Legal Information

Microsoft Collaboration Data Objects Programmer's Reference

Overview of CDO

Microsoft® Collaboration Data Objects (CDO) is a technology for building messaging or collaboration applications. (In versions previous to 1.1, CDO was called OLE Messaging; in version 1.1 it was called Active Messaging.) It is designed to simplify the creation of applications with messaging functionality, or to add messaging functionality to existing applications. For example, CDO and Active Server Pages enable you to add script to a Web site to provide support for creating, sending, and receiving e-mail as well as participating in discussions and other public folder applications.

CDO does not represent a new messaging model, but rather an additional scripting interface to the Messaging Application Programming Interface (MAPI) model.

CDO is made available through the two CDO libraries. They are described in detail in Introduction and Overview of CDO Rendering.

These libraries expose programmable messaging objects (including folders, messages, recipient addresses, attachments, and other messaging components), which are extensions to the programmable objects offered as part of Microsoft® Visual Basic®, such as forms and controls.

Intended Audience

To develop messaging-enabled applications using CDO, your background should include:

- Proficiency with a scripting language, such as Microsoft® Visual Basic® Scripting Edition (also called VBScript), Microsoft® JScript™, or JavaScript.
- Some understanding of messaging technology.

To develop messaging-enabled applications for the World Wide Web, you should also be proficient in the use of Hypertext Markup Language (HTML). No experience with C/C++ is necessary, although experience with Visual Basic or Visual Basic for Applications is recommended.

Software Requirements

The dynamic-link libraries for CDO (OLEMSG[32].DLL) and CDO Rendering (AMHTML.DLL) are MAPI client object libraries. As such, they require MAPI (the version of MAPI32.DLL installed with Microsoft® Exchange Server version 5.0) and service providers – for example, the same service providers as with Microsoft Exchange Server. AMHTML.DLL and OLEMSG[32].DLL are included with Microsoft Exchange Server version 5.0 and are installed on the server when the installation option **Active Server Components** is selected.

You can also use CDO (OLEMSG[32].DLL only, not AMHTML.DLL) after installing the Windows Messaging client included with Microsoft® Windows® 95 and Microsoft® Windows NT® version 4.0. CDO Rendering (AMHTML.DLL) is intended for server-side use only.

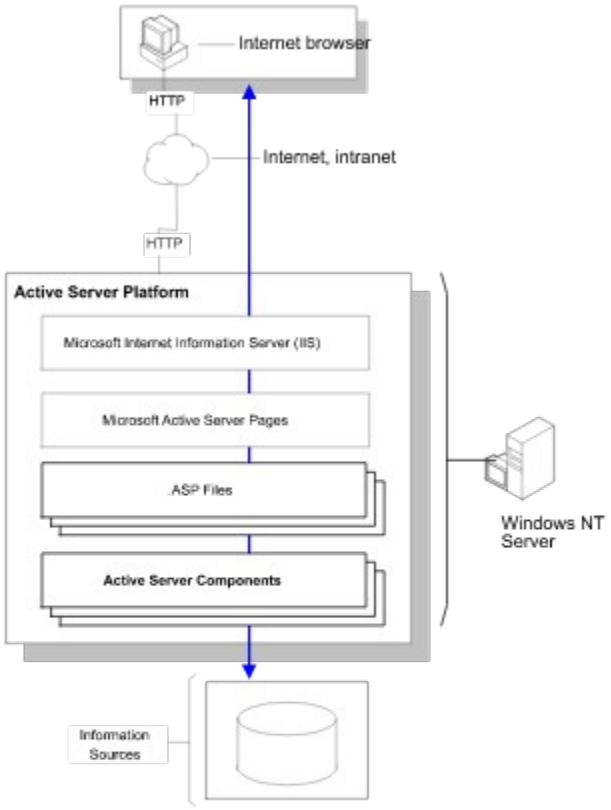
Although CDO works with Microsoft® Outlook™, OLEMSG[32].DLL is not installed with the Outlook setup program. You can set up CDO after setting up Microsoft Outlook by installing the library on its own or by installing the Microsoft Exchange Server 5.0 client. (You can install the CDO libraries independently by copying them from the installation CD-ROM to your computer's system directory.)

The Active Server Environment

Built into Microsoft® Internet Information Server (IIS) version 3.0, Active Server is a server-side and script-based programming model that allows developers to create server and Web server applications.

Active Server also takes full advantage of Microsoft® Windows NT® to create high-performance, scalable Web applications. Shared Internet server applications benefit from a rich set of services for messaging, database access, and transaction support. Because Active Server uses the component model used throughout the Active Platform, third parties can create components and applications that integrate seamlessly with other platform technologies and applications.

CDO in Microsoft® Exchange Server 5.0 is an Active Server component and provides messaging and collaboration functionality to all Active Platform applications. The following illustration shows how Active Server components (including, for example, the Active Server Components of Microsoft Exchange) fit within the Active Server platform.



The Active Server Components of Microsoft Exchange

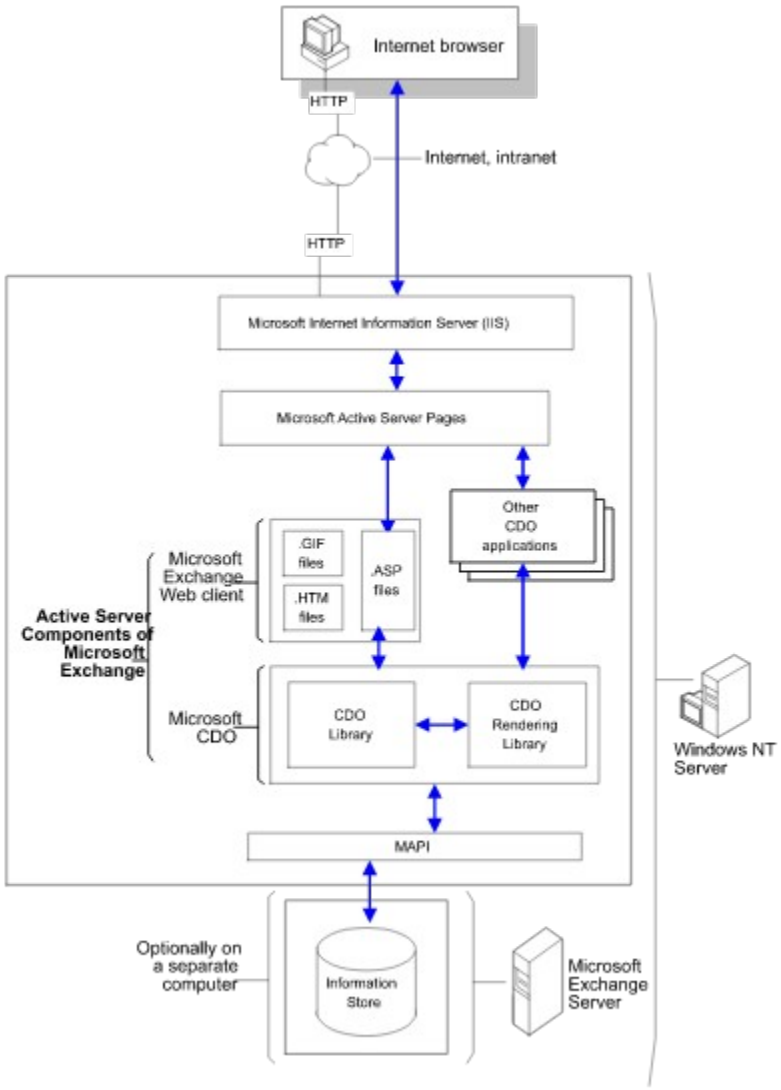
Microsoft® Exchange Active Server components provide the technology for integrating Microsoft Exchange Server with Web applications. This integration provides Web access to Microsoft Exchange Server data using IIS and Active Server Pages (ASP).

With Microsoft Exchange Active Server components, developers create applications by combining scripting, HTML, and core Microsoft Exchange technologies such as messaging, calendaring, and groupware. The Microsoft Exchange Active Server components let developers leverage not only the services of Microsoft Exchange Server but also other Microsoft and third-party services using any Web browser as a front end.

Microsoft Exchange Server installs the Active Server components of Microsoft Exchange if the installation option **Active Server Components** is selected. This installation gives you:

- **Microsoft CDO**, which includes the CDO Library and the CDO Rendering Library.
- **The Microsoft Exchange Web client**.

As indicated in the following illustration, Microsoft Exchange Server can be installed on the same computer as the Active Server components or on a different computer.



Other elements in this illustration are:

- **Internet browsers** Microsoft® Internet Explorer version 3.0 or Netscape Navigator version 3.0 is required to access Microsoft Exchange ASP-based applications.
- **Microsoft Internet Information Server** (IIS), a Web server integrated into Windows NT Server. As shown in the illustration, IIS is required to access Microsoft Exchange ASP-based applications.
- **Microsoft Active Server Pages**
- **Microsoft CDO libraries**
- **Microsoft Exchange Web client**
- **Microsoft Exchange Server**, a client/server messaging and workgroup system that offers a transparent connection to many different communications systems. The two key elements of Microsoft Exchange Server that are used by the CDO libraries are the information store (for accessing mailboxes and public folders) and the directory (for accessing the address book).

Note For information on installing the Microsoft Exchange Active Server components, see the release notes for Microsoft Exchange Server 5.0. For a thorough description of the use of the Microsoft Exchange Web client, see the *What's New* guide for Microsoft Exchange Server 5.0.

About Active Server Pages

Active Server Pages (ASP) is an open, compile-free application environment in which you can combine HTML pages, scripts, and Microsoft® ActiveX™ server components to create powerful Web-based applications.

Active Server Pages offers native support for Microsoft® Visual Basic® Scripting Edition (VBScript) and Microsoft® JScript™, and supports other scripting languages such as REXX, Python, and Perl through Active Scripting plug-ins. Active Server Pages also supports ActiveX Scripting, allowing virtually any scripting engine to be used. It allows Web developers to write scripts that are executed on either the server or the client.

Active Server Pages also supports ActiveX components developed in any language, such as C++, Visual Basic, Java, COBOL, and others. The resulting applications are compatible with any Web browser running on any operating system. (The server-side scripting processor also allows for multilingual support, defining in which language HTML is returned, based on user preference.)

Script Processing

Microsoft Active Server Pages processes ASP scripts. When Active Server Pages encounters regular HTML text, it does not process it, but passes it through the Active Server response object (and an **IStream** object) directly to the browser. When Active Server Pages encounters text within server-side script tags (<% and %>), it processes this script code and generates HTML, which it sends to the browser.

Scripts are not stored in a compiled form. Rather, they are interpreted when the ASP file is requested from the server.

Active Server Pages Sessions

Active Server Pages is not stateless. This means that, to use it, you need to start an Active Server Pages session. Such a session exists – and a Session object is created – after a user connects. When the session expires, the Session object is destroyed. In contrast, the Hypertext Transfer Protocol (HTTP) is stateless, which means that no "state" information concerning the requester is maintained between successive requests to the HTTP server.

Because the CDO libraries are an interface to MAPI, they must use a MAPI session. A MAPI session object is stored as a state variable in an Active Server Pages session, which means that a user need not log on to MAPI for each request.

Active Server Pages uses a default twenty-minute time-out. Scripts used with the Microsoft Exchange Web client set this time-out to sixty minutes for authenticated users. When this time-out expires, the Active Server Pages session and the MAPI session objects are destroyed.

About ASP Files

Active Server Pages (.asp) files are standard HTML documents interlaced with ActiveX script code that calls specific Active Server components, such as CDO.

The Microsoft Exchange Active Server components include a number of server-side scripts in .asp files. The scripting in these .asp files functions through calls to the interfaces in the CDO Library and the CDO Rendering Library. Active Server Pages processes these .asp files, and uses an **IStream** interface to send to the browser either generated HTML content or a new (changed) .asp file, which the browser interprets.

Some .asp files are specific to the Microsoft Exchange Web client, and others are useful for other ASP-based collaboration applications.

Because .asp files are not compiled and the ASP source code for Web access to Microsoft Exchange Server is included, the source files for the Web client can be used as sample code for building other applications or can be modified to customize its behavior, visual appearance, or functionality. Because Microsoft Exchange Active Server components are built on the Active Server platform using the CDO libraries, they illustrate how other collaborative Web applications can be created using CDO.

For more information about customizing .asp files for use with Microsoft Exchange Server, see Overview of CDO Rendering.

About the CDO Libraries

The CDO and CDO Rendering libraries are used for building collaborative Web server applications on Microsoft® Exchange Server. Both libraries can be used to build client and server applications.

The CDO libraries can be called from Microsoft® Visual Basic® or Visual Basic Scripting Edition (VBScript), Microsoft® JScript™, Javascript, Java, and any application that supports Visual Basic for Applications such as Microsoft® Office.

These libraries are used by the following classes of applications:

- Server applications integrated with Active Server Pages and a browser to provide Web access to client features, namely mailboxes, and public folders.
- Client applications for client-side scripting. In this case, the CDO libraries are not used with Active Server Pages.

Note Scripts can be run on the server or on the client. The Microsoft Exchange Web client's .asp files include scripts written in VBScript and executed by Microsoft® Internet Information Server (IIS); client-side scripts are written in VBScript, JScript, or JavaScript and executed by the browser.

These are the two CDO libraries:

- **CDO Library** This library lets you add to your application the ability to send and receive mail messages and to interact with folders and address books. You can create programmable messaging objects, then use their properties and methods to meet the needs of your application.
- **CDO Rendering Library** This library is used to render CDO objects and collections in HTML for use on the World Wide Web.

Note If your purpose is to run on a Web server to expose content to the Internet, you need a computer running IIS to work with the CDO libraries. However, you can use the CDO Library or CDO Rendering Library alone on the client (or on the server) as scripting libraries. In this case, they are used as general-purpose libraries, and IIS is not required.

The Microsoft Exchange Web Client

With the Microsoft® Exchange Web client, users can access data on a Microsoft Exchange Server computer using an Internet browser (that supports frames and JavaScript) from a UNIX, Macintosh, or Microsoft Windows®-based computer. The Web client provides Web-based public access to Microsoft Exchange Server public folders and the global address list. Authenticated users can log on to their personal accounts to read private e-mail and send messages. Using Web-based public folder access, an organization can build private and public discussion forums on the Internet and private intranets. Users can publish information on the Internet without having to manually convert documents to HTML format.

With an Internet browser, users specify the Uniform Resource Locator (URL) using HTTP to access the virtual root for the Microsoft Exchange Server computer. Then, after providing the proper logon credentials, they can access their mailbox and public folder data. Microsoft Exchange Server data is translated by Active Server Pages into HTML and transmitted to the browser using HTTP.

Browser access to Active Server Pages through HTTP is controlled through the Microsoft Exchange Administrator program. Access can be granted on a per-user basis or made available to any user through anonymous access.

The Microsoft Exchange Web client uses files of these types:

- **.asp files** Contain Active Server Pages scripts.
- **.htm files** HTML files that do not contain Active Server Pages scripts.
- **.gif files** Graphic image files used to depict items such as screen titles, buttons, and icons.

Common Tasks

These are some of the most common actions performed with the Microsoft Exchange Web client:

- An authenticated user opens a mailbox.
- A user (authenticated or not) accesses a public folder.
- An authenticated user reads a message in a mailbox.
- An unauthenticated user reads a message in a public folder.
- An authenticated user sends a message.
- A user (authenticated or not) posts a message to a public folder.
- A user (authenticated or not) looks for recipients in the address book.

Some of these tasks are explained in the following topic.

Note From the server, your CDO application cannot view the contents of a personal folder store (PST). Likewise, you cannot view the contents of a personal address book (PAB). Personal folder stores and personal address books are accessible when the CDO application is run on the client workstation.

Sequence of Events

The following procedures describe the events that take place and the flow of data as selected messaging tasks are performed. To see a diagram showing how the elements mentioned in these descriptions relate to one another, see The Active Server Components of Microsoft Exchange.

An authenticated user opens a mailbox

1. A user clicks the logon URL or follows a link (http://<server>/exchange, a virtual root) to the logon page for Active Server components.
2. The user enters a mailbox name, domain account name, and password. The script for the logon interaction is contained in the logon.asp file.
3. If the user is authenticated through the Microsoft® Windows NT® domain controller, an Active Server Pages session is started, which maintains session information until the user logs off or the session times out. (After authentication, the session timer starts when the first page is sent to the browser, and is restarted when each subsequent page is sent to the browser.)

   A CDO Session object is created and stored as a state variable in the Active Server Pages session. This lets the CDO Library and CDO Rendering Library make messaging calls to retrieve information store data from Microsoft Exchange Server.
4. The Inbox for this Session object is opened. This becomes visible to the user as the script file root.asp is executed. The Inbox is displayed in four frames from the \inbox directory. (Anonymous users are directed to the file \anon\root.asp.) For more information, see Directory Structure.

An unauthenticated user accesses a public folder

1. A user clicks the logon URL or follows a link (http://<server>/exchange, a virtual root) to the logon page. (Alternatively, a user may have followed a URL to the public folder, in which case the user is logged on transparently, and sees no logon page.)
2. The user clicks **Public Access** (or the appropriate **Click here**) on the logon screen.
3. A CDO session is started for the unauthenticated user.
4. The root folder of the public folder tree is displayed as the file \anon\root.asp is rendered. Only certain public folders are visible. The administrator determines which folders are available to unauthenticated users, using the HTTP Protocol object in the Protocols container on the site.

An unauthenticated user posts a message to a public folder

1. The user opens the public folder, as described in the previous procedure.
2. The user clicks **Post New Item**. The browser supplies the name "Anonymous" (or a suitable equivalent in the user's language, if not English) to be displayed on messages posted to public folders. Unauthenticated users can post messages, but they cannot send e-mail messages.

A user reads a document or message in a public folder

– or –

An authenticated user reads a message in a mailbox or public folder

1. The user opens the mailbox or public folder, as in one of the previous procedures.
2. The user clicks a message in the mailbox or public folder.
3. If the user is opening a message in a mailbox, the file \forms\ipm\note\read.asp is loaded into Microsoft Active Server Pages, which renders the message using the CDO Rendering Library. (The file \forms\ipm\post\read.asp is used to render a message in a public folder.)

Directory Structure

After the Microsoft Exchange Active Server components are installed on a server, the files of the Microsoft Exchange Web client reside in a directory structure similar to that in the following illustration. A directory tree exists for each language you install; in the illustration, the usa tree is expanded, and some of the files in the usa\anon subdirectory are listed in the right pane.

The ASP files used by Microsoft Exchange Active Server components reside in these subdirectories. For example, the \inbox directory contains .asp files used by the Active Server components to display a user's mailbox and its contents. Other subdirectories contain files for other uses; for example the \anon directory contains files that are rendered to show public folders and their contents to an unauthenticated user, whereas the files in \pf are used when an authenticated user accesses public folders.

The \forms directory and its subdirectories contain scripts for every form. The structure of the \forms directory is based on the message class of the form; the .asp files in each directory are named after the verb that is applied – such as read.asp and compose.asp. For example, an IPM.Note is read using the file read.asp in the directory \forms\ipm\note. Customizers can install additional forms for each message class they define using the same structure. This structure is loaded at application start.

Handling Multiple Languages

The Microsoft Exchange Web client handles the rendering of different languages in the following way:

- Scripts for all languages are installed under the same virtual root (typically //<server>/exchange), in a separate directory for each language. See the illustration in Directory Structure, which shows directories for German (Ger) and Japanese (Jpn) as well as USA-English (usa). Additional language packs can be obtained to support other languages.
- An Internet Server API (ISAPI) filter, ExchFilt.dll, is installed. This filter examines all incoming URLs. If a URL is for one of the applications defined in \\HKLU\System\CurrentControlSet\Services\MSExchangeWeb\Applications (Microsoft Exchange Server is defined by default, but any application can be added to this list), the filter will:
  1. Examine the AcceptLanguage header from the browser. (The AcceptLanguage is the language stated to be preferred by a given browser.)
  2. Look up the header using the table laid out in \\HKLU\System\CurrentControlSet\Services\MSExchangeWeb\AcceptLanguages.
  3. Insert the directory name into the URL after the application name.

For example, if you have a browser that prefers USA-English, //MyServer/Exchange/logon.asp becomes //MyServer/Exchange/USA/logon.asp.

This process enables a Web browser being used with Microsoft Exchange Active Server components to run the set of scripts most suitable for a particular user's language. In the case where a particular language is not installed, the default will be the language of the Microsoft Exchange Server computer.

Note that code page and locale are also defined in these registry settings and can be used to refine support for specific sublanguages.

Impersonation

A user's access to Microsoft Exchange Server information is handled in a thread of execution within the IIS process. If the user wants authenticated access – to open a mailbox, for example – this thread must impersonate a Windows NT security context. In other words, to be granted authenticated access to the Microsoft Exchange information store, a thread must be associated with a set of valid security credentials.

The impersonation process has two parts:

1. At the time a user logs on, save the valid security context into the Session object.
2. When rendering a page in a multiframe set, or when a session ends, retrieve the saved security context and call the **Impersonate** method on the RenderingApplication object.

To save a security context

At the time of user logon, use a command such as the following (from the file lib\logon.inc), to save the current security context in the session object:

```
Session("hImp") = objRenderApp.ImpID
```

To impersonate the logged on user

1. When rendering a page in a multiframe set, or as a session is ending (such as in the method **Session_onEnd** in the file global.asa), retrieve the saved security context handle from the Session object. The following code is from the file lib\session.inc:

   ```
   hImp = Session("hImp")
   ```

2. Get the RenderingApplication object and call the **Impersonate** method, passing the security context handle, as shown in the following code from the file lib\session.inc.

   ```
   set objRA = Application(bstrRenderApp)
   objRA.Impersonate(hImp)
   ```

Introduction

The Microsoft® Collaboration Data Objects (CDO) Library exposes messaging objects for use by Microsoft® Visual Basic®, C/C++, and Microsoft® Visual C++® applications. (In versions previous to 1.1, the CDO Library was called the OLE Messaging Library; in version 1.1 it was called the Active Messaging Library.)

The CDO Library lets you quickly and easily add to your Visual Basic application the ability to send and receive mail messages and to interact with folders and address books. You can create programmable messaging objects, then use their properties and methods to meet the needs of your application.

When you combine messaging objects with other programmable objects exposed by Microsoft® Access, Microsoft® Excel, and Microsoft® Word, you can quickly build custom applications that cover all your business needs. For example, with these powerful building blocks you can build a custom application that allows your users to extract information from a database, copy it to a spreadsheet for analysis, then create a report with the results and mail the report to several people.

The Microsoft CDO Library does not represent a new messaging model. It represents an additional interface to the Messaging Application Programming Interface (MAPI) model, designed to handle the most common tasks for client developers using Visual Basic, C/C++, and Visual C++.

This guide assumes that you are familiar with the Microsoft Visual Basic programming model. To help you use the CDO Library, this guide provides a short overview of the MAPI architecture. For complete reference information, see the *MAPI Programmer's Reference*.

The CDO Library requires installation of MAPI and of an automation controller. An automation controller is an application that supports Automation, such as the following Microsoft applications:

- Microsoft Visual Basic version 3.0 or later
- Microsoft Visual Basic for Applications
- Microsoft Access version 2.0 or later
- Microsoft Excel version 5.0 or later
- Microsoft Project version 4.0 or later
- Microsoft Visual C++ version 1.5 or later

Note Microsoft Visual Basic version 3.0 does not support multivalued properties.

Quick Start

The following example demonstrates how easy it is to add messaging to your applications when you use Microsoft® Visual Basic® or Visual Basic for Applications.

In this code fragment, we first create a Session object and log on. We then create a Message object and set its properties to indicate its subject and content. Next we create a Recipient object and call its **Resolve** method to obtain a full messaging address. We then call the Message object's **Send** method to transmit the message. Finally, we display a completion message and log off.

```
' You must install the MAPI SDK, registering the
' CDO Library, to run this sample code.
' This sample uses Visual Basic 3.0 error handling.
'
Function QuickStart()
Dim objSession As MAPI.Session ' use early binding for more efficient
Dim objMessage As Message      '                    code and type checking
Dim objOneRecip As Recipient

On Error GoTo error_olemsg

' create a session and log on -- username and password in profile
Set objSession = CreateObject("MAPI.Session")
' change the parameters to valid values for your configuration
objSession.Logon profileName:="Sender Name"

' create a message and fill in its properties
Set objMessage = objSession.Outbox.Messages.Add
objMessage.Subject = "Sample Message"
objMessage.Text = "This is sample message text."

' create the recipient
Set objOneRecip = objMessage.Recipients.Add
objOneRecip.Name = "Recipient Name"
objOneRecip.Type = CdoTo
objOneRecip.Resolve ' get MAPI to determine complete e-mail address

' send the message and log off
objMessage.Send showDialog:=False
MsgBox "The message has been sent"
objSession.Logoff
Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Exit Function

End Function
```

The CDO Library invalidates the Message object after you call its **Send** method. This code fragment logs off to end the session after sending the message, but if you continued the MAPI session, you could avoid potential errors by setting the Message object to **Nothing**.

About Installation

The Collaboration Data Objects Library version 1.2 is installed with the MAPI component of the Platform Software Development Kit (SDK) and with the Microsoft® Exchange Client. The setup programs register the CDO Library for subsequent use by automation controllers, that is, applications that support Automation.

Note No separate setup program is provided or needed for the CDO Library.

When you use the CDO Library with an automation controller, verify that the tool has referenced the CDO Library. For example, when you are using Microsoft® Visual Basic® version 4.0, choose the **References** command from the **Tools** menu, and select the check box for **Microsoft Active Messaging 1.1 Object Library**.

When the CDO Library is available, the following flag is set in the WIN.INI file:

```
[Mail]
OLEMessaging=1
```

The **OLEMsgPersistenceTimeout** registry setting controls how quickly the CDO Library shuts down and unloads from memory after all messaging objects are released by client applications. On Win32® systems, the setting appears at the following registry location:

HKEY_LOCAL_MACHINE\Software\Microsoft\Windows Messaging Subsystem

For 16-bit Microsoft® Windows® systems, the **OLEMsgPersistenceTimeout** setting appears within the [MAPI] section of the WIN.INI file.

About This Guide

Overview defines the MAPI terms used in this guide and compares the CDO Library with the other MAPI programming interfaces. It then describes the design of the CDO Library, defining the objects and the collections of objects that are available to you with the CDO Library. This section also explains the relationships between these objects.

Programming Tasks offers sample Microsoft® Visual Basic® code for many common programming tasks, such as creating and sending a message, posting a message to a public folder, navigating through folders, searching through address books, and handling errors.

Objects, Properties, and Methods contains comprehensive reference information for the properties and methods of all objects and collection objects.

The appendixes, Error Codes, Property Tags, Web Page Support, How Programmable Objects Work, and Java Programming Considerations, offer additional background information about Automation (the technology used by the CDO Library), describe how the CDO Library provides support for HTML (Hypertext Markup Language) script on a Web page, and provide procedures and examples for accessing CDO Library objects from Java.

The best way to learn about the CDO Library is to alternate your reading with hands-on programming. You can use the sample code that is provided with the CDO Library.

Overview

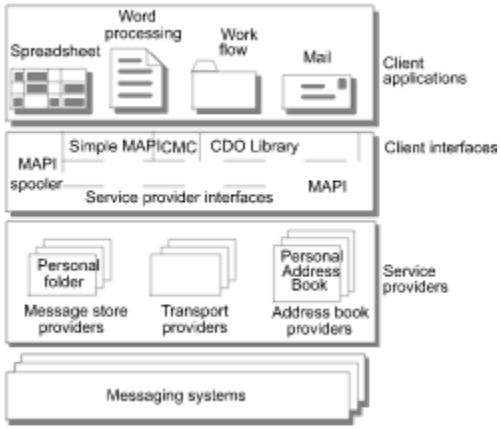
This section presents a brief introduction to MAPI and describes how the Collaboration Data Objects (CDO) Library fits into the mix of MAPI programming interfaces. It provides a short description of Automation, which is the basis of the design of the CDO Library. The section also offers a conceptual overview of the CDO Library, and a discussion of differences between 16-bit and 32-bit platforms.

Introduction to MAPI

MAPI defines a complete architecture for messaging applications. The architecture specifies several well-defined components. This allows system administrators to mix and match components to support a broad range of vendors, computing devices, and communication protocols.

The MAPI architecture can be used for e-mail, scheduling, personal information managers, bulletin boards, and online services that run on mainframes, personal computers, and hand-held computing devices. The comprehensive architectural design allows MAPI to serve as the basis for a common information exchange.

The MAPI architecture defines messaging applications, or *clients*, that interact with various message *services* through the MAPI programming interfaces, as shown in the following diagram.



To use the messaging services, a client must first establish a *session*. A session is a specific connection between the client and the MAPI interface based on information provided in a *profile*. The profile contains configuration and user preference information. For example, the profile contains the names of various supporting files, the time interval to check for new messages, and other settings, such as whether to remember the user's password or to prompt the user for the password during each logon. A successful logon is required to enable the client's use of the MAPI system.

After establishing a MAPI session, the client can use the MAPI services. MAPI defines three primary services: address books, transports, and message stores.

An *address book* service is similar to a telephone directory. The address book can be thought of as a persistent database that contains valid addressing information. An entry in the address book is called an *address entry* and consists of a display name, an e-mail type, and an e-mail address. The display name refers to the name, such as a person's full name, that an application displays to its users. You can provide a display name, and the address book service looks up the display name and provides the corresponding messaging system address.

A *transport* supports communication between different devices and different underlying messaging systems.

A *message store* stores messages in a hierarchical structure that consists of one or more *folders*. A folder can be a *personal folder* that contains an individual's messages, or a *public folder*, similar to a bulletin board or online forum, that is accessible to many users. Each folder can contain messages or other folders.

A *message* represents a communication that is sent from the sender to one or more recipients or that gets posted in a public folder. A message can include one or more attachments, which are attached to and sent with the message. An *attachment* can be the contents of a file, a link to a file, an OLE object, or another message.

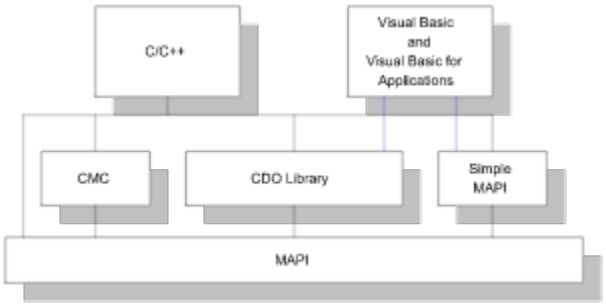
Several *properties* can be associated with a message: its subject, its importance, its delivery properties (such as the time it is sent and received), and whether to notify the sender when the message is delivered and read. Some message properties identify the message as part of a *conversation*. The conversation properties allow you to group related messages and identify the sequence of comments and replies in the thread of the conversation.

The message can have one or more recipients. A *recipient* can be an individual or a *distribution list.* A distribution list can contain individuals and other distribution lists. For messages that are posted to public folders, the recipient can also be the public folder itself. Before sending a message, you should *resolve* each recipient; this means you should check each recipient against the address book to make sure its e-mail address is valid.

MAPI Programming Interfaces

Microsoft provides several programming interfaces for MAPI, so that developers working in a wide variety of development environments can use this common message exchange.

The following figure shows the CDO Library as a layer that is built on top of MAPI. This is similar to the way function calls to the Common Messaging Calls (CMC) interface are mapped to the underlying MAPI interfaces. It also demonstrates that the CDO Library is available to all the concerned languages, namely Microsoft® Visual Basic®, Visual Basic for Applications, and C/C++.



It is important to recognize that the CDO Library does not offer access to all of the features of MAPI. In particular, it is designed primarily for clients and is not suitable for service providers.

The following table summarizes the programming interfaces that Microsoft provides for MAPI.

Programming interface	Description
MAPI custom controls	User interface elements for Visual Basic version 3.0 developers.
Simple MAPI	Functions for Visual Basic version 3.0 and later, Visual Basic for Applications, and C/C++ client developers that allow access to the Inbox (no access to MAPI properties). Most developers should probably use either CMC or MAPI rather than Simple MAPI.
CDO Library	Programmable messaging objects for Visual Basic/Visual Basic for Applications and C/C++ developers.
Common Messaging Calls (CMC)	Functions for C/C++ client developers; X.400 API Association (XAPIA) standard.
MAPI	OLE Component Object Model (COM) interfaces for C/C++ developers. Full access to all MAPI programming interfaces. Implemented and called by clients, service providers, and MAPI itself.

MAPI Custom Controls and the CDO Library

Although both the MAPI custom controls and the CDO Library are designed for Visual Basic programmers, they represent significantly different capabilities.

A *control* is a user interface element that enables you to display data for the user. The custom controls are usually convenient for offering more specialized capabilities than are provided by the standard user interface controls such as the list box, combo box, command button, and option button.

A programmable object may offer some user interface capabilities, but that is usually not its primary purpose. It offers the very powerful ability to interact with existing OLE objects. For a familiar example, consider the data access objects provided with Microsoft Visual Basic version 3.0 Professional Edition and subsequent versions. The data access library lets you create and use such database objects as tables and queries. As the data access library lets you use database objects, the CDO Library lets you add messaging to your applications.

MAPI Functions and the CDO Library

Compared to the function call interfaces of traditional application programming interface (API) libraries, an Automation object library yields faster development and code that is easier to read, debug, and maintain.

The CDO Library also takes care of many programming details for you, such as memory management and keeping count of the number of objects in collections.

The following table compares a traditional function call interface, such as CMC or Simple MAPI, with the CDO Library interface.

Task or code	Function call interface	CDO Library
Dim mFiles() As MapiFile Dim mRecips() As MapiRecip	Requires arrays of these structures to be declared, even if the developer does not use them.	Automatically manages these structures as child objects of the parent Message object.
ReDim mRecips(0) ReDim mFiles(0)	Structures are resized by redimensioning arrays.	Objects are added to collections with the **Add** method.
mMessage.RecipCount = 1	Requires developer to indicate the number of recipients and attachments.	Automatically determines the number of objects in these collections.
Error handling	Each function call returns its own set of error codes.	Integrated with Visual Basic error handling during both design and run time.
Return values	Returned implicitly in the parameters of the function call.	Returned as an explicit result of a method or in object properties.

As programming tasks grow more complex, the function call approach becomes increasingly unwieldly. In contrast, the CDO Library expands gracefully to encompass greater complexity. A well-planned, thorough framework of collections, objects, methods, and properties can neatly encompass very complex systems.

Introduction to Automation

The CDO Library is based on the capabilities provided by Automation. The CDO Library allows you to create instances of programmable messaging *objects* that you can reference with automation controllers. An *automation controller* is a tool that supports Automation, such as Microsoft® Visual Basic®.

For the purposes of this document, an *object* is an Automation object: a software component that exposes its properties and methods. Such an object follows the Visual Basic programming model and lets you get properties, set properties, and call methods.

You can think of programmable objects as additions or extensions to the programmable objects that are offered as part of Visual Basic, such as forms and controls. Forms and controls expose their properties and methods so that developers can tailor these objects for the needs of their programs. In addition to the forms and controls, Visual Basic allows for the definition of a wide variety of other programmable objects by providing the **CreateObject** and **LoadObject** functions. Note that these functions do not have specialized names like CreateSpreadsheet or LoadDatabase. They are general-purpose functions that enable an open-ended number of programmable objects, including the CDO Library.

Throughout this document, Visual Basic is used as a concrete example of an automation controller, but the statements about Visual Basic apply to all such tools.

Visual Basic scripts drive the CDO Library. The scripts can also drive other libraries that support Automation, such as the libraries of programmable objects provided by Microsoft® Excel version 5.0 and Microsoft® Access version 2.0. Visual Basic can call many different programmable object libraries and can act as the glue that holds all of these objects together.

Each library can create its own objects, set properties, and call methods. The Visual Basic program coordinates the work of all the libraries. For example, it can direct the Microsoft Access object to find data in a specific table, direct the Microsoft Excel object to run calculations using that data, and then direct CDO Library objects to create a message containing the results of those calculations and send the message to several recipients.

CDO Library Object Design

The CDO Library is designed for ease of use and convenience. It implements the MAPI functions most used by client applications. The CDO Library is not designed for development of service providers. (For more information about service providers, see Introduction to MAPI.)

Note The CDO Library design does not represent a one-to-one correspondence with MAPI objects. The description of the CDO Library object design does not always apply to the MAPI programming interface.

The CDO Library defines the following objects:

- AddressEntries collection
- AddressEntry
- AddressEntryFilter
- AddressList
- AddressLists collection
- Attachment
- Attachments collection
- Field
- Fields collection
- Folder
- Folders collection
- GroupHeader
- InfoStore
- InfoStores collection
- Message
- MessageFilter
- Messages collection
- Recipient
- Recipients collection
- Session

The objects supported in the CDO Library can be grouped into three categories:

- Top-level objects, which can be created directly in a Microsoft® Visual Basic® program.
- Child objects, which can be instantiated under the top-level objects.
- Collections, or groups of objects of the same type.

Top-Level Objects

A top-level object is one that can be created directly by your code, without having to derive it from any other object. Currently, the only top-level Active Messaging object is the Session object. Other objects are accessible only through the Session object.

You can create a Session object either through early binding:

```
Dim objSession As MAPI.Session
Set objSession = CreateObject ("MAPI.Session")
objSession.Logon
```

or through late binding:

```
Dim objSession As Object
Set objSession = CreateObject ("MAPI.Session")
objSession.Logon
```

and then use the **Logon** method to initiate a session with MAPI. You cannot access any other object, or even the Session object's properties or methods, until you log on. The only exception to this rule is the Session object's **SetLocaleIDs** method.

Generally, early binding is preferable, because it enforces type checking and generates more efficient code. Note that you specify "MAPI.Session" instead of just "Session" in order to distinguish a MAPI session from other types of sessions available to a Visual Basic program through other object libraries.

Early binding is not supported in CDO Library versions previous to 1.1.

C/C++ programmers use globally unique identifiers (GUIDs) for these objects, defined in the type library for the CDO Library. The following C++ code fragment demonstrates how to create a Session object and call its **Logon** method:

```
// create a Session object and log on using IDispatch interface
// to the CDO library
#include <ole2.h>
#include <stdio.h>
#include <stdlib.h>   // for exit
#define dispidM_Logon 119   // get constants for all props, methods
// allows you to save cost of GetIdsFromNames calls
// can generate yourself by calling GetIdsFromNames for all
// properties and methods
// GUID values for Session defined in the type library
static const CLSID GUID_OM_SESSION =
{0x3FA7DEB3, 0x6438, 0x101B, {0xAC, 0xC1, 0, 0xAA, 0, 0x42, 0x33, 0x26}};
void main(void)
{
HRESULT hr;

/* interface pointers */
LPUNKNOWN punk = NULL; // IUnknown *; used to get IDispatch *
DISPPARAMS dispparamsNoArgs = {NULL, NULL, 0, 0};
VARIANT varRetVal;
IDispatch * pSession;

    //Initialize OLE.
    hr = OleInitialize(NULL);
       printf("OleInitialize returned 0x%lx\n", hr);
    VariantInit(&varRetVal);
```

```
// Create an instance of the CDO Library Session object
// Ask for its IDispatch interface.
    hr = CoCreateInstance(GUID_OM_SESSION,
                          NULL,
                          CLSCTX_SERVER,
                          IID_IUnknown,
                          (void FAR* FAR*)&punk);
    printf("CoCreateInstance returned 0x%lx\n", hr);
    if (S_OK != hr)
        exit(1);
    hr = punk->QueryInterface(IID_IDispatch, (void FAR* FAR*)&pSession);
    punk->Release();            // no longer needed; release it
    printf("QI for IID_IDispatch returned 0x%lx\n", hr);
    if (S_OK != hr)
        exit(1);
// Logon using the session object; call its Logon method
    hr = pSession->Invoke(dispidM_Logon, // value = 119
                          IID_NULL,
                          LOCALE_SYSTEM_DEFAULT,
                          DISPATCH_METHOD,
                          &dispparamsNoArgs,
                          &varRetVal,
                          NULL,
                          NULL);
    printf("Invoke returned 0x%lx\n", hr);
    printf("Logon call returned 0x%lx\n", varRetVal.lVal);
// do other things here...
// when done, release the Session dispatch object and shut down OLE
    pSession->Release();
    OleUninitialize();
```

The following table lists the GUIDs for the top-level objects accessible to C/C++ programmers.

CDO Library object	**GUID**
Session	{3FA7DEB3-6438-101B-ACC1-00AA00423326}

Child Objects

All CDO Library objects can be considered as relative to a Session object. A session's immediate child objects are the AddressLists collection object, the InfoStores collection object, and the Inbox or Outbox Folder object. These provide access, respectively, to the root of the address book hierarchy for the current session, the set of all message stores available to the session, and the current default Inbox and Outbox folders.

The session's child objects have their own child objects, which in turn have child objects, and so on. This hierarchy permits increasingly detailed levels of access. The AddressLists collection, for example, contains one or more AddressList child objects, each representing one available address book container. Each of these has as its child an AddressEntries collection containing AddressEntry child objects. Each address entry that is a distribution list has a **Members** property that provides another AddressEntries collection for the members of the distribution list.

See the Object Model diagram for the logical hierarchy of the CDO Library.

In addition to the hierarchy of objects, each object has properties and methods. The hierarchy is important because it determines the correct syntax to use in your Visual Basic applications. In your Visual Basic code, the relationship between a parent object and a child object is denoted by the left-to-right sequence of the objects in the Visual Basic statement. For example,

```
objSession.AddressLists("Personal Address Book").AddressEntriesColl(2)
```

refers to the second AddressEntry object in the AddressEntries collection of the current session's personal address book (PAB) AddressList object.

Object Collections

A *collection* is a group of objects of the same type. In the CDO Library, the name of the collection takes the plural form of the individual CDO Library object. For example, the Messages collection is the name of the collection that contains Message objects. The CDO Library supports the following collections:

- AddressEntries
- AddressLists
- Attachments
- Fields
- Folders
- InfoStores
- Messages
- Recipients

For purposes of accessing their individual member objects, collections can be characterized as either large or small.

For a *small collection*, the service provider maintains an accurate count of the objects in the collection. The AddressLists, Attachments, Fields, InfoStores, and Recipients collections are considered small collections. You can access individual items using an index into the collection. You can also add and delete items from the collection (except for the AddressLists and InfoStores collections, which are read-only for the CDO Library).

Small collections, with a known number of member objects, have a reliable **Count** property, which always contains the current number of member objects. The **Item** property can be used to select any arbitrary member of the collection. A small collection also has an implicit temporary **Index** property, assigned by the CDO Library. **Index** properties are valid only during the current MAPI session and can change as your application adds and deletes objects. The **Index** value for the first member object is 1.

For example, in an Attachments collection with three Attachment objects, the first attachment is referred to as Attachments.Item(1), the second as Attachments.Item(2), and the third as Attachments.Item(3). If your application deletes the second attachment, the third attachment becomes the second and Attachments.Item(3) has the value **Nothing**. The **Count** property is always equal to the highest **Index** in the collection.

Other applications can add and delete objects while your application is running. The **Count** property is not updated until you re-create or refresh the collection, for example by calling the parent Message object's **Update** or **Send** method. An attachment is saved in the MAPI system when you refresh the Message object, and the **Count** properties of its Attachments and Recipients collections are updated.

For a *large collection*, the service provider cannot always maintain an accurate count of the objects in the collection. The AddressEntries, Folders, and Messages collections are considered large collections. In preference to using a count, these collections support **Get** methods that let you get the first, last, next, or previous item in the collection. Programmers needing to access individual objects in a large collection are strongly advised to use the Visual Basic **For Each** statement or the **Get** methods.

Large collections, with an uncertain number of member objects, support the **Count** property in a limited way. It can tell you if the collection is empty or not, but it cannot be used as the collection's exact size if its value is set to **CdoMaxCount**. The **Item** property has the same functionality as it does in small collections. For more information on using the **Count** and **Item** properties in a large collection, see the example in the **Count** property.

The **Count** property is updated whenever you refresh an AddressEntries or Messages collection, in particular by altering its child AddressEntryFilter or MessageFilter object.

MAPI assigns a permanent, unique string **ID** property when an individual member object is created.

These identifiers do not change from one MAPI session to another. You can call the Session object's **GetAddressEntry**, **GetFolder**, or **GetMessage** method, specifying the unique identifier, to obtain the individual AddressEntry, Folder, or Message object. You can also use the **GetFirst** and **GetNext** methods to move from one object to the next in these collections.

Note To ensure correct operation of the **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** methods in a large collection, call **GetFirst** before making any calls to **GetNext** on that collection, and call **GetLast** before any calls to **GetPrevious**. To ensure that you are always making the calls on the same collection, create an explicit variable that refers to that collection.

For example, the following two code fragments are not equivalent:

```
' fragment 1: each Set statement creates a new Messages collection;
'              it's undefined which message is returned by GetNext
Set objMessage = objInBox.Messages.GetFirst
...
Set objMessage = objInBox.Messages.GetNext

' fragment 2: use an explicit variable to refer to the collection;
'              now the Get methods return the intended messages
Set objMsgColl = objSession.objInBox.Messages
Set objMessage = objMsgColl.GetFirst
...
Set objMessage = objMsgColl.GetNext
```

Code fragment 1 causes the CDO Library to create a new Messages collection in each **Set** statement. The **GetFirst** call returns the first message in the collection, but the result of the **GetNext** call is undefined since **GetFirst** has not yet been called on this new collection.

Code fragment 2 creates and uses the explicit variable *objMsgColl*, so the **GetFirst** and **GetNext** calls act as expected for collections with more than one item.

The collections in the CDO Library are specifically designed for messaging applications. The definition of collections in this document may differ slightly from the definitions of collections in the OLE programming documentation. Where there are differences, the description of the operation of the CDO Library supersedes the other documentation.

Platform Differences

The CDO Library is available to programs running on both 16-bit and 32-bit versions of the Microsoft® Windows® operating system. All the features released with CDO Library version 1.0.a can be used on either platform, but some of the features released with version 1.1 are limited to a 32-bit platform.

Constants with values less than 65,536 can be defined in 16 bits. Those with values from 65,536 through 4,294,967,295 require 32 bits to define, and these are not available in 16-bit type libraries. The 32-bit constants include:

- Limits such as **CdoMaxCount**.
- MAPI error codes such as **CdoE_INVALID_PARAMETER**.
- MAPI property tags such as **CdoPR_MESSAGE_CLASS**.

If your program is intended for a 16-bit platform, you must use numeric equivalents for these constants. The **CdoMaxCount** constant is explained in the **Count** property of the AddressEntries collection. Definitions for other numeric values can be found in the Error Codes and Property Tags appendixes.

Java programs cannot process **#define** directives, so they must also use numeric equivalents in place of the defined constants. For more information, see Java Language Features.

Certain file names are different between the two platforms. Versions of the CDO Library previous to 1.1 had the local server in MDISP.EXE and the type library file in MDISP.TLB. With version 1.1, the in-process server and the type library both reside in OLEMSG32.DLL for 32-bit platforms and OLEMSG.DLL for 16-bit platforms.

Programming Tasks

This section describes some of the common programming tasks you can perform with the Collaboration Data Objects (CDO) Library. The first task your application must complete is to obtain and **Logon** to a valid Session object as described in Starting a CDO Session. The following table categorizes the described tasks:

Category	Programming tasks
General programming tasks	Handling Errors Improving Application Performance Starting a CDO Session Viewing MAPI Properties
Working with messages	Adding Attachments to a Message Checking for New Mail Creating and Sending a Message Customizing a Folder or Message Deleting a Message Filtering Messages in a Folder Making Sure the Message Gets There Reading a Message from the Inbox Searching for a Message Securing Messages
Working with addresses	Changing an Existing Address Entry Creating a New Address Book Entry Selecting Recipients from the Address Book Using Addresses
Working with folders	Accessing Folders Copying a Message to Another Folder Customizing a Folder or Message Moving a Message to Another Folder Searching for a Folder
Working with public folders	Posting Messages to a Public Folder Working with Conversations .

The following table summarizes the programming procedures that you must use to perform these tasks. Note that all tasks require a valid Session object and a successful **Logon**.

Programming task	Procedure
Accessing Folders	1. Access the Folder object's **Folders** property to obtain its collection of subfolders. 2. Use the Folders collection's **GetFirst**, **GetNext**, **GetPrevious**, and **GetLast** methods to navigate through the subfolders.
Adding Attachments to a	1. Create or obtain the Message object that

Message	is to include the attachment. 2. Call the Message object's Attachments collection's **Add** method. 3. Call the Message object's **Update** or **Send** method.
Changing an Existing Address Entry	1. Obtain a valid AddressEntry object. 2. Update the AddressEntry object's **Name**, **Type**, or **Address** property. 3. Call the AddressEntry object's **Update** method.
Checking for New Mail	Count messages in the Inbox folder that have the **Unread** property set to **True**. – or – Count messages received after a specified time.
Copying a Message to Another Folder	1. Obtain the source message that you want to copy. 2. Call the source Message object's **CopyTo** method. 3. Call the new Message object's **Update** method.
Creating a New Address Book Entry	1. Obtain the Session object's AddressLists collection. 2. Select the AddressList object corresponding to the desired address book container. 3. Obtain the address list's AddressEntries collection. 4. Call the AddressEntries collection's **Add** method.
Creating and Sending a Message	1. Call the Messages collection's **Add** method to create a Message object. 2. Set the Message object's **Text**, **Subject**, and other message properties. 3. Call the message's Recipients collection's **Add** method to add a recipient. – or – 3. Copy a Recipients collection from another message to the new message's **Recipients** property. 4. Set the Recipient object's **Name**, **Address**, or **AddressEntry** property. 5. Call the Recipient object's **Resolve**

	method to validate the address information. 6. Call the Message object's **Send** method.
Customizing a Folder or Message	1. Create or obtain the Folder or Message object that is to have the custom properties. 2. Call the object's Fields collection's **Add** method.
Deleting a Message	1. Select the message you want to delete. 2. Call the Message object's **Delete** method.
Filtering Messages in a Folder	1. Access the folder in which you wish to filter the messages. 2. Obtain the MessageFilter object for the folder. 3. Select and set the desired MessageFilter properties to specify the filter.
Handling Errors	Use the Visual Basic **On Error Goto** statement to add exception-handling code just as you would in any Visual Basic application.
Improving Application Performance	Each dot in a Visual Basic statement directs the CDO Library to create a temporary internal object. Use explicit variables when you reuse messaging objects.
Making Sure the Message Gets There	1. Set the Message object's **DeliveryReceipt** and/or **ReadReceipt** properties to **True**. 2. Call the Message object's **Send** method.
Moving a Message to Another Folder	1. Obtain the source message that you want to move. 2. Call the source Message object's **MoveTo** method. 3. Call the Message object's **Update** method at its new location.
Posting Messages to a Public Folder	Use a procedure similar to Creating and Sending a Message, where you specify the name of the public folder as the recipient name. – or – 1. Call the public folder's Messages collection's **Add** method to create a

	Message object. 2. Set the Message object's **Text**, **Subject**, **ConversationSubject**, **ConversationIndex**, **TimeSent**, **TimeReceived**, and other message properties. 3. Set the Message object's **Unread**, **Submitted,** and **Sent** properties to **True**. 4. Call the Message object's **Send** or **Update** method to post the message.
Reading a Message from the Inbox	1. Call the session's Inbox folder's **GetFirst, GetNext, GetPrevious,** and **GetLast** methods to obtain a Message object. 2. Obtain the Message object's **Text** property.
Searching for a Folder	Use the Session object's **GetFolder** method to obtain the folder from its known identifier value. – or – Call the Folders collection's **Get** methods to get individual Folder objects, and compare properties of each folder with the desired property values.
Searching for a Message	Use the Session object's **GetMessage** method to obtain the message from its known identifier value. – or – Call the Messages collection's **Get** methods to get individual Message objects, using a message filter to reduce the number of messages searched, and if necessary compare properties of each message with the desired property values.
Securing Messages	1. Set the Message object's **Encrypted** and/or **Signed** properties to **True**. 2. Perform processing on the message's **Text** property to encrypt or sign the message. 3. Call the Message object's **Send** method.
Selecting Recipients from the Address Book	1. Call the session's **AddressBook** method to use the MAPI address book dialog box. 2. Set a Recipients collection object to the Recipients collection returned by the **AddressBook** method. 3. Use that Recipients collection or copy

	individual recipients from it.
Starting a CDO Session	1. Create or obtain a Session object. 2. Call the Session object's **Logon** method.
Using Addresses	1. Set the message's Recipient object's **Address** property to a full address. 2. Call the Recipient object's **Resolve** method.
Viewing MAPI Properties	Specify a MAPI property tag as the Fields collection's **Item** property.
Working with Conversations	1. Set the message's **ConversationTopic** property. 2. Set the message's **ConversationIndex** property. 3. Send the message by calling the **Send** method. – or – 3. Post the message in the public folder by setting the **Submitted** property to **True**.

It is important to understand the hierarchy of the CDO Library objects, because the hierarchical relationships between objects determines the correct syntax of Microsoft® Visual Basic® statements. The relative positions of these objects in the hierarchy indicate how the objects appear from left to right in a Visual Basic statement. For more information on the hierarchy, see Object Model.

In the sample code that appears in this guide, individual statements are often broken across several lines. The convention used for this is the statement continuation introduced in Visual Basic version 4.0, which consists of a space followed by the underscore character (_). This sequence is placed at the end of a code line to indicate that the current statement is continued on the next line.

Accessing Folders Group

Folders can be organized in a hierarchy, allowing you to access folders within folders. Subfolders appear in the Folders collection returned by the **Folders** property of the Folder object containing them.

With the CDO Library version 1.1 and later, you can create a new folder within an existing folder using the **Add** method of the Folders collection.

There are two general approaches for accessing folders:

- Obtaining the folder directly by calling the Session object's **GetFolder** method.
- Navigating folders using the Folders collection's **Get** methods.

To obtain the folder directly using the **GetFolder** method, you must have the folder's identifier. In the following code fragment, the identifier is stored in the variable *strFolderID*:

```
Function Session_GetFolder()
    On Error GoTo error_olemsg

    If objSession Is Nothing Then
        MsgBox "No active session, must log on"
        Exit Function
    End If
    If strFolderID = "" Then
        MsgBox ("Must first set folder ID variable; see Folder->ID")
        Exit Function
    End If
    Set objFolder = objSession.GetFolder(strFolderID)
    ' equivalent to:
    ' Set objFolder = objSession.GetFolder(folderID:=strFolderID)
    If objFolder Is Nothing Then
        Set objMessages = Nothing
        MsgBox "Unable to retrieve folder with specified ID"
        Exit Function
    End If
    MsgBox "Folder set to " & objFolder.Name
    Set objMessages = objFolder.Messages
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Set objFolder = Nothing
    Set objMessages = Nothing
    MsgBox "Folder is no longer available; no active folder"
    Exit Function
End Function
```

To navigate through the hierarchy of folders, start with a known or available folder, such as the Inbox or Outbox, and examine its Folders collection. You can use the collection's **GetFirst** and **GetNext** methods to get each Folder object in the collection. When you have a subfolder, you can examine its properties, such as its name, to see whether it is the desired folder. The following code fragment navigates through all existing subfolders of the Inbox:

```
Function TestDrv_Util_ListFolders()
    On Error GoTo error_olemsg
    If objFolder Is Nothing Then
```

```
        MsgBox "Must select a folder object; see Session menu"
        Exit Function
    End If
    If 2 = objFolder.Class Then ' verify object is a Folder
            ' with CDO Library 1.1, can use Class value:
            ' If CdoFolder = objFolder.Class Then
        x = Util_ListFolders(objFolder) ' use current global folder
    End If
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next

End Function

' Function: Util_ListFolders
' Purpose: Recursively list all folders below the current folder
' See documentation topic: Folders collection
Function Util_ListFolders(objParentFolder As Object)
Dim objFoldersColl As Folders ' the child Folders collection
Dim objOneSubfolder As Folder ' a single Folder object
    On Error GoTo error_olemsg
    If Not objParentFolder Is Nothing Then
        MsgBox ("Folder name = " & objParentFolder.Name)
        Set objFoldersColl = objParentFolder.Folders
        If Not objFoldersColl Is Nothing Then ' loop through all
            Set objOneSubfolder = objFoldersColl.GetFirst
            While Not objOneSubfolder Is Nothing
                x = Util_ListFolders(objOneSubfolder)
                Set objOneSubfolder = objFoldersColl.GetNext
            Wend
        End If
    End If
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next
End Function
```

See Also

Searching for a Folder

Adding Attachments to a Message

Group

You can add one or more attachments to a message. You add each attachment to the Attachments collection obtained from the Message object's **Attachments** property. The relationship between the Message object and an attachment is shown here:

Message object
  Attachments collection
    Attachment object
      Type property
      Source property

The CDO Library supports several different kinds of attachments: files, links to files, OLE objects, and embedded messages. An attachment's type is specified by its **Type** property. To add an attachment, use the related Attachment object property or method appropriate for that type, as shown in the following table:

Attachment type	Related Attachment object property or method
CdoFileData	**ReadFromFile** method
CdoFileLink	**Source** property
CdoOLE	**ReadFromFile** method
CdoEmbeddedMessage	**ID** property of the Message object to be embedded

The following example demonstrates inserting a file as an attachment. This example assumes that the application has already created the Session object variable *objSession* and successfully called the Session object's **Logon** method, as described in Starting a CDO Session.

```
' Function: Attachments_Add_Data
' Purpose: Demonstrate the Add method for type = CdoFileData
' See documentation topic: Adding Attachments To A Message,
'    Add method (Attachments collection)
Function Attachments_Add_Data()
Dim objMessage As Message  ' local
Dim objRecip As Recipient  ' local

    On Error GoTo error_olemsg
    If objSession Is Nothing Then
        MsgBox ("must first log on; use Session->Logon")
        Exit Function
    End If
    Set objMessage = objSession.Outbox.Messages.Add
    If objMessage Is Nothing Then
        MsgBox "could not create a new message in the Outbox"
        Exit Function
    End If
    With objMessage ' message object
        .Subject = "attachment test"
        .Text = "Have a nice day."
        .Text = " " & objMessage.Text ' add placeholder for attachment
        Set objAttach = .Attachments.Add ' add the attachment
        If objAttach Is Nothing Then
```

```
            MsgBox "Unable to create new Attachment object"
            Exit Function
        End If
        With objAttach
            .Type = CdoFileData
            .Position = 0 ' render at first character of message
            .Name = "c:\smiley.bmp"
            .ReadFromFile "c:\smiley.bmp"
         End With
         objAttach.Name = "smiley.bmp"
         .Update ' update message to save attachment in MAPI system
    End With
    MsgBox "Created message, added 1 CdoFileData attachment, updated"
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next

End Function
```

The attachment overwrites the placeholder character at the rendering position specified by the attachment's **Position** property. A space is normally used for the placeholder character.

The CDO Library does not actually place the attachment within the message; that is the responsibility of the messaging client application. You can also use the value -1 for the **Position** property, which indicates that the attachment should be sent with the message, but should not be rendered by the **Position** property.

To insert an attachment of type **CdoOLE**, use code similar to the **CdoFileData** type example. Set the attachment type to **CdoOLE** and make sure that the specified file is a valid OLE *docfile* (a file saved by an OLE-aware application such as Microsoft® Word version 7.0 that uses the OLE interfaces **IStorage** and **IStream**).

To add an attachment of type **CdoFileLink**, set the **Type** property to **CdoFileLink** and set the **Source** property to the file name. The following sample code demonstrates this type of attachment:

```
' Function: Attachments_Add
' Purpose: Demonstrate the Add method for type = CdoFileLink
' See documentation topic: Adding Attachments To A Message,
'     Add method (Attachments collection)
Function Attachments_Add()
    On Error GoTo error_olemsg

    If objAttachColl Is Nothing Then
        MsgBox "must first select an attachments collection"
        Exit Function
    End If
    Set objAttach = objAttachColl.Add ' add the attachment
    With objAttach
        .Type = CdoFileLink
        .Position = 0 ' render at first character of message
        .Source = "\\server\bitmaps\honey.bmp"
    End With
    ' must update the message to save the new info
    objOneMsg.Update ' update message; save attachment in MAPI system
    MsgBox "Added an attachment of type CdoFileLink"
```

```
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next

End Function
```

See Also

Creating and Sending a Message

Changing an Existing Address Entry

Group

The CDO Library lets you change existing address entries in any address book container for which you have modification permission. Typically you have such permission only for your personal address book (PAB).

To change an existing address entry

1. Select the AddressEntry object to modify. You can obtain the AddressEntry object in several ways, including the following:
   - Call the Session object's **AddressBook** method to let the user select recipients. The method returns a Recipients collection. Examine each Recipient object's **AddressEntry** property to obtain its child AddressEntry object.
   - Use the Message object's **Sender** property to obtain an AddressEntry object.
   - Use the Message object's **Recipients** property to obtain a Recipients collection. Then obtain an individual Recipient object and use its **AddressEntry** property to obtain its child AddressEntry object.
2. Change individual properties of the AddressEntry object, such as the **Address**, **Name**, or **Type** property.
3. Call the AddressEntry object's **Update** method.

The following sample code demonstrates this procedure:

```
' Function: AddressEntry_Update
' Purpose: Demonstrate the Update method
' See documentation topic: Update method AddressEntry object
Function AddressEntry_Update()
Dim objRecipColl As Recipients  ' Recipients collection
Dim objNewRecip As Recipient    ' New recipient object

On Error GoTo error_olemsg
If objSession Is Nothing Then
    MsgBox "must log on first"
    Exit Function
End If
Set objRecipColl = objSession.AddressBook ' let user select
If objRecipColl Is Nothing Then
    MsgBox "must select someone from the address book"
    Exit Function
End If
Set objNewRecip = objRecipColl.Item(1)
With objNewRecip.AddressEntry
    .Name = .Name & " the Magnificent"
    .Type = "X.500" ' you can update the type, too ...
    .Update
End With
MsgBox "Updated address entry name: " & objNewRecip.AddressEntry.Name
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next
```

```
End Function
```

See Also

Using Addresses, Creating a New Address Book Entry, Selecting Recipients from the Address Book

Checking for New Mail Group

The Inbox contains new messages. When users refer to new messages, they can mean messages that have arrived after the last time messages were read, or they can mean all unread messages. Depending on the needs of your application users, your applications can check various Message object properties to determine whether there is new mail.

You can force immediate delivery of any pending messages by calling the Session object's **DeliverNow** method.

The following sample code tracks new messages by checking for messages in the Inbox with the **Unread** property value equal to **True**:

```
' Function: Util_CountUnread
' Purpose:  Count unread messages in a folder
'
Function Util_CountUnread()
Dim cUnread As Integer ' counter

    On Error GoTo error_olemsg
    If objMessages Is Nothing Then
        MsgBox "must select a Messages collection"
        Exit Function
    End If
    Set objMessage = objMessages.GetFirst
    cUnread = 0
    While Not objMessage Is Nothing ' loop through all messages
        If True = objMessage.Unread Then
            cUnread = cUnread + 1
        End If
        Set objMessage = objMessages.GetNext
    Wend
    MsgBox "Number of unread messages = " & cUnread
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next

End Function
```

You can also check for new messages by counting the messages received after a specified time. For example, your application can maintain a variable that represents the time of the latest message received, based on the Message object's **TimeReceived** property. The application can periodically check for all messages with a **TimeReceived** value greater than the saved value. When new messages are found, the application increments its count of new messages and updates the saved value.

With the CDO Library version 1.1 or later, you can use the Messages collection's **Filter** property to obtain a MessageFilter object. Setting the message filter's **TimeFirst** or **Unread** property reduces the number of messages presented to the loop doing the counting or other processing of new messages.

See Also

Filtering Messages in a Folder, Reading a Message from the Inbox

Copying a Message to Another Folder

Group

The procedure documented in this section first demonstrates the old way to copy message properties using the Messages collection's **Add** method, and then demonstrates how to take advantage of the newer **CopyTo** method of the Message object.

Note With versions of CDO Library previous to 1.1, the Message object's **Sender** property and other read-only properties of the Message object were not preserved during the first part of the procedure in this section. To preserve these properties using the old procedure, you had to append their text fields to read/write properties, such as the Message object's **Text** property.

With the **CopyTo** method, every property that is set on a Message object is automatically copied to the new Message object, regardless of whether it has read-only or read/write access. The access capability of every property is also preserved across the copy.

To copy a message from one folder to another folder using the CDO Library

1. Obtain the source message that you want to copy.
2. Call the destination folder's Messages collection's **Add** method, supplying the source message properties as parameters.

   – or –

   Call the source Message object's **CopyTo** method.
3. Call the new Message object's **Update** method to save all new information in the MAPI system.

The hierarchy of objects is as follows:

Session object
    Folder object (Inbox or Outbox)
        Messages collection
            Message object
    InfoStores collection
        InfoStore object
            Folder object
                Messages collection
                    Message object

To obtain the source message that you want to copy, first obtain its folder, then obtain the message within the folder's Messages collection. For more information about finding messages, see Searching for a Message.

To obtain the destination folder, you can use the following approaches:

- Use the Folders collection's **Get** methods to search for a specific folder.
- Call the Session object's **GetFolder** method with a string parameter that specifies the *FolderID*, a unique identifier for that folder.

For more information about finding folders, see Searching for a Folder.

The following example copies the first two messages in the given folder to the Inbox. They could as easily be copied to any folder with a known identifier and therefore accessible using the Session object's **GetFolder** method. The example uses the old procedure to copy the first message and the new **CopyTo** method to copy the second.

This code fragment assumes that the application has already created the Session object variable

objSession and successfully called the Session object's **Logon** method, as described in Starting a CDO Session.

```
'/*******************************/
' Function: Util_CopyMessage
' Purpose: Utility functions that demonstrates code to copy a message
' See documentation topic: Copying A Message To Another Folder
Function Util_CopyMessage()
' obtain the source messages to copy
' for this sample, just copy the first two messages to the Inbox
' assume session object already created, validated, and logged on
Dim objMsgColl As Messages   ' given folder's Messages collection
Dim objThisMsg As Message    ' original message from given folder
Dim objInbox As Folder       ' destination folder is Inbox
Dim objCopyMsg As Message    ' new message that is the copy
Dim objOneRecip As Recipient ' single message recipient being copied
Dim strRecipName As String   ' recipient name from original message
Dim i As Integer             ' loop counter

On Error GoTo error_olemsg
If objGivenFolder Is Nothing Then
    MsgBox "Must supply a valid folder"
    Exit Function
End If
Set objMsgColl = objGivenFolder.Messages ' to be reused later
' ( ... then validate the Messages collection before proceeding ... )
Set objThisMsg = objMsgColl.GetFirst() ' filter parameter not needed
If objThisMsg Is Nothing Then
    MsgBox "No valid messages in given folder"
    Exit Function
End If
' Get Inbox as destination folder
Set objInbox = objSession.Inbox
If objInbox Is Nothing Then
    MsgBox "Unable to open Inbox"
    Exit Function
Else
    MsgBox "Copying first message to Inbox"
End If
' Copy first message using old procedure
Set objCopyMsg = objInbox.Messages.Add _
   (Subject:=objThisMsg.Subject, _
    Text:=objThisMsg.Text, _
    Type:=objThisMsg.Type, _
    Importance:=objThisMsg.Importance)
If objCopyMsg Is Nothing Then
    MsgBox "Unable to create new message in Inbox"
    Exit Function
End If
' Copy all the recipients
For i = 1 To objThisMsg.Recipients.Count Step 1
    strRecipName = objThisMsg.Recipients.Item(i).Name
    If strRecipName <> "" Then
        Set objOneRecip = objCopyMsg.Recipients.Add
        If objOneRecip Is Nothing Then
```

```
            MsgBox "Unable to create recipient in message copy"
            Exit Function
        End If
        objOneRecip.Name = strRecipName
    End If
Next i
' Copy other properties; a few listed here as an example
objCopyMsg.Sent = objThisMsg.Sent
objCopyMsg.Text = objThisMsg.Text
objCopyMsg.Unread = objThisMsg.Unread
' Update new message so all changes are saved in MAPI system
objCopyMsg.Update
' If MOVING a message to another folder, delete the original message:
'     objThisMsg.Delete
' Move operation implies that the original message is removed

' Now copy second message using new procedure
Set objThisMsg = objMsgColl.GetNext ()
' ( ... then validate the second message before proceeding ... )
Set objCopyMsg = objThisMsg.CopyTo (objInbox.ID)
' Then Update and we're done
objCopyMsg.Update
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Exit Function ' so many steps to succeed; just exit on error

End Function
```

Note that the old procedure does not preserve all message properties. The **CopyTo** method copies all properties with their values and access capabilities (read-only or read/write) unchanged.

See Also

Moving a Message to Another Folder

Creating a New Address Book Entry

Group

You can create new address entries in a collection with the CDO Library version 1.1 and later.

You need permission to **Add** a new entry to an address book container. Usually you only have this permission for your personal address book (PAB).

For address entries in an address book container, the hierarchy of objects is as follows:

Session object
    AddressLists collection
        AddressList object
            AddressEntries collection
                AddressEntry object
                    Fields collection
                        Field object

The procedure is basically to work down the hierarchy. After a session is established and logged on, you use the Session object's **AddressLists** property to obtain the AddressLists collection, select the AddressList object corresponding to the desired address book container, and use the address list's **AddressEntries** property to call the AddressEntries collection's **Add** method.

If you have not specified all the parameters in the call to the **Add** method, you can then supply the missing values by setting AddressEntry object properties such as **Address**, **Name**, and **Type**. You can also set MAPI properties and custom properties using the new address entry's **Fields** property. To create a custom property you call the Fields collection's **Add** method.

Finally, you commit all the new data to the address book container and to the MAPI system by calling the new address entry's **Update** method.

This code fragment adds a new entry to a user's PAB. Note the use of early binding and of default properties. The objects are declared using early binding to force matching of object types, and to distinguish a MAPI session from other types of sessions available to a Microsoft® Visual Basic® program through other object libraries. The **Item** property is the default property of all collections and so does not need to be specifically referenced in the statements selecting items from the AddressLists and Fields collections.

```
' we assume we have add permission for our PAB
Function AddEntry()

Dim objSession As MAPI.Session   ' Session object
Dim objMyPAB As AddressList      ' personal address book object
Dim objNewEntry As AddressEntry  ' new address entry object
Dim propTag As Long              ' MAPI property tag for new field

On Error GoTo error_olemsg
Set objSession = CreateObject("MAPI.Session")

' log on to session, supplying username and password
objSession.Logon 'profileName:="MyProfile", _
                 'profilePassword:="my_password"

' get PAB AddressList from AddressLists collection of Session
Set objMyPAB = objSession.AddressLists("Personal Address Book")
If objMyPAB Is Nothing Then
    MsgBox "Invalid PAB from session"
```

```
    Exit Function
End If

' add new AddressEntry to AddressEntries collection of AddressList
Set objNewEntry = objMyPAB.AddressEntries.Add "SMTP", "Jane Doe"
objNewEntry.Address = "janed@exchange.microsoft.com"

' set MAPI property in new AddressEntry (don't need to Add it)
propTag = &H3A08001E ' VB4.0: CdoPR_BUSINESS_TELEPHONE_NUMBER
objNewEntry.Fields(propTag) = "+1-206-555-9901"

' add custom property to new AddressEntry and set its value
objNewEntry.Fields.Add "CellularPhone", vbString
objNewEntry.Fields("CellularPhone") = "+1-206-555-9902"

' commit new entry, properties, fields, and values to PAB AddressList
objNewEntry.Update
MsgBox "New address book entry successfully added"
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Exit Function ' so many steps to succeed; just exit on error

End Function
```

Creating and Sending a Message Group

Creating and sending a message is easy when you use the CDO Library.

To create and send a message

1. Establish a session with the MAPI system.
2. Call the Messages collection's **Add** method to create a Message object.
3. Supply values for the Message object's **Subject**, **Text**, and other properties.
4. Call the Recipients collection's **Add** method for each recipient, or copy the **Recipients** property from an existing message to the new message.
5. If necessary, set each Recipient object's **Address**, **AddressEntry**, and **Name** properties.
6. Call each Recipient object's **Resolve** method to validate the address information.
7. Call the Message object's **Send** method.

The following code fragment demonstrates each of these steps for a message sent to a single recipient:

```
' This also appears as the "QuickStart" example in "Overview"
Function QuickStart()
Dim objSession As Object  ' or Dim objSession As MAPI.Session
Dim objMessage As Object  ' or Dim objMessage As Message
Dim objOneRecip As Object ' or Dim objOneRecip As Recipient

    On Error GoTo error_olemsg

' create a session then log on, supplying username and password
Set objSession = CreateObject("MAPI.Session")
' change the parameters to valid values for your configuration
objSession.Logon 'profileName:="Princess Leia", _
                 'profilePassword:="go_rebels"

' create a message and fill in its properties
Set objMessage = objSession.Outbox.Messages.Add
objMessage.Subject = "Gift of droids"
objMessage.Text = "Help us, Obi-Wan. You are our only hope."

' create the recipient
Set objOneRecip = objMessage.Recipients.Add
objOneRecip.Name = "Obi-Wan Kenobi"
objOneRecip.Type = CdoTo
objOneRecip.Resolve

' send the message and log off
objMessage.Update
objMessage.Send showDialog:=False
MsgBox "The message has been sent"
objSession.Logoff
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next
```

```
End Function
```

Note When you edit an object other than the Message object, save your changes using the **Update** method before you clear or reuse the variable that refers to the object. If you do not use the **Update** method, your changes can be lost without warning.

After calling the Message object's **Send** method, you should not try to access the Message object again. The **Send** method invalidates the Message object.

See Also

Adding Attachments to a Message, Customizing a Folder or Message

Customizing a Folder or Message Group

The CDO Library allows customization and extensibility by offering the Field object and Fields collection. A Field object includes a name, a data type, and a value property. An object that supports fields, in effect, lets you add your own custom properties to the object.

The CDO Library supports the use of fields with the AddressEntry, AddressEntryFilter, Attachment, Folder, Message and MessageFilter objects. These objects all have a **Fields** property through which the Fields collection can be accessed.

For example, suppose that you want to add a “Keyword” property to messages so that you can associate a string with the message. You may wish to use a self-imposed convention that values of the “Keyword” are restricted to a small set of strings. You can then organize your messages by the “Keyword” property.

The following code fragment shows how to add the “Keyword” field to a Message object:

```
' Function: Fields_Add
' Purpose:  Add a new Field object to the Fields collection
' See documentation topic:  Add method (Fields collection)
Function Fields_Add()
Dim cFields As Integer      ' count of fields in the collection
Dim objNewField As Field    ' new Field object

On Error GoTo error_olemsg
If objFieldsColl Is Nothing Then
    MsgBox "must first select Fields collection"
    Exit Function
End If
Set objNewField = objFieldsColl.Add( _
                  Name:="Keyword", _
                  Class:=vbString, _
                  Value:="Peru")
If objNewField Is Nothing Then
    MsgBox "could not create new Field object"
    Exit Function
End If
cFields = objFieldsColl.Count
MsgBox "new Fields collection count = " & cFields
' you can now write code that searches for
' messages with this "custom property"
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next

End Function
```

Note that the new field information specified by the **Add** method is not actually saved until you call the Message object’s **Update** method.

MAPI stores all custom properties that represent date and time information using Greenwich Mean Time (GMT). The CDO Library converts these properties so that the values appear to the user in local time.

For more information on the Field object's data types, see its **Type** property.

See Also

Creating and Sending a Message

Deleting a Message Group

The Message object's **Delete** method deletes the message.

To delete a message

1. Select the message you want to delete.
2. Call the Message object's **Delete** method.
3. Set the Message object to **Nothing**.

You should not try to access the message after deleting it. Doing so can produce unpredictable results.

See Also

Searching for a Message

Filtering Messages in a Folder Group

A program sometimes needs to traverse an entire collection in order to take some action on all its members, such as displaying, sending, or copying them. But traversing a large collection like AddressEntries or Messages can take an inordinate amount of time. If you are only interested in certain members of the collection, your code can make efficient use of a filter.

The purpose of filtering is to limit the members of a collection that are presented to a traversing operation such as the Visual Basic **For Each** construction or a **GetFirst** … **GetNext** loop. The members are limited based on the values of the properties that you specify for the filter. Only those members that satisfy every filter property you have set are passed to your loop for processing.

In the case of messages in a folder, the hierarchy of objects is as follows:

Session object
    Folder object (Inbox or Outbox)
        Messages collection
            Message object
                Attachments collection
                Fields collection
                Recipients collection
            MessageFilter object
                Fields collection
                    Field object

Suppose, for example, you wish to find all unread messages received before a certain date, and to display the subject of each one. Before your display loop, you can set the message filter to limit the messages your loop sees. To do this, you obtain the Inbox folder, the folder's Messages collection, and the collection's MessageFilter object. Next you set the filter's **Unread** property to **True** and its **TimeLast** property to the desired date. Then your loop deals only with the messages it needs.

This code fragment displays the **Subject** property of every message in the Inbox received before August 18, 1997 that has never been read:

```
Dim objSess, objInbox, objMsgColl, objMsgFilter As Object
Dim objMess As Message ' individual message processed in loop
On Error GoTo error_olemsg
Set objSess = CreateObject ( "MAPI.Session" )
objSess.Logon ' assume valid session for this example
Set objInbox = objSess.Inbox
If objInbox Is Nothing Then
    MsgBox "Invalid IPM Inbox from session"
    Exit Function
End If
Set objMsgColl = objInbox.Messages ' get Inbox's messages collection
' ( ... then validate the messages collection before proceeding ... )
Set objMsgFilter = objMsgColl.Filter
' ( ... then validate the message filter before proceeding ... )
objMsgFilter.TimeLast = DateValue ( "08/18/97" )
objMsgFilter.Unread = True ' filter for unread messages
' Message filter is now specified; ready for display loop
For Each objMess in objMsgColl ' performs loop, Sets each objMess
    MsgBox "Message not read: " & objMess.Subject
Next ' even easier than objMsgColl.GetFirst and .GetNext
error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
```

```
Exit Function ' so many steps to succeed; just exit on error
```

Handling Errors Group

The CDO Library raises exceptions for all errors. When you write Microsoft® Visual Basic® applications that use the CDO Library, use the same run-time error handling techniques that you use in all your Visual Basic applications: the Visual Basic **On Error GoTo** statement.

Note that the error values and error handling techniques vary slightly depending on whether you are using Visual Basic version 4.0 or older versions of Visual Basic for Applications.

When you use older versions of Visual Basic for Applications, use the **Err** function to obtain the status code and the **Error$** function to obtain a descriptive error message, as in the following code fragment:

```
' Visual Basic for Applications error handling
MsgBox "Error number " & Err & " description. " & Error$(Err)
```

When you use Visual Basic 4.0, use the **Err** object's **Number** property to obtain the status code and its **Description** property to obtain the error message, as in the following fragment:

```
'' Visual Basic version 4.0 error handling
MsgBox "Error " & Err.Number & " description. " & Err.Description
```

Depending on your version of Visual Basic, the error code is returned as a long integer or as a short integer, and you should appropriately define the value of the error codes checked by your program.

When you use Visual Basic 4.0, the error value is returned as the value of the MAPI **HRESULT** data type, a long integer error code. When you use earlier versions of Visual Basic, the error value is returned as the sum of decimal 1000 and the low-order word of **HRESULT**. This is because versions of Visual Basic previous to 4.0 reserve all run-time error values below 1000 for their own errors.

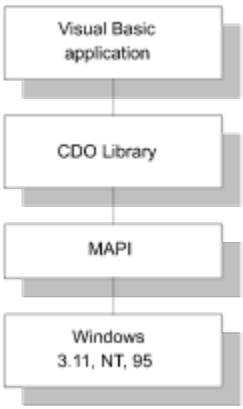
This code fragment checks for an error corresponding to the MAPI error code **CdoE_USER_CANCEL**, which has the value &H80040113. Visual Basic 4.0 users can check directly for this value. Visual Basic for Applications users check for the value of the low-order word plus decimal 1000. The low-order word is &H0113, or 275, so the value returned by Visual Basic for Applications is 1275.

```
' demonstrates error handling for Logon
' Function: TestDrv_Util_CreateSessionAndLogon
' Purpose: Call the utility function Util_CreateSessionAndLogon
Function TestDrv_Util_CreateSessionAndLogon()
Dim bFlag As Boolean
On Error GoTo error_olemsg
bFlag = Util_CreateSessionAndLogon()
MsgBox "bFlag = " & bFlag
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next

End Function

' Function: Util_CreateSessionAndLogon
' Purpose: Demonstrate common error handling for Logon
Function Util_CreateSessionAndLogon() As Boolean
Dim objSession As MAPI.Session
On Error GoTo err_CreateSessionAndLogon

Set objSession = CreateObject("MAPI.Session")
```

```
objSession.Logon
Util_CreateSessionAndLogon = True
Exit Function

err_CreateSessionAndLogon:
If Err() = 1275 Then ' VB4.0: If Err.Number = CdoE_USER_CANCEL Then
    MsgBox "User pressed Cancel"
Else
    MsgBox "Unrecoverable Error:" & Err
End If
Util_CreateSessionAndLogon = False
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next

End Function
```

When an error occurs in the MAPI subsystem, the CDO Library supplies the error value returned by MAPI. However, the value can be returned from any of several different *levels* of software. The lowest level of software is that which interacts directly with hardware, such as a mouse driver or video driver. Higher levels of software move toward greater device independence and greater generality.

The following diagram suggests the different levels of software in Visual Basic applications that use the CDO Library. Visual Basic applications reside at the highest level and interact with the CDO Library at the next lower level. The CDO Library interacts with the MAPI system software, and the MAPI system software interacts with a lower layer of software, the operating system.



Errors can occur at any level or at the interface between any two levels. For example, a user of your application without security permissions can be denied access to an address book entry. The lowest level in this diagram, the operating system, returns the error to the next higher level, and so on, until the error is returned to the highest level in this diagram, the Visual Basic application.

It is often useful to provide a general error handling capability that can display the complete **HRESULT** or error code value returned by the CDO Library.

For more information about run-time error handling and the **Err** object, see your product's Visual Basic documentation. For a listing of CDO Library and MAPI error values, see Error Codes.

See Also

Starting a CDO Session

Improving Application Performance

Group

This section describes how your Microsoft® Visual Basic® code can operate most efficiently when you use CDO Library objects. Note that this section is written primarily for Visual Basic programmers rather than for C programmers.

To access CDO Library objects, you create Visual Basic statements that concatenate the object names in sequence from left to right, separating objects with the period character. For example, consider the following Visual Basic statement:

```
Set objMessage = objSession.Inbox.Messages.GetFirst
```

The CDO Library creates an internal object for each period that appears in the statement. For example, the portion of the statement that says objSession.Inbox directs the CDO Library to create an internal Folder object that represents the user's Inbox. The next portion, .Messages, directs the CDO Library to create an internal Messages collection object. The final part, .GetFirst, directs the CDO Library to create an internal Message object that represents the first message in the user's Inbox. The statement contains three periods; the CDO Library creates three internal objects.

The best rule of thumb is to remember that periods are expensive. For example, the following two lines of code are very inefficient:

```
' warning: do not code this way; this is inefficient
MsgBox "Text: " & objSession.Inbox.Messages.GetFirst.Text
MsgBox "Subj: " & objSession.Inbox.Messages.GetFirst.Subject
```

While this code generates correct results, it is not efficient. For the first statement, the CDO Library creates internal objects that represent the Inbox, its Messages collection, and its first message. After the application displays the text, these internal objects are discarded. In the next line, the same internal objects are generated again. A more efficient approach is to generate the internal objects only once:

```
With objSession.Inbox.Messages.GetFirst
    MsgBox "Text: " & .Text
    MsgBox "Subj: " & .Subject
End With
```

When your application needs to use an object more than once, define a variable for the object and set its value. The following code fragment is very efficient when your application reuses the Folder or Message objects or the Messages collection:

```
' efficient when the objects are reused
Set objInboxFolder = objSession.Inbox
Set objInMessages = objInboxFolder.Messages
Set objOneMessage = objInMessages.GetFirst
With objOneMessage
    MsgBox "The Message Text: " & .Text
    MsgBox "The Message Subject: " & .Subject
End With
```

Now that you understand that a period in a statement directs the CDO Library to create a new internal object, you can see that the following two lines of code are not only not optimal but actually incorrect:

```
' error: collection returns the same message both times
MsgBox("first message: " & inBoxObj.Messages.GetFirst)
MsgBox("next message: " & inBoxObj.Messages.GetNext)
```

The CDO Library creates a temporary internal object that represents the Messages collection, then discards it after displaying the first message. The second statement directs the CDO Library to create another new temporary object that represents the Messages collection. This Messages collection is new and has no state information, that is, this new collection has not called **GetFirst**. The **GetNext** statement therefore causes it to return its first message again.

Use the Visual Basic **With** statement or explicit variables to generate the expected results. The following code fragment shows both approaches:

```
' Use of the Visual Basic With statement
With objSession.Inbox.Messages
    Set objMessage = .GetFirst
    ' ...
    Set objMessage = .GetNext
End With
' Use of explicit variables to refer to the collection
Set objMsgColl = objSession.Inbox.Messages
Set objMessage = myMsgColl.GetFirst
...
Set objMessage = myMsgColl.GetNext
```

For more information about improving the performance of your applications, see your Visual Basic programming documentation.

Making Sure the Message Gets There

Group

The Message object contains two properties that can direct the underlying MAPI system to report successful receipt of the message: **DeliveryReceipt** and **ReadReceipt**.

When you set these properties to **True** and send the message, the underlying MAPI system automatically tracks the message for you. When you set the **DeliveryReceipt** property, the MAPI system automatically generates a message to the sender reporting when the recipient receives the message. When you set the **ReadReceipt** property, the MAPI system automatically generates a message to the sender reporting when the recipient reads the message.

Delivery and read notification may not be supported by all messaging systems.

See Also

Securing Messages

Moving a Message to Another Folder

Group

The procedure documented in this section demonstrates, first, the old way to move message properties using the Messages collection's **Add** method and the Message object's **Delete** method, and then how to take advantage of the newer **MoveTo** method of the Message object.

Note With CDO Library version 1.0, the Message object's **Sender** property and other read-only properties of the Message object were not preserved during the first part of the procedure in this section. To preserve these properties using the old procedure, you had to append their text fields to read/write properties, such as the Message object's **Text** property.

With the **MoveTo** method, every property that is set on a Message object is automatically moved to the new Message object, regardless of whether it has read-only or read/write access. The access of every property is also preserved across the copy.

To move a message from one folder to another

1. Obtain the source message that you want to move.
2. Call the destination folder's Messages collection's **Add** method, supplying the source message properties as parameters.

- or -

2. Call the source Message object's **MoveTo** method.
3. Call the new Message object's **Update** method to save all new information in the MAPI system.
4. (Only necessary if you used the old **Add** and copy procedure) Call the source message's **Delete** method to delete the original message from its folder.

For more details on this procedure and a sample code fragment, see Copying a Message to Another Folder. The comment lines at the end of the first copy procedure contain the call to delete the original message:

```
' If MOVING a message to another folder, delete the original message:
objThisMsg.Delete
' Move operation implies that the original message is removed
```

This **Delete** call is not necessary if the **MoveTo** method is used.

Posting Messages to a Public Folder

Group

To post a message to a public folder, create a message within the public folder by adding it to the folder's Messages collection. Then add your subject and message text as you would for other messages.

Note that for messages in public folders, you must also set a few more message properties than you would when sending a message to a recipient. When you post a message to a public folder, the components of the MAPI architecture that usually handle a message and set its properties do not manage the message. Your application must set the **Sent** and **Unread** properties to **True**, the **Submitted** property to **False**, and the **TimeReceived** and **TimeSent** properties to the current time.

When you are ready to make the message available, call the **Update** method. The message is not accessible by any other messaging user until you call **Update**.

Note When posting messages in a public folder, you cannot use the CDO Library to set the **Sender** property. The **Sender** and related underlying properties are not present for a message created by the CDO Library.

For more information on sending messages, see Creating and Sending a Message.

To create a message within a public folder

1. Call the Messages collection's **Add** method to create a Message object.
2. Set the Message object's **ConversationIndex**, **ConversationTopic**, **Subject**, **Text**, **TimeReceived**, **TimeSent**, and other message properties as desired.
3. Set the Message object's **Sent** and **Unread** properties to **True**, and the **Submitted** property to **False**.
4. Call the Message object's **Update** method.

Note that when you post a message, you must explicitly set the **TimeSent** and **TimeReceived** properties. When you send a message using the **Send** method, the MAPI system assigns the values of these properties for you. However, when you post the message with the **Update** method, your application must set the time properties. Set both time properties to the same value, just before you set the **Sent** property to **True**.

```
' Function: Util_New_Conversation
' Purpose: Set properties to start a new conversation in a public folder
Function Util_NewConversation()
Dim objRecipColl As Recipients
Dim i As Integer
Dim objNewMsg As Message ' new message object
Dim strNewIndex As String
On Error GoTo error_olemsg

' objPublicFolder is a global variable that indicates
' the folder in which you want to post the message
Set objNewMsg = objPublicFolder.Messages.Add
If objNewMsg Is Nothing Then
    MsgBox "unable to create a new message for the public folder"
    Exit Function
End If
strConversationFirstMsgID = objNewMsg.ID 'save for reply
With objNewMsg
```

```
    .Subject = "Used space vehicle wanted"
    .Text = "Wanted: Apollo or Mercury spacecraft with low mileage."
    .ConversationTopic = .Subject
    .ConversationIndex = Util_GetEightByteTimeStamp() ' utility
    .TimeReceived = Time
    .TimeSent = .TimeReceived
    .Sent = True
    .Submitted = False
    .Unread = True
    .Update ' .Send is not used for posting to a folder
End With
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next

End Function
```

For more information on the **ConversationIndex** property, see Working With Conversations.

See Also

Searching for a Folder

Reading a Message from the Inbox

Group

After establishing a Session object and successfully logging on to the system, a user can access the *Inbox*. The Inbox is the default folder for mail received by the user.

As described in CDO Library Object Design, the CDO Library objects are organized in a hierarchy. The Session object at the topmost level allows access to a Folder object. Each folder contains a Messages collection, which contains individual Message objects. The text of the message appears in its **Text** property.

Session object
    Folder object
        Messages collection
            Message object
                Text property

To obtain an individual message, the application must move down through this object hierarchy to the **Text** property. The following example uses the Session object's **Inbox** property to obtain a Folder object, then uses the folder's **Messages** property to obtain a Messages collection object, and calls the collection's methods to get a specific message.

This code fragment assumes that the application has already created the Session object variable *objSession* and successfully called the Session object's **Logon** method, as described in Starting a CDO Session:

```
Dim objSession As MAPI.Session ' Session object
Dim objInboxFolder As Folder   ' Folder object
Dim objInMessages As Messages  ' Messages collection
Dim objOneMsg As Message       ' Message object
' ...
' move down through the hierarchy
Set objInboxFolder = objSession.Inbox
Set objInMessages = objInboxFolder.Messages
Set objOneMsg = objInMessages.GetFirst
MsgBox "The message text: " & objOneMsg.Text
```

Note Use the Microsoft® Visual Basic® keyword **Set** whenever you initialize a variable that represents an object. When you attempt to set an object variable without using the **Set** keyword, Visual Basic generates an error message.

The preceding code fragment declares several object variables. However, it is also possible to access the message with fewer variables. The following code fragment is equivalent to the preceding code, and is preferable if you have no subsequent need for the Inbox folder or its Messages collection:

```
Set objOneMsg = objSession.Inbox.Messages.GetFirst
MsgBox "The message text: " & objOneMsg.Text
```

You should declare an individual variable when the application needs to access an object more than once. When an object is accessed repeatedly, variables can help make your code efficient. For more information, see Improving Application Performance.

See Also

Creating and Sending a Message, Searching for a Message

Searching for a Folder Group

Two frequently used folders, the Inbox and the Outbox, are available through Session object properties. To access these folders, simply set a Folder object to the corresponding property.

To access other folders, search for the folder using one of the following techniques:

- Call the Session object's **GetFolder** method with a string parameter that specifies the *FolderID*, a unique identifier for the folder.
- Use the **Get** methods to navigate through the Folders collection. Search for a specific folder by comparing each folder's properties with the desired properties.

Using the Session Object's GetFolder Method

When you know the unique identifier for the folder you are looking for, you can call the Session object's **GetFolder** method.

The unique identifier for the folder, established at the time the folder is created, is stored in its **ID** property. The **ID** property is a string representation of the MAPI entry identifier and its value is determined by the service provider.

The following code fragment contains code that saves the identifier for the folder, then uses it in a subsequent **GetFolder** call:

```
' Function: Session_GetFolder
' Purpose: Demonstrate how to set a folder object
' See documentation topic: Session object GetFolder method
Function Session_GetFolder()
    On Error GoTo error_olemsg

    If objSession Is Nothing Then
        MsgBox "No active session, must log on"
        Exit Function
    End If
    If strFolderID = "" Then
        MsgBox ("Must first set folder ID variable; see Folder->ID")
        Exit Function
    End If
    Set objFolder = objSession.GetFolder(strFolderID)
    'equivalent to:
    ' Set objFolder = objSession.GetFolder(folderID:=strFolderID)
    If objFolder Is Nothing Then
        Set objMessages = Nothing
        MsgBox "Unable to retrieve folder with specified ID"
        Exit Function
    End If
    MsgBox "Folder set to " & objFolder.Name
    Set objMessages = objFolder.Messages
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Set objFolder = Nothing
    Set objMessages = Nothing
    MsgBox "Folder is no longer available; no active folder"
    Exit Function
End Function
```

Using the Get Methods

When you are looking for a folder within a Folders collection, you can navigate through the collection, examining properties of each Folder object to determine whether it is the folder you want.

The CDO Library supports the **GetFirst**, **GetNext**, **GetLast**, and **GetPrevious** methods for the Folders collection object.

The following code fragment demonstrates how to use the **Get** methods to search for the specified folder:

```
' Function: TestDrv_Util_GetFolderByName
' Purpose: Call the utility function Util_GetFolderByName
' See documentation topic: Item property (Folder object)
Function TestDrv_Util_GetFolderByName()
Dim fFound As Boolean
    fFound = Util_GetFolderByName("Junk mail")
    If fFound Then
        MsgBox "Folder named 'Junk mail' found"
    Else
        MsgBox "Folder named 'Junk mail' not found"
    End If
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next
End Function

' Function: Util_GetFolderByName
' Purpose: Use Get* methods to search for a folder
' See documentation topic:  Searching For a Folder
Function Util_GetFolderByName(strSearchName As String) As Boolean
Dim objOneFolder As Object   ' local; temp version of folder object

    On Error GoTo error_olemsg
    Util_GetFolderByName = False ' default; assume failure
    If objFolder Is Nothing Then
        MsgBox "Must first select a folder such as Session->Inbox"
        Exit Function
    End If
    Set objFoldersColl = objFolder.Folders ' Folders collection
    If objFoldersColl Is Nothing Then
        MsgBox "no subfolders; not found"
        Exit Function
    End If
    ' get the first folder in the collection
    Set objOneFolder = objFoldersColl.GetFirst
    ' loop through all the folders in the collection
    Do While Not objOneFolder Is Nothing
        If objOneFolder.Name = strSearchName Then
            Exit Do ' found it, leave the loop
        Else ' keep searching
            Set objOneFolder = objFoldersColl.GetNext
        End If
    Loop
```

```
    ' exit from the Do While loop comes here
    ' if objOneFolder is valid, the folder is found
    If Not objOneFolder Is Nothing Then ' went off end of loop
        Util_GetFolderByName = True ' success
    End If
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next
End Function
```

You can also navigate upward through the folder hierarchy by using each Folder object's **Parent** property.

See Also

Searching for a Message

Searching for a Message Group

To access a message, you can search for it using one of the following techniques:

- Call the Session object's **GetMessage** method with a string parameter that specifies the *MessageID*, a unique identifier for the message.
- Use the **Get** methods to navigate through the folder's Messages collection. Search for a specific message by comparing the current Message object's properties with the desired properties.
- Obtain a MessageFilter object from the Filter property of the Messages collection. Set the desired properties for filtering, and then use the **Get** methods, which return only the messages matching the filter settings.

Using the Session Object's GetMessage Method

When you know the unique identifier for the message you are looking for, you can call the Session object's **GetMessage** method.

The message identifier specifies a unique identifier that is created for the Message object at the time it is created. The identifier is accessible through the Message object's **ID** property.

The following code fragment contains code that saves the identifier for the message, then uses it in a subsequent **GetMessage** call:

```
' Function: Session_GetMessage
' Purpose: Demonstrate how to set a message object using GetMessage
' See documentation topic: GetMessage method (Session object)
Function Session_GetMessage()
    On Error GoTo error_olemsg

    If objSession Is Nothing Then
        MsgBox "No active session, must log on"
        Exit Function
    End If
    If strMessageID = "" Then
        MsgBox ("Must first set Message ID variable; see Message->ID")
        Exit Function
    End If
    Set objOneMsg = objSession.GetMessage(strMessageID)
    If objOneMsg Is Nothing Then
        MsgBox "Unable to retrieve message with specified ID"
        Exit Function
    End If
    MsgBox "GetMessage returned msg with subject: " & objOneMsg.Subject
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Set objOneMsg = Nothing
    MsgBox "Message is no longer available; no active message"
    Exit Function
End Function
```

Using the Get Methods

When you are looking for a message within a Messages collection, you can navigate through the collection, examining properties of each Message object to determine if it is the message you want.

The CDO Library supports the **GetFirst**, **GetNext**, **GetLast**, and **GetPrevious** methods for the Messages collection object. You can also use the Visual Basic **For Each** construction to traverse the collection.

Note that, with the CDO Library version 1.1 and later, you can use a MessageFilter object to restrict a search with the **Get** methods. Obtain the message filter through the Messages collection's Filter property, set the filter's properties to the values desired for the search, and then proceed with the **Get** methods. Only the messages passing the filter criteria are returned for your inspection. For more information on message filtering, see Filtering Messages in a Folder.

The following sample demonstrates how to use the **Get** methods to search for the specified message:

```
' Function: TestDrv_Util_GetMessageByName
' Purpose: Call the utility function Util_GetMessageByName
' See documentation topic: Item property (Message object)
Function TestDrv_Util_GetMessageByName()
Dim fFound As Boolean
    On Error GoTo error_olemsg

    fFound = Util_GetMessageByName("Junk mail")
    If fFound Then
        MsgBox "Message named 'Junk mail' found"
    Else
        MsgBox "Message named 'Junk mail' not found"
    End If
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next
End Function

' Function: Util_GetMessageByName
' Purpose: Use Get* methods to search for a message
' See documentation topic:  Searching for a message
' Search through the messages for one with a specific subject
Function Util_GetMessageByName(strSearchName As String) As Boolean
Dim objOneMessage As Message ' local; temp version of message object

    On Error GoTo error_olemsg
    Util_GetMessageByName = False ' default; assume failure
    If objFolder Is Nothing Then
        MsgBox "Must first select a folder such as Session->Inbox"
        Exit Function
    End If
    Set objMessages = objFolder.Messages
    Set objOneMessage = objMessages.GetFirst
    If objOneMessage Is Nothing Then
        MsgBox "No messages in the folder"
        Exit Function
    End If
    ' loop through all the messages in the collection
    Do While Not objOneMessage Is Nothing
        If objOneMessage.Subject = strSearchName Then
            Exit Do ' found it, leave the loop
        Else ' keep searching
```

```
            Set objOneMessage = objMessages.GetNext
        End If
    Loop
    ' exit from the Do While loop comes here
    ' if objOneMessage is valid, the message was found
    If Not objOneMessage Is Nothing Then
        Util_GetMessageByName = True ' success
    End If
    Exit Function

error_olemsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Resume Next

End Function
```

See Also

Searching for a Folder

Securing Messages Group

A Message object contains two properties that specify security for the message: the **Encrypted** and **Signed** properties. When you want to request that your message be secured, set one or both of these flags to **True**.

These flags simply represent a request to the underlying messaging service. Whether the message gets encrypted or digitally signed depends on whether these security measures are implemented by your messaging service.

Neither MAPI nor the CDO Library performs encryption or digital signing. The CDO Library simply sets the appropriate MAPI properties so that the proper request for security is delivered to the messaging service. For more information about the capabilities of your messaging service, contact your server administrator.

```
Dim objMessage As Message ' assume valid Message object
' ...
objMessage.Encrypted = True ' can also set objMessage.Signed = True
objMessage.Send
```

See Also

Making Sure the Message Gets There

Selecting Recipients from the Address Book Group

After establishing a Session object and successfully logging on to the system, the user can access the address book to select recipients. You can select recipients from any address book, such as the global address list (GAL) or your personal address book (PAB).

As described in CDO Library Object Design, the CDO Library objects are organized in a hierarchy. The Session object at the topmost level contains an **AddressBook** method that lets your application users select recipients from an address book. The method returns a Recipients collection, which contains individual Recipient objects. The Recipient object in turn specifies an AddressEntry object. This hierarchy is shown in the following diagram.

Recipients collection
    Recipient object
        Address property (full address)
        AddressEntry object
            Address property (e-mail address, no type)
            Type property

To obtain an individual **Address** property that can be used to address and send messages, the application must move down through this object hierarchy. The following code fragment uses the Recipients collection returned by the Session object's **AddressBook** method.

This code fragment assumes that the application has already created the Session object variable *objSession* and successfully called the Session object's **Logon** method, as described in Starting a CDO Session:

```
' Function: Session_AddressBook
' Purpose: Set the global variable that contains the current recipients
'        collection to that returned by the Session AddressBook method
' See documentation topic: AddressBook method (Session object)
Function Session_AddressBook()
    On Error GoTo err_Session_AddressBook

    If objSession Is Nothing Then
        MsgBox "Must first create MAPI session and logon"
        Exit Function
    End If
    Set objRecipColl = objSession.AddressBook( _
                       Title:="Select Attendees", _
                       forceResolution:=True, _
                       recipLists:=1, _
                       toLabel:="&Cdo") ' appears on button
    ' Note: first parameter ("recipients") not used in this call
    ' recipients:=objInitRecipColl initializes recipients for dialog
    MsgBox "Name of first recipient = " & objRecipColl.Item(1).Name
    Exit Function

err_Session_AddressBook:
    If (Err = 91) Then ' MAPI dlg-related function that sets an object
        MsgBox "No recipients selected"
    Else
        MsgBox "Unrecoverable Error:" & Err
    End If
```

```
    Exit Function
End Function
```

See Also

Changing an Existing Address Entry, Using Addresses

Starting a CDO Session Group

As described in CDO Library Object Design, all messaging objects are relative to the Session object. The first task of every application is to create a valid Session object and call its **Logon** method. No other method or property of the Session object can be accessed, and no other CDO Library object can be created, until the application has successfully logged on. The only exception to this rule is the Session object's **SetLocaleIDs** method.

The Session object is created using the Microsoft® Visual Basic® function **CreateObject**. The following code demonstrates how to perform this common startup task:

```
Function Util_CreateSessionAndLogon() As Boolean
Dim objSession As MAPI.Session ' use early binding for type checking
On Error GoTo err_CreateSessionAndLogon

Set objSession = CreateObject("MAPI.Session")
' call objSession.SetLocaleIDs here if you need to change your locale
objSession.Logon
Util_CreateSessionAndLogon = True
Exit Function

err_CreateSessionAndLogon:
If (Err = 1275) Then ' VB4.0: If Err.Number = CdoE_USER_CANCEL Then
    MsgBox "User pressed Cancel"
Else
    MsgBox "Unrecoverable Error:" & Err
End If
Util_CreateSessionAndLogon = False
Exit Function

End Function
```

The way you deal with errors depends on your version of Visual Basic. For more information, see Handling Errors.

When no parameters are supplied to the **Logon** method, as in the example above, the CDO Library displays an application-modal logon dialog box that prompts the application user to select a user profile. Based on the characteristics of the selected profile, the underlying MAPI system logs on the user or prompts for password information.

You can also choose to use your own application's dialog box to obtain the parameters needed to log on, rather than using the MAPI logon dialog box. The following example obtains the profile name and password information and directs the **Logon** method not to display a logon dialog box:

```
' Function: Session_Logon_NoDialog
' Purpose: Call the Logon method, set parameter to show no dialog
' See documentation topic: Logon Method (Session object)
Function Session_Logon_NoDialog()
Dim objSession As MAPI.Session
On Error GoTo error_olemsg
' can set strProfileName, strPassword from a custom form
' adjust these parameters for your configuration
If objSession Is Nothing Then
    Set objSession = CreateObject("MAPI.Session")
End If
If Not objSession Is Nothing Then
```

```
    objSession.Logon profileName:=strProfileName, _
                     showDialog:=False
End If
Exit Function

error_olemsg:
If 1273 = Err Then ' VB4.0: If Err.Number = CdoE_LOGON_FAILED Then
    MsgBox "Cannot logon: incorrect profile name or password"
    Exit Function
End If
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next
End Function
```

Note Your Visual Basic application should be able to handle cases that occur when a user provides incorrect profile or password information, or when a user cancels from the logon dialog box. For more information, see Handling Errors. For a listing of CDO Library and MAPI error values, see Error Codes.

After establishing a Session object and successfully logging on to the system, the user has access to several default objects provided by the Session object, including the Inbox and Outbox folders. For more information, see Reading a Message from the Inbox.

See Also

Creating and Sending a Message

Using Addresses Group

In general, MAPI supports two kinds of addressing:

- Addresses that the MAPI system looks up for you in your address book, based on a display name that you supply
- Addresses that represent *custom addresses,* that are used as supplied without lookup

The CDO Library supports both kinds of addresses with its Recipient object. To look up an address for a name, you supply the **Name** property only. To use custom addresses, you supply the full address in the **Address** property.

The address book can be thought of as a database in persistent storage, managed by the MAPI system, that contains valid addressing information that is associated with a *display name.* The display name represents the way that a person's name might be displayed for your application users, using that person's full name, rather than the e-mail address that the messaging system uses to transmit the message. For example, the display name "John Doe" could be mapped to the e-mail address "johnd@company.com".

In contrast to the address book, the objects that you create with the CDO Library are temporary objects that reside in memory. When you fill in the Recipient object's **Name** property with a display name, you must then *resolve* the address. To resolve the address means that you ask the MAPI system to look up the display name in the database and supply the corresponding address. When the display name is ambiguous, or can match more than one entry in the address book, the MAPI system prompts the user to select from a list of possible matching names.

The Recipient object's **Name** property represents the display name. Call the Recipient object's **Resolve** method to resolve the display name.

After the Recipient object is resolved, it has a child AddressEntry object that contains a copy of the valid addressing information from the database. The child AddressEntry object is accessible from the Recipient object's **AddressEntry** property. The Recipient and AddressEntry object properties are related as follows:

CDO Library object and property	MAPI property	Description
Recipient.**Address**	Combination of PR_ADDRTYPE and PR_EMAIL_ADDRESS	Full address; AddressEntry object's **Type** and **Address** properties
Recipient.**Name**	PR_DISPLAY_NAME	Display name
Recipient.**AddressEntry**.**Address**	PR_EMAIL_ADDRESS	E-mail address
Recipient.**AddressEntry**.**ID**	PR_ENTRYID	AddressEntry object's unique identifier
Recipient.**AddressEntry**.**Name**	PR_DISPLAY_NAME	Display name
Recipient.**AddressEntry**.**Type**	PR_ADDRTYPE	E-mail type

The Recipient object's **Address** property represents a *full address*, that is, the combination of address type and e-mail address that MAPI uses to send a message. The full address represents information that appears in the AddressEntry object's **Address** and **Type** properties.

You can also supply a complete recipient address. By manipulating the address yourself, you direct the

MAPI system to send the message to the full address that you supply without using the database. In this case, you must also supply the display name. When you supply a custom address, the Recipient object's **Address** property must use the following syntax:

AddressType:*AddressValue*

There is also a third method of working with addresses. You can directly obtain and use the Recipient object's child AddressEntry object from messages that have already been successfully sent through the messaging system.

For example, to reply to a message, you can use the Message object's **Sender** property to get a valid AddressEntry object. When you work with valid AddressEntry objects, you do not have to call the **Resolve** method.

Note When you use existing AddressEntry objects, do not try to modify them. In general, do not write directly to the Recipient object's child AddressEntry object properties.

In summary, you can provide addressing information in three different ways:

- Obtain the correct addressing information for a known display name. Set the Recipient object's **Name** property and call its **Resolve** method. You can optionally request that **Resolve** display a dialog box.
- Create a custom address. Set the Recipient object's **Address** property, using the correct syntax as described earlier, with the colon character (:) separating the address type from the address, and call the **Resolve** method. You need **Resolve** even though you have supplied the address, because it must be made into an object and given an entry identifier.
- Use an existing valid address entry, such as the Message object's **Sender** property, when you are replying to a message. Set the Recipient object's **AddressEntry** property to an existing AddressEntry object that is known to be valid. You do not need to call the **Resolve** method.

The following code fragment demonstrates these three kinds of addresses:

```
' Function: Util_UsingAddresses
' Purpose:  Set addresses three ways
' See documentation topic: Using Addresses
Function Util_UsingAddresses()
Dim objNewMessage As Message   ' new message to add recipients to
Dim objNewRecips As Recipients ' recipients of new message
Dim strAddrEntryID As String   ' ID value from AddressEntry object
Dim strName As String          ' Name from AddressEntry object

On Error GoTo error_olemsg
If objOneMsg Is Nothing Then
    MsgBox "Must select a message"
    Exit Function
End If
With objOneMsg.Recipients.Item(1).AddressEntry
    strAddrEntryID = .ID
    strName = .Name
End With
Set objNewMessage = objSession.Outbox.Messages.Add
If objNewMessage Is Nothing Then
    MsgBox "Unable to add a new message"
    Exit Function
End If
Set objNewRecips = objNewMessage.Recipients
```

```
' Add three recipients
' 1. look up entry in address book specified by profile
Set objOneRecip = objNewRecips.Add( _
                                Name:=strName, _
                                Type:=CdoTo)
If objOneRecip Is Nothing Then
    MsgBox "Unable to add recipient using display name"
    Exit Function
End If
objOneRecip.Resolve ' this looks up the entry

' 2. add a custom recipient
Set objOneRecip = objNewRecips.Add( _
                                Address:="SMTP:someone@microsoft.com", _
                                Type:=CdoTo)
If objOneRecip Is Nothing Then
    MsgBox "Unable to add recipient using custom addressing"
    Exit Function
End If
objOneRecip.Resolve ' assign entry identifier

' 3. add an existing valid address entry object
Set objOneRecip = objNewRecips.Add( _
                                entryID:=strAddrEntryID, _
                                Type:=CdoTo)
If objOneRecip Is Nothing Then
    MsgBox "Unable to add recipient using existing address entry"
    Exit Function
End If

objNewMessage.Text = "Expect 3 different recipients"
MsgBox ("Count = " & objNewRecips.Count)
' you can also call resolve for the whole collection
' objNewRecips.Resolve (True) ' resolve all; show dialog

objNewMessage.Subject = "Addressing test"
objNewMessage.Update ' commit the message to storage in MAPI system
objNewMessage.Send(showDialog:=False)
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Exit Function

End Function
```

See Also

Changing an Existing Address Entry

Viewing MAPI Properties Group

You can use a feature of the CDO Library's Fields collection to view the values of MAPI properties.

The Fields collection's **Item** property allows you to specify the actual *property tag* value as an identifier. The MAPI property tag is a 32-bit unsigned integer that contains the property identifier in its high-order 16 bits and the property type (its underlying data type) in the low-order 16 bits.

Note You can only use the MAPI property tag on 32-bit platforms. This method of access is not available on any other platform.

The CDO Library also supports *multivalued* properties, or properties that represent arrays of values. A multivalued property appears to the Microsoft® Visual Basic® application as a variant array. You can use the **For ... Next** construction or **For Each** statement to access individual array entries.

Note Do not mix data types within an OLE variant array that you are going to use with the CDO Library. Unlike variant array members, every member of a MAPI multivalued property must be of the same type. Setting mixed types in a variant array and presenting it to MAPI as a multivalued property results in MAPI errors.

The CDO Library works with three types of message properties:

- Standard MAPI properties with property tags defined as constants by the CDO Library, such as **CdoPR_MESSAGE_CLASS**.
- Standard MAPI properties not defined by the CDO Library. The Object Browser can tell you if the property you want to access is defined.
- Custom properties created and named by the application.

The Fields collection exposes standard MAPI properties not defined by the CDO Library and custom properties created and named by the application. The **Item** property selects an individual Field object either by its MAPI property tag or by its custom name.

Although the Field object provides a **Delete** method, some standard MAPI properties, such as those created by MAPI system components, cannot be deleted.

MAPI stores all properties that represent date and time information using Greenwich Mean Time (GMT). The CDO Library converts these properties so that the values appear to the user in local time.

For definitions and details on all standard MAPI properties, see the *MAPI Programmer's Reference*.

```
' Function: Fields_Selector
' Purpose: View a MAPI property by supplying a property tag value as
'          the Item value
' See: Item property (Fields collection)
Function Fields_Selector()
Dim lValue As Long
Dim strMsg As String

On Error GoTo error_olemsg

If objFieldsColl Is Nothing Then
    MsgBox "Must first select a Fields collection"
    Exit Function
End If
' you can provide a dialog here so users enter MAPI proptags,
' or select property names from a list; for now, hard-coded value
```

```
lValue = &H001A001E ' VB4.0: lValue = CdoPR_MESSAGE_CLASS
' &H001A = PR_MESSAGE_CLASS; &H001E = PT_TSTRING
' high-order 16 bits = property ID, low-order = property type
Set objOneField = objFieldsColl.Item(lValue)
If objOneField Is Nothing Then
    MsgBox "Could not get the Field using the value " & lValue
    Exit Function
Else
    strMsg = "Used the value " & lValue & " to access the property "
    strMsg = strMsg & "PR_MESSAGE_CLASS: type = " & objOneField.Type
    strMsg = strMsg & "; value = " & objOneField.Value
    MsgBox strMsg
End If
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next

End Function
```

See Also

Customizing a Folder or Message

Working with Conversations Group

Two Message object properties let you show relationships among messages by defining them as part of a *conversation*. A conversation is a series of messages, consisting of an initial message and all messages sent in reply to the initial message. When the initial message or a reply elicits additional messages, the resulting messages are called a *conversation thread*. A thread represents a subset of messages in the conversation.

The Message object properties **ConversationIndex** and **ConversationTopic** give you an easy way to organize and display messages. Rather than simply grouping messages by subject, time received, or sender, you can show conversational relationships among messages. The **ConversationTopic** property is a string that describes the overall subject of the conversation. All messages within the same conversation use the same value for the **ConversationTopic** property. The **ConversationIndex** property is a hexadecimal string that you can use to represent the relationships between the messages in the thread. Each message in the conversation should have a different **ConversationIndex** property.

When you start an initial message, set the **ConversationTopic** property to a value appropriate to all messages within the conversation, not only to the first message. For many applications, the message's **Subject** property is appropriate.

You can use your own convention to decide how to use the **ConversationIndex** property. However, it is recommended that you adopt the same convention used by the Microsoft® Exchange Client message viewer, so that you can use that viewer's user interface to show the relationships between messages in a conversation. This convention uses concatenated time stamp values. The first time stamp in the **ConversationIndex** string represents the original message. Whenever a message replies to a conversation message, it appends a time stamp value to the end of the string. The new string value is used as the **ConversationIndex** value of the new message. Using this convention, you can easily see relationships among messages when you sort the messages by **ConversationIndex** values.

The following code fragment provides a utility function, **Util_GetEightByteTimeStamp**, which can be used to build Microsoft Exchange Server compatible **ConversationIndex** values. The utility function calls the OLE function **CoCreateGuid** to obtain the time stamp value from a **GUID** data structure. The **GUID** value is composed of a time stamp and a machine identifier; the utility function saves the part that contains the time stamp.

```
' declarations for the Util_GetEightByteTimeStamp function
Type GUID
    Guid1 As Long
    Guid2 As Long
    Guid3 As Long
    Guid4 As Long
End Type
Declare Function CoCreateGuid Lib "COMPOBJ.DLL" (pGuid As GUID) As Long
' Note: Use "OLE32.DLL" for Windows NT, Win95 platforms
Global Const S_OK = 0
' end declarations section

' Function: Util_GetEightByteTimeStamp
' Purpose: Generate a time stamp for use in conversations
' See documentation topic: Working With Conversations
Function Util_GetEightByteTimeStamp() As String
Dim lResult As Long
Dim lGuid As GUID
' Exchange conversation is a unique 8-byte value
' Exchange client viewer sorts by concatenated properties
On Error GoTo error_olemsg
```

```
lResult = CoCreateGuid(lGuid)
If lResult = S_OK Then
    Util_GetEightByteTimeStamp = Hex$(lGuid.Guid1) & Hex$(lGuid.Guid2)
Else
    Util_GetEightByteTimeStamp = "00000000" ' zeroes
End If
Exit Function

error_olemsg:
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Util_GetEightByteTimeStamp = "00000000"
Exit Function

End Function
```

When you start a new conversation, set the **ConversationIndex** property to the value returned by this function, as follows:

```
' new conversation
objMessage.ConversationIndex = Util_GetEightByteTimeStamp()
```

When you are replying to a message in an existing conversation, append the time stamp value to that message's **ConversationIndex** value, as follows:

```
' reply within an existing conversation
Dim objOriginalMsg As Message ' assume valid
Dim objNewMessage As Message  ' new message in conversation
Dim strNewIndex As String
' ...
' copy the original topic and append
'      the current time stamp to the original time stamp
objNewMessage.ConversationTopic = objOriginalMsg.ConversationTopic
strNewIndex = objOriginalMsg.ConversationIndex _
                            & Util_GetEightByteTimeStamp()
objNewMessage.ConversationIndex = strNewIndex
```

For additional sample code dealing with conversations, see Posting Messages to a Public Folder.

Designing and Creating Forms

A form is a custom e-mail message that, because of its distinct appearance and functionality, is rendered differently than a standard e-mail message. This difference reflects the addition of nonstandard fields used to provide the added functionality.

The way a message is rendered is controlled by its message class. In Microsoft® Exchange, standard e-mail messages have the class IPM.Note, and every new message is assigned this class by default. This means that when a person uses a Web browser to create a message, Collaboration Data Objects (CDO) renders a new message of the class IPM.Note. As with non-Web e-mail clients, the sender can then fill in the message's fields and mail it. It is sent as an IPM.Note and displayed as such to the recipient.

A new message class is typically distinguished by the presence of a different set of message fields, which provide access to MAPI properties. The new class usually contains all the fields of the standard message plus others that make it useful for its specific purpose. Regardless of a form's appearance, function, or message class, it remains a message, and Microsoft Exchange stores and transfers it like any other message.

Creating Web Forms with CDO

Traditionally, the Microsoft Exchange Electronic Forms Designer or Microsoft® Visual C++® is used to create custom forms for use with Microsoft Exchange Server. Forms can also be created with CDO for use with a Web browser, a usage that provides the advantage of platform independence when viewing messages and using forms. Regardless of hardware and operating system, if a Web browser can be used on a given computer, it can render any message or form written using CDO.

Technically, the World Wide Web has no concept of e-mail forms, or even e-mail messages. On the Web, only pages are rendered. Still, each page can contain a set of controls that provide nearly all the functionality offered by a form created with the Electronic Forms Designer or Visual C++.

Active Server Pages renders messages and forms using a collection of ASP scripts. These scripts contain not only the CDO code that handles information received from users, but also the HTML code that interacts with users. This code includes input boxes, option buttons, and list controls that a standard message does not include.

For details about form creation steps, see Creating the New Classified Ad Form.

Message Classes and the Microsoft Exchange Web Client

The Microsoft Exchange Web client recognizes a form's message class by reading its **Type** property. It parses this property to determine the path to the folder where the form's .asp files are installed. For example, the message class for the Classified Ad sample is:

IPM.Microsoft.ITG.NewClassifiedAd

The Web client starts with the string \exchsrvr\webdata\usa\forms and appends the **Type** property string, replacing each period with a backslash character. This gives the following folder path:

\exchsrvr\webdata\usa\forms\IPM\Microsoft\ITG\NewClassifiedAd

When you create a form meant for use with the Microsoft Exchange Web client, follow this convention when choosing where to save its .asp files and where to install them after distribution. Similarly, forms you download should be installed into a folder path that follows this convention.

A separate form exists for creating a purchase offer. This form has the message class IPM.MS.ITG.MicroNews.PrchOfr, and the files that render it can be found in the folder \exchsrvr\webdata\usa\forms\IPM\MS\ITG\MicroNews\PrchOfr. The existence of this message class illustrates how the use of different message classes lets one set of information – about an item for sale, for example – be presented in different ways. Different forms are rendered for different purposes, though the same data can be used in each form.

The Microsoft Exchange Web client uses this convention in the following way:

Using the Web client to open an existing form

1. At the Microsoft Exchange Web client interface, a user opens a form by clicking it.
2. The Web client reads the form's **Type** property and uses it to determine the directory path to the form's installed .asp files.
3. The Web client uses that path to locate and run the file called Read.asp. The Read.asp file can now redirect control to any other .asp or .htm file.
4. Typically, CDO functions are now called that use MAPI to retrieve properties from the form's message object stored in a Microsoft Exchange information store. This data populates the controls of the form, which are rendered to the user.

Form Example: A Classified Ad

A form for classified advertisements was originally created for use with Microsoft® Exchange Server and has been modified for use on the Web.

The following sections describe design considerations for this sample application and step you through some of its code, which is found in various Active Server Pages (ASP) scripts.

Designing the Classified Ad

The classified ad consists of several forms, each used for a different stage in the advertisement and sales process. Each form contains a set of custom properties that are useful to sellers and potential buyers. Also, each form is distinct, and rendered with its own ASP scripts, which are described briefly here:

1. **Advertisement Creation** The seller uses this form to create the initial sales (or "item wanted") announcement. When a form of this type is created, custom advertisement-specific fields such as Category, Subcategory, and ContactInfo are used.
2. **Advertisement Viewing** The potential buyer uses this form to read the sales announcement. This form renders the custom advertisement-specific fields and displays the values specified by the seller.

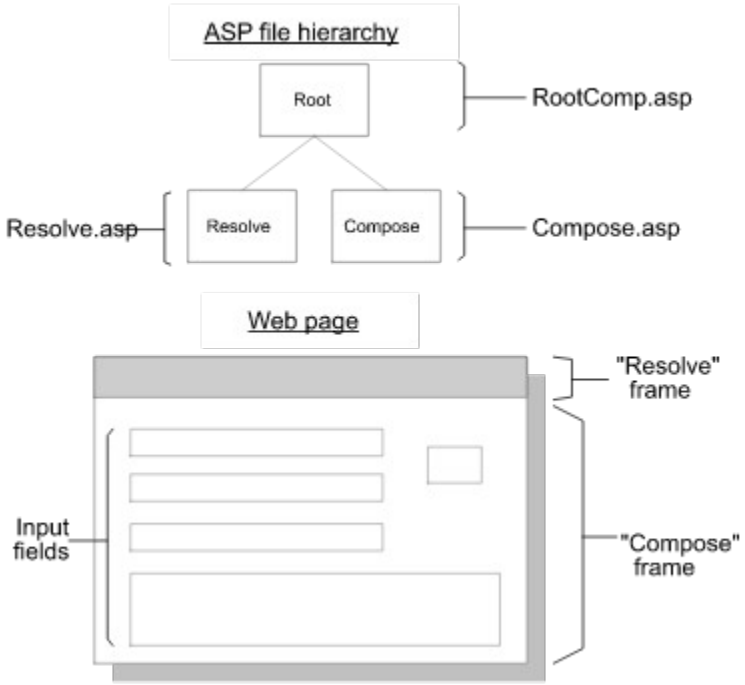
   A different form is used to view the advertisement than to create it because certain controls are used only for one action and not the other. For example, the person submitting the ad first selects "Wanted" or "For Sale," because the item described in the ad may be either sought or offered. The viewer of the ad need only see the outcome of this choice – that the item is, for example, for sale. In the viewer's form, only one of "Wanted" or "For Sale" is displayed.
3. **Purchase Offer Creation** The buyer uses this form to respond to the advertisement.
4. **Purchase Offer Viewing** The seller uses this form to view the buyer's response.
5. **Purchase Offer Response** After the preceding forms are used to initiate a sale, one or more standard e-mail messages (of message class IPM.Note) can be sent to verify the details of the sale.

Preserving Message Data at Run Time

Because the World Wide Web uses pages instead of objects, special design considerations are required for Web forms. With Microsoft Exchange, if you send a message addressed to an invalid recipient, your message information remains intact in the message object, though the message is not delivered. You can readdress the message and send it again.

This model of data persistence cannot be transferred from a traditional messaging system to the Web. If a person types message information on a Web page and submits the page, that Web page disappears and a new page appears. This new page can be passed the user's information and can send it. But if this send attempt fails, perhaps because of an invalid recipient, the original page (along with the user's information) is gone. At this point, there is no convenient way to repopulate the fields with the user's message information.

The Classified Ad sample application has a solution to this problem that uses a three-part model. It uses the three script files RootComp.asp, Resolve.asp, and Compose.asp, as shown in the following diagram. (More frames are actually used than those shown here; this diagram is meant to illustrate merely how data is preserved.)



The files and frames in this illustration work together in the following manner.

At the Web client interface, the user clicks a link that creates and renders a new classified ad. The first script called is RootComp.asp, which initializes and ties together two frames − Compose and Resolve − in one frameset. Since Resolve and Compose are two frames on the same page, both are running simultaneously.

The Resolve frame first checks a variable called *sendRequest*. If this variable has not been set to the value **sendMessage**, Resolve does not process the message. This mechanism is meant to keep Resolve from trying to process message information before the user has entered it. (At startup, VBScript automatically initializes the *sendRequest* variable to **Nothing**.)

Resolve displays a caption, but no tags for user input. Meanwhile, the Compose frame displays a form containing HTML controls with which the ad's creator enters information about offered or sought items. During this time, Compose sets the *sendRequest* variable to **sendMessage**.

When finished entering information, the user clicks **Send** on the Compose frame. Control is now

passed to Resolve, which, because *sendRequest* has been set to **sendMessage**, begins processing the message. Resolve requests the entered data from Compose, using the Request object in this manner:

```
szWorkPhone = Request.Form ("WorkPhone")
```

The Resolve frame now creates the new message object, adds fields for the data gathered from Compose, and sets their values. It also sets the form's type. For more information on these actions, see the following section.

Resolve checks essential fields and, if important data is missing or invalid (such as if the destination name does not resolve), it displays an alert to notify the user of the error. The user can now re-enter information at the Compose page, which still holds all the original information. If Resolve determines that the information is valid this time, it sends the message.

Creating the New Classified Ad Form

These are the main steps to follow for creating a form with CDO:

To create a form using CDO

1. Using VBScript, create a message with the **Add** method of the Messages collection object. This call creates a standard message of the default message class IPM.Note, which contains the basic components needed to send a message, including the To, From, Received, and Subject fields and the message body.
2. You can now customize the standard message by adding custom fields to provide the special functionality the form offers.
3. Set the message class for the form and save the name of this message class in the **Type** property of the Message object.
4. Set the MS_EXCHANGE_01 property. For more information, see Informing Microsoft Exchange Server.
5. If the form is to be used by the Microsoft Exchange Web client, save the form's .asp files to the appropriate location on disk.
6. If the form is to be used by the Microsoft Exchange Client – in addition to or instead of Web use – use the Microsoft Exchange Forms Manager to add the new form's message class to the Microsoft Exchange Server form library. For information on form libraries, see the *MAPI Programmer's Reference*.

These programming actions are discussed in more detail in the following sections.

Creating the Default Message

For the creation of a classified ad form, Read.asp is opened as the default file. In this script, the first step is the creation of a standard message. This happens in the following line of code, by the addition of a message to the current profile's (the session's) Outbox:

```
Set oNewMessage = objAMSession.Outbox.Messages.Add
```

In this call, *objAMSession* is the handle to the current session, and *oNewMessage* is the handle to the new message object. This new message contains the default fields of a standard message. The message handle is used later in this script when the message is sent with the command *oNewMessage*.**Send**. The **Send** command can include various flags, such as for requesting a delivery receipt or saving a copy in the Sent Items folder.

Because this call requests memory for a message object, it can fail if the computer is currently low on memory. For this reason, it may be good to check the return value from this call. In VBScript, if the object creation fails in a given call, the return value is set to **Nothing**. (In this code, rather than checking if the new message is set to **Nothing**, the creation of child objects is checked a few lines of code later.)

Adding Custom Fields

Within this new message object is a child object known as a Fields collection, which is the actual array of fields that house data. To start using the Fields collection, you may first want to obtain a handle to it with the following call:

```
Set oNewFields = oNewMessage.Fields
```

This call provides a handle to all the message's properties. After making this call, you can check its value for success (**Nothing** = failure). With the *oNewFields* handle, you can now add new fields to the message with the Fields.**Add** method, as in the following call:

```
oNewFields.Add "Category Name", Category_Type, Value
```

You can also determine the number of fields (or properties) in the message using Fields.**Count** (in this case, *oNewFields*.**Count**). For more information, see Add Method (Fields Collection). The code example at the bottom of the topic is reproduced here:

```
' Fragment from Fields_Add; uses the type "vbString"
    Set objNewField = objFieldsColl.Add( _
                      Name:="Keyword", _
                      Class:=vbString, _
                      Value:="Peru")
'   verify that objNewField is a valid Field object
' Fragment from Field_Type; display the integer type value
    MsgBox "Field type = " & objOneField.Type
```

In this example, the message contains a Fields collection whose handle is *objFieldsColl*. Using the **Add** method, a new field called Keyword is created whose class is **vbString** and whose value is "Peru". Then, the variable *objNewField* is assigned ("Set") the value of this field creation operation, so that you can check for success. If the value assigned is not **Nothing**, the field was created.

Field Names and Field Identifiers

Some fields have names ("named properties"), and others do not, such as the FROM field. Unnamed fields are identified by their identifiers. It is easiest to use the named property when it exists, but you must use the property identifier otherwise. In the file amprops.inc, a number of custom property form name identifier numbers are defined. These are hexadecimal numbers used to identify fields. None of these fields are necessarily rendered, although they may contain data.

For example, in one sample script data is being retrieved from the FROM field. The Fields object is opened and the current index in the Fields object is set to the identifier of the FROM field. The identifier must be used because a given field (the FROM field in this example) is not always in the same position within a Fields collection. Because you can determine the number of properties in the Fields collection (with Fields.**Count**), you incrementally loop through the fields (from zero to the Fields count) until you reach the one whose identifier is equal to the constant defined for the FROM field. Then, you can read its value.

Informing Microsoft Exchange Server

When you have created a custom form, you need to inform Microsoft Exchange Server in two ways:

1. By setting the message class.
2. By adding the Boolean property called MS_EXCHANGE_01 to the message object and setting its value to **True**. This property is required for every Microsoft Exchange Server custom form, whether or not it is used for the Web.

   Use the **Add** method on the NewFields object, as shown in this example:

   ```
   oNewFields.Add "MS_EXCHANGE_01", VT_BOOL, "True"
   ```

Setting the Message Class

After you have changed the set of fields, you need to provide a way for this form to be recognized (by a Microsoft Exchange client or by CDO) for the new, distinctive, type that it is. You do this by specifying and naming a new message class. You can give it any name you want, such as IPM.MyNote.

To set the message class, assign it to the **Type** property of the Message object. For example, this assignment occurs in Resolve.asp:

```
oNewMessage.Type = "IPM.Microsoft.ITG.NewClassifiedAd"
```

Before you make this assignment (for newly created objects), the Type field had a default setting of IPM.Note.

To have the Microsoft Exchange Client recognize a new message class, use the Microsoft Exchange Forms Manager to add it to the forms library. Then, you can view the new form through the **New Form** option on the **Compose** menu of the Microsoft Exchange Client.

Objects, Properties, and Methods

This reference contains property and method information for the Microsoft® Collaboration Data Objects (CDO) Library objects.

The following table summarizes each object's properties and methods.

Object	Available in version	Properties	Methods
AddressEntries collection	1.1	Application, Class, Count, Filter, Item, Parent, RawTable1, Session	Add, Delete, GetFirst, GetLast, GetNext, GetPrevious, Sort
AddressEntry	1.0.a	Address, Application, Class, DisplayType, Fields, ID, Manager, MAPIOBJECT1, Members, Name, Parent, Session, Type	Delete, Details, GetFreeBusy, IsSameAs, Update
AddressEntryFilter	1.1	Address, Application, Class, Fields, Name, Not, Or, Parent, Session	IsSameAs
AddressList	1.1	AddressEntries, Application, Class, Fields, ID, Index, IsReadOnly, Name, Parent, Session	IsSameAs
AddressLists collection	1.1	Application, Class, Count, Item, Parent, Session	(none)
AppointmentItem	1.2	AllDayEvent, Application, Attachments, BusyStatus, Categories, Class, Conversation, ConversationIndex, ConversationTopic, DeliveryReceipt, Duration, Encrypted, EndTime, Fields, FolderID, ID, Importance, IsRecurring,	ClearRecurrencePattern, CopyTo, Delete, GetRecurrencePattern, IsSameAs, MoveTo, Options, Respond, Send, Update

		Location, MAPIOBJECT1, MeetingResponse Status, MeetingStatus, Organizer, Parent, ReadReceipt, Recipients, ReminderMinutes BeforeStart, ReminderSet, ReplyTime, ResponseRequest ed, Sender, Sensitivity, Sent, Session, Signed, Size, StartTime, StoreID, Subject, Submitted, Text, TimeCreated, TimeExpired, TimeLastModified, TimeReceived, TimeSent, Type, Unread	
Attachment	1.0.a	Application, Class, Fields, Index, MAPIOBJECT1, Name, Parent, Position, Session, Source, Type	Delete, IsSameAs, ReadFromFile, WriteToFile
Attachments collection	1.0.a	Application, Class, Count, Item, Parent, Session	Add, Delete
Field	1.0.a	Application, Class, ID, Index, Name, Parent, Session, Type, Value	Delete, ReadFromFile, WriteToFile
Fields collection	1.0.a	Application, Class, Count, Item, Parent, Session	Add, Delete, SetNamespace
Folder	1.0.a	Application, Class, Fields, FolderID, Folders, HiddenMessages, ID, MAPIOBJECT1, Messages, Name, Parent, Session, StoreID	CopyTo, Delete, IsSameAs, MoveTo, Update

Folders collection	1.0.a	Application, Class, Count, Item, Parent, RawTable[1], Session	Add, Delete, GetFirst, GetLast, GetNext, GetPrevious, Sort
GroupHeader	1.1	Application, Class, Count, Level, Name, Parent, Session, Unread	(none)
InfoStore	1.0.a	Application, Class, Fields, ID, Index, MAPIOBJECT[1], Name, Parent, ProviderName, RootFolder, Session	IsSameAs
InfoStores collection	1.0.a	Application, Class, Count, Item, Parent, Session	(none)
MeetingItem	1.2	Application, Attachments, Categories, Class, Conversation, ConversationIndex, ConversationTopic, DeliveryReceipt, Encrypted, Fields, FolderID, ID, Importance, MAPIOBJECT[1], MeetingType, Parent, ReadReceipt, Recipients, Sender, Sensitivity, Sent, Session, Signed, Size, StoreID, Subject, Submitted, Text, TimeCreated, TimeExpired, TimeLastModified, TimeReceived, TimeSent, Type,	CopyTo, Delete, Forward, GetAssociatedAppointment, IsSameAs, MoveTo, Options, Reply, ReplyAll, Respond, Send, Update

		Unread	
Message	1.0.a	Application, Attachments, Categories, Class, Conversation, ConversationIndex, ConversationTopic, DeliveryReceipt, Encrypted, Fields, FolderID, ID, Importance, MAPIOBJECT[1], Parent, ReadReceipt, Recipients, Sender, Sensitivity, Sent, Session, Signed, Size, StoreID, Subject, Submitted, Text, TimeCreated, TimeExpired, TimeLastModified, TimeReceived, TimeSent, Type, Unread	CopyTo, Delete, Forward, IsSameAs, MoveTo, Options, Reply, ReplyAll, Send, Update
MessageFilter	1.1	Application, Class, Conversation, Fields, Importance, Not, Or, Parent, Recipients, Sender, Sent, Session, Size, Subject, Text, TimeFirst, TimeLast, Type, Unread	IsSameAs
Messages collection	1.0.a	Application, Class, Count, Filter, Item, Parent, RawTable[1], Session	Add, Delete, GetFirst, GetLast, GetNext, GetPrevious, Sort
Recipient	1.0.a	Address, AddressEntry, AmbiguousNames, Application, Class, DisplayType, ID, Index, MeetingResponse Status, Name,	Delete, GetFreeBusy, IsSameAs, Resolve

		Parent, Session, Type	
Recipients collection	1.0.a	Application, Class, Count, Item, RawTable[1], Parent, Resolved, Session	Add, AddMultiple, Delete, GetFirstUnresolved, GetFreeBusy, GetNextUnresolved, Resolve
RecurrencePattern	1.2	Application, Class, DayOfMonth, DayOfWeekMask, Duration, EndTime, Instance, Interval, MonthOfYear, NoEndDate, Occurrences, Parent, PatternEndDate, PatternStartDate, RecurrenceType, Session, StartTime	(none)
Session	1.0.a	AddressLists, Application, Class, CurrentUser, Inbox, InfoStores, MAPIOBJECT[1], Name, OperatingSystem, Outbox, OutOfOffice, OutOfOfficeText, Parent, Session, Version	AddressBook, CompareIDs, CreateConversationIndex, DeliverNow, GetAddressEntry, GetAddressList, GetDefaultFolder, GetFolder, GetInfoStore, GetMessage, GetOption, Logoff, Logon, SetLocaleIDs, SetOption

1 The **MAPIOBJECT** and **RawTable** properties are not available to Visual Basic applications. For more information, see the references for these properties.

This reference is organized by object. For each object there is a summary topic, followed by reference documentation for each property or method that belongs to the object. The properties and methods are organized alphabetically.

Each property or method topic in the reference displays a **Group** button following the topic title. Clicking this button displays the summary topic for the object to which the property or method belongs. The summary topic includes tables of the object's properties and methods.

To avoid duplication, the section Properties Common to All CDO Library Objects describes the properties that have the same meaning for all CDO Library objects. These are:

- **Application**
- **Class**
- **Parent**
- **Session**

Object Model

The object model for the CDO Library is hierarchical. The following table shows the containment hierarchy. Each indented object is a child of the object under which it is indented. An object is the parent of every object at the next level of indentation under it. For example, an Attachments collection and a Recipients collection are both child objects of a Message object, and a Messages collection is a parent object of a Message object. However, a Messages collection is not a parent object of a Recipients collection.

Session
- AddressLists collection
  - AddressList
    - Fields collection
      - Field
    - AddressEntries collection
      - AddressEntry
        - Fields collection
          - Field
        - AddressEntryFilter
          - Fields collection
            - Field
- Folder (Inbox or Outbox)
  - Fields collection
    - Field
  - Folders collection
    - Folder
      - Fields collection
        - Field
      - [Folders … Folder …]
      - Messages collection
        - AppointmentItem
          - RecurrencePattern
        - GroupHeader
        - MeetingItem
        - Message
          - Attachments collection
            - Attachment
              - Fields collection
                - Field
          - Fields collection
            - Field
          - Recipients collection
            - Recipient
              - AddressEntry
                - Fields collection
                  - Field
        - MessageFilter
          - Fields collection
            - Field
- InfoStores collection
  - InfoStore
    - Fields collection
      - Field
    - Folder [as expanded under Folders]

The notation “[Folders … Folder …]” signifies that any Folder object can contain a Folders collection of subfolders, and each subfolder can contain a Folders collection of more subfolders, nested to an arbitrary level.

Properties Common to All CDO Library Objects

All CDO Library objects expose the properties **Application**, **Class**, **Parent**, and **Session**. The **Application** and **Session** properties have the same values for all objects within a given session. The **Parent** property indicates the immediate parent of the object, and the **Class** property is an integer value that identifies the CDO Library object.

All four of these common properties have read-only access in all objects. Note that for the Session object, the **Parent** and **Session** properties are assigned the value **Nothing**. The Session object represents the highest level in the CDO Library object hierarchy and has no parent.

These common properties do not correspond to MAPI properties and cannot be rendered into HTML hypertext by the CDO Rendering Library.

To reduce duplication, the detailed reference for these properties appears only once, in this section. The following table lists the properties that are common to all CDO Library objects and that have the same meaning for all objects.

Properties

Name	Type	Access
Application	String	Read-only
Class	Long	Read-only
Parent	Object	Read-only
Session	Session object	Read-only

Application Property (All CDO Library Objects) Group

The **Application** property returns the name of the active application, namely the Microsoft® Collaboration Data Objects (CDO) Library. Read-only.

Syntax

object.**Application**

Data Type

String

Remarks

The **Application** property always contains the string “Collaboration Data Objects (CDO) version 1.2”.

By always returning the same string, CDO differs from other implementations of Automation servers. Many Automation servers are based on executable files, which take the extension .EXE and return an object value. CDO, being part of the MAPI subsystem, is implemented with dynamic-link libraries, which take the extension .DLL.

As of version 1.1, CDO is an in-process server, residing in a .DLL file and linking dynamically with the calling modules. In comparison with the former local server architecture, this removes the need for remote procedure calls (RPCs) across process boundaries and greatly improves the performance of CDO Library calls.

The version number of the CDO Library is available through the Session object’s **Version** property.

The **Application** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

```
' Function: Session_Application
' Purpose: Display the Application property of the Session object
' See documentation topic: Application property
Function Session_Application()
Dim objSession As Object ' or Dim objSession As MAPI.Session
' error handling ...
Set objSession = CreateObject("MAPI.Session")
If Not objSession Is Nothing Then
    MsgBox "Session’s Application property = " & objSession.Application
End If
' error handling
End Function
```

Class Property (All CDO Library Objects)

Group

The **Class** property returns the object class of the object. Read-only.

Syntax

object.**Class**

Data Type

Long

Remarks

The **Class** property contains a numeric constant that identifies the CDO Library object. The following values are defined:

CDO Library object	Class value	Type library constant
AddressEntries collection	21	**CdoAddressEntries**
AddressEntry	8	**CdoAddressEntry**
AddressEntryFilter	9	**CdoAddressFilter**
AddressList	7	**CdoAddressList**
AddressLists collection	20	**CdoAddressLists**
AppointmentItem	26	**CdoAppointment**
Attachment	5	**CdoAttachment**
Attachments collection	18	**CdoAttachments**
Field	6	**CdoField**
Fields collection	19	**CdoFields**
Folder	2	**CdoFolder**
Folders collection	15	**CdoFolders**
GroupHeader	25	**CdoGroupHeader**
InfoStore	1	**CdoInfoStore**
InfoStores collection	14	**CdoInfoStores**
MeetingItem	27	**CdoMeetingItem**
Message	3	**CdoMsg**
MessageFilter	10	**CdoMessageFilter**
Messages collection	16	**CdoMessages**

Recipient	4	**CdoRecipient**
Recipients collection	17	**CdoRecipients**
RecurrencePattern	28	**CdoRecurrencePattern**
Session	0	**CdoSession**

CDO also defines **CdoUnknown**, with the value -1, for an object implementing the OLE **IUnknown** interface.

The **Class** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

```
' Function: Util_DecodeObjectClass
' Purpose: Decode the long integer class value,
'          show the related object name
' See documentation topic: Class property
Function Util_DecodeObjectClass(lClass As Long)
' error handling here ...
Select Case (lClass)
    Case CdoSession:
        MsgBox ("Session object; Class = " & lClass)
    Case CdoMsg:
        MsgBox ("Message object; Class = " & lClass)
End Select
' error handling ...
End Function

' Function: TestDrv_Util_DecodeObjectClass
' Purpose: Call the utility function DecodeObjectClass for Class values
' See documentation topic: Class property
Function TestDrv_Util_DecodeObjectClass()
' error handling here ...
If objSession Is Nothing Then
    MsgBox "Need to set the Session object: Session->Logon"
    Exit Function
End If
' expect type CdoSession = 0 for Session object
Util_DecodeObjectClass (objSession.Class)
Set objMessages = objSession.Inbox.Messages
Set objOneMsg = objMessages.GetFirst
If objOneMsg Is Nothing Then
    MsgBox "Inbox is empty"
    Exit Function
End If
' expect type CdoMessage = 3 for Message object
Util_DecodeObjectClass (objOneMsg.Class)
' error handling here ...
End Function
```

Parent Property (All CDO Library Objects) Group

The **Parent** property returns the parent of the object. Read-only.

Syntax

Set *objParent* = *object*.**Parent**

Data Type

Object

Remarks

The **Parent** property in CDO returns the *immediate* parent of an object. The immediate parent for each object is shown in the following table.

CDO Library object	Immediate parent in object hierarchy
AddressEntries collection	AddressList
AddressEntry (returned by Session.**CurrentUser**)	AddressEntries collection
AddressEntry (all others)	Recipient
AddressEntryFilter	AddressEntries collection
AddressList	AddressLists collection
AddressLists collection	Session
AppointmentItem	Messages collection
Attachment	Attachments collection
Attachments collection	Message
Field	Fields collection
Fields collection	AddressEntry, AddressEntryFilter, AddressList, AppointmentItem, Attachment, Folder, InfoStore, Message, or MessageFilter
Folder (Inbox or Outbox)	Session
Folder (all others)	Folders collection or InfoStore
Folders collection	Folder, including Inbox or Outbox
GroupHeader	Messages collection
InfoStore	InfoStores collection
InfoStores collection	Session
MeetingItem	Messages collection
Message	Messages collection
MessageFilter	Messages collection
Messages collection	Folder, including Inbox or Outbox
Recipient	Recipients collection

Recipients collection	Message
RecurrencePattern	AppointmentItem
Session	Set to **Nothing**

The **Parent** property represents the *immediate* parent of the object, rather than the *logical* parent. For example, a folder contains a Messages collection, which contains Message objects. The **Parent** property for a message is the immediate parent, the Messages collection, rather than the logical parent, the Folder object.

The Session object represents the highest level in the hierarchy of CDO Library objects and its **Parent** property is set to **Nothing**.

For more information on the CDO Library object hierarchy, see Object Model.

The **Parent** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. Depending on the parent object returned, you might be able to render it as an object, by setting the ObjectRenderer object's **DataSource** property to the object returned by the **Parent** property, or as a container object, by setting the ContainerRenderer object's **DataSource** property to the collection object returned by the **Parent** property. See the **DataSource** properties for what objects are accepted.

Example

This code fragment displays the **Class** of the parent Messages collection of a Message object:

```
' Function: Message_Parent
Function Message_Parent()
' error handling here ...
If objOneMsg Is Nothing Then
    MsgBox "Need to select a message; see Messages->Get*"
    Exit Function
End If
' Immediate parent of message is the Messages collection
MsgBox "Message immediate parent class = " & objOneMsg.Parent.Class
' error handling code ...
End Function
```

To get to the Folder object, you have to take the parent of the Messages collection:

```
' Function: Messages_Parent
' Purpose: Display the Messages collection Parent class value
' See documentation topic: Parent property
Function Messages_Parent()
Set objMessages = objOneMsg.Parent
' error handling here ...
If objMessages Is Nothing Then
    MsgBox "No active Messages collection"
    Exit Function
End If
MsgBox "Messages collection parent class = " & objMessages.Parent.Class
Exit Function
' error handling here ...
End Function
```

Session Property (All CDO Library Objects) Group

The **Session** property returns the top-level Session object associated with the specified CDO Library object. Read-only.

Syntax

Set *objSession* = *object*.**Session**

Data Type

Object (Session)

Remarks

The Session object represents the highest level in the CDO Library object hierarchy. If you invoke the **Session** property of a Session object, it returns the same Session object.

The **Session** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

```
' Function: Folder_Session
' Purpose: Access the Folder's Session property and display its name
' See documentation topic: Session property
Function Folder_Session()
Dim objSession2 As Session ' Session object to get the property
' error handling here ...
If objFolder Is Nothing Then
    MsgBox "No active folder; please select Session->Inbox"
    Exit Function
End If
Set objSession2 = objFolder.Session
If objSession2 Is Nothing Then
    MsgBox "Unable to access Session property"
    Exit Function
End If
MsgBox "Folder's Session property's Name = " & objSession2.Name
Set objSession2 = Nothing
' error handling here ...
End Function
```

AddressEntries Collection Object

The AddressEntries collection object contains one or more AddressEntry objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.1
Parent objects:	AddressList
Child objects:	AddressEntry AddressEntryFilter
Default property:	**Item**

An AddressEntries collection is considered a *large collection*, which means that the **Count** property has limited validity, and the best way to access an individual AddressEntry object within the collection is to use either its unique identifier or the **Get** methods. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.1	String	Read-only
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Filter	1.1	AddressEntryFilter object	Read/write
Item	1.1	AddressEntry object	Read-only
Parent	1.1	AddressList object	Read-only
RawTable	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Session	1.1	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.1	*emailtype* as **String**, (optional) *name* as **String**, (optional) *address* as **String**
Delete	1.1	(none)
GetFirst	1.1	(none)
GetLast	1.1	(none)
GetNext	1.1	(none)
GetPrevious	1.1	(none)

Sort	1.1	(optional) *SortOrder* as **Long**, (optional) *PropTag* as **Long**, (optional) *PropID* as **String**

Remarks

Each AddressEntry object in the collection holds information representing a person or process to which the messaging system can deliver messages. An AddressEntries collection provides access to the entries in a MAPI address book container.

An AddressEntries collection can be rendered into HTML hypertext in tabular form using the CDO Rendering ContainerRenderer object. To specify this, set the container renderer's **DataSource** property to the AddressEntries collection object itself.

With the same **DataSource** setting, the container renderer's **RenderProperty** method can also render selected properties of the collection's parent AddressList object. The individual properties that can be rendered are indicated in the AddressList object property descriptions.

Large collections, such as the AddressEntries collection, cannot always maintain an accurate count of the number of objects in the collection. It is strongly recommended that you use the **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** methods to access individual items in the collection. You can access one specific address entry by using the Session object's **GetAddressEntry** method, and you can access all the items in the collection with the Microsoft® Visual Basic® **For Each** construction.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the address entries are sorted or not. The AddressEntry objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

Add Method (AddressEntries Collection)

Group

The **Add** method creates and returns a new AddressEntry object in the AddressEntries collection.

Syntax

Set *objAddressEntry* = *objAddrEntriesColl*.**Add(***emailtype* **[***, name, address* **])**

objAddressEntry
On successful return, contains the new AddressEntry object.

objAddrEntriesColl
Required. The AddressEntries collection object.

emailtype
Required. String. The address type of the address entry.

name
Optional. String. The display name or alias of the address entry.

address
Optional. String. The full messaging address of the address entry.

Remarks

The *emailtype* parameter corresponds to the PR_ADDRTYPE property and qualifies the *address* parameter by specifying which messaging system the address is valid in. Typical values are SMTP, FAX, and X400.

The *emailtype*, *name*, and *address* parameters correspond to the **Type**, **Name**, and **Address** properties of the AddressEntry object.

You can set the *emailtype* parameter to any string recognized and supported by the address book providers invoked by the current profile, such as SMTP or X400. In particular, if you are using the Microsoft® Exchange private address book (PAB) provider, you can set *emailtype* to MAPIPDL to indicate a private distribution list (PDL).

The **DisplayType** property of the new AddressEntry object is set by the address book provider to either **CdoUser** or **CdoDistList**, depending on which kind of address entry is being added. The **DisplayType** property is read-only and cannot subsequently be changed.

The user must have the appropriate permission to **Add**, **Delete**, or **Update** an AddressEntry object. Most users have this permission only for their personal address book (PAB).

The new AddressEntry object is saved in the MAPI system when you call its **Update** method.

Example

This code fragment adds a new entry to a user's personal address book (PAB). Note the use of the **Item** property as the default property of both the AddressLists and Fields collections.

```
' get PAB AddressList from AddressLists collection of Session
Set myList = MAPI.Session.AddressLists("Personal Address Book")
' add new AddressEntry to AddressEntries collection of AddressList
Set newEntry = myList.AddressEntries.Add "FAX", "John Doe"
' add FaxNumber field to new AddressEntry and give it a value
newEntry.Fields.Add "FaxNumber", vbString
newEntry.Fields("FaxNumber") = "+1-206-555-7069"
' commit new entry, field, and value to PAB AddressList
newEntry.Update
```

Count Property (AddressEntries Collection) Group

The **Count** property returns the number of AddressEntry objects in the collection, or a very large number if the exact count is not available. Read-only.

Syntax

objAddrEntriesColl.**Count**

Data Type

Long

Remarks

A large collection cannot always maintain an accurate count of its members, and the **Count** property cannot be used as the collection's size when it has the value &H7FFFFFFF. Programmers needing to access individual objects in a large collection are strongly advised to use the Microsoft® Visual Basic® **For Each** statement or the **Get** methods.

The **Count** property can always be used to determine whether an AddressEntries collection is empty or not.

The recommended procedures for traversing a large collection are, in decreasing order of preference:

1. Global selection, such as the Visual Basic **For Each** statement.
2. The **Get** methods, particularly **GetFirst** and **GetNext**.
3. An indexed loop, such as the Visual Basic **For ... Next** construction.

If the address book provider cannot supply the precise number of AddressEntry objects, CDO returns &H7FFFFFFF (= 2^31 - 1 = 2,147,483,647) for the **Count** property. This is the largest positive value for a long integer and is intended to prevent an approximate count from prematurely terminating an indexed loop. On 32-bit platforms, this value is defined in the type library as **CdoMaxCount**. On other platforms, **CdoMaxCount** is not defined, and a program on such a platform must compare the **Count** property against &H7FFFFFFF to see if it is reliable.

If the **Count** property is not reliable, that is, if it is &H7FFFFFFF, a program using it to terminate an indexed loop must also check each returned object for a value of **Nothing** to avoid going past the end of the collection.

The use of the **Item** property in conjunction with the **Count** property in a large collection can be seen in the following example.

Example

This code fragment counts the AddressEntry objects in a user's personal address book (PAB):

```
Dim i As Integer                ' loop index / object counter
Dim myPAB as AddressList        ' personal address book AddressList
Dim myPABColl as AddressEntries ' AddressEntries collection of PAB
' select PAB from AddressLists collection of Session
Set myPAB = MAPI.Session.AddressLists.Item("Personal Address Book")
' .Item could have been omitted above since it is default property
' make sure returned AddressList object is valid
If myPAB Is Nothing Then
    ' MsgBox "PAB object is invalid"
    ' Exit
End If
```

```
' get AddressEntries collection of PAB AddressList
Set myPABColl = myPAB.AddressEntries
' see if PAB is empty
i = myPABColl.Count ' valid if not a "very large number"
If 0 = i Then ' collection empty; 0 is correct count
    MsgBox "No AddressEntry items in PAB"
ElseIf CdoMaxCount = i Then ' .Count is not valid; get exact count
    For i = 0 To myPABColl.Count Step 1
        If myPABColl.Item(i) Is Nothing Then
            Exit For ' end of collection; members are 0, ... , i - 1
        End If
    Next i
End If
```

Delete Method (AddressEntries Collection) Group

The **Delete** method removes all the AddressEntry objects from the AddressEntries collection.

Syntax

objAddrEntriesColl.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every AddressEntry object. If you have another reference to an address entry, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another address entry.

The final **Release** on each AddressEntry object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one AddressEntry object, use the **Delete** method specific to that object.

The **Delete** method on a large collection takes effect immediately and is permanent. A deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

Filter Property (AddressEntries Collection) Group

The **Filter** property returns an AddressEntryFilter object for the AddressEntries collection. Read/write.

Syntax

objAddrEntriesColl.**Filter**

Data Type

Object (AddressEntryFilter)

Remarks

An AddressEntryFilter object with no criteria is created by default for every AddressEntries collection. When you specify criteria by setting properties in the filter's Fields collection, the filter restricts any subsequent search on the AddressEntries collection. For more information, see the AddressEntryFilter Object and Filtering Messages in a Folder.

An address entry filter can also be inherited from the restriction specified in a CDO Rendering TableView object. Writing any property on this filter disinherits it, refreshes the AddressEntries collection, and instantiates a new address entry filter specifying only the property just written. This new filter, however, is no longer inherited, and the application can read its properties and set additional restrictions within it.

The address entry filter affects traversals of the AddressEntries collection using the Microsoft® Visual Basic® **For Each** statement, the **Get** methods, or the Visual Basic **For … Next** construction. These accesses return an AddressEntry object.

Example

This code fragment shows how to set a filtering value in an AddressEntries collection's initial default address entry filter, and then how to clear all settings and reset the filter to its default state of no criteria:

```
Dim objAEColl As AddressEntries ' collection
Dim objAEntry As AddressEntry   ' address entry passed by filter
Dim objAEFilt As AddressEntryFilter
' assume valid AddressEntries collection just created
' make first use of filter to check for names containing "Mac"
Set objAEFilt = objAEColl.Filter ' original empty default filter
objAEFilt.Name = "Mac" ' string used in a name resolution search
For Each objAEntry in objAEColl ' loops and Sets each objAEntry
    ' process address entries that are passed by the filter
Next
' ... later, when current filter settings are no longer needed ...
objAEColl.Filter = Nothing ' invalidates and clears filter
Set objAEFilt = objAEColl.Filter ' new empty filter
' filter now available for new settings
```

GetFirst Method (AddressEntries Collection) Group

The **GetFirst** method returns the first AddressEntry object in the AddressEntries collection. It returns **Nothing** if no first object exists.

Syntax

Set *objAddressEntry* = *objAddrEntriesColl*.**GetFirst( )**

objAddressEntry
On successful return, represents the first AddressEntry object in the collection.

objAddrEntriesColl
Required. The AddressEntries collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the address entries are sorted or not. The AddressEntry objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

GetLast Method (AddressEntries Collection) Group

The **GetLast** method returns the last AddressEntry object in the AddressEntries collection. It returns **Nothing** if no last object exists.

Syntax

Set *objAddressEntry* = *objAddrEntriesColl*.**GetLast( )**

objAddressEntry
On successful return, represents the last AddressEntry object in the collection.

objAddrEntriesColl
Required. The AddressEntries collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the address entries are sorted or not. The AddressEntry objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

GetNext Method (AddressEntries Collection) Group

The **GetNext** method returns the next AddressEntry object in the AddressEntries collection. It returns **Nothing** if no next object exists, for example if already positioned at the end of the collection.

Syntax

Set *objAddressEntry* = *objAddrEntriesColl*.**GetNext( )**

objAddressEntry
On successful return, represents the next AddressEntry object in the collection.

objAddrEntriesColl
Required. The AddressEntries collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the address entries are sorted or not. The AddressEntry objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

If the **GetFirst** method has not been called since the AddressEntries collection was initialized, the behavior of the **GetNext** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to set an explicit variable for the collection before entering the loop. For more information, see Object Collections.

GetPrevious Method (AddressEntries Collection) Group

The **GetPrevious** method returns the previous AddressEntry object in the AddressEntries collection. It returns **Nothing** if no previous object exists, for example if already positioned at the beginning of the collection.

Syntax

Set *objAddressEntry* = *objAddrEntriesColl*.**GetPrevious( )**

objAddressEntry
On successful return, represents the previous AddressEntry object in the collection.

objAddrEntriesColl
Required. The AddressEntries collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the address entries are sorted or not. The AddressEntry objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

If the **GetLast** method has not been called since the AddressEntries collection was initialized, the behavior of the **GetPrevious** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to set an explicit variable for the collection before entering the loop. For more information, see Object Collections.

Item Property (AddressEntries Collection) Group

The **Item** property returns a single AddressEntry object from the AddressEntries collection. Read-only.

Syntax

objAddrEntriesColl.**Item(***index***)**

objAddrEntriesColl.**Item(***searchValue***)**

index
A long integer ranging from 1 to the size of the AddressEntries collection.

searchValue
A string used to search the AddressEntries collection starting at the current position. The search returns the next AddressEntry object having the current sorting property greater than or equal to the *searchValue* string.

The **Item** property is the default property of an AddressEntries collection, meaning that *objAddrEntriesColl*(*index*) is syntactically equivalent to *objAddrEntriesColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (AddressEntry)

Remarks

Programmers needing to access individual objects in a large collection are strongly advised to use the Visual Basic **For Each** statement or the **Get** methods, particularly **GetFirst** and **GetNext**.

The **Item(***index***)** syntax returns the AddressEntry object at the indicated position in the collection. It can be used in an indexed loop, such as the **For ... Next** construction in Visual Basic. The first item in the collection has an index of 1.

For more information on using the **Count** and **Item** properties in a large collection, see the example in the **Count** property.

The **Item(***searchValue***)** syntax returns the next AddressEntry object whose current sorting property is greater than or equal to the string specified by *searchValue*. This syntax starts its search at the current position.

Searching is based on the current sort order of the collection. The default sort property for an AddressEntries collection is the **Name** property of the collection's AddressEntry objects. If you want to use the **Item(***searchValue***)** syntax to search the collection on another property, for example an address type, you should first call the **Sort** method specifying the **Type** property.

Note The **Item(***searchValue***)** syntax uses the **IMAPITABLE::FindRow** method, which performs a search dependent on the current sort order of the table underlying the collection. Not all tables are sorted alphabetically. If your most recent sort order is nonalphabetic, you should access the messages using the **Item(***index***)** syntax. This could be the case, for example, if your AddressEntries collection is sorted on the **DisplayType** property.

For more information on tables, bookmarks, restrictions, and sort and search orders, see the *MAPI Programmer's Reference*.

Although the **Item** property itself is read-only, the AddressEntry object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

RawTable Property (AddressEntries Collection) Group

The **RawTable** property returns an **IUnknown** pointer to the MAPI table object underlying the AddressEntries collection. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objAddrEntriesColl.**RawTable**

Data Type

Variant (**vbDataObject** format)

Remarks

The **RawTable** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **RawTable** property is an **IUnknown** object that returns an **IMAPITable** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

Sort Method (AddressEntries Collection)

Group

The **Sort** method sorts the collection on the specified property according to the specified sort order.

Syntax

objAddrEntriesColl.**Sort([***SortOrder, PropTag***])**

objAddrEntriesColl.**Sort([***SortOrder, name***])**

objAddrEntriesColl
Required. The AddressEntries collection object.

SortOrder
Optional. Long. The specified sort order, one of the following values:

Value	Numeric value	Description
CdoNone	0	No sort
CdoAscending	1	Ascending sort (default)
CdoDescending	2	Descending sort

PropTag
Optional. Long. The property tag value for the MAPI property to be used for the sort. *PropTag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_EMAIL_ADDRESS**.

name
Optional. String. The custom property name of a MAPI named property.

Remarks

Both parameters are optional. If *SortOrder* is not specified, ascending order is used. If neither *PropTag* nor *name* is specified, the property used in the previous call to **Sort** is used again. If **Sort** has never been called on this collection during this session, the MAPI property **CdoPR_DISPLAY_NAME** is used for the sort.

Each call to **Sort** generates an entirely new sort order based on the specified property. No previous sort order is retained or nested.

If the underlying messaging system does not support the sort criteria specified, for example descending order or MAPI named properties, the **Sort** method returns **CdoE_TOO_COMPLEX**.

AddressEntry Object

The AddressEntry object defines addressing information valid for a given messaging system. An address usually represents a person or process to which the messaging system can deliver messages.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	AddressEntries collection Recipient
Child objects:	Fields collection
Default property:	**Name**

When an AddressEntry object is used as a child object of a Recipient object, it represents a copy of valid addressing information that is obtained from the address book during a call to the Recipient object's **Resolve** method. When you obtain the AddressEntry object in this context, you should not modify its properties.

Properties

Name	Available in version	Type	Access
Address	1.0.a	String	Read/write
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
DisplayType	1.0.a	Long	Read-only
Fields	1.0.a	Field object or Fields collection object	Read-only
ID	1.0.a	String	Read-only
Manager	1.1	AddressEntry object	Read-only
MAPIOBJECT	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Members	1.1	AddressEntries collection object	Read-only
Name	1.0.a	String	Read/write
Parent	1.0.a	AddressEntries collection object or Recipient object	Read-only
Session	1.0.a	Session object	Read-only
Type	1.0.a	String	Read/write

Methods

	Available

Name	in version	Parameters
Delete	1.0.a	(none)
Details	1.0.a	(optional) *parentWindow* as **Long**
GetFreeBusy	1.2	*StartTime* as **Variant**, *EndTime* as **Variant**, *Interval* as **Long**
IsSameAs	1.1	(required) *objAddrEntry2* as **Object**
Update	1.0.a	(optional) *makePermanent* as **Boolean**, (optional) *refreshObject* as **Boolean**

Remarks

An AddressEntry object can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to the AddressEntry object itself. The individual properties that can be rendered with the **RenderProperty** method are indicated in the AddressEntry object property descriptions.

Address Property (AddressEntry Object)

Group

The **Address** property specifies the messaging address of an address entry or message recipient. Read/write.

Syntax

objAddressEntry.**Address**

Data Type

String

Remarks

The AddressEntry object's **Address** property contains a unique string that identifies a message recipient and provides routing information for messaging systems. The format of the address string is specific to each messaging system.

The AddressEntry object's **Address** and **Type** properties can be combined to form the *full address*, the complete messaging address that appears in the Recipient object's **Address** property using the following syntax:

AddressType:*AddressValue*

The **Address** property corresponds to the MAPI property PR_EMAIL_ADDRESS. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this AddressEntry object and the *property* parameter of the **RenderProperty** method to **CdoPR_EMAIL_ADDRESS**.

Example

```
' Set up a series of object variables
' Set the Folder and Messages variables from Session_Inbox
Set objFolder = objSession.Inbox
Set objMessages = objFolder.Messages
' Set the Message object variable from Messages_GetFirst()
Set objOneMsg = objMessages.GetFirst
' Set the Recipients collection variable from Message_Recipients()
Set objRecipColl = objOneMsg.Recipients
' Set the Recipient object variable from Recipients_Item()
If 0 = objRecipColl.Count Then
    MsgBox "No recipients in the list"
    Exit Function
End If
iRecipCollIndex = 1
Set objOneRecip = objRecipColl.Item(iRecipCollIndex)
' could also be objRecipColl(iRecipCollIndex) since .Item is default

' set the AddressEntry object variable from Recipient_AddressEntry()
Set objAddrEntry = objOneRecip.AddressEntry
' from Util_CompareFullAddressParts()
' display the values
strMsg = "Recipient full address = " & objOneRecip.Address
strMsg = strMsg & "; AddressEntry type = " & objAddrEntry.Type
strMsg = strMsg & "; AddressEntry address = " & objAddrEntry.Address
MsgBox strMsg
```

Delete Method (AddressEntry Object)

Group

The **Delete** method removes the AddressEntry object from the AddressEntries collection.

Syntax

objAddressEntry.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the AddressEntry object. If you have another reference to the address entry, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another address entry.

The final **Release** on the AddressEntry object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The action of the **Delete** method is permanent, and the AddressEntry object cannot be restored to the collection. Before calling **Delete**, your application can prompt the user to verify whether the address entry should be permanently deleted.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

The user must have the appropriate permission to **Add**, **Delete**, or **Update** an AddressEntry object. Most users have this permission only for their personal address book (PAB).

You can delete all the address entries in the AddressEntries collection by calling the collection's **Delete** method. The ability to delete any address entry depends on the permissions granted to the user. The **Delete** method returns an error code if called with insufficient permissions.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first AddressEntry object. That reference survives the call to **Delete** and has to be reassigned. The second AddressEntry object is deleted without creating another reference, and no other action is necessary.

```
' assume valid AddressList object
Set objAddressEntry = objAddressList.AddressEntries.Item(1)
objAddressEntry.Delete ' still have a reference from Set statement
' ... other operations on objAddressEntry possible but pointless ...
Set objAddressEntry = Nothing ' necessary to remove reference
' ...
objAddressList.AddressEntries.Item(2).Delete ' no reference to remove
```

Details Method (AddressEntry Object)

Group

The **Details** method displays a modal dialog box that provides detailed information about an AddressEntry object.

Syntax

objAddressEntry.**Details([***parentWindow***])**

objAddressEntry
Required. The AddressEntry object.

parentWindow
Optional. Long. The parent window handle for the details dialog box. A value of zero (the default) specifies that the dialog box should be application-modal.

Remarks

The **Details** dialog box is always modal, meaning the parent window is disabled while the dialog box is active. If the *parentWindow* parameter is set to zero or is not set, all windows belonging to the application are disabled while the dialog box is active. If the *parentWindow* parameter is supplied but is not valid, the call returns **CdoE_INVALID_PARAMETER**.

The dialog box must always contain at least the display name and messaging address of the address entry. The **Details** method fails if either the **Name** or **Address** property is empty.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)
- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's Reference*.

DisplayType Property (AddressEntry Object) Group

The **DisplayType** property returns the display type of the address entry. Read-only.

Syntax

objAddressEntry.**DisplayType**

Data Type

Long

Remarks

The **DisplayType** property enables special processing based on its value, such as displaying an associated icon. You can also use the display type to sort or filter address entries.

The following values are defined:

DisplayType value	Decimal value	Description
CdoAgent	3	An automated agent, such as Quote-of-the-Day.
CdoDistList	1	A public distribution list.
CdoForum	2	A forum, such as a bulletin board or a public folder.
CdoOrganization	4	A special address entry defined for large groups, such as a helpdesk.
CdoPrivateDistList	5	A private, personally administered distribution list.
CdoRemoteUser	6	A messaging user in a remote messaging system.
CdoUser	0	A local messaging user.

When you **Add** a new address entry to an AddressEntries collection, the **DisplayType** property is set by the address book provider to either **CdoUser** or **CdoDistList**, depending on which kind of address entry is being added. The **DisplayType** property cannot subsequently be changed.

If an address entry represents a distribution list, the **Members** property can be used to retrieve an AddressEntries collection containing the members of the distribution list. If the address entry is a single messaging user, the **Members** property returns **Nothing**.

A private distribution list (PDL) exists only in your personal address book (PAB) and does not have an e-mail address. Before invoking an address entry's **Address** or **Type** property, you should verify that its **DisplayType** is not **CdoPrivateDistList**. Attempted access to addressing properties on a PDL results in a return of **CdoE_NOT_FOUND**.

The **DisplayType** property corresponds to the MAPI property PR_DISPLAY_TYPE. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this AddressEntry object and the *property* parameter of the **RenderProperty** method to **CdoPR_DISPLAY_TYPE**.

Fields Property (AddressEntry Object)

Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objAddressEntry.**Fields**

objAddressEntry.**Fields(***index***)**

objAddressEntry.**Fields(***proptag***)**

objAddressEntry.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with an AddressEntry object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of any MAPI property using either a name or a MAPI property tag. For access with the property tag, use *objAddressEntry*.**Fields(***proptag***)**, where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_GIVEN_NAME**. To access a named property, use *objAddressEntry*.**Fields(***name***)**, where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

The **Fields** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

GetFreeBusy Method (AddressEntry Object) Group

The **GetFreeBusy** method returns a string representing the availability of the messaging user for a meeting over a specified period of time.

Syntax

strAvail = *objAddressEntry*.**GetFreeBusy(***StartTime, EndTime, Interval***)**

strAvail
On successful return, contains a string indicating the messaging user's availability for each of the time slots in the specified time period.

objAddressEntry
Required. The AddressEntry object.

StartTime
Required. Variant (**vbDate** format). Specifies the date/time of the beginning of the first time slot.

EndTime
Required. Variant (**vbDate** format). Specifies the date/time of the end of the last time slot.

Interval
Required. Long. Specifies the length of each time slot in minutes.

Remarks

The returned string length equals the number of time slots between *StartTime* and *EndTime*. Each character is the ASCII representation of the appropriate type library constant indicating the messaging user's availability during a time slot:

ASCII character	Corresponding type library constant	Meaning
"0"	**CdoFree**	Available for appointments or meetings throughout the time slot
"1"	**CdoTentative**	At least one tentative commitment during the time slot
"2"	**CdoBusy**	At least one confirmed commitment during the time slot
"3"	**CdoOutOfOffice**	Designated as out-of-office (OOF) for at least part of the time slot

If there is any overlapping of commitments during a time slot, **GetFreeBusy** returns the most committed state, that is, the highest character value. For example, if a messaging user already has one tentative meeting and one confirmed meeting scheduled during the same time slot, **GetFreeBusy** returns "2" for that time slot, corresponding to **CdoBusy**. **CdoFree** is not returned unless the entire time slot is free of commitments.

If an address entry represents a distribution list, the status of its individual members cannot be returned to you. A meeting request should be sent only to single messaging users. You can determine if a messaging user is a distribution list by checking its **DisplayType** property.

ID Property (AddressEntry Object)

Group

The **ID** property returns the unique identifier of the AddressEntry object as a string. Read-only.

Syntax

objAddressEntry.**ID**

Data Type

String

Remarks

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

Although the AddressEntry and Recipient objects are not identical objects in the CDO Library, they represent the same underlying MAPI messaging user object, and the address entry's **ID** property is equal to the recipient's **ID** property. This can be used to advantage, for example, when adding an existing AddressEntry object to a Recipients collection. You can use the address entry's **ID** property as the *entryID* parameter to the **Add** method.

The **ID** property corresponds to the MAPI property PR_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this AddressEntry object and the *property* parameter of the **RenderProperty** method to **CdoPR_ENTRYID**.

Example

This code fragment copies information from an AddressEntry object to a Recipient object:

```
' Function: Recipients_Add_EntryID
' Purpose: Add a new recipient to the collection using AddressEntry ID
Function Recipients_Add_EntryID()
Dim strID As String          ' ID from Message.Sender
Dim strName As String        ' Name from Message.Sender
Dim objNewMsg As Message     ' new msg; set its recipient using ID
Dim objNewRecip As Recipient ' new msg recipient; set from ID, Name
' error handling
strID = objOneMsg.Sender.ID  'Address Entry object ID
strName = objOneMsg.Sender.Name
Set objNewMsg = objSession.Outbox.Messages.Add
If objNewMsg Is Nothing Then
    MsgBox "Could not create a new message"
    Exit Function
End If
objNewMsg.Subject = "Sample message from CDO Library"
objNewMsg.Text = "Called Recipients.Add method w/ entryID parameter"
Set objNewRecip = objNewMsg.Recipients.Add( _
                  entryID:=strID, _
                  Name:=strName)
If objNewRecip Is Nothing Then
```

```
    MsgBox "Could not create a new recipient"
    Exit Function
End If
objNewMsg.Update ' make sure new data get saved in MAPI
objNewMsg.Send showDialog:=False
MsgBox "Created a new message in the Outbox and sent it"
Exit Function
' error handling
End Function
```

IsSameAs Method (AddressEntry Object) Group

The **IsSameAs** method returns **True** if the AddressEntry object is the same as the AddressEntry object being compared against.

Syntax

objAddressEntry.**IsSameAs(***objAddrEntry2***)**

objAddressEntry
Required. This AddressEntry object.

objAddrEntry2
Required. The AddressEntry object being compared against.

Remarks

Two AddressEntry objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is available with the Session object's **CompareIDs** method.

Example

This code fragment uses **IsSameAs** to verify that the sender of a message is the same messaging user as is found in the local Global Address List (GAL):

```
Dim objMessage As Message
Dim objSender As AddressEntry
Dim colAEs As AddressEntries
Dim objAEFilt As AddressEntryFilter
Dim objUser As AddressEntry
' assume objMessage received without error
Set objSender = objMessage.Sender
' construct sender's full address
strSender = objSender.Type & ":" & objSender.Address
' get the Global Address List the easy way (0 = CdoAddressListGAL)
Set colAEs = objSession.GetAddressList(0).AddressEntries
Set objAEFilt = colAEs.Filter
objAEFilt.Address  = strSender ' look for sender's full address
For Each objUser in colAEs
  If objUser.IsSameAs(objSender)
    MsgBox "Sender found in GAL"
  End If
Next
```

Manager Property (AddressEntry Object) Group

The **Manager** property returns an AddressEntry object representing the manager of the user corresponding to this address entry. Read-only.

Syntax

objAddressEntry.**Manager**

Data Type

Object (AddressEntry)

Remarks

You can use the **Manager** property when your organization stores management information in the MAPI system. This is possible, for example, with Microsoft® Exchange Server.

If the user's manager is not available in the MAPI system, the **Manager** property returns **Nothing**.

The **Manager** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. The **Name** property of the AddressEntry object returned by the **Manager** property corresponds to the MAPI property PR_MANAGER_NAME. To render just the manager's name, you can set the ObjectRenderer object's **DataSource** property to this AddressEntry object and the *property* parameter of the **RenderProperty** method to **CdoPR_MANAGER_NAME**.

MAPIOBJECT Property (AddressEntry Object) Group

The **MAPIOBJECT** property returns an **IUnknown** pointer to the AddressEntry object. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objAddressEntry.**MAPIOBJECT**

Data Type

Variant (**vbDataObject** format)

Remarks

The **MAPIOBJECT** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **MAPIOBJECT** property is an **IUnknown** object that returns an **IMailUser** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

The **MAPIOBJECT** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Members Property (AddressEntry Object) Group

The **Members** property returns an AddressEntries collection that contains the members of a distribution list. Read-only.

Syntax

objAddressEntry.**Members**

Data Type

Object (AddressEntries collection)

Remarks

The **Members** property returns a collection of all the members of the AddressEntry object if it is a distribution list. You can browse the returned AddressEntries collection, and you can add and delete entries if you have change access.

If the AddressEntry object is not a distribution list, the **Members** property returns **Nothing**. The address entry is a distribution list if its **DisplayType** property is set to **CdoDistList** or **CdoPrivateDistList**.

Although the **Members** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member AddressEntry objects retain their respective read/write or read-only accessibility.

The **Members** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. It could be rendered as a container object by setting the ContainerRenderer object's **DataSource** property to the AddressEntries collection object returned by the **Members** property.

Name Property (AddressEntry Object)

Group

The **Name** property returns or sets the display name or alias of the AddressEntry object as a string. Read/write.

Syntax

objAddressEntry.**Name**

The **Name** property is the default property of an AddressEntry object, meaning that *objAddressEntry* is syntactically equivalent to *objAddressEntry*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The AddressEntry object is typically used as a copy of valid addressing information obtained from the address book after you have called the Recipient object's **Resolve** method. When you obtain the AddressEntry object in this context, you should not modify its properties. To request resolution of a display name, use the Recipient object's **Name** property and **Resolve** method.

The **Name** property corresponds to the MAPI property PR_DISPLAY_NAME. It can be rendered into HTML hypertext using the Active Messaging Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this AddressEntry object and the *property* parameter of the **RenderProperty** method to **CdoPR_DISPLAY_NAME**.

Example

```
' for values of variables, see AddressEntry Address property
' Recipient and AddressEntry display names are the same
    strMsg = "Recipient name = " & objOneRecip.Name
    strMsg = strMsg & "; AddressEntry name = " & objAddrEntry.Name
    MsgBox strMsg
```

See Also

Using Addresses

Type Property (AddressEntry Object)

Group

The **Type** property specifies the address type, such as SMTP, FAX, or X400. Read/write.

Syntax

objAddressEntry.**Type**

Data Type

String

Remarks

The address type is usually a tag referring to the messaging system that routes messages to this address, such as SMTP or FAX.

The AddressEntry object's **Address** and **Type** properties can be combined to form the *full address*, the complete messaging address that appears in the Recipient object's **Address** property using the following syntax:

AddressType:*AddressValue*

The value of the **Type** property is not checked by CDO, but it should contain a string recognized and supported by the address book providers invoked by the current profile. For example, the Microsoft® Exchange private address book (PAB) provider supports a **Type** value of MAPIPDL to denote a private distribution list (PDL).

The **Type** property corresponds to the MAPI property PR_ADDRTYPE. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this AddressEntry object and the *property* parameter of the **RenderProperty** method to **CdoPR_ADDRTYPE**.

Example

See the example for the AddressEntry object's **Address** property.

Update Method (AddressEntry Object)

Group

The **Update** method saves changes to the AddressEntry object in the MAPI system.

Syntax

objAddressEntry.**Update([***makePermanent, refreshObject***])**

objAddressEntry
Required. The AddressEntry object.

makePermanent
Optional. Boolean. A value of **True** indicates that the property cache is flushed and all changes are committed in the underlying address book container. **False** indicates that the property cache is flushed but not committed to persistent storage. The default value is **True**.

refreshObject
Optional. Boolean. A value of **True** indicates that the property cache is reloaded from the values in the underlying address book container. **False** indicates that the property cache is not reloaded. The default value is **False**.

Remarks

Changes to objects are not permanently saved in the MAPI system until you call the **Update** method with the *makePermanent* parameter set to **True**.

For improved performance, CDO caches property changes in private storage and updates either the object or the underlying persistent storage only when you explicitly request such an update. For efficiency, you should make only one call to **Update** with its *makePermanent* parameter set to **True**.

The *makePermanent* and *refreshObject* parameters combine to cause the following changes:

	refreshObject = True	**refreshObject = False**
makePermanent = True	Commit all changes, flush the cache, and reload the cache from the address book.	Commit all changes and flush the cache (default combination).
makePermanent = False	Flush the cache and reload the cache from the address book.	Flush the cache.

Call **Update(False, True)** to flush the cache and then reload the values from the address book.

The user must have the appropriate permission to **Add**, **Delete**, or **Update** an AddressEntry object. Most users have this permission only for their personal address book (PAB).

Example

The following code fragment changes the display name for a valid AddressEntry object:

```
' Function: AddressEntry_Update
' Purpose: Demonstrate the Update method
Function AddressEntry_Update()
Dim objRecipColl As Recipients ' Recipients collection
Dim objNewRecip As Recipient   ' New recipient

' error handling omitted ...
Set objRecipColl = objSession.AddressBook
```

```
If objRecipColl Is Nothing Then
    MsgBox "must select someone from the address book"
    Exit Function
End If
Set objNewRecip = objRecipColl.Item(1)
' above could be objRecipColl(1) since .Item is default property
With objNewRecip.AddressEntry
    .Name = .Name & " the Magnificent"
    .Type = "X.500" ' you can also change the Type
    .Update         ' defaults to makePermanent = True
End With
MsgBox "Updated address entry name: " & objNewRecip.AddressEntry.Name
Exit Function
' error handling omitted
End Function
```

AddressEntryFilter Object

The AddressEntryFilter object specifies criteria for restricting a search on an AddressEntries collection.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.1
Parent objects:	AddressEntries collection
Child objects:	Fields collection
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Address	1.1	String	Read/write
Application	1.1	String	Read-only
Class	1.1	Long	Read-only
Fields	1.1	Field object or Fields collection object	Read-only
Name	1.1	String	Read/write
Not	1.1	Boolean	Read/write
Or	1.1	Boolean	Read/write
Parent	1.1	AddressEntries collection object	Read-only
Session	1.1	Session object	Read-only

Methods

Name	Available in version	Parameters
IsSameAs	1.1	*objAddrEntryFilter2* as **Object**

Remarks

An AddressEntryFilter object with no criteria is created by default for every AddressEntries collection. This means that initially the filter's properties are unset and its child Fields collection is empty. You specify the filter by setting values for its properties, and by adding fields to its Fields collection and setting a value for each added field. You do not need to call any **Update** method when setting filter criteria.

The filter is invoked when the AddressEntries collection is traversed with the **Get** methods or the Microsoft® Visual Basic® **For Each** construction. Each field participates in a MAPI search restriction comparing the field's **Value** property against the value of the AddressEntry object's property specified by the field's **ID** property.

For fields of data type other than **String**, the MAPI search restriction type is RES_PROPERTY with relational operator RELOP_EQ. For fields of data type **String**, the restriction type is RES_CONTENT with fuzzy level options FL_SUBSTRING, FL_IGNORECASE, and FL_LOOSE. However, the following MAPI properties are compared using FL_PREFIX instead of FL_SUBSTRING:

PR_ACCOUNT
PR_BUSINESS_ADDRESS_CITY

PR_COMPANY_NAME
PR_DEPARTMENT_NAME
PR_DISPLAY_NAME
PR_GIVEN_NAME
PR_OFFICE_LOCATION
PR_SURNAME
PR_TITLE

If the underlying messaging system does not support the search criteria specified by the filter fields, the **Get** methods return **CdoE_TOO_COMPLEX**.

The results of the individual restrictions are normally **AND**ed together to form the final filter value. You can change this by setting the **Or** property, which causes all the results to be **OR**ed instead of **AND**ed. You can also set the **Not** property to specify that the result of each individual restriction is to be negated before being **AND**ed or **OR**ed into the final filter value.

The address entry filter affects traversals of the AddressEntries collection using the Visual Basic **For Each** statement, the **Get** methods, or the Visual Basic **For … Next** construction. These accesses return an AddressEntry.

The AddressEntryFilter object is persistent within its parent AddressEntries collection. It is not deleted even when it is released, and it remains attached to the AddressEntries collection until the collection's **Filter** property is set to **Nothing** or the collection is itself released. You can use the following code to clear an address entry filter of all of its previous settings and reset it to its default state of no criteria:

```
objAddrEntsColl.Filter = Nothing ' filter now invalidated and cleared
Set objAddrEntFilt = objAddrEntsColl.Filter ' new valid empty filter
```

If an address book container is being rendered with a CDO rendering application, the AddressEntries collection and the address entry filter are instantiated according to the specifications in the TableView object being applied to the address book container. The AddressEntryFilter object inherits the restriction specified in the view. An inherited filter can be used without modification, but it cannot be read or changed by the rendering application. Writing any property on an inherited filter disinherits it and refreshes the AddressEntries collection. This means that the collection is reinstantiated with a new address entry filter specifying only the property just written. This new filter, however, is no longer inherited, and the application can read its properties and set additional restrictions within it.

Example

This code fragment specifies that the address entry filter on the personal address book (PAB) should pass only AddressEntry objects that are remote users **OR** that have a fax address:

```
Dim objThisPAB As AddressList           ' Personal address book
Dim objAddrEntFilt As AddressEntryFilter
Dim propTag As Long                     ' MAPI property tag
Dim dispType As Long                    ' MAPI display type

Set objThisPAB = objSession.AddressLists("Personal AddressBook")
' ... validate AddressList object ...
Set objAddrEntFilt = objThisPAB.AddressEntries.Filter
' ... validate AddressEntryFilter object ...
propTag = &H39000003 ' VB4.0: propTag = CdoPR_DISPLAY_TYPE
dispType = 6         ' VB4.0: dispType = CdoRemoteUser
objAddrEntFilt.Fields(propTag) = dispType
objAddrEntFilt.Address = "fax:" ' case-insensitive substring match
objAddrEntFilt.Or = True ' OR results together instead of AND
```

Address Property (AddressEntryFilter Object) Group

The **Address** property specifies the *full address* for the AddressEntry object being filtered. Read/write.

Syntax

objAddressEntryFilter.**Address**

Data Type

String

Remarks

The AddressEntryFilter object's **Address** property is a concatenation of the address type and messaging address in the following format:

AddressType:*AddressValue*

where *AddressType* and *AddressValue* represent the AddressEntry object's **Type** and **Address** properties.

The AddressEntryFilter object's **Address** property corresponds to a combination of the MAPI properties PR_ADDRTYPE and PR_EMAIL_ADDRESS. It represents the *full address*, that is, the complete messaging address used by the MAPI system.

The **Address** property can be copied from the **Address** property of a Recipient. The advantage of doing this is that the value of the Recipient object's **Address** property has already been computed by CDO from its **Name** property and the **Resolve** method.

Fields Property (AddressEntryFilter Object) Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objAddressEntryFilter.**Fields**

objAddressEntryFilter.**Fields(***index***)**

objAddressEntryFilter.**Fields(***proptag***)**

objAddressEntryFilter.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the Fields collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with an AddressEntryFilter object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The fields that have been set in the Fields collection specify the filter, together with any other AddressEntryFilter properties that have been set.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of a MAPI property using either its name or its MAPI property tag. For access with the property tag, use *objAddressEntryFilter*.**Fields(***proptag***)**, where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_POSTAL_ADDRESS**. To access a named property, use *objAddressEntryFilter*.**Fields(***name***)**, where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

IsSameAs Method (AddressEntryFilter object) Group

The **IsSameAs** method returns **True** if the AddressEntryFilter object is the same as the AddressEntryFilter object being compared against.

Syntax

objAddressEntryFilter.**IsSameAs(***objAddrEntryFilter2***)**

objAddressEntryFilter
Required. This AddressEntryFilter object.

objAddrEntryFilter2
Required. The AddressEntryFilter object being compared against.

Remarks

Two AddressEntryFilter objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

Name Property (AddressEntryFilter Object) Group

The **Name** property specifies a value for use in an ANR (ambiguous name resolution) restriction on an AddressEntry object. Read/write.

Syntax

objAddressEntryFilter.**Name**

The **Name** property is the default property of an AddressEntryFilter object, meaning that *objAddressEntryFilter* is syntactically equivalent to *objAddressEntryFilter*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Name** property contains an ANR string that can be compared against each AddressEntry object using a provider-defined algorithm. The property or properties used in the comparison are chosen by the provider as part of the algorithm; the PR_DISPLAY_NAME property is the most commonly used.

The **Name** property corresponds to the MAPI property PR_ANR.

Example

This code fragment specifies that the address entry filter should pass all AddressEntry objects that contain any resolution of the string “pet”, such as “Peter”, “Petra”, “Peterson”, and “pet lovers”:

```
Dim colAEs As AddressEntries
Dim objAEFilt As AddressEntryFilter
Dim objAEpet As AddressEntry
' ... validate AddressEntries collection ...
Set objAEFilt = colAEs.Filter
' ... validate AddressEntry object ...
objAEFilt.Name = "pet"
For Each objAEpet in colAEs
  MsgBox "Found " & objAEpet ' .Name is default property
Next
```

Not Property (AddressEntryFilter Object) Group

The **Not** property specifies that all restriction values are to be negated before being **AND**ed or **OR**ed to specify the address entry filter. Read/write.

Syntax

objAddressEntryFilter.**Not**

Data Type

Boolean

Remarks

If the **Not** property is **False**, the restriction values are treated normally. If it is **True**, each value is toggled (between **True** and **False**) before being used.

Or Property (AddressEntryFilter Object)

Group

The **Or** property specifies that the restriction values are to be **OR**ed instead of **AND**ed to specify the address entry filter. Read/write.

Syntax

objAddressEntryFilter.**Or**

Data Type

Boolean

Remarks

If the **Or** property is **False**, all the restriction values are **AND**ed together. If it is **True**, the values are **OR**ed together.

AddressList Object

The AddressList object supplies a list of address entries to which a messaging system can deliver messages.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.1
Parent objects:	AddressLists collection
Child objects:	AddressEntries collection Fields collection
Default property:	**Name**

Properties

Name	Available in version	Type	Access
AddressEntries	1.1	AddressEntries collection object	Read-only
Application	1.1	String	Read-only
Class	1.1	Long	Read-only
Fields	1.1	Field object or Fields collection object	Read-only
ID	1.1	String	Read-only
Index	1.1	Long	Read-only
IsReadOnly	1.1	Boolean	Read-only
Name	1.1	String	Read-only
Parent	1.1	AddressLists collection object	Read-only
Session	1.1	Session object	Read-only

Methods

Name	Available in version	Parameters
IsSameAs	1.1	*objAddrList2* as **Object**

Remarks

An AddressList object represents one address book container available under the MAPI address book hierarchy for the current session. The entire hierarchy is available through the parent AddressLists collection.

An AddressList object can be rendered into HTML hypertext as the parent of an AddressEntries collection, using the ContainerRenderer object. The individual properties that can be rendered with the **RenderProperty** method are indicated in the AddressList object property descriptions.

AddressEntries Property (AddressList Object) Group

The **AddressEntries** property returns a single AddressEntry object or an AddressEntries collection object. Read-only.

Syntax

Set *objAddrEntriesColl* **=** *objAddressList.***AddressEntries**

Set *objOneAddrEntry* **=** *objAddressList.***AddressEntries(***index***)**

objAddrEntriesColl
Object. An AddressEntries collection object.

objAddressList
Object. The AddressList object.

objOneAddrEntry
Object. A single AddressEntry object.

index
Long. Specifies the number of the address entry within the AddressEntries collection. Ranges from 1 to the size of the collection.

Data Type

Object (AddressEntry or AddressEntries collection)

Remarks

An AddressEntries collection is a large collection, and its size cannot necessarily be determined from its **Count** property. It is not safe to use the *index* parameter with the **AddressEntries** property unless an indexed loop has determined that an address entry at that position in the collection actually exists.

Although the **AddressEntries** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member AddressEntry objects retain their respective read/write or read-only accessibility.

The **AddressEntries** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. If a single AddressEntry object is returned, it could be rendered as an object by setting the ObjectRenderer object's **DataSource** property to the AddressEntry object returned by the **AddressEntries** property. If an AddressEntries collection is returned, it could be rendered as a container object by setting the ContainerRenderer object's **DataSource** property to the AddressEntries collection object returned by the **AddressEntries** property.

Fields Property (AddressList Object)

Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objAddressList.**Fields**

objAddressList.**Fields(***index***)**

objAddressList.**Fields(***proptag***)**

objAddressList.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with an AddressList object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of any MAPI property using either a name or a MAPI property tag. For access with the property tag, use *objAddressList*.**Fields(***proptag***)**, where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_DISPLAY_NAME**. To access a named property, use *objAddressList*.**Fields(***name***)**, where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

The **Fields** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

ID Property (AddressList Object) Group

The **ID** property returns the unique identifier of the AddressList object as a string. Read-only.

Syntax

objAddressList.**ID**

Data Type

String

Remarks

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

The **ID** property corresponds to the MAPI property PR_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ContainerRenderer object if the container renderer's **DataSource** property is set to this AddressList object's child AddressEntries collection. To specify this, set the *property* parameter of the **RenderProperty** method to **CdoPR_ENTRYID**.

Example

This code fragment displays the value of the AddressList object's permanent identifier:

```
Dim strAddressListID as String ' hex string version of ID
Dim objAddressList as AddressList ' assume valid for this example
strAddressListID = objAddressList.ID ' global variable
MsgBox "Address Book ID = " & strAddressListID
```

Index Property (AddressList Object)

Group

The **Index** property returns the index number for the AddressList object within the AddressLists collection. Read-only.

Syntax

objAddressList.**Index**

Data Type

Long

Remarks

The **Index** property indicates this object's position within the parent AddressLists collection. It can be saved and used later with the collection's **Item** property to reselect the same address list in the collection.

The first object in the collection has an **Index** value of 1.

The **Index** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

```
Function AddressListsGetByIndex()
Dim rqIndex As Long ' requested index value within collection
Dim svIndex As Long ' saved index value within collection
Dim objOneAddressList As AddressList ' requested address list
' set error handler here
If objAddressListsColl Is Nothing Then
    MsgBox "Must select a valid AddressLists collection"
    Exit Function
End If
If 0 = objAddressListsColl.Count Then
    MsgBox "Must select collection with 1 or more address lists"
    Exit Function
End If
' get rqIndex by passed parameter or by prompting ...
Set objOneAddressList = objAddressListsColl.Item(rqIndex)
If objOneAddressList Is Nothing Then
    MsgBox "AddressList could not be selected"
    Exit Function
End If
MsgBox "Selected address list: " & objOneAddressList.Name
svIndex = objOneAddressList.Index ' save index for later
' get same AddressList object later ...
Set objOneAddressList = objAddressListsColl.Item(svIndex)
If objOneAddressList Is Nothing Then
    MsgBox "Error: could not reselect the address list"
Else
    MsgBox "Reselected address list (" & svIndex & _
           ") using saved index: " & objOneAddressList.Name
End If
Exit Function
```

IsReadOnly Property (AddressList Object) Group

The **IsReadOnly** property indicates that the AddressList object cannot be modified. Read-only.

Syntax

objAddressList.**IsReadOnly**

Data Type

Boolean

Remarks

The **IsReadOnly** property refers to adding and deleting the entries in the address book container represented by the AddressList object. The property is **True** if no entries can be added or deleted, and **False** if the container can be modified, that is, if address entries can be added to and deleted from the container.

IsReadOnly refers to the address book entries in the context of the address book container. It does not indicate whether the contents of the individual entries themselves can be modified.

The **IsReadOnly** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

IsSameAs Method (AddressList Object)

Group

The **IsSameAs** method returns **True** if the AddressList object is the same as the AddressList object being compared against.

Syntax

objAddressList.**IsSameAs(***objAddrList2***)**

objAddressList
Required. This AddressList object.

objAddrList2
Required. The AddressList object being compared against.

Remarks

Two AddressList objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

Name Property (AddressList Object)

Group

The **Name** property returns the name of the AddressList object as a string. Read-only.

Syntax

objAddressList.**Name**

The **Name** property is the default property of an AddressList object, meaning that *objAddressList* is syntactically equivalent to *objAddressList*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Name** property corresponds to the MAPI property PR_DISPLAY_NAME for the address book container represented by the AddressList object. It can be rendered into HTML hypertext using the CDO Rendering ContainerRenderer object if the container renderer's **DataSource** property is set to this AddressList object's child AddressEntries collection. To specify this, set the *property* parameter of the **RenderProperty** method to **CdoPR_DISPLAY_NAME**.

Example

```
Dim objAddressList As AddressList ' assume valid address list object
MsgBox "Address book container name = " & objAddressList.Name
' or could be just objAddressList since .Name is default property
```

AddressLists Collection Object

The AddressLists collection object contains one or more AddressList objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.1
Parent objects:	Session
Child objects:	AddressList
Default property:	**Item**

An AddressLists collection is considered a *small collection*, which means that it supports count and index values that let you access an individual AddressList object through the **Item** property. The AddressLists collection supports the Microsoft® Visual Basic® **For Each** statement. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.1	String	Read-only
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Item	1.1	AddressList object	Read-only
Parent	1.1	Session object	Read-only
Session	1.1	Session object	Read-only

Methods

(None.)

Remarks

The AddressLists collection provides access to the root of the MAPI address book hierarchy for the current session. You can obtain the collection through the parent Session object's **AddressLists** property.

You can use the **Count** and **Item** properties to traverse the hierarchy for all available address books, or you can use the **Item** property to select a particular AddressList object. The type of access you obtain depends on the access granted to you by each available address book provider.

Each AddressList object represents one MAPI address book container. The AddressLists collection contains only those AddressList objects that contain recipients, and not those containing only subcontainers. For more information on the different types of containers, see the description of the PR_CONTAINER_FLAGS property in the *MAPI Programmer's Reference*.

Count Property (AddressLists Collection) Group

The **Count** property returns the number of AddressList objects in the collection. Read-only.

Syntax

objAddrListsColl.**Count**

Data Type

Long

Example

This code fragment uses the **Count** and **Item** properties to display the name of every valid AddressList object in the collection:

```
Dim i As Integer ' loop counter
Set Hierarchy = MAPI.Session.AddressLists
' make sure collection is valid
If Hierarchy Is Nothing Then
    ' Exit "Address book hierarchy is invalid"
End If
' see if hierarchy is empty
i = Hierarchy.Count ' count of address lists in hierarchy
If 0 = i Then
    MsgBox "No available address books"
    ' exit ...
End If
' display names of all valid address book containers
For i = 1 To Hierarchy.Count Step 1
    If Nothing = Hierarchy.Item(i) Then
        MsgBox "Address List " & i & " is not valid"
    Else
        MsgBox "Address List " & i & ": " Hierarchy(i).Name
    End If
Next i
```

Item Property (AddressLists Collection)

Group

The **Item** property returns a single AddressList object from the AddressLists collection. Read-only.

Syntax

objAddrListsColl.**Item(***index***)**

objAddrListsColl.**Item(***name***)**

index
A long integer ranging from 1 to *objAddrListsColl*.**Count**.

name
A string representing the value of the **Name** property of an AddressList object.

The **Item** property is the default property of an AddressLists collection, meaning that *objAddrListsColl***(***index***)** is syntactically equivalent to *objAddrListsColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (AddressList)

Remarks

The **Item** property works like an accessor property for small collections.

The **Item(***index***)** syntax selects an arbitrary AddressList object within the AddressLists collection. The example in the **Count** property shows how these two properties can be used together to traverse the collection.

The **Item(***name***)** syntax returns the first AddressList object whose **Name** property matches the string specified by *name*.

Although the **Item** property itself is read-only, the AddressList object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

AppointmentItem Object

The AppointmentItem object represents an appointment in a calendar folder.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.2
Parent objects:	Messages collection
Child objects:	Attachments collection Fields collection Recipients collection RecurrencePattern
Default property:	**Subject**

The AppointmentItem object is a subclass of the Message object and exposes all the same properties and methods, except for the Message object's **Forward**, **Reply**, and **ReplyAll** methods. In the following tables of properties and methods, those that are common with the Message object are linked to their descriptions for the Message object. Only the properties and methods unique to the AppointmentItem object are described in this section.

Properties

Name	Available in version	Type	Access
AllDayEvent	1.2	Boolean	Read/write
Application	1.2	String	Read-only
Attachments	1.2	Attachment object or Attachments collection object	Read-only
BusyStatus	1.2	Long	Read/write
Categories	1.2	String array	Read/write
Class	1.2	Long	Read-only
Conversation	1.2	(Obsolete. Do not use.)	Read/write
ConversationIndex	1.2	String	Read/write
ConversationTopic	1.2	String	Read/write
DeliveryReceipt	1.2	Boolean	Read/write
Duration	1.2	Long	Read-only
Encrypted	1.2	Boolean	Read/write
EndTime	1.2	Variant (**vbDate** format)	Read/write
Fields	1.2	Field object or Fields collection object	Read-only
FolderID	1.2	String	Read-only
ID	1.2	String	Read-only
Importance	1.2	Long	Read/write
IsRecurring	1.2	Boolean	Read-only

Location	1.2	String	Read/write
MAPIOBJECT	1.2	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
MeetingResponseStatus	1.2	Long	Read/write
MeetingStatus	1.2	Long	Read/write
Organizer	1.2	AddressEntry object	Read-only
Parent	1.2	Messages collection object	Read-only
ReadReceipt	1.2	Boolean	Read/write
Recipients	1.2	Recipients object or Recipients collection object	Read/write
ReminderMinutesBeforeStart	1.2	Long	Read/write
ReminderSet	1.2	Boolean	Read/write
ReplyTime	1.2	Variant (**vbDate** format)	Read/write
ResponseRequested	1.2	Boolean	Read/write
Sender	1.2	AddressEntry object	Read/write
Sensitivity	1.2	Long	Read/write
Sent	1.2	Boolean	Read/write
Session	1.2	Session object	Read-only
Signed	1.2	Boolean	Read/write
Size	1.2	Long	Read-only
StartTime	1.2	Variant (**vbDate** format)	Read/write
StoreID	1.2	String	Read-only
Subject	1.2	String	Read/write
Submitted	1.2	Boolean	Read/write
Text	1.2	String	Read/write
TimeCreated	1.2	Variant (**vbDate** format)	Read-only
TimeExpired	1.2	Variant (**vbDate**	Read/write

		format)	
TimeLastModified	1.2	Variant (**vbDate** format)	Read-only
TimeReceived	1.2	Variant (**vbDate** format)	Read/write
TimeSent	1.2	Variant (**vbDate** format)	Read/write
Type	1.2	String	Read/write
Unread	1.2	Boolean	Read/write

Methods

Name	Available in version	Parameters
ClearRecurrencePattern	1.2	(none)
CopyTo	1.2	*folderID* as **String**, (optional) *storeID* as **String**
Delete	1.2	(none)
GetRecurrencePattern	1.2	(none)
IsSameAs	1.2	*objMessage2* as **Object**
MoveTo	1.2	*folderID* as **String**, (optional) *storeID* as **String**
Options	1.2	(optional) *parentWindow* as **Long**
Respond	1.2	*RespondType* as **Long**
Send	1.2	(optional) *saveCopy* as **Boolean**, (optional) *showDialog* as **Boolean**, (optional) *parentWindow* as **Long**
Update	1.2	(optional) *makePermanent* as **Boolean**, (optional) *refreshObject* as **Boolean**

Remarks

An AppointmentItem object is distinguished from a Message object by its **Type** property containing IPM.Appointment.

New AppointmentItem objects can only be created by using the **Add** method on a Messages collection obtained from a Folder object reserved for calendar data:

```
Dim objSession As Session
Dim objCalendarFolder As Folder
Dim objAppointments As Messages
Dim objNewAppointment As AppointmentItem

Set objCalendarFolder = objSession.GetDefaultFolder _
                                   (CdoDefaultFolderCalendar)
Set objAppointments = objCalendarFolder.Messages
Set objNewAppointment = objAppointments.Add
```

An appointment can be obtained from its parent Messages collection using the collection's **Item** property. To get to the Messages collection in a folder, use the Folder object's **Messages** property. If you know an appointment's unique identifier, you can obtain it directly from the Session object's

GetMessage method.

You can apply a MessageFilter object to a Messages collection containing appointments. However, the current version of CDO only supports filtering on the **EndTime** and **StartTime** properties. An attempt to filter on any other properties, including the inherited Message object properties, returns **CdoE_TOO_COMPLEX**.

You can turn an appointment into a meeting by setting its **MeetingStatus** property to **CdoMeeting** and sending it to one or more recipients. The appointment becomes a meeting as of the moment you call its **Send** method, at which time CDO instantiates a MeetingItem object and identifies you in the appointment's **Organizer** property. The MeetingItem object becomes a member of the Messages collection of each recipient's Inbox. They can treat it programmatically like the Message objects in the collection.

You should not send a meeting request for an appointment to any recipient that represents a distribution list, because the status of its individual members cannot be returned to you. You should only send the meeting request to single messaging users. You can determine if a messaging user is a distribution list by checking the **DisplayType** property of the AddressEntry object representing that user.

To cancel a meeting, you set the **MeetingStatus** property to **CdoMeetingCanceled** and send it to all the recipients. Once you have sent the cancellation you can release the underlying AppointmentItem object, typically by using the **Set** statement to assign it to **Nothing**. Note that simply releasing the appointment does not cancel the meeting, and in fact can produce unexpected behavior. You should always cancel first. Only the organizer of a meeting can cancel or release it.

You can cause an appointment or meeting to become recurring by calling its **GetRecurrencePattern** method, which sets the **IsRecurring** property to **True** and returns a child RecurrencePattern object describing the recurrence characteristics. At first the RecurrencePattern object is populated with the default values indicated in its property descriptions, but you can change them as desired. The appointment or meeting can be restored to nonrecurring status with the **ClearRecurrencePattern** method, which also resets **IsRecurring** to **False**.

Making an appointment recurring does not create any additional AppointmentItem objects for the recurrences. An individual recurrence can be instantiated by using a MessageFilter object to restrict **CdoPR_START_DATE** and **CdoPR_END_DATE** to the start and end of the desired occurrence, and then calling the Messages collection's **GetFirst** method.

The purpose of instantiating an individual recurrence is to edit it and make it different from other recurrences in the series. If you intend to change its **StartTime** or **EndTime** property, you should keep these rules in mind:

- Two instances of a recurring appointment must not be on the same day.
- An instance must not be moved before a previous instance or after a subsequent instance.
- Instances must not be overlapped in time.

If these rules are not followed, the next call to **Send** or **Update** returns an error.

An individual recurrence's **GetRecurrencePattern** method returns the same RecurrencePattern object as does the original appointment's **GetRecurrencePattern**. However, the individual recurrence is not the parent of the recurrence pattern. The original AppointmentItem object is the parent and in fact is obtained from the RecurrencePattern object through its **Parent** property:

```
Dim objRecAppt As AppointmentItem ' an individual recurrence
Dim objOrigAppt As AppointmentItem ' the original appointment
Set objOrigAppt = objRecAppt.GetRecurrencePattern.Parent
```

To edit an entire recurring series of appointments, you modify the appropriate properties on either the original AppointmentItem object or its child RecurrencePattern object. To edit an individual recurrence

only, you instantiate it and modify its AppointmentItem properties. All changes take effect when you call the appointment's **Send** or **Update** method.

The original appointment's **StartTime**, **EndTime**, and **AllDayEvent** properties are disabled whenever its **IsRecurring** property is **True**. Any attempt to access them while in this state returns **CdoE_NO_SUPPORT**. You must use the recurrence pattern's **PatternStartDate**, **PatternEndDate**, **StartTime**, and **EndTime** properties to edit a recurring series.

An AppointmentItem object can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to the AppointmentItem object itself. The individual properties that can be rendered with the **RenderProperty** method are indicated in the AppointmentItem and Message object property descriptions.

One or more appointments can also be rendered by the CDO Rendering CalendarView object's **RenderAppointments** method. The ContainerRenderer object's **DataSource** property must be set to the parent Messages collection and its **CurrentView** property to a calendar view.

An AppointmentItem object can also be rendered as the parent of a Recipients collection, using the ContainerRenderer object. The individual properties that can be rendered with the **RenderProperty** method are indicated in the AppointmentItem and Message object property descriptions.

AllDayEvent Property (AppointmentItem Object) Group

The **AllDayEvent** property indicates whether this appointment is an all-day or multiple-day event. Read/write.

Syntax

objAppointment.**AllDayEvent**

Data Type

Boolean

Remarks

The **AllDayEvent** property contains **True** if the appointment takes up one or more entire days in the calendar without any free blocks. It contains **False** if the appointment is limited to a specified start time and a duration that is not a multiple of 24 hours.

If you change **AllDayEvent** from **False** to **True**, the appointment's **StartTime** is automatically reset to the midnight (00:00) preceding the current starting date/time, and **EndTime** is reset to the midnight following the current ending date/time. The resulting **Duration** is a nonzero multiple of 24 hours. If the appointment underlies a meeting, these calculations are performed in the current time zone of the appointment's organizer.

If you subsequently change **StartTime** or **EndTime**, you are not required to set them to midnight, but you must set them to the same time of day, such that their values differ by a nonzero multiple of 24 hours. If you do not comply with this restriction while **AllDayEvent** is **True**, you get a return of **CdoE_INVALID_OBJECT** when you call the appointment's **Update** method.

If you change **AllDayEvent** from **True** to **False**, the appointment's **StartTime** is automatically reset to the current value of the "BusinessDayStartTime" option on the current starting date, and **EndTime** is reset to 30 minutes past "BusinessDayStartTime" on the current ending date. Thus the appointment still covers the same number of days as it did before. The "BusinessDayStartTime" option can be obtained from the Session object's **GetOption** method and altered with the **SetOption** method. If **AllDayEvent** was already **False**, **StartTime** and **EndTime** are not modified.

If an appointment is viewed through Microsoft Schedule+ and its **StartTime** and **EndTime** are a multiple of 24 hours apart, its **AllDayEvent** property is forced **True** by Schedule+. The starting and ending times are not changed.

If you make this appointment recurring by calling its **GetRecurrencePattern** method, its **StartTime**, **EndTime**, and **AllDayEvent** properties are disabled, and any attempt to access them returns **CdoE_NO_SUPPORT**. Calling **ClearRecurrencePattern** returns the appointment to nonrecurring status, and these properties can once again be accessed. However, their values may have changed if the corresponding properties on the RecurrencePattern object were edited while the appointment was recurring.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

BusyStatus Property (AppointmentItem Object) Group

The **BusyStatus** property returns or sets the busy status of this messaging user for this appointment. Read/write.

Syntax

objAppointment.**BusyStatus**

Data Type

Long

Remarks

The **BusyStatus** property can have exactly one of the following values:

BusyStatus value	Decimal value	Description
CdoFree	0	This messaging user has no conflicting commitments during the time span of this appointment.
CdoTentative	1	This messaging user has at least one tentative commitment during the time span of this appointment.
CdoBusy	2	This messaging user has at least one confirmed commitment during the time span of this appointment.
CdoOutOfOffice	3	This messaging user is to be considered out-of-office (OOF) for at least part of the time span of this appointment.

If two or more conflicting commitments are present during the time span of this appointment, the highest applicable decimal value is returned, representing the most committed state. For example, if the user has one tentative commitment and one confirmed commitment during the time span, the **BusyStatus** property returns **CdoBusy**, that is, the highest level of commitment.

If an appointment is viewed through Microsoft Schedule+ and its **BusyStatus** property has a value of **CdoTentative** or **CdoOutOfOffice**, it is handled by Schedule+ as if it were **CdoBusy**.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

ClearRecurrencePattern Method (AppointmentItem Object) Group

The **ClearRecurrencePattern** method removes any recurrence settings from this appointment.

Syntax

objAppointment.**ClearRecurrencePattern( )**

Remarks

The **ClearRecurrencePattern** method sets the **IsRecurring** property to **False** and dissociates this AppointmentItem object from any RecurrencePattern object it might have had assigned to it.

ClearRecurrencePattern calls **Release** on the RecurrencePattern object. This is normally the final **Release** because the RecurrencePattern object applies only to its parent appointment and cannot be used for any other AppointmentItem object. The RecurrencePattern object is removed from memory in response to its final **Release**.

The **ClearRecurrencePattern** method is only valid on a nonrecurring appointment or an appointment originating a recurring series. An attempt to call it on an individual recurrence in a series returns **CdoE_NOT_SUPPORTED**.

The effect of the **ClearRecurrencePattern** operation is not permanent until you call the **Update** method on the AppointmentItem object.

Calling **ClearRecurrencePattern** does not immediately invalidate references to individual recurrences that have been instantiated. You can still access the properties and methods of an individual recurrence, but when you call **Update** to make your changes persistent, you get a return of **CdoE_INVALID_OBJECT**.

Duration Property (AppointmentItem Object) Group

The **Duration** property returns the duration of this appointment in minutes. Read-only.

Syntax

objAppointment.**Duration**

Data Type

Long

Remarks

The **Duration** property contains the number of minutes the appointment is to last. The minimum value is 0 and the maximum value is 1,490,000, which is treated as infinity. Exceeding these limits can result in a return of **CdoE_INVALID_PARAMETER**. The default value of **Duration** is 30 minutes.

Since **Duration** is read-only, you must change the **StartTime** or **EndTime** property to cause a new value to be calculated for **Duration**.

Among its possible values, the **Duration** property can be any multiple of 24 hours that does not exceed its maximum value. If an appointment has such a value for **Duration**, Microsoft® Schedule+ interprets it as lasting exactly 24 hours. That is, Schedule+ treats **Duration** values of 0, 1440, 2880, 4320, and so on as if they were 1440.

Example

This code fragment causes CDO to calculate a value of 90 minutes for the **Duration** property of an appointment:

```
Dim objAppt As Appointment
' ...
objAppt.EndTime = DateAdd("n", 90, objAppt.StartTime) ' n for minutes!
```

EndTime Property (AppointmentItem Object) Group

The **EndTime** property returns or sets the ending date/time of this appointment. Read/write.

Syntax

objAppointment.**EndTime**

Data Type

Variant (**vbDate** format)

Remarks

The **EndTime** property uses both the date and the time component of the **vbDate** format. Its default value is the current time rounded up to the next half hour.

The **EndTime** property ignores seconds and truncates the time component to the minute.

The value of **EndTime** must be greater than that of the **StartTime** property. If you make settings that violate this constraint, your next call to the **Update** method returns **CdoE_INVALID_OBJECT**.

If you change the value of **EndTime**, **Duration** is automatically recalculated from the new **EndTime** and unchanged **StartTime** values.

You can apply a MessageFilter object to a Messages collection containing AppointmentItem objects and filter them on the **StartTime** and **EndTime** properties. The filter passes appointments starting on or before the date/time in **CdoPR_START_DATE** and ending on or after the date/time in **CdoPR_END_DATE**.

If you make this appointment recurring by calling its **GetRecurrencePattern** method, its **StartTime**, **EndTime**, and **AllDayEvent** properties are disabled, and any attempt to access them returns **CdoE_NO_SUPPORT**. Calling **ClearRecurrencePattern** returns the appointment to nonrecurring status, and these properties can once again be accessed. However, their values may have changed if the corresponding properties on the RecurrencePattern object were edited while the appointment was recurring.

The appointment's **StartTime** and **EndTime** properties are always held internally in UTC (Coordinated Universal Time, also known as GMT). By contrast, the RecurrencePattern object's **StartTime** and **EndTime** properties are always held internally in the organizer's current time zone. However, all these properties are converted to the local messaging user's current time zone whenever they are displayed or read programmatically.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

The **EndTime** property corresponds to the MAPI property PR_END_DATE.

GetRecurrencePattern Method (AppointmentItem Object) Group

The **GetRecurrencePattern** method returns a RecurrencePattern object defining the recurrence attributes of an appointment.

Syntax

Set *objRecurPatt* = *objAppointment*.**GetRecurrencePattern( )**

objRecurPatt
On successful return, contains the RecurrencePattern object.

objAppointment
Required. This AppointmentItem object.

Remarks

If the appointment had already been specified as recurring, the **GetRecurrencePattern** method returns the RecurrencePattern object containing the current recurrence characteristics. If the appointment was previously nonrecurring, it is made recurring and **GetRecurrencePattern** returns a new RecurrencePattern object populated with the default values indicated in its property descriptions.

The **IsRecurring** property is set to **True** when the **GetRecurrencePattern** method is called.

Note You cannot use **GetRecurrencePattern** to test whether an appointment is recurring, because it always returns a RecurrencePattern object and forces the appointment to be recurring. Instead, you should test for recurrence using the **IsRecurring** property.

You can use the **ClearRecurrencePattern** method to return the appointment to nonrecurring status.

Example

This code fragment makes an appointment recurring and changes its **Subject** property. It is equally valid for a nonrecurring appointment, an appointment originating a recurring series, and an individual recurrence in that series. If *objAppt* is nonrecurring before executing this fragment, it becomes the originator of a recurring series. If it is already an originator, doing *objOrig*.**Update** is equivalent to doing *objAppt*.**Update**.

```
Dim objAppt, objOrig As AppointmentItem
Dim objRecPatt As RecurrencePattern
' objAppt can be solitary, an originator, or a recurrence
Set objRecPatt = objAppt.GetRecurrencePattern
With objRecPatt
   ' set recurrence pattern properties as desired
End with
Set objOrig = objRecPatt.Parent
With objOrig
  .Subject = "New subject for entire recurring series"
  .Update ' necessary for any changes to take effect
End with
```

Note If *objAppt* in the preceding fragment is an individual recurrence, its properties are not changed by *objOrig*.**Update**. This is because changes you make in the original appointment only affect recurrences instantiated after the update. Because *objAppt* was already instantiated before the update, its **Subject** property is not updated when *objOrig*.**Subject** is. To avoid this problem, you can refresh *objAppt* by repeating the **Set** statement that instantiated it in the first place.

IsRecurring Property (AppointmentItem Object) Group

The **IsRecurring** property indicates whether this appointment is specified as recurring. Read-only.

Syntax

objAppointment.**IsRecurring**

Data Type

Boolean

Remarks

The **IsRecurring** property contains **True** if the appointment is recurring and **False** if it is not. **IsRecurring** defaults to **False** in a newly created AppointmentItem object.

IsRecurring is set to **True** when the **GetRecurrencePattern** method is called and to **False** when the **ClearRecurrencePattern** method is called.

Location Property (AppointmentItem Object) Group

The **Location** property returns or sets the location of this appointment. Read/write.

Syntax

objAppointment.**Location**

Data Type

String

Remarks

The **Location** property contains a string representing the specific location in which this appointment is scheduled, such as an office or conference room. It is typically set by the messaging user that creates the MeetingItem object from the appointment. The initiating messaging user is available through the **Organizer** property.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

The **Location** property corresponds to the MAPI property PR_OFFICE_LOCATION.

MeetingResponseStatus Property (AppointmentItem Object) Group

The **MeetingResponseStatus** property returns or sets the overall status of this appointment for this messaging user. Read/write.

Syntax

objAppointment.**MeetingResponseStatus**

Data Type

Long

Remarks

You turn an appointment into a meeting by setting its **MeetingStatus** property to **CdoMeeting** and sending it to one or more recipients. Their responses to your meeting request come back to you in the form of MeetingItem objects with the **MeetingType** property set to **CdoMeetingResponse**. You can call **GetAssociatedAppointment** on each meeting response and read the returned appointment's **MeetingResponseStatus** property to find out the response of that individual recipient.

The **MeetingResponseStatus** property can have exactly one of the following values:

MeetingResponseStatus value	Decimal value	Description
CdoResponseNone	0	This appointment has not been made into a meeting.
CdoResponseNotResponded	5	This messaging user has not responded to the meeting request.
CdoResponseAccepted	3	This messaging user has responded to the meeting request with a firm acceptance.
CdoResponseDeclined	4	This messaging user has responded to the meeting request with a declination.
CdoResponseTentative	2	This messaging user has responded to the meeting request with a tentative acceptance.
CdoResponseOrganized	1	This messaging user is the organizer, the user that initiated the meeting request.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

MeetingStatus Property (AppointmentItem Object) Group

The **MeetingStatus** property returns or sets the overall meeting status of this appointment. Read/write.

Syntax

objAppointment.**MeetingStatus**

Data Type

Long

Remarks

The **MeetingStatus** property is used to indicate whether this appointment represents a meeting, and if so, what its status is.

MeetingStatus can have exactly one of the following values:

MeetingStatus value	Decimal value	Description
CdoNonMeeting	0	This appointment has been scheduled by this messaging user alone and does not represent a meeting (default value).
CdoMeeting	1	The appointment has been or is to be made into a meeting.
CdoMeetingCanceled	5	The meeting organizer has canceled the meeting.
CdoMeetingReceived	3	The requests for the meeting have been received by the intended attendees.

When an AppointmentItem object is first created, its **MeetingStatus** property contains **CdoNonMeeting**. The appointment becomes a meeting when you set **MeetingStatus** to **CdoMeeting** and send it to one or more recipients. This creates a MeetingItem object for the meeting. The meeting request is usually in your Sent Items folder, and the meeting responses from the recipients appear in your Inbox.

You should not send a meeting request to any recipient that represents a distribution list, because the status of its individual members cannot be returned to you. You should only send the meeting request to single messaging users. You can determine if a messaging user is a distribution list by checking the **DisplayType** property of the AddressEntry object representing that user.

To cancel a meeting, you set the **MeetingStatus** property to **CdoMeetingCanceled** and send it to all the recipients. Once you have sent the cancellation you can release the underlying AppointmentItem object, typically by using the **Set** statement to assign it to **Nothing**. Note that simply releasing the appointment does not cancel the meeting, and in fact can produce unexpected behavior. Only the organizer of a meeting can cancel or release it.

Before you call the appointment's **Send** method, you must set **MeetingStatus** to **CdoMeeting** or

CdoMeetingCanceled. If **MeetingStatus** contains any other value or is not set, **Send** returns **CdoE_NO_SUPPORT**.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

Organizer Property (AppointmentItem Object) Group

The **Organizer** property returns the messaging user that initiated a meeting from this appointment. Read-only.

Syntax

objAppointment.**Organizer**

Data Type

Object (AddressEntry)

Remarks

The **Organizer** property returns an AddressEntry object representing the messaging user that created the MeetingItem object from this appointment.

The **Organizer** property is automatically set at the moment the AppointmentItem object is created.

ReminderMinutesBeforeStart Property (AppointmentItem Object) Group

The **ReminderMinutesBeforeStart** property indicates how many minutes before the start of this appointment a reminder should be issued. Read/write.

Syntax

objAppointment.**ReminderMinutesBeforeStart**

Data Type

Long

Remarks

The **ReminderMinutesBeforeStart** property must contain a positive integer. It is not enabled unless the **ReminderSet** property contains **True**. **ReminderMinutesBeforeStart** defaults to 15 minutes in a newly created AppointmentItem object.

Note If you set the **ReminderMinutesBeforeStart** property on an appointment and then make the appointment into a meeting by sending it to one or more recipients, the value of **ReminderMinutesBeforeStart** for each recipient depends on how that recipient processes the meeting request. If the recipient uses a CDO Library application or Microsoft® Outlook™, your setting of **ReminderMinutesBeforeStart** is preserved. If the recipient uses Microsoft® Schedule+, **ReminderMinutesBeforeStart** is reset to the default value of 15 minutes. In either case, the value can be altered as desired on the recipient's version of the AppointmentItem object.

Schedule+ also resets **ReminderMinutesBeforeStart** to 15 minutes for any recipient that resets **ReminderSet** to **False**.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

ReminderSet Property (AppointmentItem Object) Group

The **ReminderSet** property indicates whether this messaging user is to be reminded of this appointment. Read/write.

Syntax

objAppointment.**ReminderSet**

Data Type

Boolean

Remarks

The **ReminderSet** property contains **True** if a reminder has been set for this appointment and **False** otherwise. **ReminderSet** defaults to **True** in a newly created AppointmentItem object.

The **ReminderMinutesBeforeStart** property is not enabled unless the **ReminderSet** property contains **True**.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

ReplyTime Property (AppointmentItem Object) Group

The **ReplyTime** property returns or sets the date/time by which action on this appointment is expected. Read/write.

Syntax

objAppointment.**ReplyTime**

Data Type

Variant (**vbDate** format)

Remarks

The **ReplyTime** property does not have a default value. If you attempt to read it when it has never been set, it returns **CdoE_NOT_FOUND**.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

The **ReplyTime** property corresponds to the MAPI property PR_REPLY_TIME.

Respond Method (AppointmentItem Object) Group

The **Respond** method returns a MeetingItem object for responding to a meeting request for an appointment.

Syntax

Set *objMeetResp* = *objAppointment*.**Respond(***RespondType***)**

objMeetResp
Object. On successful return, contains a MeetingItem object that can be used to respond to the meeting request.

objAppointment
Required. An AppointmentItem object returned by the **GetAssociatedAppointment** method of a MeetingItem object.

RespondType
Required. Long. The value to send as the response.

Remarks

The **Respond** method prepares a meeting response which can be sent in answer to a meeting request using the **Send** method. The MeetingItem object has as a primary recipient the messaging user that created the requesting MeetingItem object from this appointment. The initiating user is available through the **Organizer** property.

The *RespondType* parameter can have exactly one of the following values:

***RespondType* setting**	**Decimal value**	**Description**
CdoResponseAccepted	3	This messaging user wishes to firmly accept the meeting request.
CdoResponseDeclined	4	This messaging user wishes to decline the meeting request.
CdoResponseTentative	2	This messaging user wishes to tentatively accept the meeting request.

The message class of the response you send depends on the value you specify in the *RespondType* parameter. It is IPM.Schedule.Meeting.Resp.Pos if you accept, IPM.Schedule.Meeting.Resp.Neg if you decline, or IPM.Schedule.Meeting.Resp.Tent if you accept tentatively.

The only AppointmentItem objects on which you can call the **Respond** method are those returned by the **GetAssociatedAppointment** method of a MeetingItem object. An attempt to call **Respond** on any other AppointmentItem object returns **CdoE_NO_SUPPORT**.

You can also call the **Respond** method directly from the MeetingItem object.

Example

See the example for the MeetingItem object's **Respond** method.

ResponseRequested Property (AppointmentItem Object) Group

The **ResponseRequested** property indicates whether a response is requested for this appointment. Read/write.

Syntax

objAppointment.**ResponseRequested**

Data Type

Boolean

Remarks

The **ResponseRequested** property contains **True** if the messaging user that created a MeetingItem object from this appointment wishes a response. It contains **False** if there is no request for a response. **ResponseRequested** defaults to **True**.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

StartTime Property (AppointmentItem Object) Group

The **StartTime** property returns or sets the starting date/time of this appointment. Read/write.

Syntax

objAppointment.**StartTime**

Data Type

Variant (**vbDate** format)

Remarks

The **StartTime** property uses both the date and the time component of the **vbDate** format. Its default value is the current time rounded down to the preceding half hour.

The **StartTime** property ignores seconds and truncates the time component to the minute.

The value of **StartTime** must be less than that of the **EndTime** property. If you make settings that violate this constraint, your next call to the **Update** method returns **CdoE_INVALID_OBJECT**.

If you change the value of **StartTime**, **Duration** is automatically recalculated from the new **StartTime** and unchanged **EndTime** values.

You can apply a MessageFilter object to a Messages collection containing AppointmentItem objects and filter them on the **StartTime** and **EndTime** properties. The filter passes appointments starting on or before the date/time in **CdoPR_START_DATE** and ending on or after the date/time in **CdoPR_END_DATE**.

If you make this appointment recurring by calling its **GetRecurrencePattern** method, its **StartTime**, **EndTime**, and **AllDayEvent** properties are disabled, and any attempt to access them returns **CdoE_NO_SUPPORT**. Calling **ClearRecurrencePattern** returns the appointment to nonrecurring status, and these properties can once again be accessed. However, their values may have changed if the corresponding properties on the RecurrencePattern object were edited while the appointment was recurring.

The appointment's **StartTime** and **EndTime** properties are always held internally in UTC (Coordinated Universal Time, also known as GMT). By contrast, the RecurrencePattern object's **StartTime** and **EndTime** properties are always held internally in the organizer's current time zone. However, all these properties are converted to the local messaging user's current time zone whenever they are displayed or read programmatically.

Changes you make to properties on an AppointmentItem object take effect when you call the **Send** or **Update** method.

The **StartTime** property corresponds to the MAPI property PR_START_DATE.

Attachment Object

The Attachment object represents a document that is an attachment of a message.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Attachments collection
Child objects:	Fields collection
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Fields	1.1	Field object or Fields collection object	Read-only
Index	1.0.a	Long	Read-only
MAPIOBJECT	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Name	1.0.a	String	Read/write
Parent	1.0.a	Attachments collection object	Read-only
Position	1.0.a	Long	Read/write
Session	1.0.a	Session object	Read-only
Source	1.0.a	String or Message object	Read/write
Type	1.0.a	Long	Read/write

Methods

Name	Available in version	Parameters
Delete	1.0.a	(none)
IsSameAs	1.1	*objAttach2* as **Object**
ReadFromFile	1.0.a	*fileName* as **String**
WriteToFile	1.0.a	*fileName* as **String**

Remarks

An attachment is an object, such as a file or an OLE object, that is associated with and transmitted with

a Message object. It is assigned a particular location within the message, specified by the **Position** property, and overwrites the character at that position when the message is displayed to a messaging user. Typically, a placeholder such as an icon is displayed instead of the attachment's contents, until the user requests that the attachment be opened and displayed in its entirety.

The Microsoft® CDO Library does not manage the actual display of the attachment or its placeholder. The properties of the Attachment object simply provide information which the displaying application can use to find and open the attachment, select a suitable placeholder, and convert the attachment's contents into a display.

An Attachment object can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to the Attachment object itself. The individual properties that can be rendered with the **RenderProperty** method are indicated in the Attachment object property descriptions.

Delete Method (Attachment Object)

Group

The **Delete** method removes the Attachment object from the Attachments collection.

Syntax

objAttachment.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Attachment object. If you have another reference to the attachment, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another attachment.

The final **Release** on the Attachment object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

The effect of the **Delete** operation is not permanent until you use the **Update**, **Send**, or **Delete** method on the Message object to which this attachment belongs.

The immediate parent of this Attachment object is an Attachments collection, which is a child of the message. You can delete all the message's attachments by calling the collection's **Delete** method.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Attachment object. That reference survives the call to **Delete** and has to be reassigned. The second Attachment object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Message object
Set objAttachment = objMessage.Attachments.Item(1)
objAttachment.Delete ' still have a reference from Set statement
' ... other operations on objAttachment possible but pointless ...
Set objAttachment = Nothing ' necessary to remove reference
' ...
objMessage.Attachments.Item(2).Delete ' no reference to remove
```

Fields Property (Attachment Object)

Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objAttachment.**Fields**

objAttachment.**Fields(***index***)**

objAttachment.**Fields(***proptag***)**

objAttachment.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the Fields collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with an Attachment object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of a MAPI property using either its name or its MAPI property tag. For access with the property tag, use *objAttachment*.**Fields(***proptag***)**, where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_ATTACH_SIZE**. To access a named property, use *objAttachment*.**Fields(***name***)**, where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

The **Fields** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Index Property (Attachment Object)

Group

The **Index** property returns the index number for the Attachment object within the Attachments collection. Read-only.

Syntax

objAttachment.**Index**

Data Type

Long

Remarks

The **Index** property indicates this attachment's position within the parent Attachments collection. It can be saved and used later with the collection's **Item** property to reselect the same attachment in the collection.

The first object in the collection has an **Index** value of 1.

An index value should not be considered a static value that remains constant for the duration of a session. It can be affected when other attachments are added and deleted. The index value is changed following an update to the Message object to which the Attachments collection belongs.

The **Index** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

```
Function Attachments_GetByIndex()
Dim lIndex As Long
Dim objOneAttach As Attachment ' assume valid attachment
' set error handler here
If objAttachColl Is Nothing Then
    MsgBox "Must select an Attachments collection"
    Exit Function
End If
If 0 = objAttachColl.Count Then
    MsgBox "Must select collection with 1 or more attachments"
    Exit Function
End If
' prompt user for index; for now, use 1
Set objOneAttach = objAttachColl.Item(1)
MsgBox "Selected attachment 1: " & objOneAttach.Name
lIndex = objOneAttach.Index  ' save index to retrieve it later
'
' ... get same attachment object later
Set objOneAttach = objAttachColl.Item(lIndex)
If objOneAttach Is Nothing Then
    MsgBox "Error: could not reselect the attachment"
Else
    MsgBox "Reselected attachment " & lIndex & _
            " using index: " & objOneAttach.Name
End If
Exit Function
```

IsSameAs Method (Attachment Object)

Group

The **IsSameAs** method returns **True** if the Attachment object is the same as the Attachment object being compared against.

Syntax

objAttachment.**IsSameAs(***objAttach2***)**

objAttachment
Required. This Attachment object.

objAttach2
Required. The Attachment object being compared against.

Remarks

Two Attachment objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

MAPIOBJECT Property (Attachment Object) Group

The **MAPIOBJECT** property returns an **IUnknown** pointer to the Attachment object. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objAttachment.**MAPIOBJECT**

Data Type

Variant (**vbDataObject** format)

Remarks

The **MAPIOBJECT** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **MAPIOBJECT** property is an **IUnknown** object that returns an **IAttach** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

The **MAPIOBJECT** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Name Property (Attachment Object)

Group

The **Name** property returns or sets the display name of the Attachment object as a string. Read/write.

Syntax

objAttachment.**Name**

The **Name** property is the default property of an Attachment object, meaning that *objAttachment* is syntactically equivalent to *objAttachment*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

Before setting or changing the **Name** property, you should be sure that the **Source** property is already set. Setting **Source** after setting **Name** can result in an incorrect value for **Name**.

The **Name** property can also be set at the time of creation of the attachment by supplying the *name* parameter to the **Add** method of the Attachments collection.

The **Name** property corresponds to the MAPI property PR_ATTACH_LONG_FILENAME if it is present, and PR_ATTACH_FILENAME otherwise. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Attachment object and the *property* parameter of the **RenderProperty** method to either **CdoPR_ATTACH_FILENAME** or **CdoPR_ATTACH_LONG_FILENAME**.

Example

See the example for the Attachment object's **Index** property.

Position Property (Attachment Object)

Group

The **Position** property returns or sets the position of the attachment within the text of the message. Read/write.

Syntax

objAttachment.**Position**

Data Type

Long

Remarks

The **Position** property is a long integer describing where the attachment should be displayed in the message text. The attachment overwrites the character present at that position. Applications cannot place two attachments in the same location within a message, and attachments cannot be placed beyond the end of the message text.

A positive value of **Position** represents an index to the character within the message text to be replaced by the attachment. The first text character has an index of 1. The value 0 indicates that the attachment is present but should not be made visible in the displayed message. The value -1 indicates that the attachment is not handled using the **Position** property.

CDO does not manage the actual display of the attachment within the message. The **Position** property simply provides a location for the displaying application, which must find and replace the appropriate character in the message's **Text** property.

The **Position** property can also be set at the time of creation of the attachment by supplying the *position* parameter to the **Add** method of the Attachments collection.

The **Position** property corresponds to the MAPI property PR_RENDERING_POSITION. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Attachment object and the *property* parameter of the **RenderProperty** method to **CdoPR_RENDERING_POSITION**.

Note The MAPI rendering position is zero-based, meaning that the first character in the message text is considered to be at position zero. All CDO string indexes, including the **Position** property, are one-based. If you render the **Position** property into HTML, the MAPI value is used for the rendering instead of the CDO value. This could potentially lead to confusion regarding which message text character is to be replaced with the attachment.

Example

```
' from the function Attachments_Add()
    Set objAttach = objAttachColl.Add ' add an attachment
    With objAttach
        .Type = CdoFileLink
        .Position = 0 ' place at beginning of message
        .Source = "\\server\bitmaps\honey.bmp" ' UNC name
    End With
    ' must update the message to save the new info
    objOneMsg.Update ' update the message
    MsgBox "Added an attachment of type CdoFileLink"
```

ReadFromFile Method (Attachment Object) Group

The **ReadFromFile** method loads the contents of an attachment from a file.

Syntax

objAttachment.**ReadFromFile(***fileName***)**

objAttachment
Required. The Attachment object.

fileName
Required. String. The full path and file name to read from, for example C:\DOCUMENT\BUDGET.XLS.

Remarks

The **ReadFromFile** method replaces the existing contents of the Attachment object, if any.

The **ReadFromFile** method operates differently, depending on the value of the Attachment object's **Type** property. The following table describes its operation:

Attachment Type property	ReadFromFile operation
CdoFileData	Copies the contents of the specified file to the attachment.
CdoFileLink	(Not supported)
CdoOLE	Reads the attachment from the specified file, which must be in OLE docfile format. The file could have been previously written by the **WriteToFile** method with an **CdoOLE** type setting.
CdoEmbeddedMessage	(Not supported)

The term "OLE docfile" indicates that the file is written by an application such as Microsoft® Word version 6.0 or later that writes files using the OLE **IStorage** and **IStream** interfaces.

Note The current version of CDO does not support **ReadFromFile** for **CdoFileLink** or **CdoEmbeddedMessage** attachments. These calls generate the run-time error **CdoE_NO_SUPPORT**.

You can load the contents of an attachment when you first create it by specifying the *type* and *source* parameters when you call the **Add** of the Attachments collection.

Source Property (Attachment Object)

Group

The **Source** property returns or sets information specifying the location of the data for the attachment. Read/write.

Syntax

objAttachment.**Source**

Data Type

String or Object (Message)

Remarks

The **Source** property returns or sets the full path and file name of the file containing the data for **CdoFileLink** attachments. It returns or sets the OLE class name of the attachment for **CdoOLE** attachments. For **CdoEmbeddedMessage** attachments, the **Source** property is set with the **ID** property of the message to be embedded, but it returns the Message object itself. An embedded message is copied into the attachment at creation time.

Note that the **Source** property is a string except when it returns the source of an **CdoEmbeddedMessage** attachment.

CDO does not synchronize the **Source** property and the **ReadFromFile** method. For **CdoFileData** and **CdoOLE** attachments, when you change the **Source** property to indicate a different file, you must also explicitly call the **ReadFromFile** method to update the object data. Similarly, when you call **ReadFromFile** with data from a different file, you must change the **Source** property.

The return value or setting of the **Source** property depends on the value of the **Type** property, as described in the following table:

Type property	Source property
CdoFileData	Not used; contains an empty string. The source for this type of attachment must be specified in the call to the **Add** method.
CdoFileLink	Specifies a full path name in a universal naming convention (UNC) format, such as \\ SALES\INFO\PRODUCTS\NEWS.DOC.
CdoOLE	Specifies the registered OLE class name of the attachment, such as Word.Document or PowerPoint.Show.
CdoEmbeddedMessage	Specifies the unique identifier of the message to be embedded; returns the embedded Message object.

The UNC format is suitable for sending attachments to recipients who have access to a common file server.

Note Certain of the Attachment object's properties must be set in a specific order. You must set **Type** before you set **Source**, and you must set **Source** before you set **Name**. Failure to do this can result in a return of **CdoE_NOT_FOUND** from the **ReadFromFile** or **WriteToFile** method, or in an incorrect value for **Name**.

The **Source** property can also be set at the time of creation of the attachment by supplying the *source*

parameter to the **Add** method of the Attachments collection. For attachments of type **CdoFileData**, the **Add** method is the only place the source file can be specified. However, you can change it later with the Attachment object's **ReadFromFile** method.

The **Source** property corresponds to the MAPI property PR_ATTACH_PATHNAME. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Attachment object and the *property* parameter of the **RenderProperty** method to **CdoPR_ATTACH_PATHNAME**.

Example

```
' from the function Attachments_Add()
    Set objAttach = objAttachColl.Add ' add an attachment
    With objAttach
        .Type = CdoFileLink
        .Position = 0 ' place at beginning of message
        .Source = "\\server\bitmaps\honey.bmp" ' UNC name
    End With
    ' must update the message to save the new info
    objOneMsg.Update ' update the message
    MsgBox "Added an attachment of type CdoFileLink"
```

Type Property (Attachment Object)

Group

The **Type** property describes the attachment type. Read/write.

Syntax

objAttachment.**Type**

Data Type

Long

Remarks

The following attachment types are supported:

Type property	Value	Description
CdoFileData	1	Attachment is the contents of a file. (Default value.)
CdoFileLink	2	Attachment is a link to a file.
CdoOLE	3	Attachment is an OLE object.
CdoEmbeddedMessage	4	Attachment is an embedded message.

The value of the **Type** property determines the valid values for the **Source** property. Consequently, you must set **Type** before setting **Source** in order for the **ReadFromFile** and **WriteToFile** methods to work correctly.

The **Type** property can also be set at the time of creation of the attachment by supplying the *type* parameter to the **Add** method of the Attachments collection.

The **Type** property corresponds to the MAPI property PR_ATTACH_METHOD. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Attachment object and the *property* parameter of the **RenderProperty** method to **CdoPR_ATTACH_METHOD**.

Example

```
' from the function Attachments_Add()
    Set objAttach = objAttachColl.Add ' add an attachment
    With objAttach
        .Type = CdoFileLink
        .Position = 0 ' place at beginning of message
        .Source = "\\server\bitmaps\honey.bmp" ' UNC name
    End With
    ' must update the message to save the new info
    objOneMsg.Update ' update the message
    MsgBox "Added an attachment of type CdoFileLink"
```

WriteToFile Method (Attachment Object) Group

The **WriteToFile** method saves the attachment to a file in the file system.

Syntax

objAttachment.**WriteToFile(***fileName***)**

objAttachment
Required. The Attachment object.

fileName
Required. String. The full path and file name for the saved attachment, for example C:\DOCUMENT\BUDGET.XLS.

Remarks

The **WriteToFile** method overwrites the file without warning if a file of that name already exists. Your application should check for the existence of the file before calling **WriteToFile**.

The **WriteToFile** method operates differently, depending on the value of the Attachment object's **Type** property. The following table describes its operation:

Attachment Type property	WriteToFile operation
CdoFileData	Copies the contents of the attachment to the specified file.
CdoFileLink	(Not supported)
CdoOLE	Writes the attachment to the specified file in OLE docfile format. The file can subsequently be read by the **ReadFromFile** method with an **CdoOLE** type setting.
CdoEmbeddedMessage	(Not supported)

The term "OLE docfile" indicates that the file is written by an application such as Microsoft® Word 6.0 or later that writes files using the OLE **IStorage** and **IStream** interfaces.

Note The current version of CDO does not support **WriteToFile** for **CdoFileLink** or **CdoEmbeddedMessage** attachments. These calls generate the run-time error **CdoE_NO_SUPPORT**.

Attachments Collection Object

The Attachments collection object contains one or more Attachment objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Message
Child objects:	Attachment
Default property:	**Item**

An Attachments collection is considered a *small collection*, which means that it supports count and index values that let you access an individual Attachment object through the **Item** property. The Attachments collection supports the Microsoft® Visual Basic® **For Each** statement. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Count	1.0.a	Long	Read-only
Item	1.0.a	Attachment object	Read-only
Parent	1.0.a	Message object	Read-only
Session	1.0.a	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.0.a	(optional) *name* as **String**, (optional) *position* as **Long**, (optional) *type* as **Long**, (optional) *source* as **String**
Delete	1.0.a	(none)

Add Method (Attachments Collection)

Group

The **Add** method creates and returns a new Attachment object in the Attachments collection.

Syntax

Set *objAttachment* = *objAttachColl*.**Add([** *name, position, type, source* **])**

objAttachment
On successful return, contains the new Attachment object.

objAttachColl
Required. The Attachments collection object.

name
Optional. String. The display name of the attachment. The default value is an empty string. To allow a user to click on the attachment that appears in the message and activate an associated application, supply the full file name, including the file extension.

position
Optional. Long. The position of the attachment within the body text of the message. The default value is zero.

type
Optional. Long. The type of attachment; either **CdoFileData**, **CdoFileLink**, **CdoOLE**, or **CdoEmbeddedMessage**. The default value is **CdoFileData**.

source
Optional. String. The path and file name of the file containing the data for the attachment, or the unique identifier of the message to be embedded. The path and file name must be in the appropriate format for the attachment type, specified by the *type* parameter. The default value is an empty string.

Remarks

The **Add** method parameters correspond to the **Name**, **Position**, **Type**, and **Source** properties of the Attachment object. The *source* parameter is also closely related to the **ReadFromFile** method's *fileName* parameter.

You can supply the data for the attachment at the same time that you add the attachment to the collection. The **Add** method operates differently, depending on the value of the *type* parameter. The following table describes its operation.

Value of *type* parameter	**Value of *source* parameter**
CdoFileData	Specifies a full path and file name that contains the data for the attachment, for example C:\DOCUMENT\BUDGET.XLS. Must be supplied with the **Add** method. The data is read into the attachment.
CdoFileLink	Specifies a full path and file name in a universal naming convention (UNC) format, such as \\SALES\INFO\PRODUCTS\NEWS.DOC. The attachment is a link, so the **Add** method does not read the data.
CdoOLE	Specifies a full path and file name to a valid OLE docfile, for example C:\DOCUMENT\BUDGET2.XLS. The data is read into the attachment.

CdoEmbeddedMessage	Specifies the **ID** property of the message to be embedded. The message is copied into the attachment.

If the *type* parameter has the value **CdoFileData**, the *source* parameter must be supplied, since it cannot be subsequently set through the **Source** property of the Attachment object.

When the *type* parameter has the value **CdoFileLink**, the *source* parameter is a full path and file name in a UNC format. This is suitable for sending attachments to recipients who have access to a common file server. Note that when you use the *type* **CdoFileLink**, CDO does not validate the file name.

If you do not specify the *name*, *type*, and *source* parameters when you call the **Add** method, you must later explicitly set these properties. In this case you must set **Type** before you set **Source**, and you must set **Source** before you set **Name**. Failure to do this can result in a return of **CdoE_NOT_FOUND** from the **ReadFromFile** or **WriteToFile** method, or in an incorrect value for **Name**. If the type is **CdoOLE**, you must also call **ReadFromFile** on the new Attachment object to load the attachment's content.

The **Index** property of the new Attachment object equals the new **Count** property of the Attachments collection.

Note Microsoft Outlook supports attachments on AppointmentItem objects, but Microsoft® Schedule+ does not. For consistency of interface, the **Add** method always accepts a new attachment on an appointment, but if the appointment is associated with Schedule+, the attachment is ignored and discarded when you commit the appointment to storage with **Send** or **Update**.

The attachment is saved in the MAPI system when you **Update** or **Send** the parent Message object.

Count Property (Attachments Collection) Group

The **Count** property returns the number of Attachment objects in the collection. Read-only.

Syntax

objAttachColl.**Count**

Data Type

Long

Example

This code fragment stores in an array the names of all Attachment objects in the collection. It shows the **Count** and **Item** properties working together.

```
' from the sample function, TstDrv_Util_SmallCollectionCount
' objAttachColl is an Attachments collection
x = Util_SmallCollectionCount(objAttachColl)

Function Util_SmallCollectionCount(objColl As Object)
Dim strItemName(100) As String ' Names of objects in collection
Dim i As Integer               ' loop counter
    On Error GoTo error_actmsg
    If objColl Is Nothing Then
        MsgBox "Must supply a valid collection object as a parameter"
        Exit Function
    End If
    If 0 = objColl.Count Then
        MsgBox "No items in the collection"
        Exit Function
    End If
    For i = 1 To objColl.Count Step 1
        strItemName(i) = objColl.Item(i).Name
        If 100 = i Then ' max size of string array
            Exit Function
        End If
    Next i
    ' error handling here...
End Function
```

Delete Method (Attachments Collection)

Group

The **Delete** method removes all the Attachment objects from the Attachments collection.

Syntax

objAttachColl.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Attachment object. If you have another reference to an attachment, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another attachment.

The final **Release** on each Attachment object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Attachment object, use the **Delete** method specific to that object.

The effect of the **Delete** method is not permanent until you use the **Update**, **Send**, or **Delete** method on the parent Message object containing the Attachments collection. A permanently deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

Item Property (Attachments Collection)

Group

The **Item** property returns a single Attachment object from the Attachments collection. Read-only.

Syntax

objAttachColl.**Item(***index***)**

objAttachColl.**Item(***recordKey***)**

index
Long. An integer ranging from 1 to *objAttachColl*.**Count**.

recordKey
String. The MAPI record key of an individual attachment.

The **Item** property is the default property of an Attachments collection, meaning that *objAttachColl***(***index***)** is syntactically equivalent to *objAttachColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Attachment)

Remarks

The **Item** property works like an accessor property for small collections.

The **Item(***index***)** syntax selects an arbitrary Attachment object within the Attachments collection.

The **Item(***recordKey***)** syntax returns the first Attachment object with a MAPI record key equivalent to the string specified by *recordKey*. You can obtain the MAPI record key of an attachment through its Fields collection, but you cannot convert it programmatically to the requisite string format with Visual Basic. The record key is in a counted binary format for which Visual Basic and CDO have no corresponding data type.

The *recordKey* parameter corresponds to the MAPI property PR_RECORD_KEY, converted to a string of hexadecimal characters.

Although the **Item** property itself is read-only, the Attachment object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together to traverse the collection:

```
' from Util_SmallCollectionCount(objAttachColl As Object)
Dim strItemName(100) as String
Dim i As Integer ' loop counter
' error handling omitted from this fragment ...
For i = 1 To objAttachColl.Count Step 1
    strItemName(i) = objAttachColl.Item(i).Name
    ' or = objAttachColl(i) since Item and Name are default properties
    If 100 = i Then ' max size of string array
        Exit Function
    End If
Next i
```

Field Object

A Field object represents a MAPI property on a Microsoft® CDO Library object.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Fields collection
Child objects:	(none)
Default property:	**Value**

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
ID	1.0.a	Long	Read-only
Index	1.0.a	Long	Read-only
Name	1.0.a	String	Read-only
Parent	1.0.a	Fields collection object	Read-only
Session	1.0.a	Session object	Read-only
Type	1.0.a	Integer	Read-only
Value	1.0.a	Variant	Read/write

Methods

Name	Available in version	Parameters
Delete	1.0.a	(none)
ReadFromFile	1.0.a	*fileName* as **String**
WriteToFile	1.0.a	*fileName* as **String**

Remarks

The Field object gives you the ability to access MAPI properties of an AddressEntry, AddressEntryFilter, AddressList, AppointmentItem, Attachment, Folder, InfoStore, MeetingItem, Message, or MessageFilter object. You do not have to add a predefined MAPI property to the Fields collection in order to access it. You can just set it or read its value.

You can add additional properties tailored for your specific application to the Fields collection. Before adding a field for an eligible object, review the properties that are already provided by CDO. Many of the most common ones are already offered. For example, **Subject** and **Importance** are already defined as Message object properties.

Data types are preserved between MAPI properties and CDO fields, with the exception of MAPI properties of type PT_BINARY. These are converted from counted binary in MAPI to character string

representation in CDO, where the characters in the string represent the hexadecimal digits of the MAPI property value. The string is converted back into counted binary when you write to the field.

Note that the predefined MAPI properties are unnamed when they are accessed through Field objects. For these MAPI properties, the **Name** property is an empty string.

The Field object also supports multivalued MAPI properties. The multivalued property appears to the Microsoft® Visual Basic® application as a variant array; that is, you can use the **For ... Next** statement to access individual array entries, as shown in the following sample program.

```
Dim rgstr(0 To 9) As String
' Build array of values for MV prop
For i = 0 To 9
    rgstr(i) = "String" + Str(i)
Next

' Create MV field on the message (note that we don't specify
' the array as third argument to Fields.Add, but add separately)
Set f = msg.Fields.Add("FancyName", vbString + vbArray)
f.Value = rgstr ' Set value of the new field
' Save/send the message, logoff, etc.

' later: code that reads the multivalued properties
Dim rgstr As Variant
Set f = msg.Fields.Item("FancyName") ' Get MV Field
rgstr = f.Value ' Get array of values into a variant
For i = LBound(rgret) To UBound(rgret)
    MsgBox rgret(i)
Next I
```

For more information on MAPI properties, see the reference documentation for the Fields collection and the *MAPI Programmer's Reference*.

Delete Method (Field Object) Group

The **Delete** method removes the Field object from the Fields collection if the field is user-defined or optional.

Syntax

objField.**Delete( )**

Remarks

This method only deletes user-defined fields and fields that represent properties considered optional by the underlying provider.

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Field object. If you have another reference to the field, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another field.

The final **Release** on the Field object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

The effect of the **Delete** operation is not permanent until you use the **Update**, **Send**, or **Delete** method on the parent AddressEntry, AddressEntryFilter, AddressList, AppointmentItem, Attachment, Folder, InfoStore, MeetingItem, Message, or MessageFilter object of the Fields collection.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Field object. That reference survives the call to **Delete** and has to be reassigned. The second Field object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Message object
Set objField = objMessage.Fields.Item(1)
objField.Delete ' still have a reference from Set statement
' ... other operations on objField possible but pointless ...
Set objField = Nothing ' necessary to remove reference
' ...
objMessage.Fields.Item(2).Delete ' no reference to remove
```

ID Property (Field Object) Group

The **ID** property returns the MAPI tag for the Field object as a long integer. Read-only.

Syntax

objField.**ID**

Data Type

Long

Remarks

The Field object **ID** property is unique among identifier properties supported in the CDO Library. The Field object identifier is a long integer that corresponds to a MAPI property tag value. All other **ID** properties are hexadecimal strings corresponding to the MAPI PR_ENTRYID property.

A MAPI property tag is a 32-bit unsigned integer. Its high-order 16 bits contain the MAPI property identifier, and its low-order 16 bits contain the MAPI property type. For more information, see “About Property Tags” in the *MAPI Programmer’s Reference*.

Note The MAPI property type is not the same as the CDO **Type** property. There is a correspondence between the two entities, but their value sets are not the same. The Field object's **ID** property contains the MAPI property type; its **Type** property contains the Visual Basic® data type used by CDO.

Example

```
' The Field.ID property is a long value, not a string
' fragment from the function Field_ID()
'   verify that objOneField is valid, then access
    MsgBox "MAPI ID in high-order word, MAPI type in low-order: &H" _
           & Hex(objOneField.ID)
```

Index Property (Field Object) Group

The **Index** property returns the index number of the Field object within the Fields collection. Read-only.

Syntax

objField.**Index**

Data Type

Long

Remarks

The **Index** property indicates this object's position within the parent Fields collection. It can be saved and used later with the collection's **Item** property to reselect the same field in the collection.

The first object in the collection has an **Index** value of 1.

An index value should not be considered a static value that remains constant for the duration of a session. It can be affected when other fields are added and deleted. The index value is changed following an update to the object to which the Fields collection belongs.

Example

This code fragment shows the Fields collection's **Count** property and the **Index** property working together:

```
' set up a variable as an index to access a small collection
' fragment from the functions Fields_FirstItem, Fields_NextItem
    If objFieldsColl Is Nothing Then
        MsgBox "must first select a Fields collection"
        Exit Function
    End If
    If 0 = objFieldsColl.Count Then
        MsgBox "No fields in the collection"
        Exit Function
    End If
' Fragment from Fields_FirstItem
    iFieldsCollIndex = 1
    Set objOneField = objFieldsColl.Item(iFieldsCollIndex)
    ' verify that the Field object is valid ...
' Fragment from Fields_NextItem
    If iFieldsCollIndex >= objFieldsColl.Count Then
        iFieldsCollIndex = objFieldsColl.Count
        MsgBox "Already at end of Fields collection"
        Exit Function
    End If
    iFieldsCollIndex = iFieldsCollIndex + 1
    Set objOneField = objFieldsColl.Item(iFieldsCollIndex)
    ' verify that the Field object is valid, then loop back ...
```

Name Property (Field Object) Group

The **Name** property returns the name of the field as a string. Read-only.

Syntax

objField.**Name**

objField.**Name(***PropsetID***)**

objField
Object. The Field object.

PropsetID
Optional. String. Contains the **GUID** that identifies the property set, represented as a string of hexadecimal characters. When this identifier is not present, the property is created within the default property set. The default property set is either the property set most recently supplied to the **SetNamespace** method, or the initial default property set value, PS_PUBLIC_STRINGS.

Data Type

String

Remarks

The **Name** property is read-only. You set the name of the Field object at the time you create it, when you call the Fields collection's **Add** method.

Field objects used to access predefined MAPI properties do not have names. Names appear only on the custom properties that you create. For more information, see the **Item** property documentation for the Fields collection.

Example

```
' fragment from Fields_Add
Dim objNewField As Object ' new Field object
    Set objNewField = objFieldsColl.Add( _
                      Name:="Keyword", _
                      Class:=vbString, _
                      Value:="Peru")
    If objNewField Is Nothing Then
        MsgBox "could not create new Field object"
        Exit Function
    End If
    cFields = objFieldsColl.Count
    MsgBox "new Fields collection count = " & cFields
' later: fragment from Field_Name; modified to use objNewField
    If "" = objNewField.Name Then
        MsgBox "Field has no name; ID = " & objNewField.ID
    Else
        MsgBox "Field name = " & objNewField.Name
    End If
```

ReadFromFile Method (Field Object)

Group

The **ReadFromFile** method loads the value of a string or binary field from a file.

Syntax

objField.**ReadFromFile(***fileName***)**

objField
Required. The Field object.

fileName
Required. String. The full path and file name to read, for example C:\DOCUMENT\BUDGET.XLS.

Remarks

The **ReadFromFile** method reads the string or binary value from the specified file and stores it as the value of the Field object. It replaces any previously existing value for the field.

ReadFromFile is not supported for simple types, such as **vbInteger**, **vbLong**, and **vbBoolean**. Microsoft® Visual Basic® provides common functions to read and write these base types to and from files. The **ReadFromFile** method fails if the **Type** property of the Field object is not **vbString** or **vbBlob**.

MAPI properties of type PT_BINARY are read from persistent storage in counted binary format but converted to a hexadecimal string format when they are stored as Field values. Comparison operations on the **Value** property and the actual contents of the file can return “not equal” even when the values are equivalent.

In addition, support for types can vary among providers. Not all providers support both the **vbString** and **vbBlob** property types.

ReadFromFile returns **CdoE_INTERFACE_NOT_SUPPORTED** for Field objects obtained from a Folder object’s Fields collection.

See Also

WriteToFile Method (Field Object)

Type Property (Field Object) Group

The **Type** property returns the data type of the Field object. Read-only.

Syntax

objField.**Type**

Data Type

Integer

Remarks

The **Type** property contains the data type of the Field object and determines the range of valid values that can be supplied for the **Value** property. You set the **Type** property when you first create the field by setting the *Class* parameter of the Fields collection's **Add** method. After that, you cannot change the **Type** property.

Valid data types are as follows:

Type	Description	Decimal value	OLE variant type	MAPI property type
vbArray	Multivalued type	8192	VT_ARRAY	PT_MV_FLAG
vbBlob	Binary (unknown format)	65	VT_BLOB	PT_BINARY
vbBoolean	Boolean	11	VT_BOOL	PT_BOOLEAN
vbCurrency	8-byte integer (scaled by 10000)	6	VT_CY	PT_CURRENCY
vbDataObject	Data object	13	VT_UNKNOWN	PT_OBJECT
vbDate	8-byte real (date in integer, time in fraction)	7	VT_DATE	PT_APPTIME
vbDouble	8-byte real (floating point)	5	VT_R8	PT_DOUBLE, PT_R8
vbEmpty	Not initialized	0	VT_DEREF	PT_UNSPECIFIED
vbInteger	2-byte integer	2	VT_I2	PT_I2 PT_SHORT
vbLong	4-byte integer	3	VT_I4	PT_I4, PT_LONG
vbNull	Null (no	1	VT_NULL	PT_NULL

	valid data)			
vbSingle	4-byte real (floating point)	4	VT_R4	PT_FLOAT, PT_R4
vbString	String	8	VT_BSTR	PT_TSTRING

The current version of CDO does not support the **vbNull** and **vbDataObject** data types. The **vbEmpty** data type should never appear as the value of the **Type** property because the **Add** method should derive the data type from the new field's value if the *Class* parameter is set to **vbEmpty**.

The **vbArray** data type must always be used in conjunction with one of the other types, for example **vbArray + vbInteger**. Note that operations such as comparison cannot be done with a single operator on types involving **vbArray**.

When you use a multivalued type, to avoid an **CdoE_INVALID_TYPE** error you must also declare the array to be of the appropriate type, as shown in the following code fragment:

```
Dim Codes(10) As Long ' NOT just Dim Codes(10)
' ...
Set objCodesField = objFieldsColl.Add("Codes", vbArray + vbLong)
objCodesField.Value = Codes
```

MAPI stores all custom properties that represent date and time information using Greenwich Mean Time (GMT), also known as Coordinated Universal Time (UTC). CDO converts these properties so that the values appear to the user in local time.

Example

```
' Fragment from Fields_Add; uses the type "vbString"
    Set objNewField = objFieldsColl.Add( _
                      Name:="Keyword", _
                      Class:=vbString, _
                      Value:="Peru")
'  verify that objNewField is a valid Field object
' Fragment from Field_Type; display the decimal type value
    MsgBox "Field type = " & objOneField.Type
```

Value Property (Field Object) Group

The **Value** property returns or sets the value of the Field object. Read/write.

Syntax

objField.**Value**

The **Value** property is the default property of a Field object, meaning that *objField* is syntactically equivalent to *objField*.**Value** in Microsoft® Visual Basic® code.

Data Type

Variant

Remarks

The **Value** property of the Field object represents a value of the type specified by the **Type** property. For example, when the Field object has the **Type** property **vbBoolean**, the **Value** property can take the values **True** or **False**. When the Field object has the **Type** property **vbInteger**, the **Value** property can contain a short integer.

Example

```
' fragment from function Field_Type()
' after validating the Field object objOneField
    MsgBox "Field type = " & objOneField.Type
' fragment from function Field_Value() ...
    MsgBox "Field value = " & objOneField.Value
```

WriteToFile Method (Field Object) Group

The **WriteToFile** method saves the field value to a file in the file system.

Syntax

objField.**WriteToFile(***fileName***)**

objField
Required. The Field object.

fileName
Required. String. The full path and file name for the saved field, for example C:\DOCUMENT\BUDGET.XLS.

Remarks

The **WriteToFile** method writes the string or binary value of the Field object to the specified file name. It overwrites any existing information in that file.

WriteToFile is not supported for simple types, such as **vbInteger**, **vbLong**, and **vbBoolean**. Microsoft® Visual Basic® provides common functions to read and write these base types to and from files. The **WriteToFile** method fails if the **Type** property of the Field object is not **vbString** or **vbBlob**.

MAPI properties of type PT_BINARY are represented in a hexadecimal string format by CDO but written to persistent storage in counted binary format. Comparison operations on the **Value** property and the actual contents of the file can return “not equal” even when the values are equivalent.

In addition, support for types can vary among providers. Not all providers support both the **vbString** and **vbBlob** property types.

See Also

ReadFromFile Method (Field Object)

Fields Collection Object

The Fields collection object contains one or more Field objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	AddressEntry AddressEntryFilter AddressList AppointmentItem Attachment Folder InfoStore MeetingItem Message MessageFilter
Child objects:	Field
Default property:	**Item**

A Fields collection is considered a *small collection*, which means that it supports count and index values that let you access an individual Field object through the **Item** property. The Fields collection supports the Microsoft® Visual Basic® **For Each** statement. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Count	1.0.a	Long	Read-only
Item	1.0.a	Field object	Read-only
Parent	1.0.a	AddressEntry object, AddressEntryFilter object, AddressList object, AppointmentItem object, Attachment object, Folder object, InfoStore object, MeetingItem object, Message object, or MessageFilter object	Read-only
Session	1.0.a	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.0.a	*name* as **String**, *Class* as **Long**,

		value as **Variant**, (optional) *PropsetID* as **String**, *PropTag* as **Long**
Delete	1.0.a	(none)
SetNamespace	1.0.a	(optional) *PropsetID* as **String**

Remarks

Field objects give you the ability to access MAPI properties on the parent object of the Fields collection. These include the predefined underlying MAPI properties and your own custom user-defined properties.

MAPI defines a set of properties with identifiers less than the value &H8000. These are known as *unnamed properties* because they are accessed using the MAPI property tag rather than a name. You can access these MAPI-defined properties using the Fields collection. All MAPI properties are accessible except those of types PT_OBJECT and PT_CLSID.

Data types are preserved between MAPI properties and CDO fields, with the exception of MAPI properties of type PT_BINARY. These are converted from counted binary in MAPI to character string representation in CDO, where the characters in the string represent the hexadecimal digits of the MAPI property value. The string is converted back into counted binary when you write to the field.

You can also extend the properties available through MAPI by defining your own properties. These user-defined properties, defined using a name and automatically assigned an identifier greater than &H8000 by CDO, are known as *named properties*. (C++ programmers can access the property name in the MAPI structure **MAPINAMEID** and convert it to the property tag value.)

All named properties are defined as part of a *property set*, which corresponds in the context of CDO to a *name space*.

A property set is defined by a **GUID**, or globally unique identifier. CDO represents this **GUID** as a string of hexadecimal characters. Such identifiers are usually referenced using a constant that starts with the characters PS_, such as PS_PUBLIC_STRINGS, the default property set for all properties created using the CDO Library.

You can also choose to organize your custom properties within their own name space by defining your own property set. The **Add** and **Item** properties and the **SetNamespace** method let you specify the property set identifier to be used for named property access.

When creating your own property set, you should be aware that MAPI reserves several property set identifiers for specific purposes. The following table lists reserved property sets:

Reserved property set	Description
PS_MAPI	Allows providers to supply names for the unnamed properties (properties with identifiers less than &H8000).
PS_PUBLIC_STRINGS	Default property set for custom properties added using CDO.
PS_ROUTING_ADDRTYPE	E-mail address types that are translated between messaging domains.
PS_ROUTING_DISPLAY_NAME	Display name properties that are translated between messaging domains.
PS_ROUTING_EMAIL_ADDRESSES	E-mail addresses that are translated between messaging domains.
PS_ROUTING_ENTRYID	Long-term entry identifiers that are translated between messaging

	domains.
PS_ROUTING_SEARCH_KEY	Search keys that are translated between messaging domains.

To create your own **GUID** that identifies your property set, you can either use the Win32® command-line utility **UUIDGEN** or you can call the OLE function **CoCreateGuid** to supply one for you, as demonstrated in the following code fragment:

```
' declarations required for the call to CoCreateGuid
Type GUID
    Guid1 As Long
    Guid2 As Long
    Guid3 As Long
    Guid4 As Long
End Type
Declare Function CoCreateGuid Lib "OLE32.DLL" (pGuid As GUID) As Long
Global Const S_OK = 0
Dim strPropID As String
Dim lResult As Long
Dim lGuid As GUID

' call CoCreateGuid, then convert the result to a hex string
    lResult = CoCreateGuid(lGuid)
    If lResult = S_OK Then
        strPropID =  Hex$(lGuid.Guid1) & Hex$(lGuid.Guid2)
        strPropID = myHexString & Hex$(lGuid.Guid3)
        strPropID = myHexString & Hex$(lGuid.Guid4)
    Else
        ' ... handle error ...
    End If
```

For more information on named properties and property sets, see “Named Properties” in the *MAPI Programmer’s Reference*. For more information on **UUIDGEN** and **CoCreateGuid**, see "COM and ActiveX Object Services" in the Microsoft Platform SDK documentation.

MAPI stores all custom properties that represent date and time information using Greenwich Mean Time (GMT). CDO converts these properties so that the values appear to the user in local time.

Example

To uniquely identify a Field object in the Fields collection, use the Field object’s **Name** or **Index** property, or the MAPI property tag:

```
Set objNamedField = objFolder.Fields.Item("BalanceDue")
Set objNamedField2 = objMessage.Fields.Item("Keyword")
Set objIndexedField = objMessage.Fields.Item(3)
propTag = &H0E180003 ' VB4.0: propTag = CdoPR_MESSAGE_DOWNLOAD_TIME
Set objMAPIField = objMessage.Fields.Item(propTag)
```

Add Method (Fields Collection) Group

The **Add** method creates and returns a new Field object in the Fields collection.

Syntax

Set *objField* = *objFieldsColl*.**Add (***name, Class* **[***, value, PropsetID***])**

Set *objField* = *objFieldsColl*.**Add (***PropTag, value***)**

objField
On successful return, contains the new Field object.

objFieldsColl
Required. The Fields collection object.

name
Required. String. The property name assigned to a custom MAPI named property.

Class
Required. Long. The data type for the field, such as string or integer. The *Class* parameter represents the same values as the Field object's **Type** property. The following types are allowed:

Type property	Description	Numeric value	OLE variant type
vbArray	Multivalued type	8192	VT_ARRAY
vbBlob	Binary (unknown format)	65	VT_BLOB
vbBoolean	Boolean	11	VT_BOOL
vbCurrency	8-byte integer (scaled by 10000)	6	VT_CY
vbDataObject	Data object	13	VT_UNKNOWN
vbDate	8-byte real (date in integer, time in fraction)	7	VT_DATE
vbDouble	8-byte real (floating point)	5	VT_R8
vbEmpty	Not initialized	0	VT_DEREF
vbInteger	2-byte integer	2	VT_I2
vbLong	4-byte integer	3	VT_I4
vbNull	Null (no valid data)	1	VT_NULL
vbSingle	4-byte real (floating point)	4	VT_R4
vbString	String	8	VT_BSTR

The current version of CDO does not support the **vbNull** and **vbDataObject** data types.

value
Required (optional in first syntax). Variant. The value of the field, of the data type specified in the *Class* parameter or implicit in the *PropTag* parameter. You can change the value later by setting it directly or by subsequent calls to the Field object's **ReadFromFile** method.

PropsetID
Optional. String. Contains the **GUID** that identifies the property set, represented as a string of hexadecimal characters. When this identifier is not present, the property is created within the default property set. The default property set is either the property set most recently supplied to the **SetNamespace** method, or the initial default property set value, PS_PUBLIC_STRINGS.

PropTag
Required. Long. The MAPI property tag for a predefined MAPI property.

Remarks

The Field object created by the **Add** method always represents a MAPI property. This can be either a predefined MAPI property, which is designated by a property identifier, or a custom property, which is designated by a unique name that MAPI associates with an identifier by means of a name-identifier mapping. This mapping makes use of the property set **GUID** that is common to every named property in that property set.

The first syntax is used for a named property. The *name* parameter contains the custom name that MAPI maps to a property identifier. You can optionally include the property set **GUID** with the name as an alternative to using the *PropsetID* parameter. If you elect this option, the **GUID** is placed in braces immediately preceding the property name itself. If the property set **GUID** is supplied in both the *name* and *PropsetID* parameters, the value in *PropsetID* takes precedence.

If the *Class* parameter contains **vbEmpty** or an invalid setting, the **Add** method attempts to derive the data type from the new field's value. If this attempt fails, for example if the *value* parameter is not set, the **Add** method returns **CdoE_NO_SUPPORT**.

The second syntax is used for a predefined MAPI property. The *PropTag* parameter contains the 32-bit MAPI property tag associated with the property and corresponds to the **ID** property of the Field object. The property tag contains the MAPI property identifier in its high-order 16 bits and the MAPI property type in its low-order 16 bits. All MAPI properties are accessible except those of MAPI type PT_OBJECT or PT_CLSID.

Support for the **Add** method is provider-dependent. Not all providers support named properties.

The *name*, *Class*, and *value* parameters in the first syntax correspond to the **Name**, **Type**, and **Value** properties of the Field object.

The **Index** property of the new Field object equals the new **Count** property of the Fields collection.

The field is saved in the MAPI system when you **Update** the parent object, or **Send** it if the Fields collection's parent is a Message object.

The **vbArray** data type must always be used in conjunction with one of the other types, for example **vbArray + vbInteger**. When you use a multivalued type, to avoid an **CdoE_INVALID_TYPE** error you must also declare the array to be of the appropriate type:

```
Dim Words(10) As String ' NOT just Dim Words(10)
' ...
Set objKeysField = objFieldsColl.Add("Keywords", vbArray + vbString)
objKeysField.Value = Words
```

When you use the **vbBlob** type for binary data, you supply the value in the form of a hexadecimal string that contains the hexadecimal representation of the bytes in the binary object (such as a hexadecimal dump of the object).

MAPI stores all custom properties that represent date and time information using Greenwich Mean Time (GMT). CDO converts these properties so that the values appear to the user in local time.

Example

```
' Fragment from Fields_Add; uses the type "vbString"
    Set objNewField = objFieldsColl.Add( _
                      Name:="Keyword", _
                      Class:=vbString, _
                      Value:="Peru")
'  verify that objNewField is a valid Field object
```

```
' Fragment from Field_Type; display the integer type value
    MsgBox "Field type = " & objOneField.Type
```

Count Property (Fields Collection) Group

The **Count** property returns the number of Field objects in the collection. Read-only.

Syntax

objFieldsColl.**Count**

Data Type

Long

Example

This code fragment maintains a global variable as an index into the small collection, and uses the **Count** property to check its validity:

```
' from Fields_NextItem
' iFieldsCollIndex is an integer used as an index
'   check for empty collection ...
'   check index upper bound
    If iFieldsCollIndex >= objFieldsColl.Count Then
        iFieldsCollIndex = objFieldsColl.Count
        MsgBox "Already at end of Fields collection"
        Exit Function
    End If
    ' index is < count; can be incremented by 1
    iFieldsCollIndex = iFieldsCollIndex + 1
    Set objOneField = objFieldsColl.Item(iFieldsCollIndex)
    If objOneField Is Nothing Then
        MsgBox "Error, cannot get this Field object"
        Exit Function
    Else
        MsgBox "Selected field # " & iFieldsCollIndex
    End If
```

Delete Method (Fields Collection) Group

The **Delete** method removes all user-defined and optional Field objects from the Fields collection.

Syntax

objFieldsColl.**Delete( )**

Remarks

The **Delete** method operates only on user-defined fields and on fields considered optional by the underlying provider.

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Field object. If you have another reference to a field, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another field.

The final **Release** on each Field object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Field object, use the **Delete** method specific to that object.

The effect of the **Delete** method is not permanent until you use the **Update** method on the parent object containing the Fields collection, or the **Send** or **Delete** method if the parent is a Message object. A permanently deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

Item Property (Fields Collection) Group

The **Item** property returns a single Field object from the Fields collection. Read-only.

Syntax

objFieldsColl.**Item(***index***)**

objFieldsColl.**Item(***proptag***)**

objFieldsColl.**Item(***name* **[**, *propsetID***])**

objFieldsColl
Required. Specifies the Fields collection object.

index
Short integer (less than or equal to 65,535 = &HFFFF) ranging from 1 to *objFieldsColl*.**Count**. Specifies the index within the collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Contains the custom name of the user-defined property, or a string representation of the of its property tag.

propsetID
Optional. String. Contains the **GUID** that identifies the property set, represented as a string of hexadecimal characters. When *propsetID* is not supplied, the property set used for the access is the default property set value most recently set by this collection's **SetNamespace** method, or the initial default property set value, PS_PUBLIC_STRINGS.

The **Item** property is the default property of a Fields collection, meaning that *objFieldsColl***(***index***)** is syntactically equivalent to *objFieldsColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Field)

Remarks

The **Item** property works like an accessor property for small collections. In the Fields collection object it allows access to the predefined MAPI properties and to your own custom user-defined properties.

The *proptag* parameter in the second syntax contains the 32-bit MAPI property tag associated with the property and corresponds to the **ID** property of the Field object. The property tag contains the MAPI property identifier in its high-order 16 bits and the MAPI property type in its low-order 16 bits. All MAPI properties are accessible except those of MAPI type PT_OBJECT or PT_CLSID.

The *name* parameter in the third syntax must be a string. It contains either the custom property's name or its property tag. The tag must be represented as an ASCII string, which must consist of the characters "0x" followed by up to eight hexadecimal digits. Combined with the **GUID** in the *propsetID* parameter, this syntax allows you to access properties from a property set other than your default set, either by name or by property tag.

If you have a custom property name that starts with the string "0x" you cannot access it with the *name* parameter, because the third syntax attempts to interpret the characters following "0x" as hexadecimal digits.

If the specified property is not present in the Fields collection, the **Item** property returns **CdoE_NOT_FOUND**.

Several macros for C/C++ programmers are available in the *MAPI Programmer's Reference* to help manipulate the MAPI property tag data structure. The macros **PROP_TYPE** and **PROP_ID** extract the property type and property identifer from the property tag. The macro **PROP_TAG** builds the property tag from the type and identifier components.

Although the **Item** property itself is read-only, the Field object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment accesses a custom user-defined property using its property name:

```
' from the function Fields_ItemByName()
' error handling here ...
If objFieldsColl Is Nothing Then
    MsgBox "Must first select Fields collection"
    Exit Function
End If
Set objOneField = objFieldsColl.Item("Keyword")
' could be objFieldsColl("Keyword") since .Item is default property
If objOneField Is Nothing Then
    MsgBox "could not select Field object"
    Exit Function
End If
If "" = objOneField.Name Then
    MsgBox "Keyword has no name; ID = " & objOneField.ID
Else
    MsgBox "Keyword name = " & objOneField.Name
End If
```

You can also use the **Item** property to access MAPI properties. The defined MAPI properties are unnamed properties and can only be accessed using the numeric *proptag* value. They cannot be accessed using a string that represents the name. This code fragment accesses the MAPI property PR_MESSAGE_CLASS:

```
' from the function Fields_Selector()
' ... error handling here
' you can provide a dialog to allow entry for MAPI proptags
' or select property names from a list; for now, hard-coded
lValue = CdoPR_MESSAGE_CLASS ' = &H001A001E
' high-order 16 bits are property ID; low-order are property type
Set objOneField = objFieldsColl.Item(lValue)
If objOneField Is Nothing Then
    MsgBox "Could not get the Field using the value " & lValue
    Exit Function
Else
    strMsg = "Used " & lValue _
                     & " to access the MAPI property " _
                     & "PR_MESSAGE_CLASS: type = " _
                     & objOneField.Type _
                     & "; value = " _
                     & objOneField.Value
    MsgBox strMsg
End If
```

CDO also supports multivalued MAPI properties.

You can also choose to access properties from other property sets, including your own, by either

setting the *propsetID* parameter or by calling the **SetNamespace** method to set that property set's unique identifier.

For more information on working with MAPI properties, see Customizing a Folder or Message and Viewing MAPI Properties.

SetNamespace Method (Fields Collection) Group

The **SetNamespace** method selects the default property set to be used for accessing MAPI named properties in the Fields collection.

Syntax

objFieldsColl.**SetNamespace (***PropsetID***)**

objFieldsColl
Required. The Fields collection object.

PropsetID
Optional. String. Contains the **GUID** that uniquely identifies the property set, represented as a string of hexadecimal characters. This becomes the default property set to be used in subsequent named property accesses to a Field object in this Fields collection. An empty string resets the default property set to PS_PUBLIC_STRINGS.

Remarks

Every MAPI named property belongs to a property set, each member of which uses the same **GUID** for the first part of its name. The set of all possible names within a property set is called its name space. The **SetNamespace** method specifies which property set is to be in effect until changed by another call to this method. The MAPI named properties are accessed using the Fields collection's **Add** method and **Item** property.

The initial default value for the property set is PS_PUBLIC_STRINGS. To create your own property set for your named properties, supply a unique property set **GUID** to **SetNamespace**. This property set then replaces PS_PUBLIC_STRINGS as the default property set for all subsequent named property accesses using this object. The default property set is used unless explicitly overridden by an optional *PropsetID* parameter. The value is set only for the current object; to continue using the same property set for all objects, you must call **SetNamespace** for each object.

To define a new property set, obtain a string that contains hexadecimal characters representing a unique identifier. You can obtain this identifier by using the Win32® command-line utility **UUIDGEN** or by calling the Win32 function **CoCreateGuid**.

For more information on named properties and property sets, see the *MAPI Programmer's Reference*. For more information on **UUIDGEN** and **CoCreateGuid**, see "COM and ActiveX Object Services" in the Microsoft Platform SDK documentation.

Folder Object

The Folder object represents a folder or container within the MAPI system. A folder can contain subfolders and messages.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Folders collection InfoStore
Child objects:	Fields collection Folders collection Messages collection
Default property:	**Messages**

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Fields	1.0.a	Field object or Fields collection object	Read-only
FolderID	1.0.a	String	Read-only
Folders	1.0.a	Folders collection object	Read-only
HiddenMessages	1.2	Messages collection object	Read-only
ID	1.0.a	String	Read-only
MAPIOBJECT	1.0.a	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Messages	1.0.a	Messages collection object	Read-only
Name	1.0.a	String	Read/write
Parent	1.0.a	Folders collection object or InfoStore object	Read-only
Session	1.0.a	Session object	Read-only
StoreID	1.0.a	String	Read-only

Methods

	Available

Name	in version	Parameters
CopyTo	1.1	*folderID* as **String**, (optional) *storeID* as **String**, (optional) *name* as **String**, (optional) *copySubfolders* as **Boolean**
Delete	1.0.a	(none)
IsSameAs	1.1	*objFolder2* as **Object**
MoveTo	1.1	*folderID* as **String**, (optional) *storeID* as **String**
Update	1.0.a	(optional) *makePermanent* as **Boolean**, (optional) *refreshObject* as **Boolean**

Remarks

A Folder object can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to the Folder object itself. The individual properties that can be rendered with the **RenderProperty** method are indicated in the Folder object property descriptions.

A Folder object can also be rendered as the parent of a Messages collection, using the ContainerRenderer object. The individual properties that can be rendered with the **RenderProperty** method are indicated in the Folder object property descriptions.

Changes to a folder are not saved by MAPI until you call its **Update** method.

CopyTo Method (Folder Object) Group

The **CopyTo** method makes a copy of the Folder object at another folder hierarchy location.

Syntax

Set *objCopiedFolder* = *objFolder*.**CopyTo(***folderID* **[***, storeID, name, copySubfolders* **])**

objCopiedFolder
On successful return, contains the copied Folder object.

objFolder
Required. This Folder object.

folderID
Required. String. The unique identifier of the new parent Folder object, that is, the Folder object under which the copy of this folder is to appear as a subfolder.

storeID
Optional. String. The unique identifier of the InfoStore object in which the folder copy is to appear, if different from this folder's InfoStore.

name
Optional. String. The name to be assigned to the folder copy, if different from this folder's name.

copySubfolders
Optional. Boolean. If **True**, all subfolders contained within this folder are to be copied along with the folder. The default value is **True**.

Remarks

All Message objects contained within this folder are copied along with the folder itself. This also applies to messages contained in the subfolders if the *copySubfolders* parameter is **True**.

The copy operation takes effect immediately. This Folder object, together with all its contents, remains unchanged by the **CopyTo** method.

Delete Method (Folder Object) Group

The **Delete** method removes the Folder object from its parent Folders collection or InfoStore object.

Syntax

objFolder.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Folder object. If you have another reference to the folder, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another folder.

The final **Release** on the Folder object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The action of the **Delete** method is permanent, and the Folder object cannot be restored to the collection. Before calling **Delete**, your application can prompt the user to verify whether the folder should be permanently deleted.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

You can delete all the folders in the Folders collection by calling the collection's **Delete** method. The ability to delete any folder depends on the permissions granted to the user. The **Delete** method returns an error code if called with insufficient permissions.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first child Folder object. That reference survives the call to **Delete** and has to be reassigned. The second child Folder object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Folder object
Set objChildFolder = objFolder.Folders.Item(1)
objChildFolder.Delete ' still have a reference from Set statement
' ... other operations on objChildFolder possible but pointless ...
Set objChildFolder = Nothing ' necessary to remove reference
' ...
objFolder.Folders.Item(2).Delete ' no reference to remove
```

Fields Property (Folder Object) Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objFolder.**Fields**

objFolder.**Fields(***index***)**

objFolder.**Fields(***proptag***)**

objFolder.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with a Folder object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of a MAPI property using either its name or its MAPI property tag. For access with the property tag, use *objFolder*.**Fields(***proptag***)**, where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_CONTENT_COUNT**. To access a named property, use *objFolder*.**Fields(***name***)**, where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

The **Fields** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

This code fragment displays the field name or identifier value of all Field Object objects within the collection:

```
' many properties are MAPI properties and have no names
' for those properties, display the ID
' fragment from Field_Name
' assume objFieldColl, objOneField are valid objects
For i = 1 to objFieldColl.Count Step 1
    Set objOneField = objFieldColl.Index(i)
    If "" = objOneField.Name Then
        MsgBox "Field has no name; ID = " & objOneField.ID
    Else
```

```
        MsgBox "Field name = " & objOneField.Name
    End If
Next i
```

FolderID Property (Folder Object) Group

The **FolderID** property returns the unique identifier of the subfolder's parent folder as a string. Read-only.

Syntax

objFolder.**FolderID**

Data Type

String

Remarks

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

A Microsoft® Schedule+ calendar folder does not have a parent folder nor reside in a message store. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, the **FolderID** property has no defined value. An attempt to access **FolderID** in this case returns **CdoE_NOT_FOUND**.

The **FolderID** property corresponds to the MAPI property PR_PARENT_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Folder object and the *property* parameter of the **RenderProperty** method to **CdoPR_PARENT_ENTRYID**.

Example

```
'          fragment from Session_Inbox
Set objFolder = objSession.Inbox
'          fragment from Folder_FolderID
strFolderID = objFolder.FolderID
MsgBox "Parent Folder ID = " & strFolderID
' later: obtain parent folder of Inbox (that is, store's root folder)
'          fragment from Session_GetFolder
If "" = strFolderID Then
    MsgBox ("Must first set folder ID variable; see Folder->ID")
    Exit Function
End If
Set objFolder = objSession.GetFolder(strFolderID)
' error checking here ...
```

See Also

ID Property (Folder Object), **GetFolder** Method (Session Object), **StoreID** Property (Folder Object)

Folders Property (Folder Object) Group

The **Folders** property returns a Folders collection of subfolders within the folder. Read-only.

Syntax

objFolder.**Folders**

Data Type

Object (Folders collection)

Remarks

Although the **Folders** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Folder objects retain their respective read/write or read-only accessibility.

The Microsoft® Schedule+ appointment folder is not implemented in the same way as Microsoft® Outlook™ folders and CDO folders. In particular, it does not have subfolders. An attempt to read the **Folders** property on the Schedule+ appointment folder returns **CdoE_NO_SUPPORT**.

The **Folders** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

This code fragment uses a recursive function to list the names of all subfolders of the specified folder:

```
' fragment from Session_Inbox
Set objFolder = objSession.Inbox
' from TstDrv_Util_ListFolders
If CdoFolder = objFolder.Class Then ' verify it's a Folder object
    x = Util_ListFolders(objFolder) ' use current global folder
End If

' complete function for Util_ListFolders
Function Util_ListFolders(objParentFolder As Object)
Dim objFoldersColl As Folders ' the child Folders collection
Dim objOneSubfolder As Folder 'a single Folder object
' set up error handler here
If Not objParentFolder Is Nothing Then
    MsgBox ("Folder name = " & objParentFolder.Name)
    Set objFoldersColl = objParentFolder.Folders
    If Not objFoldersColl Is Nothing Then ' loop through all
        Set objOneSubfolder = objFoldersColl.GetFirst
        While Not objOneSubfolder Is Nothing
            x = Util_ListFolders(objOneSubfolder)
            Set objOneSubfolder = objFoldersColl.GetNext
        Wend
    End If
    Exit Function
End If
' error handler here
End Function
```

HiddenMessages Property (Folder Object) Group

The **HiddenMessages** property returns a Messages collection object of hidden messages in the folder. Read-only.

Syntax

objFolder.**HiddenMessages**

Data Type

Object (Messages collection)

Remarks

The messages in the collection returned by the **HiddenMessages** property are not visible through the Microsoft® Exchange Client, Microsoft® Outlook™, or Microsoft Outlook Web Access (OWA). These hidden messages correspond to the associated information kept in a folder by MAPI.

Although the **HiddenMessages** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Message objects retain their respective read/write or read-only accessibility.

The **HiddenMessages** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. It could be rendered as a container object by setting the ContainerRenderer object's **DataSource** property to the Messages collection object returned by the **HiddenMessages** property.

ID Property (Folder Object) Group

The **ID** property returns the unique identifier of the Folder object as a string. Read-only.

Syntax

objFolder.**ID**

Data Type

String

Remarks

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

The **ID** property corresponds to the MAPI property PR_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Folder object and the *property* parameter of the **RenderProperty** method to **CdoPR_ENTRYID**.

Example

```
' save the current ID and restore using Session.GetFolder
'          fragment from Session_Inbox
    Set objFolder = objSession.Inbox
'          fragment from Folder_FolderID
    strFolderID = objFolder.ID
    MsgBox "Current Folder ID = " & strFolderID
' later: restore folder using objSession.GetFolder(strFolderID)
'          fragment from Session_GetFolder
    If "" = strFolderID Then
        MsgBox ("Must first set folder ID variable; see Folder->ID")
        Exit Function
    End If
    Set objFolder = objSession.GetFolder(strFolderID)
    ' error checking here ...
```

See Also

FolderID Property (Folder Object), **GetFolder** Method (Session Object), **StoreID** Property (Folder Object)

IsSameAs Method (Folder Object) Group

The **IsSameAs** method returns **True** if the Folder object is the same as the Folder object being compared against.

Syntax

objFolder.**IsSameAs(***objFolder2***)**

objFolder
Required. This Folder object.

objFolder2
Required. The Folder object being compared against.

Remarks

Two Folder objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

MAPIOBJECT Property (Folder Object)

Group

The **MAPIOBJECT** property returns an **IUnknown** pointer to the Folder object. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objFolder.**MAPIOBJECT**

Data Type

Variant (**vbDataObject** format)

Remarks

The **MAPIOBJECT** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **MAPIOBJECT** property is an **IUnknown** object that returns an **IMAPIFolder** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

The **MAPIOBJECT** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Messages Property (Folder Object)

Group

The **Messages** property returns a Messages collection object within the folder. Read-only.

Syntax

objFolder.**Messages**

The **Messages** property is the default property of a Folder object, meaning that *objFolder* is syntactically equivalent to *objFolder*.**Messages** in Visual Basic code.

Data Type

Object (Messages collection)

Remarks

Although the **Messages** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Message objects retain their respective read/write or read-only accessibility.

The **Messages** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. It could be rendered as a container object by setting the ContainerRenderer object's **DataSource** property to the Messages collection object returned by the **Messages** property.

Example

```
' from the QuickStart sample
' use the Messages property of the Outbox folder to add a new message
    Set objSession = CreateObject("MAPI.Session")
    objSession.Logon
    Set objMessage = objSession.Outbox.Messages.Add
```

MoveTo Method (Folder Object) Group

The **MoveTo** method relocates the Folder object to another folder hierarchy location.

Syntax

Set *objMovedFolder* = *objFolder*.**MoveTo(***folderID* **[***, storeID* **])**

objMovedFolder
On successful return, contains the moved Folder object.

objFolder
Required. This Folder object.

folderID
Required. String. The unique identifier of the new parent Folder object, that is, the Folder object under which this folder is to appear as a subfolder.

storeID
Optional. String. The unique identifier of the InfoStore object in which this folder is to appear, if different from its current InfoStore.

Remarks

All subfolders of this folder, together with all Message objects contained within this folder and its subfolders, are moved along with the folder itself.

The move operation takes effect immediately. This Folder object is no longer accessible at its former location after the **MoveTo** method returns.

Name Property (Folder Object) Group

The **Name** property returns or sets the name of the Folder object as a string. Read/write.

Syntax

objFolder.**Name**

Data Type

String

Remarks

The **Name** property corresponds to the MAPI property PR_DISPLAY_NAME. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Folder object and the *property* parameter of the **RenderProperty** method to **CdoPR_DISPLAY_NAME**.

Example

```
Dim objFolder As Object ' assume valid folder
MsgBox "Folder name = " & objFolder.Name
```

StoreID Property (Folder Object) Group

The **StoreID** property returns the unique identifier of the InfoStore object in which the Folder object resides. Read-only.

Syntax

objFolder.**StoreID**

Data Type

String

Remarks

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

A Microsoft® Schedule+ calendar folder does not reside in a message store nor have a parent folder. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, the **StoreID** property has no defined value. An attempt to access **StoreID** in this case returns **CdoE_NOT_FOUND**.

The **StoreID** property corresponds to the MAPI property PR_STORE_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Folder object and the *property* parameter of the **RenderProperty** method to **CdoPR_STORE_ENTRYID**.

Example

```
' from the sample function Folder_ID
    strFolderID = objFolder.ID
' from the sample function Folder_StoreID
    strFolderStoreID = objFolder.StoreID
' later: can use these IDs with Session.GetFolder()
' from the sample function Session_GetFolder
    Set objFolder = objSession.GetFolder(folderID:=strFolderID, _
                                         storeID:=strFolderStoreID)
```

See Also

FolderID Property (Folder Object), **GetFolder** Method (Session Object), **ID** Property (Folder Object)

Update Method (Folder Object) Group

The **Update** method saves changes to the Folder object in the MAPI system.

Syntax

objFolder.**Update([***makePermanent***, *refreshObject***])**

objFolder
Required. The Folder object.

makePermanent
Optional. Boolean. A value of **True** indicates that the property cache is flushed and all changes are committed in the underlying message store. **False** indicates that the property cache is flushed but not committed to persistent storage. The default value is **True**.

refreshObject
Optional. Boolean. A value of **True** indicates that the property cache is reloaded from the values in the underlying message store. **False** indicates that the property cache is not reloaded. The default value is **False**.

Remarks

Changes to Folder objects are not permanently saved in the MAPI system until you call the **Update** method with the *makePermanent* parameter set to **True**.

For improved performance, CDO caches property changes in private storage and updates either the object or the underlying persistent storage only when you explicitly request such an update. For efficiency, you should make only one call to **Update** with its *makePermanent* parameter set to **True**.

The *makePermanent* and *refreshObject* parameters combine to cause the following changes:

	refreshObject = True	**refreshObject = False**
makePermanent = True	Commit all changes, flush the cache, and reload the cache from the message store.	Commit all changes and flush the cache (default combination).
makePermanent = False	Flush the cache and reload the cache from the message store.	Flush the cache.

Call **Update(False, True)** to flush the cache and then reload the values from the message store.

Folders Collection Object

The Folders collection object contains one or more Folder objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Folder
Child objects:	Folder
Default property:	**Item**

A Folders collection is considered a *large collection*, which means that the **Count** property has limited validity, and the best way to access an individual Folder object within the collection is to use either its unique identifier or the **Get** methods. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Count	1.1	Long	Read-only
Item	1.1	Folder object	Read-only
Parent	1.0.a	Folder object	Read-only
RawTable	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Session	1.0.a	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.1	*name* as String
Delete	1.1	(none)
GetFirst	1.0.a	(none)
GetLast	1.0.a	(none)
GetNext	1.0.a	(none)
GetPrevious	1.0.a	(none)
Sort	1.1	(optional) *SortOrder* as **Long**, (optional) *PropTag* as **Long**, (optional) *PropID* as **String**

Remarks

Large collections, such as the Folders collection, cannot always maintain an accurate count of the

number of objects in the collection. It is strongly recommended that you use the **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** methods to access individual items in the collection. You can access one specific folder by using the Session object's **GetFolder** method, and you can access all the items in the collection with the Microsoft® Visual Basic® **For Each** construction.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the folders are sorted or not. The Folder objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

Example

To refer to a unique Folder object within the Folders collection, use the collection's **GetFirst** and **GetNext** methods or use the folder's **ID** value as an index.

The following code sample demonstrates the **Get** methods. The sample assumes that you have exactly three subfolders within your Inbox and exactly three subfolders within your Outbox. After this code runs, the three folders in the Inbox are named Blue, Red, and Orange (in that order), and the three folders in the Outbox are named Gold, Purple, and Yellow (in that order).

```
Dim objSession As MAPI.Session
Dim objMessage As Message
Dim objFolder As Folder

Set objSession = CreateObject("MAPI.Session")
objSession.Logon "User", "", True
With objSession.Inbox.Folders
    Set objFolder = .GetFirst
    objFolder.Name = "Blue"
    Set objFolder = .GetNext
    objFolder.Name = "Red"
    Set objFolder = .GetLast
    objFolder.Name = "Orange"
End With
With objSession.Outbox.Folders
    Set objFolder = .GetFirst
    objFolder.Name = "Gold"
    Set objFolder = .GetNext
    objFolder.Name = "Purple"
    Set objFolder = .GetLast
    objFolder.Name = "Yellow"
End With
objSession.Logoff
```

Add Method (Folders Collection) Group

The **Add** method creates and returns a new Folder object in the Folders collection.

Syntax

Set *objFolder* = *objFoldersColl*.**Add(***name***)**

objFolder
On successful return, contains the new Folder object.

objFoldersColl
Required. The Folders collection object.

name
Required. String. The display name of the folder.

Remarks

The *name* parameter corresponds to the **Name** property of the Folder object.

The user must have permission to **Add** or **Delete** a Folder object. Most users have this permission only for their personal folders.

You do not need to call the **Update** method of the new Folder object when you **Add** it to the collection. However, when you set or change any of the folder's properties, you must call **Update** to save the changes in the MAPI system.

Example

This code fragment adds a new folder to a user's Inbox:

```
Dim myInbox, newFolder As Object
Set myInbox = MAPI.Session.Inbox
' add new folder to Inbox
Set newFolder = myInbox.Folders.Add "Personal Messages"
' Update not needed until changes made
```

Count Property (Folders Collection)

Group

The **Count** property returns the number of Folder objects in the collection, or a very large number if the exact count is not available. Read-only.

Syntax

objFoldersColl.**Count**

Data Type

Long

Remarks

A large collection cannot always maintain an accurate count of its members, and the **Count** property cannot be used as the collection's size when it has the value &H7FFFFFFF. Programmers needing to access individual objects in a large collection are strongly advised to use the Microsoft® Visual Basic® **For Each** statement or the **Get** methods.

The **Count** property can always be used to determine whether a Folders collection is empty or not.

The recommended procedures for traversing a large collection are, in decreasing order of preference:

1. Global selection, such as the Visual Basic **For Each** statement.
2. The **Get** methods, particularly **GetFirst** and **GetNext**.
3. An indexed loop, such as the Visual Basic **For ... Next** construction.

If the message store provider cannot supply the precise number of Folder objects, CDO returns &H7FFFFFFF (= 2^31 - 1 = 2,147,483,647) for the **Count** property. This is the largest positive value for a long integer and is intended to prevent an approximate count from prematurely terminating an indexed loop. On 32-bit platforms, this value is defined in the type library as **CdoMaxCount**. On other platforms, **CdoMaxCount** is not defined, and a program on such a platform must compare the **Count** property against &H7FFFFFFF to see if it is reliable.

If the **Count** property is not reliable, that is, if it is &H7FFFFFFF, a program using it to terminate an indexed loop must also check each returned object for a value of **Nothing** to avoid going past the end of the collection.

The use of the **Item** property in conjunction with the **Count** property in a large collection can be seen in the following example.

Example

This code fragment searches for a Folder object called "Resumes":

```
Dim i As Integer ' loop index / object counter
Dim collFolders as Folders ' Folders collection; assume already given
If collFolders Is Nothing Then
    ' MsgBox "Folders collection object is invalid"
    ' Exit
End If
' see if collection is empty
If 0 = collFolders.Count Then
    ' MsgBox "No folders in collection"
    ' Exit
End If
' look for folder called "Resumes" in collection
```

```
For i = 1 To collFolders.Count Step 1
    If collFolders.Item(i) Is Nothing Then
    ' MsgBox "No such folder found in collection"
    ' Exit ' no more folders in collection
    End If
    If collFolders.Item(i).Name = "Resumes" Then
    ' MsgBox "Desired folder is at index " & i
    ' Exit
    End If
Next i
```

Delete Method (Folders Collection)

Group

The **Delete** method removes all the Folder objects from the Folders collection.

Syntax

objFoldersColl.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Folder object. If you have another reference to a folder, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another folder.

The final **Release** on each Folder object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Folder object, use the **Delete** method specific to that object.

The **Delete** method on a large collection takes effect immediately and is permanent. A deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

GetFirst Method (Folders Collection)

Group

The **GetFirst** method returns the first Folder object in the Folders collection. It returns **Nothing** if no first object exists.

Syntax

Set *objFolder* = *objFoldersColl*.**GetFirst( )**

objFolder
On successful return, represents the first Folder object in the collection.

objFoldersColl
Required. The Folders collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the folders are sorted or not. The Folder objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

GetLast Method (Folders Collection)

Group

The **GetLast** method returns the last Folder object in the Folders collection. It returns **Nothing** if no last object exists.

Syntax

Set *objFolder* = *objFoldersColl*.**GetLast( )**

objFolder
On successful return, represents the last Folder object in the collection.

objFoldersColl
Required. The Folders collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the folders are sorted or not. The Folder objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

GetNext Method (Folders Collection)

Group

The **GetNext** method returns the next Folder object in the Folders collection. It returns **Nothing** if no next object exists, for example if already positioned at the end of the collection.

Syntax

Set *objFolder* = *objFoldersColl*.**GetNext( )**

objFolder
On successful return, represents the next Folder object in the collection.

objFoldersColl
Required. The Folders collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the folders are sorted or not. The Folder objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

If the **GetFirst** method has not been called since the Folders collection was initialized, the behavior of the **GetNext** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to set an explicit variable for the collection before entering the loop. For more information, see Object Collections.

GetPrevious Method (Folders Collection) Group

The **GetPrevious** method returns the previous Folder object in the Folders collection. It returns **Nothing** if no previous object exists, for example if already positioned at the beginning of the collection.

Syntax

Set *objFolder* = *objFoldersColl*.**GetPrevious( )**

objFolder
On successful return, represents the previous Folder object in the collection.

objFoldersColl
Required. The Folders collection object.

Remarks

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether the folders are sorted or not. The Folder objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

If the **GetLast** method has not been called since the Folders collection was initialized, the behavior of the **GetPrevious** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to set an explicit variable for the collection before entering the loop. For more information, see Object Collections.

Item Property (Folders Collection) Group

The **Item** property returns a single Folder object from the Folders collection. Read-only.

Syntax

objFoldersColl.**Item(***index***)**

objFoldersColl.**Item(***searchValue***)**

index
A long integer ranging from 1 to the size of the Folders collection.

searchValue
A string used to search the Folders collection starting at the current position. The search returns the next Folder object having the current sorting property greater than or equal to the *searchValue* string.

The **Item** property is the default property of a Folders collection, meaning that *objFoldersColl***(***index***)** is syntactically equivalent to *objFoldersColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Folder)

Remarks

Programmers needing to access individual objects in a large collection are strongly advised to use the Visual Basic **For Each** statement or the **Get** methods, particularly **GetFirst** and **GetNext**.

The **Item(***index***)** syntax returns the Folder object at the indicated position in the collection. It can be used in an indexed loop, such as the **For ... Next** construction in Visual Basic. The first item in the collection has an index of 1.

For more information on using the **Count** and **Item** properties in a large collection, see the example in the **Count** property.

The **Item(***searchValue***)** syntax returns the next Folder object whose current sorting property is greater than or equal to the string specified by *searchValue*. This syntax starts its search at the current position.

Prefix searching is based on the current sort order of the collection. The default sort property for a Folders collection is the **Name** property of the collection's Folder objects. If you want to use the **Item(***searchValue***)** syntax to search the collection on another property, for example a parent folder ID, you should first call the **Sort** method specifying the **FolderID** property.

Note The **Item(***searchValue***)** syntax uses the **IMAPITABLE::FindRow** method, which performs a search dependent on the current sort order of the table underlying the collection. Not all tables are sorted alphabetically. The Microsoft Exchange Public Folders folder, for example, is held in a nonalphabetic order, and you should access its subfolders using the **Item(***index***)** syntax.

For more information on tables, bookmarks, restrictions, and sort and search orders, see the *MAPI Programmer's Reference*.

If your application is running as a Windows NT® service, you cannot access the Microsoft Exchange Public Folders through the normal hierarchy because of a notification conflict. You must use the InfoStore object's **Fields** property to obtain the Microsoft Exchange property PR_IPM_PUBLIC_FOLDERS_ENTRYID, property tag &H66310102. This represents the top-level public folder and allows you to access all other public folders through its **Folders** property. For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm.

Although the **Item** property itself is read-only, the Folder object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

RawTable Property (Folders Collection)

Group

The **RawTable** property returns an **IUnknown** pointer to the MAPI table object underlying the Folders collection. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objFoldersColl.**RawTable**

Data Type

Variant (**vbDataObject** format)

Remarks

The **RawTable** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **RawTable** property is an **IUnknown** object that returns an **IMAPITable** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

Sort Method (Folders Collection) Group

The **Sort** method sorts the collection on the specified property according to the specified sort order.

Syntax

objFoldersColl.**Sort([***SortOrder, PropTag***])**

objFoldersColl.**Sort([***SortOrder, name***])**

objFoldersColl
Required. The Folders collection object.

SortOrder
Optional. Long. The specified sort order, one of the following values:

Value	Numeric value	Description
CdoNone	0	No sort
CdoAscending	1	Ascending sort (default)
CdoDescending	2	Descending sort

PropTag
Optional. Long. The property tag value for the MAPI property to be used for the sort. *PropTag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_STORE_ENTRYID**.

name
Optional. String. The custom property name of a MAPI named property.

Remarks

Both parameters are optional. If *SortOrder* is not specified, ascending order is used. If neither *PropTag* nor *name* is specified, the property used in the previous call to **Sort** is used again. If **Sort** has never been called on this collection during this session, the MAPI property **CdoPR_DISPLAY_NAME** is used for the sort.

Each call to **Sort** generates an entirely new sort order based on the specified property. No previous sort order is retained or nested.

If the underlying messaging system does not support the sort criteria specified, for example descending order or MAPI named properties, the **Sort** method returns **CdoE_TOO_COMPLEX**.

GroupHeader Object

The GroupHeader object represents the header for a grouping of messages within a table view.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.1
Parent objects:	Messages collection
Child objects:	(none)
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Application	1.1	String	Read-only
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Level	1.1	Long	Read-only
Name	1.1	String	Read-only
Parent	1.1	Messages collection object	Read-only
Session	1.1	Session object	Read-only
Unread	1.1	Long	Read-only

Methods

(None.)

Remarks

A GroupHeader object is only instantiated when a CDO Rendering TableView is applied to a Messages collection, and furthermore only when this view is a grouped, or categorized, view. The group header indicates that the items following it in the view are grouped within its category. A grouped view is generated externally to the CDO application and cannot be created or deleted programmatically by the application. A rendering application applies the view by assigning it to the **CurrentView** property of the CDO Rendering ContainerRenderer object. Applying the grouped view causes the underlying collection to be updated with the grouping specified in the view.

Currently, categorized views are only applied to folders, and group headers can only appear in a Messages collection. Address book container views are not grouped.

Group headers are nonpersistent objects instantiated automatically to represent the categorization rows in a grouped view. They are not stored anywhere. Group headers, like grouped views, cannot be created or deleted programmatically by a CDO application. The only way to create GroupHeader objects is to apply a grouped view to a rendering object. The grouping is specified externally as part of the view, for example by the Microsoft® Exchange Client. A group header is released, with no persistent copy, when its Messages collection is released.

A GroupHeader object corresponds to a categorization row in a MAPI view table. The group header is only needed when you traverse a Messages collection and need to distinguish between categorization and message items. When you render a categorized table with the CDO Rendering ContainerRenderer object, the categorization rows are rendered as well as the messages.

GroupHeader objects are included with Message objects in the **Count** property of the Messages collection and are accessible through its **Item** property. They can also be returned by the Messages collection's **Get** methods.

Count Property (GroupHeader Object)

Group

The **Count** property returns the total number of items in the group. Read-only.

Syntax

objGroupHdr.**Count**

Data Type

Long

Remarks

The **Count** property represents the number of Message objects that are grouped under this group header. It includes both read and unread messages. If -1 is returned, an accurate count is not available.

The **Count** property corresponds to the MAPI property PR_CONTENT_COUNT.

Level Property (GroupHeader Object)

Group

The **Level** property returns the indentation level of the group header within the table view. Read-only.

Syntax

objGroupHdr.**Level**

Data Type

Long

Remarks

The **Level** property represents the nesting depth of this group header within the table view. The top-level group is at level 1, the outermost level. The maximum permitted grouping depth is 4.

The number of categories, or levels of grouping, in a particular table view is given by the **Categories** property of the CDO Rendering TableView object.

The **Level** property corresponds to the MAPI property PR_DEPTH, incremented by a value of 1.

Name Property (GroupHeader Object)

Group

The **Name** property returns a string that can be used as text for various categories in the table view. Read-only.

Syntax

objGroupHdr.**Name**

The **Name** property is the default property of a GroupHeader object, meaning that *objGroupHdr* is syntactically equivalent to *objGroupHdr*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Name** property returns text that can be used for view categories such as sender, recipient, subject, conversation topic, keyword, size, time sent, and time received.

A rendering object such as the CDO Rendering ContainerRenderer object should use the string in the **Name** property to render group headers. The string should be followed by the message counts in the **Count** and **Unread** properties, for example:

```
<category header string> (5 items, 3 unread)
```

or, if all items are marked as having been read:

```
<category header string> (5 items)
```

Unread Property (GroupHeader Object)

Group

The **Unread** property returns the number of unread messages in the group. Read-only.

Syntax

objGroupHdr.**Unread**

Data Type

Long

Remarks

The **Unread** property represents the number of Message objects grouped under this group header that have not been marked as read. If -1 is returned, an accurate count is not available.

The **Unread** property corresponds to the MAPI property PR_CONTENT_UNREAD.

InfoStore Object

The InfoStore object provides access to the folder hierarchy of a message store.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Fields collection InfoStores collection
Child objects:	Folder
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Fields	1.1	Field object or Fields collection object	Read-only
ID	1.0.a	String	Read-only
Index	1.0.a	Long	Read-only
MAPIOBJECT	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Name	1.0.a	String	Read-only
Parent	1.0.a	InfoStores collection object	Read-only
ProviderName	1.0.a	String	Read-only
RootFolder	1.0.a	Folder object	Read-only
Session	1.0.a	Session object	Read-only

Methods

Name	Available in version	Parameters
IsSameAs	1.1	*objInfoStore2* as **Object**

Remarks

The InfoStore object provides access to its interpersonal message folder hierarchy through the **RootFolder** property, which returns the Folder object that represents the root of the IPM subtree. To access the root folder of the entire message store, first obtain its identifier with the **FolderID** property of the IPM root folder, and then call the Session object's **GetFolder** method.

You can obtain any InfoStore object available to this session with the **Item** property of the InfoStores

collection. You can also retrieve an InfoStore object with a known identifier by calling the session's **GetInfoStore** method.

Example

```
Dim objInfoStore, objIPMRoot, objStoreRoot as Object
Dim rootID as String
Set objInfoStore = objSession.InfoStores.Item(1)
If objInfoStore is Nothing Then
    MsgBox "Cannot open session's first message store"
    ' Exit ...
End If
Set objIPMRoot = objInfoStore.RootFolder
rootID = objIPMRoot.FolderID
Set objStoreRoot = objSession.GetInfoStore (rootID)
' ... error checking ...
```

Fields Property (InfoStore Object) Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objInfoStore.**Fields**

objInfoStore.**Fields(***index***)**

objInfoStore.**Fields(***proptag***)**

objInfoStore.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the Fields collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with an InfoStore object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of a MAPI property using either its name or its MAPI property tag. For access with the property tag, use *objInfoStore*.**Fields(***proptag***)**, where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_STORE_SUPPORT_MASK**. To access a named property, use *objInfoStore*.**Fields(***name***)**, where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

The **Fields(***name***)** syntax is not supported by all message store providers. An InfoStore that does not support named properties returns **CdoE_NO_SUPPORT** for this syntax.

If your application is running as a Microsoft Windows NT® service, you cannot access the Microsoft Exchange Public Folders through the normal hierarchy because of a notification conflict. You must use the InfoStore's **Fields** property to obtain the Microsoft Exchange property PR_IPM_PUBLIC_FOLDERS_ENTRYID, property tag &H66310102. This represents the top-level public folder and allows you to access all other public folders through its **Folders** property. For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm.

Example

This code fragment accesses the root of the Public Folders subtree of a message store:

```
Dim objSess As Session ' assume logged on to valid session
Dim objInfoStore As InfoStore ' assume opened and valid
Dim strPFRootID As String ' binary entry ID returned as hex string
```

```
Dim objPFRoot As Folder ' root folder of Public Folders
tagPFRootID = &H66310102 ' PR_IPM_PUBLIC_FOLDERS_ENTRYID
strPFRootID = objInfoStore.Fields(tagPFRootID) ' entry ID
MsgBox "Public Folders root folder ID = " & strPFRootID
Set objPFRoot = objSession.GetFolder(strPFRootID)
```

ID Property (InfoStore Object) Group

The **ID** property returns the unique identifier of the InfoStore object as a string. Read-only.

Syntax

objInfoStore.**ID**

Data Type

String

Remarks

MAPI systems assign a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. The InfoStore identifier can be used in subsequent calls to the Session object's **GetInfoStore** method.

The **ID** property corresponds to the MAPI property PR_ENTRYID, converted to a string of hexadecimal characters.

Example

```
Dim strInfoStoreID as String  ' hex string version of ID
Dim objInfoStore as InfoStore ' assume valid
strInfoStoreID = objInfoStore.ID ' global variable
MsgBox "InfoStore ID = " & strInfoStoreID
' ... this ID can be used as the parameter to the Session method
Set objInfoStore = objSession.GetInfoStore(strInfoStoreID)
```

Index Property (InfoStore Object) Group

The **Index** property returns the index number for the InfoStore object within the parent InfoStores collection. Read-only.

Syntax

objInfoStore.**Index**

Data Type

Long

Remarks

The **Index** property indicates this object's position within the parent InfoStores collection. It can be saved and used later with the collection's **Item** property to reselect the same message store in the collection.

The first object in the collection has an **Index** value of 1.

Example

```
Function InfoStoresGetByIndex()
Dim lIndex As Long
Dim objOneInfoStore As InfoStore ' assume valid InfoStore
    ' set error handler here
    If objInfoStoreColl Is Nothing Then
        MsgBox "Must select an InfoStores collection"
        Exit Function
    End If
    If 0 = objInfoStoreColl.Count Then
        MsgBox "must select collection with 1 or more InfoStores"
        Exit Function
    End If
    ' prompt user for index; for now, use 1
    Set objOneInfoStore = objInfoStoreColl.Item(1)
    MsgBox "Selected InfoStore 1: " & objOneInfoStore.Name
    lIndex = objOneInfoStore.Index ' save index to retrieve this later
    ' ... get same InfoStore object later
    Set objOneInfoStore = objInfoStoreColl.Item(lIndex)
    If objOneInfoStore Is Nothing Then
        MsgBox "Error, could not reselect the InfoStore"
    Else
        MsgBox "Reselected InfoStore " & lIndex & _
            " using index: " & objOneInfoStore.Name
    End If
    Exit Function
```

IsSameAs Method (InfoStore Object)

Group

The **IsSameAs** method returns **True** if the InfoStore object is the same as the InfoStore object being compared against.

Syntax

objInfoStore.**IsSameAs(***objInfoStore2***)**

objInfoStore
Required. This InfoStore object.

objInfoStore2
Required. The InfoStore object being compared against.

Remarks

Two InfoStore objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

MAPIOBJECT Property (InfoStore Object)

Group

The **MAPIOBJECT** property returns an **IUnknown** pointer to the InfoStore object. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objInfoStore.**MAPIOBJECT**

Data Type

Variant (**vbDataObject** format)

Remarks

The **MAPIOBJECT** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **MAPIOBJECT** property is an **IUnknown** object that returns an **IMsgStore** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

Name Property (InfoStore Object) Group

The **Name** property returns the name of the InfoStore object as a string. Read-only.

Syntax

objInfoStore.**Name**

The **Name** property is the default property of an InfoStore object, meaning that *objInfoStore* is syntactically equivalent to *objInfoStore*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Name** property can be specified as the parameter to the **Item** property of the InfoStores collection if you know the name of the message store.

The string “Public Folders” is the name of the InfoStore object that contains the public folders.

The **Name** property corresponds to the MAPI property PR_DISPLAY_NAME.

Example

```
Dim objInfoStore As InfoStore ' assume valid InfoStore object
MsgBox "InfoStore name = " & objInfoStore.Name
```

ProviderName Property (InfoStore Object) Group

The **ProviderName** property returns the name of the InfoStore's message store provider as a string. Read-only.

Syntax

objInfoStore.**ProviderName**

Data Type

String

Remarks

A message store provider is a MAPI object that manages one or more MAPI message stores. Each message store is accessible as a CDO Library InfoStore object.

The **ProviderName** property corresponds to the MAPI property PR_PROVIDER_DISPLAY.

Example

```
Dim objInfoStore As InfoStore ' assume valid InfoStore object
MsgBox "Message store provider name = " & objInfoStore.ProviderName
```

RootFolder Property (InfoStore Object)

Group

The **RootFolder** property returns a Folder object representing the root of the IPM subtree for the InfoStore object. Read-only.

Syntax

Set *objFolder* **=** *objInfoStore*.**RootFolder**

Data Type

Object (Folder)

Remarks

The **RootFolder** property provides a convenient way to get to this commonly used Folder object.

In addition to the general ability to navigate through the formal collection and object hierarchy, CDO supports properties that allow your application to directly access the most common Folder objects:

- The InfoStore object's **RootFolder** property for the IPM subtree root folder
- The Session object's **Inbox** property for the Inbox folder
- The Session object's **Outbox** property for the Outbox folder

Some message stores also support a direct way to obtain the root folder of the message store. For more information, see the Session object's **GetFolder** method.

If your application is running as a Microsoft® Windows NT® service, you cannot access the Microsoft Exchange Public Folders through the normal hierarchy because of a notification conflict. You must use the InfoStore's **Fields** property to obtain the Microsoft Exchange property PR_IPM_PUBLIC_FOLDERS_ENTRYID, property tag &H66310102. This represents the top-level public folder and allows you to access all other public folders through its **Folders** property. For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm.

Example

```
' from InfoStores_RootFolder
    If objInfoStore Is Nothing Then
        MsgBox "must first select an InfoStore object"
        Exit Function
    End If
    Set objFolder = objInfoStore.RootFolder
    If objFolder Is Nothing Then
        MsgBox "Unable to retrieve IPM root folder"
        Set objMessages = Nothing
        Exit Function
    End If
    If objFolder.Name = "" Then
        MsgBox "Folder set to folder with no name, ID = " _
                                                & objFolder.ID
    Else
        MsgBox "Folder set to: " & objFolder.Name
    End If
    Set objMessages = objFolder.Messages
    Exit Function
```

InfoStores Collection Object

The InfoStores collection object contains one or more InfoStore objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Session
Child objects:	InfoStore
Default property:	**Item**

An InfoStores collection is considered a *small collection*, which means that it supports count and index values that let you access an individual InfoStore object through the **Item** property. The InfoStores collection supports the Microsoft® Visual Basic® **For Each** statement. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Count	1.0.a	Long	Read-only
Item	1.0.a	InfoStore object	Read-only
Parent	1.0.a	Session object	Read-only
Session	1.0.a	Session object	Read-only

Methods

(None.)

Remarks

An InfoStores collection provides access to all InfoStore objects available to this session. Each InfoStore object in turn offers access to the folder hierarchy of that message store. This is used primarily to obtain access to public and private folders.

CDO does not support methods to add or remove InfoStore objects from the collection.

In general, you cannot assume that the InfoStore object's **Name** property is unique. This means that you cannot rely on the name to retrieve the InfoStore from the collection. However, you can iterate through all objects in the collection using the InfoStores collection object's **Item** property, and then examine properties of the individual InfoStore objects. You can also rely on the InfoStore object's **ID** property, which is guaranteed to be unique.

Count Property (InfoStores Collection)

Group

The **Count** property returns the number of InfoStore objects in the collection. Read-only.

Syntax

objInfoStoresColl.**Count**

Data Type

Long

Example

This code fragment maintains a global variable to loop through the small collection, and uses the **Count** property to keep it from getting too large:

```
' from InfoStores_NextItem
' iInfoStoresCollIndex is an integer used as an index
'   check for empty collection ...
'   check index upper bound
    If iInfoStoresCollIndex >= objInfoStoresColl.Count Then
        iInfoStoresCollIndex = objInfoStoresColl.Count
        MsgBox "Already at end of InfoStores collection"
        Exit Function
    End If
    ' index is < count; can be incremented by 1
    iInfoStoresCollIndex = iInfoStoresCollIndex + 1
    Set objInfoStore = objInfoStoresColl.Item(iInfoStoresCollIndex)
    If objInfoStore Is Nothing Then
        MsgBox "Error, cannot get this InfoStore object"
        Exit Function
    Else
        MsgBox "Selected InfoStore " & iInfoStoresCollIndex
    End If
```

Item Property (InfoStores Collection)

Group

The **Item** property returns a single InfoStore object from the InfoStores collection. Read-only.

Syntax

objInfoStoresColl.**Item(***index***)**

objInfoStoresColl.**Item(***storeName***)**

index
A long integer ranging from 1 to *objInfoStoresColl*.**Count**.

storeName
A string representing the name of the desired InfoStore. This can be obtained from the **Name** property of an InfoStore object.

The **Item** property is the default property of an InfoStores collection, meaning that *objInfoStoresColl***(***index***)** is syntactically equivalent to *objInfoStoresColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (InfoStore)

Remarks

The **Item** property works like an accessor property for small collections.

Although the **Item** property itself is read-only, the InfoStore object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

For more information on using the **Count** and **Item** properties in an InfoStores collection, see the example in the **Count** property.

MeetingItem Object

The MeetingItem object represents a meeting in a folder.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.2
Parent objects:	Messages collection
Child objects:	Attachments collection Fields collection Recipients collection
Default property:	**Subject**

The MeetingItem object is a subclass of the Message object and exposes all the same properties and methods. In the following tables of properties and methods, those that are common with the Message object are linked to their descriptions for the Message object. Only the properties and methods unique to the MeetingItem object are described in this section.

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Attachments	1.2	Attachment object or Attachments collection object	Read-only
Categories	1.2	String array	Read/write
Class	1.2	Long	Read-only
Conversation	1.2	(Obsolete. Do not use.)	Read/write
ConversationIndex	1.2	String	Read/write
ConversationTopic	1.2	String	Read/write
DeliveryReceipt	1.2	Boolean	Read/write
Encrypted	1.2	Boolean	Read/write
Fields	1.2	Field object or Fields collection object	Read-only
FolderID	1.2	String	Read-only
ID	1.2	String	Read-only
Importance	1.2	Long	Read/write
MAPIOBJECT	1.2	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
MeetingType	1.2	Long	Read-only

Parent	1.2	Messages collection object	Read-only
ReadReceipt	1.2	Boolean	Read/write
Recipients	1.2	Recipients object or Recipients collection object	Read/write
Sender	1.2	AddressEntry object	Read/write
Sensitivity	1.2	Long	Read/write
Sent	1.2	Boolean	Read/write
Session	1.2	Session object	Read-only
Signed	1.2	Boolean	Read/write
Size	1.2	Long	Read-only
StoreID	1.2	String	Read-only
Subject	1.2	String	Read/write
Submitted	1.2	Boolean	Read/write
Text	1.2	String	Read/write
TimeCreated	1.2	Variant (**vbDate** format)	Read-only
TimeExpired	1.2	Variant (**vbDate** format)	Read/write
TimeLastModified	1.2	Variant (**vbDate** format)	Read-only
TimeReceived	1.2	Variant (**vbDate** format)	Read/write
TimeSent	1.2	Variant (**vbDate** format)	Read/write
Type	1.2	String	Read/write
Unread	1.2	Boolean	Read/write

Methods

Name	Available in version	Parameters
CopyTo	1.2	*folderID* as **String**, (optional) *storeID* as **String**
Delete	1.2	(none)
Forward	1.2	(none)
GetAssociatedAppointment	1.2	(none)
IsSameAs	1.2	*objMessage2* as **Object**
MoveTo	1.2	*folderID* as **String**, (optional) *storeID* as **String**
Options	1.2	(optional) *parentWindow* as **Long**
Reply	1.2	(none)

ReplyAll	1.2	(none)
Respond	1.2	*RespondType* as **Long**
Send	1.2	(optional) *saveCopy* as **Boolean**, (optional) *showDialog* as **Boolean**, (optional) *parentWindow* as **Long**
Update	1.2	(optional) *makePermanent* as **Boolean**, (optional) *refreshObject* as **Boolean**

Remarks

A MeetingItem object is distinguished from a Message object by its **Type** property containing IPM.Schedule.Meeting.Request.

New MeetingItem objects are created automatically by CDO when appointments are made into meetings. You can cause an AppointmentItem object to become a meeting by setting its **MeetingStatus** property to **CdoMeeting** and sending it to one or more recipients. To do this, create a Recipients collection using the appointment's **Recipients** property, populate the collection using its **Add** method, and call the appointment's **Send** method. CDO instantiates a MeetingItem object at the time you call **Send**. You cannot create a MeetingItem object directly.

A meeting item can be obtained from its parent Messages collection using the collection's **Item** property. To get to the Messages collection in a folder, use the Folder object's **Messages** property. If you know a meeting's unique identifier, you can obtain it directly from the Session object's **GetMessage** method.

A MeetingItem object is a member of the Inbox Messages collection of each recipient to which the original AppointmentItem object was sent. You can treat it programmatically like the Message objects in the collection. In particular, you can apply a MessageFilter object to the collection and filter meeting items on any properties, including the inherited Message object properties.

A MeetingItem object can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to the MeetingItem object itself. The individual properties that can be rendered with the **RenderProperty** method are indicated in the MeetingItem and Message object property descriptions.

A MeetingItem object can also be rendered as the parent of a Recipients collection, using the ContainerRenderer object. The individual properties that can be rendered with the **RenderProperty** method are indicated in the MeetingItem and Message object property descriptions.

GetAssociatedAppointment Method (MeetingItem Object) Group

The **GetAssociatedAppointment** method returns an AppointmentItem object associated with this meeting.

Syntax

Set *objAppoint* = *objMeeting*.**GetAssociatedAppointment( )**

objAppoint
On successful return, contains the AppointmentItem object associated with this meeting.

objMeeting
Required. This MeetingItem object.

Remarks

You can work directly with the AppointmentItem object to access its specifications and respond to it. The appointment returned by **GetAssociatedAppointment** is the only AppointmentItem object on which you can call the **Respond** method.

MeetingType Property (MeetingItem Object) Group

The **MeetingType** property returns the type of this meeting item. Read-only.

Syntax

objMeeting.**MeetingType**

Data Type

Long

Remarks

The **MeetingType** property is set automatically by the **Send** method when you send a meeting request from an AppointmentItem object and when you send a response from an AppointmentItem or MeetingItem object. **MeetingType** can have exactly one of the following values:

MeetingType value	Decimal value	Description
CdoMeetingRequest	1	This meeting item is a meeting request.
CdoMeetingResponse	2	This meeting item is a response to a meeting request.

Respond Method (MeetingItem Object)

Group

The **Respond** method returns a MeetingItem object for responding to this meeting request.

Syntax

Set *objMeetResp* = *objMeeting*.**Respond(***RespondType***)**

objMeetResp
Object. On successful return, contains a MeetingItem object that can be used to respond to the meeting request.

objMeeting
Required. This MeetingItem object.

RespondType
Required. Long. The value to send as the response.

Remarks

The **Respond** method prepares a meeting response which can be sent in answer to a meeting request using the **Forward**, **Reply**, **ReplyAll**, or **Send** method. The response takes the form of a MeetingItem object with the meeting's initiating user as a primary recipient. The initiating user is available through the **Organizer** property of the associated AppointmentItem object, which can be obtained from the **GetAssociatedAppointment** method.

The *RespondType* parameter can have exactly one of the following values:

***RespondType* setting**	**Decimal value**	**Description**
CdoResponseAccepted	3	This messaging user wishes to firmly accept the meeting request.
CdoResponseDeclined	4	This messaging user wishes to decline the meeting request.
CdoResponseTentative	2	This messaging user wishes to tentatively accept the meeting request.

The message class of the response you send depends on the value you specify in the *RespondType* parameter. It is IPM.Schedule.Meeting.Resp.Pos if you accept, IPM.Schedule.Meeting.Resp.Neg if you decline, or IPM.Schedule.Meeting.Resp.Tent if you accept tentatively.

Calling the **Respond** method is the same as calling **GetAssociatedAppointment** and then calling **Respond** on the AppointmentItem object.

Example

```
Dim objSess As Session
Dim objMtg As MeetingItem
Dim objAppt As AppointmentItem
Dim objResp As MeetingItem ' response to meeting request
```

```
On Error Resume Next

Set objSess = CreateObject("MAPI.Session")
objSess.Logon
Set objMtg = objSess.Inbox.Messages(1)

If objMtg Is Nothing Then
  MsgBox "No messages in Inbox"
  ' ... error exit ...
ElseIf objMtg.Class <> 27 Then ' CdoMeetingItem
  MsgBox "Message is not a meeting request or response"
  ' ... error exit ...
End If
MsgBox "Meeting is " & objMtg ' default property is .Subject

' Message exists and is a meeting; is it a request?
If objMtg.MeetingType <> 1 Then ' CdoMeetingRequest
  MsgBox "Meeting item is not a request"
  ' ... error exit ...
End If
Set objAppt = objMtg.GetAssociatedAppointment
MsgBox "Meeting times" & objAppt.StartTime & " - " & objAppt.EndTime _
                      & "; recurring is " & objAppt.IsRecurring
' we can Respond from either the AppointmentItem or the MeetingItem
Set objResp = objMtg.Respond(3) ' CdoResponseAccepted
objResp.Text = "OK, I'll be there"
objResp.Send
```

Message Object

The Message object represents a single message, item, document, or form in a folder.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Messages collection
Child objects:	Attachments collection Fields collection Recipients collection
Default property:	**Subject**

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Attachments	1.0.a	Attachment object or Attachments collection object	Read-only
Categories	1.2	String array	Read/write
Class	1.0.a	Long	Read-only
Conversation	1.0.a	(Obsolete. Do not use.)	Read/write
ConversationIndex	1.0.a	String	Read/write
ConversationTopic	1.0.a	String	Read/write
DeliveryReceipt	1.0.a	Boolean	Read/write
Encrypted	1.0.a	Boolean	Read/write
Fields	1.0.a	Field object or Fields collection object	Read-only
FolderID	1.0.a	String	Read-only
ID	1.0.a	String	Read-only
Importance	1.0.a	Long	Read/write
MAPIOBJECT	1.0.a	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Parent	1.0.a	Messages collection object	Read-only
ReadReceipt	1.0.a	Boolean	Read/write
Recipients	1.0.a	Recipients object or	Read/write

		Recipients collection object	
Sender	1.0.a	AddressEntry object	Read/write
Sensitivity	1.2	Long	Read/write
Sent	1.0.a	Boolean	Read/write
Session	1.0.a	Session object	Read-only
Signed	1.0.a	Boolean	Read/write
Size	1.0.a	Long	Read-only
StoreID	1.0.a	String	Read-only
Subject	1.0.a	String	Read/write
Submitted	1.0.a	Boolean	Read/write
Text	1.0.a	String	Read/write
TimeCreated	1.2	Variant (**vbDate** format)	Read-only
TimeExpired	1.2	Variant (**vbDate** format)	Read/write
TimeLastModified	1.2	Variant (**vbDate** format)	Read-only
TimeReceived	1.0.a	Variant (**vbDate** format)	Read/write
TimeSent	1.0.a	Variant (**vbDate** format)	Read/write
Type	1.0.a	String	Read/write
Unread	1.0.a	Boolean	Read/write

Methods

Name	Available in version	Parameters
CopyTo	1.1	*folderID* as **String**, (optional) *storeID* as **String**
Delete	1.0.a	(none)
Forward	1.2	(none)
IsSameAs	1.1	*objMessage2* as **Object**
MoveTo	1.1	*folderID* as **String**, (optional) *storeID* as **String**
Options	1.0.a	(optional) *parentWindow* as **Long**
Reply	1.2	(none)
ReplyAll	1.2	(none)
Send	1.0.a	(optional) *saveCopy* as **Boolean**, (optional) *showDialog* as **Boolean**, (optional) *parentWindow* as **Long**
Update	1.0.a	(optional) *makePermanent* as **Boolean**, (optional) *refreshObject* as **Boolean**

Remarks

Microsoft® Visual Basic® programmers can create new Message objects using the Messages collection's **Add** method.

C/C++ programmers can create new Message objects with the OLE function **CoCreateInstance**.

A message can be obtained from its parent Messages collection using the collection's **Item** property. To get to the Messages collection in a folder, use the Folder object's **Messages** property. If you know a message's unique identifier, you can obtain it directly from the Session object's **GetMessage** method.

A Message object can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to the Message object itself. The individual properties that can be rendered with the **RenderProperty** method are indicated in the Message object property descriptions.

A Message object can also be rendered as the parent of a Recipients collection, using the ContainerRenderer object. The individual properties that can be rendered with the **RenderProperty** method are indicated in the Message object property descriptions.

Attachments Property (Message Object)

Group

The **Attachments** property returns a single Attachment object or an Attachments collection object. Read-only.

Syntax

Set *objAttachColl* **=** *objMessage.***Attachments**

Set *objOneAttach* = *objMessage.***Attachments(***index***)**

objAttachColl
Object. An Attachments collection object.

objMessage
Object. The Message object.

objOneAttach
Object. A single Attachment object.

index
Long. Specifies the number of the attachment within the Attachments collection. Ranges from 1 to the value specified by the Attachments collection's **Count** property.

Data Type

Object (Attachment or Attachments collection)

Remarks

You can change individual Attachment objects within the Attachments collection, **Add** them to the collection, and **Delete** them from the collection.

Although the **Attachments** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Attachment objects retain their respective read/write or read-only accessibility.

The **Attachments** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. If a single Attachment object is returned, it could be rendered as an object by setting the ObjectRenderer object's **DataSource** property to the Attachment object returned by the **Attachments** property.

Example

This code fragment uses the **Attachments** property to retrieve an attachment of the message:

```
' from the sample function Message_Attachments
    Set objAttachColl = objOneMsg.Attachments
    If objAttachColl Is Nothing Then
        MsgBox "unable to set Attachments collection"
        Exit Function
    Else
        MsgBox "Attachments count for this msg: " & objAttachColl.Count
        iAttachCollIndex = 0 ' reset global index variable
    End If
' from the sample function Attachments_FirstItem
    iAttachCollIndex = 1
    Set objAttach = objAttachColl.Item(iAttachCollIndex)
```

Categories Property (Message Object)

Group

The **Categories** property specifies the categories assigned to the message. Read/write.

Syntax

objMessage.**Categories**

Data Type

String array

Remarks

The contents of the **Categories** property are defined by the application. **Categories** is commonly used to hold a set of keywords that can be used to access messages in a folder.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Categories** property. An attempt to access **Categories** in this case returns **CdoE_NO_SUPPORT**.

When you declare a variable to interact with the **Categories** property, you must dimension it as a string array, not just as an array of unspecified data type. The **Dimension** statement must include **As String** to accomplish this.

Example

This code fragment sets the **Categories** property of a message from a string array of keywords:

```
' assume objMessage is valid and already being accessed
Dim KWords(10) As String ' NOT just Dim KWords(10)
' obtain up to ten keywords from user
objMessage.Categories = KWords
```

Conversation Property (Message Object) Group

The **Conversation** property is obsolete. It has been replaced by the **ConversationIndex** and **ConversationTopic** properties.

For more information on conversations, see Working With Conversations.

ConversationIndex Property (Message Object) Group

The **ConversationIndex** property specifies the index to the conversation thread of the message. Read/write.

Syntax

objMessage.**ConversationIndex**

Data Type

String

Remarks

The **ConversationIndex** property is a string that represents a hexadecimal number. Valid characters within the string include the numbers 0 through 9 and the letters A through F (uppercase or lowercase).

A conversation is a group of related messages that have the same **ConversationTopic** property value. In a discussion application, for example, users can save original messages and responses in their personal folders. Messages can be tagged with the **ConversationIndex** property so that users can order the messages within the conversation.

The Session object provides the **CreateConversationIndex** method to create or update a conversation index.

This convention uses concatenated time stamp values, with each new message in the conversation adding a new time stamp to the end of the **ConversationIndex** string. You can see time relationships among the messages when you sort them by **ConversationIndex** values.

For more information on conversations, see Working With Conversations.

The current version of CDO does not support the **ConversationIndex** property on AppointmentItem objects. An attempted access returns **CdoE_NOT_FOUND**.

The **ConversationIndex** property corresponds to the MAPI property PR_CONVERSATION_INDEX. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_CONVERSATION_INDEX**.

Example

This code fragment demonstrates the old procedure used prior to version 1.1 of CDO. It takes advantage of the OLE **CoCreateGUID** function, which returns a value that consists of a time stamp and a machine identifier. The code fragment saves the time stamp part of the **GUID**.

For an example of the new procedure available with CDO version 1.1, see the **CreateConversationIndex** method.

```
' declarations section
Type GUID ' global unique identifier; contains a time stamp
    Guid1 As Long
    Guid2 As Long
    Guid3 As Long
    Guid4 As Long
End Type
' function appears in OLE32.DLL on Windows NT and Windows 95
Declare Function CoCreateGuid Lib "COMPOBJ.DLL" (pGuid As GUID) As Long
Global Const S_OK = 0 ' return value from CoCreateGuid
```

```
Function Util_GetEightByteTimeStamp() As String
Dim lResult As Long
Dim lGuid As GUID
    ' Exchange conversation is a unique 8-byte value
    ' Exchange client viewer sorts by concatenated properties
    On Error GoTo error_actmsg

    lResult = CoCreateGuid(lGuid)
    If lResult = S_OK Then
        Util_GetEightByteTimeStamp = _
            Hex$(lGuid.Guid1) & Hex$(lGuid.Guid2)
    Else
        Util_GetEightByteTimeStamp = "00000000" ' zero time stamp
    End If
    Exit Function

error_actmsg:
    MsgBox "Error " & Str(Err) & ": " & Error$(Err)
    Util_GetEightByteTimeStamp = "00000000"
    Exit Function
End Function

Function Util_NewConversation()
Dim i As Integer
Dim objNewMsg As Message  ' new message object
Dim strNewIndex As String ' value for ConversationIndex
' ... error handling ...
    Set objNewMsg = objSession.Outbox.Messages.Add
' ... error handling ...
    With objNewMsg
        .Subject = "used space vehicle wanted"
        .ConversationTopic = .Subject
        .ConversationIndex = Util_GetEightByteTimeStamp() ' utility
        .Text = "Wanted: Apollo or Mercury spacecraft with low mileage."
        Set objOneRecip = .Recipients.Add(Name:="Car Ads", Type:=CdoTo)
        ' or you could pick the public folder from the address book
        If objOneRecip Is Nothing Then
            MsgBox "Unable to create the public folder recipient"
            Exit Function
        End If
        .Recipients.Resolve
        .Update ' save everything in the MAPI system
        .Send showDialog:=False
    End With
End Function
```

A subsequent reply to this message should copy the **ConversationTopic** property and append its own time stamp to the original message's time stamp, as shown in the following code fragment:

```
Function Util_ReplyToConversation()
Dim objPublicFolder As Folder
Dim i As Integer
Dim objOriginalMsg As Message ' original message in public folder
Dim objNewMsg As Message      ' new message object for reply
```

```
Dim strPublicFolderID As String ' ID for public folder

    Set objNewMsg = objSession.Outbox.Messages.Add
' error checking ... obtain objOriginalMsg and check that it is valid
    With objNewMsg
        .Text = "How about a slightly used Gemini?" ' new text
        .Subject = objOriginalMsg.Subject ' copy original properties
        .ConversationTopic = objOriginalMsg.ConversationTopic
        ' append time stamp; compatible with Microsoft Exchange client
        .ConversationIndex = objOriginalMsg.ConversationIndex & _
                             Util_GetEightByteTimeStamp() ' new stamp
        ' message was sent to a public folder so can copy recipient
        Set objOneRecip = .Recipients.Add( _
                          Name:=objOriginalMsg.Recipients.Item(1).Name, _
                          Type:=CdoTo)
       ' ... more error handling
        .Recipients.Resolve
        .Update ' save everything in the MAPI system
        .Send showDialog:=False
    End With
' ... error handling
End Function
```

ConversationTopic Property (Message Object) Group

The **ConversationTopic** property specifies the subject of the conversation thread of the message. Read/write.

Syntax

objMessage.**ConversationTopic**

Data Type

String

Remarks

A conversation is a group of related messages. The **ConversationTopic** property is the string that describes the overall topic of the conversation. To be considered as messages within the same conversation, the messages must have the same value in their **ConversationTopic** property. The **ConversationIndex** property represents an index that indicates a sequence of messages within that conversation.

When you start an initial message, set the **ConversationTopic** property to a value appropriate to all messages within the conversation, not only to the first message. For many applications, the message's **Subject** property is appropriate.

CDO does not automatically copy the **ConversationTopic** property to other messages unless you are making an exact copy with the **CopyTo** method. When your application creates replies to an original message, you should set the **ConversationTopic** property to the same value as that of the original message. To change the **ConversationTopic** for all messages in a conversation thread, you must change the property within each message in that thread.

For more information on conversations, see Working With Conversations.

The current version of CDO does not support the **ConversationTopic** property on AppointmentItem objects. An attempted access returns **CdoE_NOT_FOUND**.

The **ConversationTopic** property corresponds to the MAPI property PR_CONVERSATION_TOPIC. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_CONVERSATION_TOPIC**.

Example

See the examples for the **ConversationIndex** property and for the Session object's **CreateConversationIndex** method.

CopyTo Method (Message Object) Group

The **CopyTo** method makes a copy of the Message object in another folder.

Syntax

Set *objCopiedMessage* = *objMessage*.**CopyTo(***folderID* **[***, storeID***])**

objCopiedMessage
On successful return, contains the copied Message object.

objMessage
Required. This Message object.

folderID
Required. String. The unique identifier of the destination Folder object in which the copy of this message is to appear.

storeID
Optional. String. The unique identifier of the InfoStore object in which the message copy is to appear, if different from this message's InfoStore.

Remarks

The current version of CDO does not support the **CopyTo** method on AppointmentItem objects.

All properties that have been set on this message are copied, whether they have read-only or read/write access. Each property is copied with its value and access unchanged.

The copy operation takes effect when you call the **Update** method on the copied Message object. This allows you to change, for example, the **Sent** property on the message copy before committing the transaction.

This Message object remains unchanged by the **CopyTo** method.

Delete Method (Message Object) Group

The **Delete** method removes the AppointmentItem, MeetingItem, or Message object from the Messages collection.

Syntax

objMessage.**Delete( )**

Remarks

The **Delete** method moves a MeetingItem or Message object to the Deleted Items folder, if the client has enabled this option. If the option is not enabled, or if the meeting or message is already in the Deleted Items folder, the **Delete** method permanently removes it from the collection, and it cannot be restored.

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the AppointmentItem, MeetingItem, or Message object. If you have another reference to the object, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another object.

The final **Release** on the AppointmentItem, MeetingItem, or Message object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The action of the **Delete** method is permanent, and the Message object cannot be restored to the collection. Before calling **Delete**, your application can prompt the user to verify whether the message should be permanently deleted.

If the Messages collection underlies a categorized view and the deleted message was the last remaining message in a group, the group's GroupHeader object is also removed from the collection. Unlike the message, however, it is not moved anywhere. Group headers do not persist in storage, and when the collection is released, whether with messages or not, the GroupHeader objects cease to exist.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

You can delete all the group headers and messages in the Messages collection by calling the collection's **Delete** method. The ability to delete any message depends on the permissions granted to the user. The **Delete** method returns an error code if called with insufficient permissions.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Message object. That reference survives the call to **Delete** and has to be reassigned. The second Message object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Folder object
Set objMessage = objFolder.Messages.Item(1)
objMessage.Delete ' still have a reference from Set statement
' ... other operations on objMessage possible but pointless ...
Set objMessage = Nothing ' necessary to remove reference
' ...
objFolder.Messages.Item(2).Delete ' no reference to remove
```

DeliveryReceipt Property (Message Object) Group

The **DeliveryReceipt** property is **True** if a delivery-receipt notification message is requested. Read/write.

Syntax

objMessage.**DeliveryReceipt**

Data Type

Boolean

Remarks

Set the **DeliveryReceipt** property to **True** to obtain a notification message when each recipient receives your message. The default setting is **False**.

Every transport provider that handles your message sends you a single delivery notification containing the names and addresses of all the recipients that provider delivered your message to. Therefore you might not get a separate notification for each recipient. Note that delivery does not imply that the message has been read.

Notification requests include the **DeliveryReceipt** and **ReadReceipt** properties. For more information, see Making Sure The Message Gets There.

Not all transport providers support notification requests.

The **DeliveryReceipt** property corresponds to the MAPI property PR_ORIGINATOR_DELIVERY_REPORT_REQUESTED. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_ORIGINATOR_DELIVERY_REPORT_REQUESTED**.

Encrypted Property (Message Object)

Group

The **Encrypted** property is **True** if the message has been encrypted or if encryption is being requested. Read/write.

Syntax

objMessage.**Encrypted**

Data Type

Boolean

Remarks

The effect of the **Encrypted** property is dependent upon the message store or transport provider. CDO does not encrypt or digitally sign the message.

Security features include the **Encrypted** and **Signed** properties. For more information, see Securing Messages.

The **Encrypted** property corresponds to the SECURITY_ENCRYPTED flag of the MAPI property PR_SECURITY. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_SECURITY**. However, you must assign a CDO Rendering Format object to the PR_SECURITY property and use the **Value** property of the format's Pattern objects to isolate the SECURITY_ENCRYPTED flag's setting for rendering.

Fields Property (Message Object) Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objMessage.**Fields**

objMessage.**Fields(***index***)**

objMessage.**Fields(***proptag***)**

objMessage.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the Fields collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with a Message object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of a MAPI property using either its name or its MAPI property tag. For access with the property tag, use *objMessage*.**Fields**(*proptag*), where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_PRIORITY**. To access a named property, use *objMessage*.**Fields**(*name*), where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

The **Fields** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

Example

```
' get the message's Fields collection
Set objFieldsColl = objOneMsg.Fields
' get the first field of the Fields collection of the message
i = 1
Set objOneField = objFieldsColl.Item(i)
' could also be objFieldsColl(i) since Item is default property
If objOneField Is Nothing Then
    MsgBox "error; cannot get this Field object"
Else
    MsgBox "Selected Field " & i
End If
```

FolderID Property (Message Object)

Group

The **FolderID** property returns the unique identifier of the folder in which the message resides. Read-only.

Syntax

objMessage.**FolderID**

Data Type

String

Remarks

Save the folder identifier to retrieve the Folder object at a later time using the Session object's **GetFolder** method.

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

The current version of CDO does not support the **FolderID** property on AppointmentItem objects.

A Microsoft® Schedule+ calendar folder does not have a MAPI identifier. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its messages have no defined value for the **FolderID** property. An attempt to access **FolderID** in this case returns **CdoE_NOT_FOUND**.

The **FolderID** property corresponds to the MAPI property PR_PARENT_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_PARENT_ENTRYID**.

Forward Method (Message Object)

Group

The **Forward** method returns a new Message object that can be used to forward the current message.

Syntax

Set *objForwardMessage* = *objMessage*.**Forward( )**

objForwardMessage
On successful return, contains the new Message object ready for forwarding.

objMessage
Required. This Message object.

Remarks

The **Forward** method copies the current message to the new message, including any Attachment objects associated with it. In keeping with forwarding conventions, **Forward** does not copy any Recipient objects to the new message. You must populate the Recipients collection before calling the **Send** method.

The current implementation of the **Forward** method does not copy the **Text** property to the new message.

ID Property (Message Object) Group

The **ID** property returns the unique identifier of the Message object as a string. Read-only.

Syntax

objMessage.**ID**

Data Type

String

Remarks

The **ID** property can be used to retrieve this message at a later time, using the Session object's **GetMessage** method.

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

The **ID** property corresponds to the MAPI property PR_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_ENTRYID**.

Example

```
'     Save ID of last message accessed; use at startup
'     from the sample function Message_ID
    strMessageID = objOneMsg.ID

' ... on shutdown, save the ID to storage
' ... on startup, get the ID from storage and restore
'     from the sample function Session_GetMessage
    Set objOneMsg = objSession.GetMessage(strMessageID)
```

Importance Property (Message Object)

Group

The **Importance** property returns or sets the importance of the message. Read/write.

Syntax

objMessage.**Importance**

Data Type

Long

Remarks

The **Importance** property can have exactly one of the following values:

Constant	Value	Description
CdoLow	0	Low importance
CdoNormal	1	Normal importance (default)
CdoHigh	2	High importance

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Importance** property. An attempt to access **Importance** in this case returns **CdoE_NOT_FOUND**.

The **Importance** property corresponds to the MAPI property PR_IMPORTANCE. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_IMPORTANCE**.

Example

This code fragment sets the importance of a message as high:

```
' from the sample function QuickStart:
    Set objMessage = objSession.Outbox.Messages.Add
    ' ... check here to verify the message was created ...
    objMessage.Subject = "Gift of droids"
    objMessage.Text = "Help us, Obi-wan. You are our only hope."
    objMessage.Importance = CdoHigh
    objMessage.Send
```

See Also

Send Method (Message Object)

IsSameAs Method (Message Object)

Group

The **IsSameAs** method returns **True** if the Message object is the same as the Message object being compared against.

Syntax

objMessage.**IsSameAs(***objMessage2***)**

objMessage
Required. This Message object.

objMessage2
Required. The Message object being compared against.

Remarks

Two Message objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

MAPIOBJECT Property (Message Object)

Group

The **MAPIOBJECT** property returns an **IUnknown** pointer to the Message object. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objMessage.**MAPIOBJECT**

Data Type

Variant (**vbDataObject** format)

Remarks

The **MAPIOBJECT** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **MAPIOBJECT** property is an **IUnknown** object that returns an **IMessage** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

The **MAPIOBJECT** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library.

MoveTo Method (Message Object) Group

The **MoveTo** method relocates the Message object to another folder.

Syntax

Set *objMovedMessage* = *objMessage*.**MoveTo(***folderID* **[**, *storeID* **])**

objMovedMessage
On successful return, contains the moved Message object.

objMessage
Required. This Message object.

folderID
Required. String. The unique identifier of the destination Folder object in which this message is to appear.

storeID
Optional. String. The unique identifier of the InfoStore object in which the message is to appear, if different from this current InfoStore.

Remarks

The current version of CDO does not support the **MoveTo** method on AppointmentItem objects.

All properties that have been set on this message are moved, whether they have read-only or read/write access. Each property is moved with its value and access unchanged.

The move operation takes effect immediately. This Message object is no longer accessible at its former location after the **MoveTo** method returns.

Options Method (Message Object) Group

The **Options** method displays a modal dialog box where the user can change the submission options for a message.

Syntax

objMessage.**Options([***parentWindow***])**

objMessage
Required. The Message object.

parentWindow
Optional. Long. The parent window handle for the options dialog box. A value of zero (the default) specifies that the dialog box should be application-modal.

Remarks

The **Options** dialog box is always modal, meaning the parent window is disabled while the dialog box is active. If the *parentWindow* parameter is set to zero or is not set, all windows belonging to the application are disabled while the dialog box is active. If the *parentWindow* parameter is supplied but is not valid, the call returns **CdoE_INVALID_PARAMETER**.

The options are provider-specific and are registered by the provider. Providers are not required to register option sheets. When providers do not register options, the **Options** method returns the error code **CdoE_NOT_FOUND**.

Per-message options are properties of a message that control its behavior after submission. The per-message options are part of the message envelope, not its content.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)
- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's Reference*.

ReadReceipt Property (Message Object)

Group

The **ReadReceipt** property is **True** if a read-receipt notification message is requested. Read/write.

Syntax

objMessage.**ReadReceipt**

Data Type

Boolean

Remarks

Set the **ReadReceipt** property to **True** to obtain a notification message when each recipient reads your message. The default setting is **False**.

Each message store that receives your message sends you an individual read notification each time one of the recipients sets the read flag on the message. Note that the read flag being set does not imply that the recipient has physically read the message. Move and copy operations, for example, typically set the read flag.

Notification requests include the **DeliveryReceipt** and **ReadReceipt** properties. For more information, see Making Sure The Message Gets There.

Not all transport providers support notification requests.

The **ReadReceipt** property corresponds to the MAPI property PR_READ_RECEIPT_REQUESTED. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_READ_RECEIPT_REQUESTED**.

Recipients Property (Message Object)

Group

The **Recipients** property returns a single Recipient object or a Recipients collection object. Read/write.

Syntax

Set *objRecipColl* **=** *objMessage.***Recipients**

Set *objOneRecip* = *objMessage.***Recipients(***index***)**

objRecipColl
Object. A Recipients collection object.

objMessage
Object. The Message object.

objOneRecip
Object. A single Recipient object.

index
Long. Specifies the number of the recipient within the Recipients collection. Ranges from 1 to the value specified by the Recipients collection's **Count** property.

Data Type

Object (Recipient or Recipients collection)

Remarks

You can change individual Recipient objects within the Recipients collection, **Add** them to the collection, and **Delete** them from the collection. You can also manipulate the Recipients collection as a whole with a single Microsoft® Visual Basic® instruction. For example, you can copy the complete recipient list of a received message, with all of each recipient's properties, to a reply message:

```
Set objReplyMessage.Recipients = objReceivedMessage.Recipients
Set objSenderAE = objReceivedMessage.Sender
Set objSender = objReplyMessage.Recipients.Add(objSenderAE.ID)
' then copy important properties from objSenderAE
```

Note that the **Attachments** property cannot be copied as a whole; attachments must be dealt with in the manner of the following example.

The **Recipients** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. If a Recipients collection is returned, it could be rendered as a container object by setting the ContainerRenderer object's **DataSource** property to the Recipients collection object returned by the **Recipients** property.

Example

This code fragment uses a loop to create a copy of every valid recipient of the original message *objOneMsg* in the copy message *objCopyMsg*. For each copied recipient, it also copies important properties from the original. Note how much more code this requires than copying the **Recipients** property from the original message.

```
' from the sample function Util_CopyMessage
For i = 1 To objOneMsg.Recipients.Count Step 1
    Set objOneRecip = objOneMsg.Recipients.Item(i)
    If objOneRecip Is Not Nothing Then
        Set objCopyRecip = objCopyMsg.Recipients.Add
        If objCopyRecip Is Nothing Then
```

```
            MsgBox "Unable to create recipient in message copy"
            Exit Function
        End If
        ' Now copy the most important properties
        objCopyRecip.Address = objOneRecip.Address
        objCopyRecip.Name = objOneRecip.Name
        objCopyRecip.Type = objOneRecip.Type
    End If
Next i
```

Reply Method (Message Object) Group

The **Reply** method returns a new Message object that can be used to reply to the sender of the current message.

Syntax

Set *objReplyMessage* = *objMessage*.**Reply( )**

objReplyMessage
On successful return, contains the new Message object ready for replying.

objMessage
Required. This Message object.

Remarks

The **Reply** method copies the current message to the new message and populates its Recipients collection with a single "To" recipient set from the original message's **Sender** property. In keeping with response conventions, **Reply** does not copy any Attachment objects to the new message.

The current implementation of the **Reply** method does not copy the **Text** property to the new message.

ReplyAll Method (Message Object)

Group

The **ReplyAll** method returns a new Message object that that can be used to reply to the sender and all recipients of the current message.

Syntax

Set *objReplyMessage* = *objMessage*.**ReplyAll( )**

objReplyMessage
On successful return, contains the new Message object ready for replying.

objMessage
Required. This Message object.

Remarks

The **ReplyAll** method copies the current message to the new message and populates its Recipients collection appropriately from the original message's **Recipients** and **Sender** properties. In keeping with response conventions, **ReplyAll** does not copy any Attachment objects to the new message.

The current implementation of the **ReplyAll** method does not copy the **Text** property to the new message.

Send Method (Message Object) Group

The **Send** method sends the message to the recipients through the MAPI system.

Syntax

objMessage.**Send([***saveCopy, showDialog, parentWindow***])**

objMessage
Required. The Message object.

saveCopy
Optional. Boolean. If **True**, saves a copy of the message in a user folder, such as the Sent Items folder. The default value is **True**.

showDialog
Optional. Boolean. If **True**, displays a **Send Message** dialog box where the user can change the message contents or recipients. *showDialog* cannot be set to **True** when sending an AppointmentItem object. The default value is **False**.

parentWindow
Optional. Long. The parent window handle for the **Send Message** dialog box. A value of zero (the default) specifies that the dialog box should be application-modal. The *parentWindow* parameter is ignored unless *showDialog* is **True**.

Remarks

Like the **Update** method, the **Send** method saves all changes to the message in the MAPI system, but **Send** also moves the message to the current user's Outbox folder. Messaging systems retrieve messages from the Outbox and transport them to the recipients. After it is transported, a message is removed from the Outbox and deleted unless *saveCopy* is **True**.

You should compose your new messages in either your Inbox or your Outbox. The **Send** method normally deals only with messages located in these folders. However, if you have appointments in a calendar folder, you can send them from that folder.

If you are sending a meeting request from an AppointmentItem object, you must first set the appointment's **MeetingStatus** property to **CdoMeeting**, or the call to **Send** returns **CdoE_NO_SUPPORT**. Also, there is no form for showing a meeting request, so you must either set the *showDialog* parameter to **False** or let it default. If *showDialog* is **True**, **Send** returns **CdoE_NO_SUPPORT**.

While you are still composing a message you can set its **Sent** property to **False** or leave it unset. The **Send** method sets the **Submitted** property to **True** when the message is accepted in the message store. After the message is transported, the spooler function of the sending messaging system sets the **Sent** and **Unread** properties to **True**. The receiving messaging system sets the **Submitted** property to **False**.

The **Send** method invalidates the composed Message object but does not remove it from memory. The programmer should **Set** the invalidated object to **Nothing** to remove it from memory, or reassign it to another message. Attempted access to a sent message results in a return of **CdoE_INVALID_OBJECT**.

The **Send** dialog box is always modal, meaning the parent window is disabled while the dialog box is active. If the *parentWindow* parameter is set to zero or is not set, all windows belonging to the application are disabled while the dialog box is active. If the *parentWindow* parameter is supplied but is not valid, the call returns **CdoE_INVALID_PARAMETER**.

For more information on sending and posting messages, see Creating and Sending a Message and Posting Messages to a Public Folder.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)
- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's Reference*.

Sender Property (Message Object)

Group

The **Sender** property returns or sets the sender of a message as an AddressEntry object. Read/write.

Syntax

Set *objAddrEntry* = *objMessage*.**Sender**

objAddrEntry
Object. The returned AddressEntry object that represents the messaging user that sent the message.

objMessage
Object. The Message object.

Data Type

Object (AddressEntry)

Remarks

You can change the **Sender** property before a message is either sent or saved, for example in a public folder. After a message has been sent or saved, any attempt to change its **Sender** property is ignored.

The current version of CDO does not support the **Sender** property on AppointmentItem objects. An attempted access returns **CdoE_NOT_FOUND**.

The **Sender** property does not correspond to a MAPI property and cannot be rendered into HTML hypertext by the CDO Rendering Library. It could be rendered as an object by setting the ObjectRenderer object's **DataSource** property to the AddressEntry object returned by the **Sender** property.

Example

This code fragment displays the name of the sender of a message:

```
' from the sample function Message_Sender
Set objAddrEntry = objOneMsg.Sender
If objAddrEntry Is Nothing Then
    MsgBox "Could not set the AddressEntry object from the Sender"
    Exit Function
End If
MsgBox "Message was sent by " & objAddrEntry.Name
```

Sensitivity Property (Message Object)

Group

The **Sensitivity** property specifies the sensitivity of the message. Read/write.

Syntax

objMessage.**Sensitivity**

Data Type

Long

Remarks

The **Sensitivity** property can have exactly one of the following values:

Constant	Value	Description
CdoNoSensitivity	0	No special sensitivity (default)
CdoPersonal	1	Personal
CdoPrivate	2	Private
CdoConfidential	3	Designated as company confidential

The **Sensitivity** property corresponds to the MAPI property PR_SENSITIVITY. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_SENSITIVITY**.

Example

This code fragment sets the sensitivity of a message as personal:

```
' from the sample function QuickStart:
    Set objMessage = objSession.Outbox.Messages.Add
    ' ... check here to verify the message was created ...
    objMessage.Subject = "Gift of droids"
    objMessage.Text = "Help us, Obi-wan. You are our only hope."
    objMessage.Sensitivity = CdoPersonal
    objMessage.Send
```

Sent Property (Message Object) Group

The **Sent** property is **True** if the message has been sent through the MAPI system. Read/write.

Syntax

objMessage.**Sent**

Data Type

Boolean

Remarks

In general, there are three different kinds of messages: *sent*, *posted*, and *saved*. Sent messages are traditional e-mail messages sent to a recipient or public folder. Posted messages are created in a public folder. Saved messages are created and saved without either sending or posting.

For all three kinds of messages, you use the **Sent**, **Submitted**, and **Unread** properties and the **Send** or **Update** methods.

The following table summarizes the use of the message properties and methods for the three kinds of messages. In some systems the message store and transport providers are tightly coupled, in which case they bypass the spooler and perform its functions themselves.

Kind of message	Method used	Sent property	Submitted property	Unread property
Sent	**Send**	Spooler sets **True**	**Send** sets **True**	Spooler sets **True**
Posted	**Update**	Application sets **True**	Application sets **False**	Application sets **True**
Saved	**Update**	Application sets **False**	Application sets **False**	Application sets **True**

For sent messages, the **Sent** property can be written until the time you call the **Send** method. Note that changing the **Sent** property to **True** does not cause the message to be sent. Only the **Send** method actually causes the message to be transmitted. After you call **Send**, the messaging system controls the **Sent** property and changes it to a read-only property. The receiving messaging system resets the **Submitted** property to **False** when the message arrives in a recipient's Inbox.

A common use for writing a value to the **Sent** property is to set it to **False** so that an electronic mail system can save pending, unsent messages in an Outbox folder, or to save work-in-progress messages in a pending folder before committing the messages to a public information store. You can cause unexpected results if you set the property incorrectly.

For posted messages, you create the message directly within a public folder and call the **Update** method. Some viewers do not allow the message to become visible to other users until you set the **Submitted** property to **True**.

The **Sent** property is changed using the following sequence. When you call the **Send** method to send a message to a recipient, the message is moved to the Outbox and the Message object's **Submitted** property is set to **True**. When the messaging system actually starts transporting the message, the **Sent** property is set to **True**.

When the message is not sent using the **Send** method, the MAPI system does not change the **Sent** property. For posted messages that call the **Update** method, you should set the value of the **Sent** property to **True** just before you post the message.

For more information on sending and posting messages, see Creating and Sending a Message and Posting Messages to a Public Folder.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Sent** property. An attempt to access **Sent** in this case returns **CdoE_NOT_FOUND**.

The **Sent** property corresponds to the MSGFLAG_UNSENT flag not being set in the MAPI property PR_MESSAGE_FLAGS. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_MESSAGE_FLAGS**. However, you must assign a CDO Rendering Format object to the PR_MESSAGE_FLAGS property and use the **Value** property of the format's Pattern objects to isolate the MSGFLAG_UNSENT flag's setting for rendering.

Signed Property (Message Object)

Group

The **Signed** property is **True** if the message has been tagged with a digital signature or if digital signing is being requested. Read/write.

Syntax

objMessage.**Signed**

Data Type

Boolean

Remarks

The effect of the **Signed** property is dependent upon the message store or transport provider. CDO does not encrypt or digitally sign the message.

Security features include the **Encrypted** and **Signed** properties. For more information, see Securing Messages.

The **Signed** property corresponds to the SECURITY_SIGNED flag of the MAPI property PR_SECURITY. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_SECURITY**. However, you must assign a CDO Rendering Format object to the PR_SECURITY property and use the **Value** property of the format's Pattern objects to isolate the SECURITY_SIGNED flag's setting for rendering.

Size Property (Message Object) Group

The **Size** property returns the approximate size in bytes of the message. Read-only.

Syntax

objMessage.**Size**

Data Type

Long

Remarks

The **Size** property contains the sum, in bytes, of the sizes of all properties on this Message object, including in particular the **Attachments** property. It can be considerably greater than the size of the **Text** property alone.

The **Size** property is computed by the message store and is not valid until after the first **Update** or **Send** operation. Note that not all message stores support this property.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Size** property. An attempt to access **Size** in this case returns **CdoE_NOT_FOUND**.

The **Size** property corresponds to the MAPI property PR_MESSAGE_SIZE. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_MESSAGE_SIZE**.

StoreID Property (Message Object)

Group

The **StoreID** property represents the unique identifier for the message store that contains the message. Read-only.

Syntax

objMessage.**StoreID**

Data Type

String

Remarks

You can save the **ID** and **StoreID** properties of this message in order to recall it later with the Session object's **GetMessage** method.

A Microsoft® Schedule+ calendar folder does not reside in a message store. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its messages have no defined value for the **StoreID** property. An attempt to access **StoreID** in this case returns **CdoE_NOT_FOUND**.

The **StoreID** property corresponds to the MAPI property PR_STORE_ENTRYID, converted to a string of hexadecimal characters. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_STORE_ENTRYID**.

Subject Property (Message Object)

Group

The **Subject** property returns or sets the subject of the message as a string. Read/write.

Syntax

objMessage.**Subject**

The **Subject** property is the default property of a Message object, meaning that *objMessage* is syntactically equivalent to *objMessage*.**Subject** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

In a conversation thread, the **Subject** property is often used to set the **ConversationTopic** property.

The **Subject** property corresponds to the MAPI property PR_SUBJECT. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_SUBJECT**.

Example

This code fragment sets the subject of a message:

```
Dim objMessage As Message ' assume valid message
objMessage.Subject = "Microsoft Bob: Check It Out"
```

See Also

Text Property (Message Object)

Submitted Property (Message Object)

Group

The **Submitted** property is **True** when the message has been submitted to the MAPI system. Read/write.

Syntax

objMessage.**Submitted**

Data Type

Boolean

Remarks

In general, there are three different kinds of messages: *sent*, *posted*, and *saved*. Sent messages are traditional e-mail messages sent to a recipient or public folder. Posted messages are created in a public folder. Saved messages are created and saved without either sending or posting.

For all three kinds of messages, you use the **Sent**, **Submitted**, and **Unread** properties and the **Send** or **Update** methods.

The following table summarizes the use of the message properties and methods for the three kinds of messages. In some systems the message store and transport providers are tightly coupled, in which case they bypass the spooler and perform its functions themselves.

Kind of message	Method used	Sent property	Submitted property	Unread property
Sent	**Send**	Spooler sets **True**	**Send** sets **True**	Spooler sets **True**
Posted	**Update**	Application sets **True**	Application sets **False**	Application sets **True**
Saved	**Update**	Application sets **False**	Application sets **False**	Application sets **True**

For sent and saved messages, the **Submitted** property is set to **False** before sending or saving the message. The messaging system also resets **Submitted** to **False** when the message arrives in a recipient's Inbox.

For posted messages, you create the message directly within a public folder and call the **Update** method. Some viewers do not allow the message to become visible to other users until you set the **Submitted** property to **True**.

For more information on sending and posting messages, see Creating and Sending a Message and Posting Messages to a Public Folder.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Submitted** property. An attempt to access **Submitted** in this case returns **CdoE_NOT_FOUND**.

The **Submitted** property corresponds to the MSGFLAG_SUBMIT flag being set in the MAPI property PR_MESSAGE_FLAGS. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_MESSAGE_FLAGS**. However, you must assign a CDO Rendering Format object to the PR_MESSAGE_FLAGS property and use the **Value** property of the format's Pattern objects to isolate the MSGFLAG_SUBMIT flag's

setting for rendering.

Text Property (Message Object) Group

The **Text** property returns or sets the text of the message as a string. Read/write.

Syntax

objMessage.**Text**

Data Type

String

Remarks

The message text is the principal content of an interpersonal message, typically displayed to each recipient as an immediate result of opening the message. Text specifically excludes various other message properties such as **Subject**, **Attachments**, and **Recipients**.

The **Text** property is a plain text representation of the message text and does not support formatted text.

The maximum size of the text can be limited by the tool that you use to manipulate string variables (such as Microsoft® Visual Basic®).

The **Text** property corresponds to the MAPI property PR_BODY. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_BODY**.

Example

This code fragment sets the text of a message:

```
Dim objMessage As Message ' assume valid message
objMessage.Text = "Thank you for buying Microsoft Home(TM) products."
```

TimeCreated Property (Message Object)

Group

The **TimeCreated** property specifies the date/time the message was first saved. Read-only.

Syntax

objMessage.**TimeCreated**

Data Type

Variant (**vbDate** format)

Remarks

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **TimeCreated** property. An attempt to access **TimeCreated** in this case returns **CdoE_NOT_FOUND**.

The **TimeCreated** property corresponds to the MAPI property PR_CREATION_TIME.

TimeExpired Property (Message Object)

Group

The **TimeExpired** property specifies the date/time the message becomes invalid and can be safely deleted. Read/write.

Syntax

objMessage.**TimeExpired**

Data Type

Variant (**vbDate** format)

Remarks

The **TimeExpired** property is not required on an AppointmentItem, MeetingItem, or Message object. If the sender does not set **TimeExpired**, an attempt by the receiver to read it returns **CdoE_NOT_FOUND**.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **TimeExpired** property. An attempt to access **TimeExpired** in this case returns **CdoE_NOT_FOUND**.

The **TimeExpired** property corresponds to the MAPI property PR_EXPIRY_TIME.

TimeLastModified Property (Message Object) Group

The **TimeLastModified** property specifies the date/time the message was most recently saved. Read-only.

Syntax

objMessage.**TimeLastModified**

Data Type

Variant (**vbDate** format)

Remarks

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **TimeLastModified** property. An attempt to access **TimeLastModified** in this case returns **CdoE_NOT_FOUND**.

The **TimeLastModified** property corresponds to the MAPI property PR_LAST_MODIFICATION_TIME.

TimeReceived Property (Message Object) Group

The **TimeReceived** property sets or returns the date/time the message was received as a **vbDate** variant data type. Read/write.

Syntax

objMessage.**TimeReceived**

Data Type

Variant (**vbDate** format)

Remarks

The **TimeReceived** and **TimeSent** properties set and return dates and times as the local time for the user's system.

When you send messages using the Message object's **Send** method, MAPI sets the **TimeReceived** and **TimeSent** properties for you. However, when you post messages in a public folder, you must first explicitly set these properties. For a message posted to a public folder, set both properties to the same time value.

The **TimeReceived** and **TimeSent** properties represent local time.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **TimeReceived** property. An attempt to access **TimeReceived** in this case returns **CdoE_NOT_FOUND**.

The **TimeReceived** property corresponds to the MAPI property PR_MESSAGE_DELIVERY_TIME. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_MESSAGE_DELIVERY_TIME**.

Note When PR_MESSAGE_DELIVERY_TIME is rendered into HTML, it is converted to the local time at IIS, not the browser's local time.

Example

This code fragment displays the date/time a message was sent and received:

```
' from the sample function Message_TimeSentAndReceived
' verify that objOneMsg is valid, then ...
With objOneMsg
    strMsg = "Message sent " & Format(.TimeSent, "Short Date")
    strMsg = strMsg & ", " & Format(.TimeSent, "Long Time")
    strMsg = strMsg & "; received "
    strMsg = strMsg & Format(.TimeReceived, "Short Date") & ", "
    strMsg = strMsg & Format(.TimeReceived, "Long Time")
    MsgBox strMsg
End With
```

TimeSent Property (Message Object)

Group

The **TimeSent** property sets or returns the date/time the message was sent as a **vbDate** variant data type. Read/write.

Syntax

objMessage.**TimeSent**

Data Type

Variant (**vbDate** format)

Remarks

The **TimeReceived** and **TimeSent** properties set and return dates and times as the local time for the user's system.

When you send messages using the Message object's **Send** method, MAPI sets the **TimeReceived** and **TimeSent** properties for you. However, when you post messages in a public folder, you must first explicitly set these properties. For a message posted to a public folder, set both properties to the same time value.

The **TimeReceived** and **TimeSent** properties represent local time.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **TimeSent** property. An attempt to access **TimeSent** in this case returns **CdoE_NOT_FOUND**.

The **TimeSent** property corresponds to the MAPI property PR_CLIENT_SUBMIT_TIME. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_CLIENT_SUBMIT_TIME**.

Note When PR_CLIENT_SUBMIT_TIME is rendered into HTML, it is converted to the local time at IIS, not the browser's local time.

Example

This code fragment displays the date/time a message was sent and received:

```
' from the sample function Message_TimeSentAndReceived
' verify that objOneMsg is valid, then ...
With objOneMsg
    strMsg = "Message sent " & Format(.TimeSent, "Short Date")
    strMsg = strMsg & ", " & Format(.TimeSent, "Long Time")
    strMsg = strMsg & "; received "
    strMsg = strMsg & Format(.TimeReceived, "Short Date") & ", "
    strMsg = strMsg & Format(.TimeReceived, "Long Time")
    MsgBox strMsg
End With
```

Type Property (Message Object) Group

The **Type** property returns or sets the MAPI message class for the message. Read/write.

Syntax

objMessage.**Type**

Data Type

String

Remarks

The **Type** property contains the MAPI message class, which determines the set of properties defined for the message, the kind of information it conveys, and how it is to be handled. The message class consists of ASCII strings concatenated with periods, each string representing a level of subclassing. A standard interpersonal message has message class IPM.Note, which is a subclass of IPM and a superclass of IPM.Note.Private.

The subclasses of the Message object are distinguished by the value of their **Type** property. An AppointmentItem object has a **Type** of IPM.Appointment, and a MeetingItem object has a **Type** of IPM.Schedule.Meeting.Request.

For more information about MAPI message classes, see the *MAPI Programmer's Reference*.

CDO does not impose any restrictions on this value except that it be a valid string value. You can set the value to any string that is meaningful for your application. By default, CDO sets the **Type** value of new messages to the MAPI message class IPM.Note.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Type** property. An attempt to access **Type** in this case returns **CdoE_NOT_FOUND**.

The **Type** property corresponds to the MAPI property PR_MESSAGE_CLASS. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message object and the *property* parameter of the **RenderProperty** method to **CdoPR_MESSAGE_CLASS**.

Unread Property (Message Object)

Group

The **Unread** property is **True** if the message has not been read by the current user. Read/write.

Syntax

objMessage.**Unread**

Data Type

Boolean

Remarks

In general, there are three different kinds of messages: *sent*, *posted*, and *saved*. Sent messages are traditional e-mail messages sent to a recipient or public folder. Posted messages are created in a public folder. Saved messages are created and saved without either sending or posting.

For all three kinds of messages, you use the **Sent**, **Submitted**, and **Unread** properties and the **Send** or **Update** methods.

The following table summarizes the use of the message properties and methods for the three kinds of messages. In some systems the message store and transport providers are tightly coupled, in which case they bypass the spooler and perform its functions themselves.

Kind of message	Method used	Sent property	Submitted property	Unread property
Sent	**Send**	Spooler sets **True**	**Send** sets **True**	Spooler sets **True**
Posted	**Update**	Application sets **True**	Application sets **False**	Application sets **True**
Saved	**Update**	Application sets **False**	Application sets **False**	Application sets **True**

The **Unread** property should initially be **True** for all three kinds of messages. The messaging system takes care of this for a sent message; you must set the property for a posted or saved message. The messaging system also resets **Submitted** to **False** when the message arrives in a recipient's Inbox. Each receiving user sets the **Unread** property to **False** as it reads its copy of the received message.

Note When you set **Unread** to **False**, the MSGFLAG_READ flag of the MAPI property PR_MESSAGE_FLAGS is immediately updated in the message store. However, to improve performance by reducing RPCs, the store might not communicate this change to a messaging client until contacted by the client. Therefore, a client such as the Microsoft® Exchange Client or Microsoft® Outlook™ may continue to show the message as unread for some indeterminate period of time.

For more information on sending and posting messages, see Creating and Sending a Message and Posting Messages to a Public Folder.

AppointmentItem objects in a Microsoft® Schedule+ calendar folder do not have the full set of attributes of a general message. If you obtain the default calendar folder by passing **CdoDefaultFolderCalendar** to the Session object's **GetDefaultFolder** method, its appointments have no defined value for the **Unread** property. An attempt to access **Unread** in this case returns **CdoE_NOT_FOUND**.

The **Unread** property corresponds to the MSGFLAG_READ flag not being set in the MAPI property PR_MESSAGE_FLAGS. It can be rendered into HTML hypertext using the CDO Rendering ObjectRenderer object. To specify this, set the object renderer's **DataSource** property to this Message

object and the *property* parameter of the **RenderProperty** method to **CdoPR_MESSAGE_FLAGS**. However, you must assign a CDO Rendering Format object to the PR_MESSAGE_FLAGS property and use the **Value** property of the format's Pattern objects to isolate the MSGFLAG_READ flag's setting for rendering.

Update Method (Message Object) Group

The **Update** method saves the message in the MAPI system.

Syntax

objMessage.**Update([***makePermanent*, *refreshObject***])**

objMessage
Required. The Message object.

makePermanent
Optional. Boolean. A value of **True** indicates that the property cache is flushed and all changes are committed in the underlying message store. **False** indicates that the property cache is flushed but not committed to persistent storage. The default value is **True**.

refreshObject
Optional. Boolean. A value of **True** indicates that the property cache is reloaded from the values in the underlying message store. **False** indicates that the property cache is not reloaded. The default value is **False**.

Remarks

Changes to a Message object are not permanently saved in the MAPI system until you either call the **Update** method with the *makePermanent* parameter set to **True** or call the **Send** method.

For improved performance, CDO caches property changes in private storage and updates either the object or the underlying persistent storage only when you explicitly request such an update. For efficiency, you should make only one call to **Update** with its *makePermanent* parameter set to **True**.

The *makePermanent* and *refreshObject* parameters combine to cause the following changes:

	refreshObject = True	**refreshObject = False**
makePermanent = True	Commit all changes, flush the cache, and reload the cache from the message store.	Commit all changes and flush the cache (default combination).
makePermanent = False	Flush the cache and reload the cache from the message store.	Flush the cache.

Call **Update(False, True)** to flush the cache and then reload the values from the message store.

Example

This code fragment changes the subject of the first message in the Inbox:

```
Set objMessage = objSession.Inbox.GetFirst
' ... verify message
objMessage.Subject = "This is the new subject"
objMessage.Update ' commit changes to MAPI system
```

To add a new Message object, use the Messages collection's **Add** method followed by the message's **Update** method. This code fragment saves a new message in the Outbox:

```
Dim objMessage As Message ' Message object
'
Set objMessage = objSession.Outbox.Messages.Add
objMessage.Subject = "Microsoft Bob(TM)"
objMessage.Text = "This is incredible; you've got to see it!"
```

```
objMessage.Update makePermanent:=True ' redundant parameter (default)
```

MessageFilter Object

The MessageFilter object specifies criteria for restricting a search on a Messages collection.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.1
Parent objects:	Messages collection
Child objects:	Fields collection
Default property:	**Subject**

Properties

Name	Available in version	Type	Access
Application	1.1	String	Read-only
Class	1.1	Long	Read-only
Conversation	1.1	String	Read/write
Fields	1.1	Field object or Fields collection object	Read-only
Importance	1.1	Long	Read/write
Not	1.1	Boolean	Read/write
Or	1.1	Boolean	Read/write
Parent	1.1	Messages collection object	Read-only
Recipients	1.1	String	Read/write
Sender	1.1	String	Read/write
Sent	1.1	Boolean	Read/write
Session	1.1	Session object	Read-only
Size	1.1	Long	Read/write
Subject	1.1	String	Read/write
Text	1.1	String	Read/write
TimeFirst	1.1	Variant (**vbDate** format)	Read/write
TimeLast	1.1	Variant (**vbDate** format)	Read/write
Type	1.1	String	Read/write
Unread	1.1	Boolean	Read/write

Methods

Name	Available in version	Parameters
IsSameAs	1.1	*objMsgFilter2* as **Object**

Remarks

A MessageFilter object with no criteria is created by default for every Messages collection. This means that initially the filter's properties are unset and its child Fields collection is empty. You specify the filter by setting values for its properties or for fields in its Fields collection. You do not need to call any **Update** method when setting filter criteria.

The filter is invoked when the Messages collection is traversed with the **Get** methods or the Microsoft® Visual Basic® **For Each** construction. Each field participates in a MAPI search restriction comparing the field's **Value** property against the value of the Message object's property specified by the field's **ID** property.

When you are traversing a Messages collection instantiated by a CDO rendering application, you should declare the Visual Basic variable to be an **Object** instead of a Message. This is because the collection may be from a calendar folder, and also because a rendering may have applied a grouped view to the folder. Therefore you can get AppointmentItem, GroupHeader, and MeetingItem objects returned as well as Message objects. You should also test the **Class** property of each returned object to see if it is an appointment, a group header, a meeting, or a message:

```
Dim objMember As Object ' could get one of several classes
' collMessages is instantiated from a rendering application
' assume collMessages valid
' ...
For Each objMember in collMessages ' collection from a rendering
  If objMember.Class = CdoMsg ' exclude other classes
    ' we have a Message object
  End If
Next
```

For fields of data type other than **String**, the MAPI search restriction type is RES_PROPERTY with relational operator RELOP_EQ. For fields of data type **String**, the restriction type is RES_CONTENT with fuzzy level options FL_SUBSTRING, FL_IGNORECASE, and FL_LOOSE. However, the following MAPI properties are compared using FL_PREFIX instead of FL_SUBSTRING:

PR_ACCOUNT
PR_BUSINESS_ADDRESS_CITY
PR_COMPANY_NAME
PR_DEPARTMENT_NAME
PR_DISPLAY_NAME
PR_GIVEN_NAME
PR_OFFICE_LOCATION
PR_SURNAME
PR_TITLE

If the underlying messaging system does not support the search criteria specified by the filter fields, the **Get** methods return **CdoE_TOO_COMPLEX**.

You can apply a MessageFilter object to a Messages collection containing AppointmentItem objects. However, the current version of CDO only supports filtering on the **EndTime** and **StartTime** properties. An attempt to filter on any other properties, including the inherited Message object properties, returns **CdoE_TOO_COMPLEX**. MeetingItem objects are members of a Messages collection belonging to a messaging user's Inbox, and they can be filtered on any properties, including the inherited Message object properties.

The MAPI search restrictions for appointment properties are as follows:

Property tag	Restriction type	Relational operator
CdoPR_END_DATE	RES_PROPERTY	RELOP_GE

CdoPR_START_DATE RES_PROPERTY RELOP_LE

The comparison order is *(property value) (relational operator) (constant value)*. For example, the message filter passes appointments with a starting date earlier than or equal to the date you indicate. To specify this restriction, you use the filter's **Fields** property to obtain its Fields collection, **Add** a new Field with **CdoPR_START_DATE** in the *PropTag* parameter, and set the new field's **Value** property to the last admissible starting date.

The results of the individual restrictions are normally **AND**ed together to form the final filter value. You can change this by setting the **Or** property, which causes all the results to be **OR**ed instead of **AND**ed. You can also set the **Not** property to specify that the result of each individual restriction is to be negated before being **AND**ed or **OR**ed into the final filter value.

The message filter affects traversals of the Messages collection using the Visual Basic **For Each** statement, the **Get** methods, or the Visual Basic **For … Next** construction. These accesses normally return a Message object but can also return a GroupHeader object if the collection is instantiated by a CDO rendering application.

The MessageFilter object is persistent within its parent Messages collection. It is not deleted even when it is released, and it remains attached to the Messages collection until the collection's **Filter** property is set to **Nothing** or the collection is itself released. You can use the following code to clear a message filter of all of its previous settings and reset it to its default state of no criteria:

```
objMessagesColl.Filter = Nothing ' filter now invalidated and cleared
Set objMessageFilt = objMessagesColl.Filter ' new valid empty filter
```

If a folder is being rendered with a CDO rendering application, the Messages collection and the message filter are instantiated according to the specifications in the TableView object being applied to the folder. The MessageFilter object inherits the restriction specified in the view. An inherited filter can be used without modification, but it cannot be read or changed by the rendering application. Writing any property on an inherited filter disinherits it and refreshes the Messages collection. This means that the collection is reinstantiated with a new message filter specifying only the property just written. This new filter, however, is no longer inherited, and the application can read its properties and set additional restrictions within it.

Example

This code fragment specifies that the message filter on the Inbox should pass only Message objects that are **Unread AND Not** of message class IPM.Note:

```
Dim objMsgFilt As MessageFilter

Set objMsgFilt = objSession.Inbox.Messages.Filter
' ... validate MessageFilter object ...
objMsgFilt.Not = True ' negate all results before ANDing
objMsgFilt.Type = "IPM.Note" ' MAPI message class
objMsgFilt.Unread = False ' .Not setting negates True to False!
```

Conversation Property (MessageFilter Object) Group

The **Conversation** property sets filtering on a message's conversation topic. Read/write.

Syntax

objMessageFilter.**Conversation**

Data Type

String

Remarks

The **Conversation** property specifies that the message filter should pass only messages whose conversation topic exactly matches the value of **Conversation**. That is, *objMessageFilter***.Conversation** sets filtering on *objMessage***.ConversationTopic**.

A conversation is a group of related messages. The Message object's **ConversationTopic** property is the string that describes the overall topic of the conversation. To be defined as messages within the same conversation, the messages must have the same value in their **ConversationTopic** property. The Message object's **ConversationIndex** property represents an index that indicates a sequence of messages within that conversation.

For more information on conversations, see Working With Conversations.

The **Conversation** property corresponds to the MAPI property PR_CONVERSATION_TOPIC.

Fields Property (MessageFilter Object)

Group

The **Fields** property returns a single Field object or a Fields collection object. Read-only.

Syntax

objMessageFilter.**Fields**

objMessageFilter.**Fields(***index***)**

objMessageFilter.**Fields(***proptag***)**

objMessageFilter.**Fields(***name***)**

index
Short integer (less than or equal to 65,535). Specifies the index within the Fields collection.

proptag
Long integer (greater than or equal to 65,536). Specifies the property tag value for the MAPI property to be retrieved.

name
String. Specifies the name of the custom MAPI property.

Data Type

Object (Field or Fields collection)

Remarks

The **Fields** property returns one or all of the fields associated with a MessageFilter object. Each field typically corresponds to a MAPI property. Data types are preserved, except that MAPI counted binary properties are converted to and from character strings representing hexadecimal digits.

The fields that have been set in the Fields collection specify the filter, together with any other MessageFilter properties that have been set.

The **Fields** property provides a generic access mechanism that allows Microsoft® Visual Basic® and Microsoft® Visual C++® programmers to retrieve the value of a MAPI property using either its name or its MAPI property tag. For access with the property tag, use *objMessageFilter*.**Fields**(*proptag*), where *proptag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_MESSAGE_FLAGS**. To access a named property, use *objMessageFilter*.**Fields**(*name*), where *name* is a string that represents the custom property name.

Although the **Fields** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Field objects retain their respective read/write or read-only accessibility.

Importance Property (MessageFilter Object) Group

The **Importance** property sets filtering on a message's importance to **CdoNormal** (the default), **CdoLow**, or **CdoHigh**. Read/write.

Syntax

objMessageFilter.**Importance**

Data Type

Long

Remarks

The following values are defined:

Constant	Value	Description
CdoLow	0	Low importance
CdoNormal	1	Normal importance (default)
CdoHigh	2	High importance

The **Importance** property corresponds to the MAPI property PR_IMPORTANCE.

IsSameAs Method (MessageFilter Object) Group

The **IsSameAs** method returns **True** if the MessageFilter object is the same as the MessageFilter object being compared against.

Syntax

objMessageFilter.**IsSameAs(***objMsgFilter2***)**

objMessageFilter
Required. This MessageFilter object.

objMsgFilter2
Required. The MessageFilter object being compared against.

Remarks

Two MessageFilter objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

Not Property (MessageFilter Object)

Group

The **Not** property specifies that all restriction values are to be negated before being **AND**ed or **OR**ed to specify the message filter. Read/write.

Syntax

objMessageFilter.**Not**

Data Type

Boolean

Remarks

If the **Not** property is **False**, the restriction values are treated normally. If it is **True**, each value is toggled (between **True** and **False**) before being used.

Or Property (MessageFilter Object)

Group

The **Or** property specifies that the restriction values are to be **OR**ed instead of **AND**ed to specify the message filter. Read/write.

Syntax

objMessageFilter.**Or**

Data Type

Boolean

Remarks

If the **Or** property is **False**, all the restriction values are **AND**ed together. If it is **True**, the values are **OR**ed together.

Recipients Property (MessageFilter Object) Group

The **Recipients** property sets filtering on whether a message's recipients include at least one recipient with a particular name. Read/write.

Syntax

*objMessageFilter.***Recipients**

Data Type

String

Remarks

The **Recipients** property specifies that the message filter should pass only messages with one or more recipients having a name corresponding to the **Recipients** property. The filter passes the message if the **Name** property of any of its Recipient objects contains the filter's **Recipients** property as a substring.

Example

This code fragment copies the first valid recipient from an original message to a message filter in order to restrict the Messages collection to messages containing that recipient:

```
Dim objOneRecip as Recipient
' assume objMessage and objMessageFilter are valid
For i = 1 To objMessage.Recipients.Count Step 1
    strRecipName = objMessage.Recipients.Item(i).Name
' or objMessage.Recipients(i) since Item and Name are default properties
    If strRecipName <> "" Then
        objMessageFilter.Recipients = strRecipName
        Exit For
    End If
Next i
```

Sender Property (MessageFilter Object)

Group

The **Sender** property sets filtering on the name of a message's sender. Read/write.

Syntax

objMessageFilter.**Sender**

Data Type

String

Remarks

The **Sender** property specifies that the message filter should pass only messages sent by a messaging user having a name corresponding to the **Sender** property. The filter passes the message if the **Name** property of the AddressEntry object returned by the message's **Sender** property contains the filter's **Sender** property as a substring.

The **Sender** property corresponds to the MAPI property PR_SENDER_NAME.

Sent Property (MessageFilter Object)

Group

The **Sent** property sets filtering on whether or not a message was sent through the MAPI system. Read/write.

Syntax

objMessageFilter.**Sent**

Data Type

Boolean

Remarks

A message's **Sent** property is **True** if it was sent through the MAPI system and **False** if it was posted or saved.

In general, there are three different kinds of messages: *sent*, *posted*, and *saved*. Sent messages are traditional e-mail messages sent to a recipient or public folder. Posted messages are created in a public folder. Saved messages are created and saved without either sending or posting. For more information, see the Message object's **Sent** property.

Size Property (MessageFilter Object)

Group

The **Size** property sets filtering on a message's approximate total size in bytes. Read/write.

Syntax

objMessageFilter.**Size**

Data Type

Long

Remarks

The **Size** property specifies that the message filter should pass only messages with approximate total size greater than the value of **Size**.

The **Size** property represents the sum of all the message's MAPI properties, including the **Subject**, **Text**, **Attachments**, and **Recipients**.

The **Size** property corresponds to the MAPI property PR_MESSAGE_SIZE.

Subject Property (MessageFilter Object)

Group

The **Subject** property sets filtering on a message's subject. Read/write.

Syntax

objMessageFilter.**Subject**

The **Subject** property is the default property of a MessageFilter object, meaning that *objMessageFilter* is syntactically equivalent to *objMessageFilter*.**Subject** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Subject** property specifies that the message filter should pass only messages having a **Subject** that contains the string in this **Subject** property as a substring.

The **Subject** property corresponds to the MAPI property PR_SUBJECT.

Text Property (MessageFilter Object)

Group

The **Text** property sets filtering on a message's main content. Read/write.

Syntax

objMessageFilter.**Text**

Data Type

String

Remarks

The **Text** property specifies that the message filter should pass only messages having a **Text** that contains the string in this **Text** property as a substring.

Note that the **Text** property is a plain text representation of the main portion of the message's content, and does not support formatted text.

The **Text** property corresponds to the MAPI property PR_BODY.

TimeFirst Property (MessageFilter Object) Group

The **TimeFirst** property sets filtering on whether a message was received at or since the specified date/time. Read/write.

Syntax

objMessageFilter.**TimeFirst**

Data Type

Variant (**vbDate** format)

Remarks

If the **TimeFirst** property is not set, the message filter passes all messages received at or before the date/time in the **TimeLast** property. If neither property is set, the filter passes messages regardless of their date/time of reception.

The **TimeFirst** and **TimeLast** properties represent local time.

The **TimeFirst** property corresponds to the MAPI Property PR_MESSAGE_DELIVERY_TIME.

TimeLast Property (MessageFilter Object) Group

The **TimeLast** property sets filtering on whether a message was received at or before the specified date/time. Read/write.

Syntax

objMessageFilter.**TimeLast**

Data Type

Variant (**vbDate** format)

Remarks

If the **TimeLast** property is not set, the message filter passes all messages received at or since the date/time in the **TimeFirst** property. If neither property is set, the filter passes messages regardless of their date/time of reception.

For more information and an example using the **TimeLast** property, see Filtering Messages in a Folder.

The **TimeFirst** and **TimeLast** properties represent local time.

The **TimeLast** property corresponds to the MAPI Property PR_MESSAGE_DELIVERY_TIME.

Type Property (MessageFilter Object)

Group

The **Type** property sets filtering on a message's MAPI message class. Read/write.

Syntax

objMessageFilter.**Type**

Data Type

String

Remarks

The **Type** property specifies that the message filter should pass only messages with a **Type** exactly matching a particular MAPI message class. By default, CDO sets the **Type** value of new messages to the MAPI message class IPM.Note.

The **Type** property corresponds to the MAPI property PR_MESSAGE_CLASS.

Unread Property (MessageFilter Object)

Group

The **Unread** property sets filtering on whether or not a message has been read. Read/write.

Syntax

objMessageFilter.**Unread**

Data Type

Boolean

Remarks

A message's **Unread** property is **True** if it has not been read by the current user.

For more information and an example using the **Unread** property, see Filtering Messages in a Folder.

The **Unread** property corresponds to the MSGFLAG_READ flag not being set in the MAPI property PR_MESSAGE_FLAGS.

Messages Collection Object

The Messages collection object contains one or more AppointmentItem, GroupHeader, MeetingItem, and Message objects.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Folder
Child objects:	AppointmentItem GroupHeader MeetingItem Message MessageFilter
Default property:	**Item**

A Messages collection is considered a *large collection*, which means that the **Count** property has limited validity, and the best way to access an individual GroupHeader or Message object within the collection is to use either its unique identifier or the **Get** methods. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Count	1.1	Long	Read-only
Filter	1.1	MessageFilter object	Read/write
Item	1.1	GroupHeader object or Message object	Read-only
Parent	1.0.a	Folder object	Read-only
RawTable	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Session	1.0.a	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.0.a	(optional) *subject* as **String**, (optional) *text* as **String**, (optional) *type* as **String**, (optional) *importance* as **Long**
Delete	1.0.a	(none)
GetFirst	1.0.a	(optional) *filter* as **String**

GetLast	1.0.a	(optional) *filter* as **String**
GetNext	1.0.a	(none)
GetPrevious	1.0.a	(none)
Sort	1.0.a	(optional) *SortOrder* as **Long**, (optional) *PropTag* as **Long**, (optional) *PropID* as **String**

Remarks

A Messages collection can be rendered into HTML hypertext in tabular form using the CDO Rendering ContainerRenderer object. To specify this, set the container renderer's **DataSource** property to the Messages collection object itself.

With the same **DataSource** setting, the container renderer's **RenderProperty** method can also render selected properties of the collection's parent Folder object. The individual properties that can be rendered are indicated in the Folder object property descriptions.

Large collections, such as the Messages collection, cannot always maintain an accurate count of the number of objects in the collection. It is strongly recommended that you use the **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** methods to access individual items in the collection. You can access one specific appointment, meeting, or message by using the Session object's **GetMessage** method, and you can access all the items in the collection with the Visual Basic **For Each** construction.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether they are sorted or not. The AppointmentItem, GroupHeader, MeetingItem, and Message objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

A message and most of its attachments, fields, properties, and recipients are read from the message store when the application first accesses the Message object. For performance reasons, attachment data and field values greater than 1,000 bytes are read from the store only when the application explicitly accesses the Attachment or Field objects. All other properties of the Attachment and Field objects are read when the parent message is read.

GroupHeader objects are not saved in the message store. They cannot be created or deleted programmatically by your application. They are generated only when a CDO Rendering TableView object is being applied to the Messages collection, and they do not persist when the view is released.

Add Method (Messages Collection)

Group

The **Add** method creates and returns a new AppointmentItem or Message object in the Messages collection.

Syntax

Set *objMessage* = *objMsgColl*.**Add([***subject, text, type, importance***])**

objMessage
On successful return, represents the new AppointmentItem or Message object added to the collection. The type of object added depends on the parent folder of the Messages collection.

objMsgColl
Required. The Messages collection object.

subject
Optional. String. The subject of the message. When this parameter is not supplied, the default value is an empty string.

text
Optional. String. The body text of the message. When this parameter is not supplied, the default value is an empty string.

type
Optional. String. The message class of the message, such as the default, IPM.Note.

importance
Optional. Long. The importance of the message. The following values are defined:

Constant	Value	Description
CdoLow	0	Low importance
CdoNormal	1	Normal importance (default)
CdoHigh	2	High importance

Remarks

The method parameters correspond to the **Subject**, **Text**, **Type**, and **Importance** properties of the Message object.

Note If you are adding an AppointmentItem object to a calendar folder, you cannot use any of the parameters of the **Add** method. You can, however, set the values later by using the corresponding properties.

You should create new messages in the Inbox or Outbox folder, and new appointments in the calendar folder.

The user must have permission to **Add** or **Delete** a Message object. Most users have this permission in their mailbox and their Personal Folders.

The new Message object is saved in the MAPI system when you call its **Update** method.

Example

This code fragment adds a new message to a folder:

```
' from the sample function Util_ReplyToConversation
Set objNewMsg = objSession.Outbox.Messages.Add
' verify objNewMsg created successfully ... then supply properties
With objNewMsg
```

```
    .Text = "How about a slightly used Gemini?" ' new text
    .Subject = objOriginalMsg.Subject ' copy original properties
    .ConversationTopic = objOriginalMsg.ConversationTopic
    ' append time stamp; compatible with Microsoft Exchange client
    Set objOneRecip = .Recipients.Add( _
                      Name:=objOriginalMsg.Recipients.Item(1).Name, _
                      Type:=CdoTo)
    .Recipients.Resolve
    .Update
    .Send showDialog:=False
End With
```

Count Property (Messages Collection)

Group

The **Count** property returns the number of AppointmentItem, MeetingItem, or GroupHeader and Message objects in the collection, or a very large number if the exact count is not available. Read-only.

Syntax

objMsgColl.**Count**

Data Type

Long

Remarks

A large collection cannot always maintain an accurate count of its members, and the **Count** property cannot be used as the collection's size when it has the value &H7FFFFFFF. Programmers needing to access individual objects in a large collection are strongly advised to use the Microsoft® Visual Basic® **For Each** statement or the **Get** methods.

The **Count** property can always be used to determine whether a Messages collection is empty or not.

The recommended procedures for traversing a large collection are, in decreasing order of preference:

1. Global selection, such as the Visual Basic **For Each** statement.
2. The **Get** methods, particularly **GetFirst** and **GetNext**.
3. An indexed loop, such as the Visual Basic **For ... Next** construction.

If the message store provider cannot supply the precise number of objects, CDO returns &H7FFFFFFF (= 2^31 - 1 = 2,147,483,647) for the **Count** property. This is the largest positive value for a long integer and is intended to prevent an approximate count from prematurely terminating an indexed loop. On 32-bit platforms, this value is defined in the type library as **CdoMaxCount**. On other platforms, **CdoMaxCount** is not defined, and a program on such a platform must compare the **Count** property against &H7FFFFFFF to see if it is reliable.

If the **Count** property is not reliable, that is, if it is &H7FFFFFFF, a program using it to terminate an indexed loop must also check each returned object for a value of **Nothing** to avoid going past the end of the collection.

The use of the **Item** property in conjunction with the **Count** property in a large collection can be seen in the following example.

Example

This code fragment searches for a Message object with subject "Bonus". Note that the variable is declared as **Object** instead of Message, and that the **Class** property is tested to verify that the object returned in the **Item** property is not an AppointmentItem, GroupHeader, or MeetingItem object.

```
Dim i As Integer ' loop index / object counter
Dim collMessages As Messages ' assume collection already provided
Dim objMsg As Object ' could get either group header or message
If collMessages Is Nothing Then
    MsgBox "Messages collection object is invalid"
    ' Exit
ElseIf 0 = collMessages.Count Then ' collection is empty
    MsgBox "No messages in collection"
    ' Exit
End If
```

```
' look for message about "Bonus" in collection
For i = 1 To collMessages.Count Step 1
    Set objMsg = collMessages.Item(i)
    ' or collMessages(i) since Item is default property
    If objMsg Is Nothing Then ' end of collection
        MsgBox "No such message found in collection"
        Exit For
    ElseIf objMsg.Class = CdoMsg ' exclude other object classes
        If 0 = StrComp(objMsg.Subject, "Bonus") Then
        ' or objMsg since Subject is default property
            MsgBox "Desired message is at index " & i
            Exit For
        End If
    End If
Next i
```

Delete Method (Messages Collection)

Group

The **Delete** method removes all the AppointmentItem, MeetingItem, GroupHeader, and Message objects from the Messages collection.

Syntax

objMsgColl.**Delete( )**

Remarks

The **Delete** method moves all the messages in the collection to the Deleted Items folder, if the client has enabled this option. If the option is not enabled, or if the Messages collection is already in the Deleted Items folder, the **Delete** method permanently removes the messages from the collection, and they cannot be recovered.

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every AppointmentItem, GroupHeader, MeetingItem, and Message object. If you have another reference to an object, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another object.

The final **Release** on each AppointmentItem, GroupHeader, MeetingItem, or Message object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

If the Messages collection underlies a categorized view, the GroupHeader objects are also removed from the collection, but unlike the messages they are not moved anywhere. Group headers do not persist in storage, and when the collection is released, whether with messages or not, the GroupHeader objects cease to exist.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Message object, use the **Delete** method specific to that object.

The **Delete** method on a large collection takes effect immediately and is permanent. A deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

Filter Property (Messages Collection)

Group

The **Filter** property returns a MessageFilter object for the Messages collection. Read/write.

Syntax

objMsgColl.**Filter**

Data Type

Object (MessageFilter)

Remarks

A MessageFilter object with no criteria is created by default for every Messages collection. When you specify criteria by setting properties in the filter's Fields collection, the filter restricts any subsequent search on the Messages collection. For more information, see Filtering Messages in a Folder and the MessageFilter Object.

A message filter can also be inherited from the restriction specified in a CDO Rendering TableView object. Writing any property on this filter disinherits it, refreshes the Messages collection, and instantiates a new message filter specifying only the property just written. This new filter, however, is no longer inherited, and the application can read its properties and set additional restrictions within it.

The message filter affects traversals of the Messages collection using the Microsoft® Visual Basic® **For Each** statement, the **Get** methods, or the Visual Basic **For … Next** construction. These accesses normally return a Message object but can also return an AppointmentItem object if the collection resides in a calendar folder, a GroupHeader object if the collection is instantiated by a CDO rendering application, or a MeetingItem object if the collection is in an Inbox or Outbox.

Example

This code fragment shows how to set a filtering value in a Messages collection's initial default message filter, and then how to clear all settings and reset the filter to its default state of no criteria:

```
Dim objMsgColl As Messages ' collection
Dim objMessage As Message  ' message passed by filter
Dim objMsgFilt As MessageFilter
' assume valid Messages collection just created
' make first use of filter to check for high importance messages
Set objMsgFilt = objMsgColl.Filter ' original empty default filter
objMsgFilt.Importance = CdoHigh
For Each objMessage in objMsgColl ' loops and Sets each objMessage
    ' process messages that are passed by the filter
Next
' ... later, when current filter settings are no longer needed ...
objMsgColl.Filter = Nothing ' invalidates and clears filter
Set objMsgFilt = objMsgColl.Filter ' new empty filter
' filter now available for new settings
```

GetFirst Method (Messages Collection)

Group

The **GetFirst** method returns the first AppointmentItem, GroupHeader, MeetingItem, or Message object in the Messages collection. It returns **Nothing** if no first object exists.

Syntax

Set *objMessage* **=** *objMsgColl*.**GetFirst([***filter***])**

objMessage
On successful return, represents the first AppointmentItem, GroupHeader, MeetingItem, or Message object in the collection.

objMsgColl
Required. The Messages collection object.

filter
Optional. String. Specifies the message class of the object, such as IPM.Note, the default value. Corresponds to the **Type** property of the Message object.

Remarks

If the *filter* parameter is set, the **GetFirst** method returns the first message in the collection with a **Type** property matching the value of *filter*.

The **Get** methods normally return a Message object but can also return an AppointmentItem, GroupHeader, or MeetingItem object.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether they are sorted or not. The AppointmentItem, GroupHeader, MeetingItem, and Message objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

GetLast Method (Messages Collection)

Group

The **GetLast** method returns the last AppointmentItem, GroupHeader, MeetingItem, or Message object in the Messages collection. It returns **Nothing** if no last object exists.

Syntax

Set *objMessage* **=** *objMsgColl*.**GetLast([***filter***])**

objMessage
On successful return, represents the last AppointmentItem, GroupHeader, MeetingItem, or Message object in the collection.

objMsgColl
Required. The Messages collection object.

filter
Optional. String. Specifies the message class of the object, such as IPM.Note, the default value. Corresponds to the **Type** property of the Message object.

Remarks

If the *filter* parameter is set, the **GetLast** method returns the last message in the collection with a **Type** property matching the value of *filter*.

The **Get** methods normally return a Message object but can also return an AppointmentItem, GroupHeader, or MeetingItem object.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether they are sorted or not. The AppointmentItem, GroupHeader, MeetingItem, and Message objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

GetNext Method (Messages Collection)

Group

The **GetNext** method returns the next AppointmentItem, GroupHeader, MeetingItem, or Message object in the Messages collection. It returns **Nothing** if no next object exists, for example if already positioned at the end of the collection.

Syntax

Set *objMessage* **=** *objMsgColl*.**GetNext( )**

objMessage
On successful return, represents the next AppointmentItem, GroupHeader, MeetingItem, or Message object in the collection.

objMsgColl
Required. The Messages collection object.

Remarks

The **Get** methods normally return a Message object but can also return an AppointmentItem, GroupHeader, or MeetingItem object.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether they are sorted or not. The AppointmentItem, GroupHeader, MeetingItem, and Message objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

If the **GetFirst** method has not been called since the Messages collection was initialized, the behavior of the **GetNext** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to **Set** an explicit variable for the collection before entering the loop. For more information, see Object Collections.

GetPrevious Method (Messages Collection) Group

The **GetPrevious** method returns the previous AppointmentItem, GroupHeader, MeetingItem, or Message object in the Messages collection. It returns **Nothing** if no previous object exists, for example if already positioned at the beginning of the collection.

Syntax

Set *objMessage* **=** *objMsgColl*.**GetPrevious( )**

objMessage
On successful return, represents the previous AppointmentItem, GroupHeader, MeetingItem, or Message object in the collection.

objMsgColl
Required. The Messages collection object.

Remarks

The **Get** methods normally return a Message object but can also return an AppointmentItem, GroupHeader, or MeetingItem object.

The order that items are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** depends on whether they are sorted or not. The AppointmentItem, GroupHeader, MeetingItem, and Message objects within a collection can be sorted on a MAPI property of your choice, either ascending or descending, using the **Sort** method. When the items are not sorted, you should not rely on these methods to return the items in any specified order. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all items within the collection, but that the order of the objects is not defined.

If the **GetLast** method has not been called since the Messages collection was initialized, the behavior of the **GetPrevious** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to **Set** an explicit variable for the collection before entering the loop. For more information, see Object Collections.

Item Property (Messages Collection)

Group

The **Item** property returns a single AppointmentItem, GroupHeader, MeetingItem, or Message object from the Messages collection. Read-only.

Syntax

objMsgColl.**Item(***index***)**

objMsgColl.**Item(***searchValue***)**

index
A long integer ranging from 1 to the size of the Messages collection.

searchValue
A string used to search the Messages collection starting at the current position. The search returns the next Message object having the current sorting property greater than or equal to the *searchValue* string.

The **Item** property is the default property of a Messages collection, meaning that *objMsgColl***(***index***)** is syntactically equivalent to *objMsgColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (GroupHeader or Message)

Remarks

Programmers needing to access individual objects in a large collection are strongly advised to use the Visual Basic **For Each** statement or the **Get** methods, particularly **GetFirst** and **GetNext**.

The **Item(***index***)** syntax returns the AppointmentItem, GroupHeader, MeetingItem, or Message object at the indicated position in the collection. It can be used in an indexed loop, such as the **For ... Next** construction in Visual Basic. The first item in the collection has an index of 1.

If you are accessing a Messages collection instantiated by a CDO rendering application, the collection may come from a calendar folder, or there may be a grouped view applied to the folder. Therefore you can get AppointmentItem, GroupHeader, and MeetingItem objects returned as well as Message objects. Because of this, you should declare the Visual Basic variable being set to the **Item** property to be an **Object** rather than a Message, and you should also test the **Class** property of each returned object to see if it is an appointment, group header, meeting, or message:

```
Dim objMember As Object ' could get one of several classes
' collMessages is instantiated from a rendering application
' assume collMessages valid
' ...
For Each objMember in collMessages ' collection from a rendering
  If objMember.Class = CdoMsg ' exclude other classes
    ' we have a Message object
  End If
Next
```

For more information on using the **Count** and **Item** properties in a large collection, see the example in the **Count** property.

The **Item(***searchValue***)** syntax returns the next Message object whose current sorting property is greater than or equal to the string specified by *searchValue*. This syntax only applies when the Messages collection contains Message objects.

The *searchValue* syntax starts its search at the current position and retrieves only messages and not group headers. Searching is based on the current sort order of the collection. The default sort property for a Messages collection is the **TimeReceived** property of the collection's Message objects. If you want to use the **Item(***searchValue***)** syntax to search the collection on another property, for example a message subject, you should first call the **Sort** method specifying the **Subject** property.

Note The **Item(***searchValue***)** syntax uses the **IMAPITABLE::FindRow** method, which performs a search dependent on the current sort order of the table underlying the collection. Not all tables are sorted alphabetically. If your most recent sort order is nonalphabetic, you should access the messages using the **Item(***index***)** syntax. This applies, for example, to messages in Microsoft Exchange Public Folders, which are held in an order determined by the currently applied view.

For more information on tables, bookmarks, restrictions, and sort and search orders, see the *MAPI Programmer's Reference*.

Although the **Item** property itself is read-only, the AppointmentItem, GroupHeader, MeetingItem, or Message object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

RawTable Property (Messages Collection) Group

The **RawTable** property returns an **IUnknown** pointer to the MAPI table object underlying the Messages collection. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objMsgColl.**RawTable**

Data Type

Variant (**vbDataObject** format)

Remarks

The **RawTable** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **RawTable** property is an **IUnknown** object that returns an **IMAPITable** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

Sort Method (Messages Collection)

Group

The **Sort** method sorts the collection on the specified property according to the specified sort order.

Syntax

objMsgColl.**Sort([***SortOrder, PropTag***])**

objMsgColl.**Sort([***SortOrder, name***])**

objMsgColl
Required. The Messages collection object.

SortOrder
Optional. Long. The specified sort order, one of the following values:

Value	Numeric value	Description
CdoNone	0	No sort
CdoAscending	1	Ascending sort (default)
CdoDescending	2	Descending sort

PropTag
Optional. Long. The property tag value for the MAPI property to be used for the sort. *PropTag* is the 32-bit MAPI property tag associated with the property, such as **CdoPR_MESSAGE_CLASS**.

name
Optional. String. The custom property name of a MAPI named property.

Remarks

Both parameters are optional. If *SortOrder* is not specified, ascending order is used. If neither *PropTag* nor *name* is specified, the property used in the previous call to **Sort** is used again. If **Sort** has never been called on this collection during this session, the MAPI property **CdoPR_MESSAGE_DELIVERY_TIME** is used for the sort.

Each call to **Sort** generates an entirely new sort order based on the specified property. No previous sort order is retained or nested.

If the Messages collection was instantiated by a CDO rendering application, a view has been applied to the folder and the collection is already sorted on the property or properties specified by the view.

If the underlying messaging system does not support the sort criteria specified, for example descending order or MAPI named properties, the **Sort** method returns **CdoE_TOO_COMPLEX**.

Recipient Object

The Recipient object represents a recipient of a message.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Recipients collection
Child objects:	AddressEntry
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Address	1.0.a	String	Read/write
AddressEntry	1.0.a	AddressEntry object	Read/write
AmbiguousNames	1.1	AddressEntries collection object	Read-only
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
DisplayType	1.0.a	Long	Read-only
ID	1.1	String	Read/write
Index	1.0.a	Long	Read-only
MeetingResponseStatus	1.2	Long	Read/write
Name	1.0.a	String	Read/write
Parent	1.0.a	Recipients collection object	Read-only
Session	1.0.a	Session object	Read-only
Type	1.0.a	Long	Read/write

Methods

Name	Available in version	Parameters
Delete	1.0.a	(none)
GetFreeBusy	1.2	*StartTime* as **Variant**, *EndTime* as **Variant**, *Interval* as **Long**
IsSameAs	1.1	*objRecip2* as **Object**
Resolve	1.0.a	(optional) *showDialog* as **Boolean**

Address Property (Recipient Object)

Group

The **Address** property specifies the *full address* for the recipient. Read/write.

Syntax

objRecipient.**Address**

Data Type

String

Remarks

You should use the Recipient object's **Address** property to specify a custom address. The recipient **Address** uses the following syntax:

AddressType:*AddressValue*

where *AddressType* and *AddressValue* correspond to the values of the AddressEntry object's **Type** and **Address** properties.

The Recipient object's **Address** property represents the *full address*, the complete messaging address used by the MAPI system.

CDO sets the value of the Recipient object's **Address** property for you when you supply the **Name** property and call the recipient's **Resolve** method.

The **Address** property corresponds to a combination of the MAPI properties PR_ADDRTYPE and PR_EMAIL_ADDRESS.

Example

```
' from the sample function Util_CompareAddressParts
' assume valid Recipient object
    Set objAddrEntry = objOneRecip.AddressEntry
    strMsg = "Recipient full address = " & objOneRecip.Address
    strMsg = strMsg & "; AddressEntry type = " & objAddrEntry.Type
    strMsg = strMsg & "; AddressEntry address = " & _
                                            objAddrEntry.Address
    MsgBox strMsg ' compare address components
```

AddressEntry Property (Recipient Object) Group

The **AddressEntry** property contains the AddressEntry object representing the recipient. Read/write.

Syntax

objRecipient.**AddressEntry**

Data Type

Object (AddressEntry)

Remarks

For a complete description of the relationship between the AddressEntry object and the Recipient object, see Using Addresses.

Accessing the **AddressEntry** property forces resolution of an unresolved recipient name. If the name cannot be resolved, CDO reports an error. For example, when the recipient contains an empty string, the resolve operation returns **CdoE_AMBIGUOUS_RECIP**.

Example

This code fragment compares the **Address** property of the Recipient object with the **Address** and **Type** properties of its child AddressEntry object, accessible through the recipient's **AddressEntry** property, to demonstrate the relationships between these properties.

```
' from the sample function Session_AddressEntry
    If objOneRecip Is Nothing Then
        MsgBox "must select a recipient"
        Exit Function
    End If
    Set objAddrEntry = objOneRecip.AddressEntry
    If objAddrEntry Is Nothing Then
        MsgBox "no valid AddressEntry for this recipient"
        Exit Function
    End If
' from the sample function Util_CompareAddressParts
    strMsg = "Recipient full address = " & objOneRecip.Address
    strMsg = strMsg & "; AddressEntry type = " & objAddrEntry.Type
    strMsg = strMsg & "; AddressEntry address = " & _
                                            objAddrEntry.Address
    MsgBox strMsg ' compare display names
    strMsg = "Recipient name = " & objOneRecip.Name
    strMsg = strMsg & "; AddressEntry name = " & objAddrEntry.Name
' Note - the Type properties are NOT the same:
'            AddressEntry.Type is the address type, such as SMTP
'            Recipient.Type is the recipient type, such as To: or Cc:
```

AmbiguousNames Property (Recipient Object) Group

The **AmbiguousNames** property returns an AddressEntries collection of suggestions for address resolution of the Recipient object. Read-only.

Syntax

objRecipient.**AmbiguousNames**

Data Type

Object (AddressEntries collection)

Remarks

The **AmbiguousNames** property is used when the recipient has not been resolved by the Recipient object's **Resolve** method or the Recipients collection's **Resolve** method. The collection returned in **AmbiguousNames** represents the AddressEntry objects in the address book that could resolve to the supplied recipient name.

If the collection returned in the **AmbiguousNames** property is empty, there are no candidates for the supplied recipient name, and it should be considered unresolvable. If the collection contains address entries, they can be displayed to the user so that the appropriate one can be selected. The **GetFirstUnresolved** and **GetNextUnresolved** methods can be used to find all the ambiguous recipients in a Recipients collection.

Although the **AmbiguousNames** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member AddressEntry objects retain their respective read/write or read-only accessibility.

Example

```
' function to attempt ambiguous name resolution (ANR)
Function TryANR(objRecip As Recipient) As Boolean
Dim objAmbigEntries As AddressEntries ' possible resolutions
Dim strChosenID As String ' ID of address entry chosen by user
' ... set up error handling ...
Set objAmbigEntries = objRecip.AmbiguousNames
If objAmbigEntries Is Nothing Then
    MsgBox "No eligible names for resolution"
    objRecip.Delete ' nothing else can be done at this point
    TryANR = False
Else
    ' show address entries to user so one can be chosen, and save its
    ' entry identifier: strChosenID = objAddrEntry.ID
    objRecip.ID = strChosenID
    TryANR = True
End If
End Function
```

Delete Method (Recipient Object) Group

The **Delete** method removes the Recipient object from the Recipients collection.

Syntax

objRecipient.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Recipient object. If you have another reference to the recipient, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another recipient.

The final **Release** on the Recipient object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

The effect of the **Delete** operation is not permanent until you use the **Update**, **Send**, or **Delete** method on the Message object to which this recipient belongs.

The immediate parent of this Recipient object is a Recipients collection, which is a child of the message. You can delete all the message's recipients by calling the collection's **Delete** method.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Recipient object. That reference survives the call to **Delete** and has to be reassigned. The second Recipient object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Message object
Set objRecipient = objMessage.Recipients.Item(1)
objRecipient.Delete ' still have a reference from Set statement
' ... other operations on objRecipient possible but pointless ...
Set objRecipient = Nothing ' necessary to remove reference
' ...
objMessage.Recipients.Item(2).Delete ' no reference to remove
```

DisplayType Property (Recipient Object)

Group

The **DisplayType** property returns the display type of the recipient. Read-only.

Syntax

objRecipient.**DisplayType**

Data Type

Long

Remarks

The **DisplayType** property enables special processing based on its value, such as displaying an associated icon. You can also use the display type to sort recipients.

The following values are defined:

DisplayType value	Decimal value	Description
CdoAgent	3	An automated agent, such as Quote-of-the-Day.
CdoDistList	1	A public distribution list.
CdoForum	2	A forum, such as a bulletin board or a public folder.
CdoOrganization	4	A special address entry defined for large groups, such as a helpdesk.
CdoPrivateDistList	5	A private, personally administered distribution list.
CdoRemoteUser	6	A messaging user in a remote messaging system.
CdoUser	0	A local messaging user.

When you **Add** a new recipient to a Recipients collection, the **DisplayType** property is set by the address book provider to either **CdoUser** or **CdoDistList**, depending on which kind of recipient is being added. The **DisplayType** property cannot subsequently be changed.

A private distribution list (PDL) exists only in your personal address book (PAB) and does not have an e-mail address. Before invoking a recipient's **Address** property, you should verify that its **DisplayType** is not **CdoPrivateDistList**. Attempted access to addressing properties on a PDL results in a return of **CdoE_NOT_FOUND**.

GetFreeBusy Method (Recipient Object)

Group

The **GetFreeBusy** method returns a string representing the availability of the recipient for a meeting over a specified period of time.

Syntax

strAvail = *objRecipient*.**GetFreeBusy(***StartTime, EndTime, Interval***)**

strAvail
On successful return, contains a string indicating the recipient's availability for each of the time slots in the specified time period.

objRecipient
Required. The Recipient object.

StartTime
Required. Variant (**vbDate** format). Specifies the date/time of the beginning of the first time slot.

EndTime
Required. Variant (**vbDate** format). Specifies the date/time of the end of the last time slot.

Interval
Required. Long. Specifies the length of each time slot in minutes.

Remarks

The returned string length equals the number of time slots between *StartTime* and *EndTime*. Each character is the ASCII representation of the appropriate type library constant indicating the recipient's availability during a time slot:

ASCII character	Corresponding type library constant	Meaning
"0"	**CdoFree**	Available for appointments or meetings throughout the time slot
"1"	**CdoTentative**	At least one tentative commitment during the time slot
"2"	**CdoBusy**	At least one confirmed commitment during the time slot
"3"	**CdoOutOfOffice**	Designated as out-of-office (OOF) for at least part of the time slot

If there is any overlapping of commitments during a time slot, **GetFreeBusy** returns the most committed state, that is, the highest character value. For example, if a recipient already has one tentative meeting and one confirmed meeting scheduled during the same time slot, **GetFreeBusy** returns "2" for that time slot, corresponding to **CdoBusy**. **CdoFree** is not returned unless the entire time slot is free of commitments.

If a recipient represents a distribution list, the status of its individual members cannot be returned to you. A meeting request should be sent only to single messaging users. You can determine if a messaging user is a distribution list by checking the **DisplayType** property of the AddressEntry object representing that user. You can obtain the AddressEntry object underlying a recipient from the Recipient object's **AddressEntry** property.

ID Property (Recipient Object) Group

The **ID** property returns the unique identifier of the Recipient object as a string. Read-write.

Syntax

objRecipient.**ID**

Data Type

String

Remarks

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. MAPI compares identifiers with the **CompareEntryIDs** method. CDO provides the **CompareIDs** method in the Session object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

Although the AddressEntry and Recipient objects are not identical objects in the CDO Library, they represent the same underlying MAPI messaging user object, and the address entry's **ID** property is equal to the recipient's **ID** property. This can be used to advantage, for example, when adding an existing AddressEntry object to a Recipients collection. You can use the address entry's **ID** property as the *entryID* parameter to the **Add** method.

The **ID** property corresponds to the MAPI property PR_ENTRYID, converted to a string of hexadecimal characters.

Index Property (Recipient Object) Group

The **Index** property returns the index number of the Recipient object within the Recipients collection. Read-only.

Syntax

objRecipient.**Index**

Data Type

Long

Remarks

The **Index** property indicates this object's position within the parent Recipients collection. It can be saved and used later with the collection's **Item** property to reselect the same recipient in the collection.

The first object in the collection has an **Index** value of 1.

An index value should not be considered a static value that remains constant for the duration of a session. It can be affected when other recipients are added and deleted. The index value is changed following an update to the Message object to which the Recipients collection belongs.

Example

```
Dim curIndex, savIndex as Integer ' variables to work with Index
' select next recipient from collection
If curIndex >= objRecipColl.Count Then
    curIndex = objRecipColl.Count
    MsgBox "Already at end of recipient list"
    Exit Function
End If
' index is < count; can be incremented by 1
curIndex = curIndex + 1
Set objOneRecip = objRecipColl.Item(curIndex)
' could be objRecipColl(curIndex) since Item is default property
' save index for later use; but remember it could change if deletions
If objOneRecip Is Nothing Then
    MsgBox "Could not select next recipient"
    Exit Function
End If
savIndex = objOneRecip.Index
MsgBox "Recipient index = " & savIndex
```

IsSameAs Method (Recipient Object)

Group

The **IsSameAs** method returns **True** if the Recipient object is the same as the Recipient object being compared against.

Syntax

objRecipient.**IsSameAs(***objRecip2***)**

objRecipient
Required. This Recipient object.

objRecip2
Required. The Recipient object being compared against.

Remarks

Two Recipient objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **IsSameAs** returns **False**.

The **IsSameAs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. This is necessary because, although MAPI requires all entry identifiers to be unique, it does not require two of them identifying the same object to be identical. A generic comparison of any two objects' unique identifiers is also available with the Session object's **CompareIDs** method.

MeetingResponseStatus Property (Recipient Object) Group

The **MeetingResponseStatus** property returns or sets the status of this recipient's response to a meeting request. Read/write.

Syntax

objRecipient.**MeetingResponseStatus**

Data Type

Long

Remarks

A messaging user that has created an AppointmentItem object can turn it into a meeting by setting its **MeetingStatus** property to **CdoMeeting** and sending it to one or more recipients. That user can then monitor the responses with the **MeetingResponseStatus** property. The original appointment underlies the meeting and retains its Recipients collection, and the originating user can read the **MeetingResponseStatus** property of each Recipient in the collection to determine the current status of that recipient's response.

An AddressEntry object representing the originating messaging user is available through the appointment's **Organizer** property.

The **MeetingResponseStatus** property can have exactly one of the following values:

MeetingResponseStatus value	Decimal value	Description
CdoMeetingAccepted	3	This recipient has responded to the meeting request with a firm acceptance.
CdoMeetingCanceled	5	The meeting has been canceled.
CdoMeetingDeclined	4	This recipient has responded to the meeting request with a declination.
CdoMeetingTentative	2	This recipient has responded to the meeting request with a tentative acceptance.

Name Property (Recipient Object) Group

The **Name** property returns or sets the name of the Recipient object as a string. Read/write.

Syntax

objRecipient.**Name**

The **Name** property is the default property of a Recipient object, meaning that *objRecipient* is syntactically equivalent to *objRecipient*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Name** property corresponds to the MAPI property PR_DISPLAY_NAME.

Example

```
' from the sample function Util_CompareFullAddressParts()
Dim strMsg As String
    Set objAddrEntry = objOneRecip.AddressEntry
' validate objects ... then display
    strMsg = "Recipient full address = " & objOneRecip.Address
    strMsg = strMsg & "; AddressEntry type = " & objAddrEntry.Type
    strMsg = strMsg & "; AddressEntry address = " & _
                                            objAddrEntry.Address
    MsgBox strMsg ' compare address parts
    strMsg = "Recipient name = " & objOneRecip.Name
    strMsg = strMsg & "; AddressEntry name = " & objAddrEntry.Name
    MsgBox strMsg ' compare display names (should be same)
```

Resolve Method (Recipient Object)

Group

The **Resolve** method resolves a recipient's address information into a full messaging address.

Syntax

objRecipient.**Resolve([***showDialog***])**

objRecipient
Required. The Recipient object.

showDialog
Optional. Boolean. If **True** (the default value), displays a modal dialog box to prompt the user to resolve ambiguous names.

Remarks

The **Resolve** method operates when the **AddressEntry** property is set to **Nothing**. Its operation depends on whether you have supplied the Recipient object's **Name** or **Address** property.

When you supply the **Name** property, **Resolve** looks it up in the address book. When a recipient is resolved, the Recipient object's **Address** property is set to the full address and its **AddressEntry** property is set to the child AddressEntry object that represents a copy of information in the address book.

When you specify a custom address by supplying only the Recipient object's **Address** property, the **Resolve** method does not attempt to compare the address against the address book.

The **Resolve** method validates the Recipient object's **Type** property and returns **CdoE_INVALID_PARAMETER** if it is not one of the defined recipient types.

You can call the Recipients collection's **Resolve** method to resolve every object in the collection and also force an update to the collection's **Count** property.

To avoid delivery errors, clients should always resolve recipients before submitting a message to the MAPI system. Resolving the recipient name means either finding a matching address in an address list or having the user select an address from a dialog box.

The **Resolve** method uses the address book or books specified in the profile, such as the global address list (GAL) and the personal address book (PAB).

The Recipients collection's **Resolved** property is set to **True** when every recipient in the collection has its address resolved.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)
- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's*

Reference.

Type Property (Recipient Object) Group

The **Type** property specifies the recipient type of the Recipient object, that is, whether it is a To, Cc, or Bcc recipient. Read/write.

Syntax

objRecipient.**Type**

Data Type

Long

Remarks

The **Type** property has the following defined values:

Recipient type	Value	Description
CdoTo	1	The recipient is on the To line (default).
CdoCc	2	The recipient is on the Cc line.
CdoBcc	3	The recipient is on the Bcc line.

The **Type** property corresponds to the MAPI property PR_RECIPIENT_TYPE.

See Also

Address Property (Recipient Object)

Recipients Collection Object

The Recipients collection object contains one or more Recipient objects and specifies the recipients of a message.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	Message
Child objects:	Recipient
Default property:	**Item**

A Recipients collection is considered a *small collection*, which means that it supports count and index values that let you access an individual Recipient object through the **Item** property. The Recipients collection supports the Microsoft® Visual Basic® **For Each** statement. For more information on collections, see Object Collections.

Properties

Name	Available in version	Type	Access
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
Count	1.0.a	Long	Read-only
Item	1.0.a	Recipient object	Read-only
RawTable	1.1	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Parent	1.0.a	Message object	Read-only
Resolved	1.0.a	Boolean	Read-only
Session	1.0.a	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.0.a	(optional) *name* as **String**, (optional) *address* as **String**, (optional) *type* as **Long**, (optional) *entryID* as **String**
AddMultiple	1.1	*names* as **String**, (optional) *type* as **Long**
Delete	1.0.a	(none)
GetFirstUnresolved	1.1	(none)
GetFreeBusy	1.2	*StartTime* as **Variant**, *EndTime* as **Variant**,

		Interval as **Long**
GetNextUnresolved	1.1	(none)
Resolve	1.0.a	(optional) *showDialog* as **Boolean**

Remarks

A Recipients collection can be rendered into HTML hypertext in tabular form using the CDO Rendering ContainerRenderer object. To specify this, set the container renderer's **DataSource** property to the Recipients collection object itself.

With the same **DataSource** setting, the container renderer's **RenderProperty** method can also render selected properties of the collection's parent Message object. The individual properties that can be rendered are indicated in the Message object property descriptions.

Add Method (Recipients Collection)

Group

The **Add** method creates and returns a new Recipient object in the Recipients collection.

Syntax

Set *objRecipient* = *objRecipColl*.**Add([***name***]***, [***address***]***, [***type***]***, [***entryID***])**

objRecipient
On successful return, represents the new Recipient object added to the collection.

objRecipColl
Required. The Recipients collection object.

name
Optional. String. The display name of the recipient. When this parameter is not present, the new Recipient object's **Name** property is set to an empty string. The *name* parameter is ignored if the *entryID* parameter is supplied.

address
Optional. String. The full messaging address of the recipient. When this parameter is not present, the new Recipient object's **Address** property is set to an empty string. The *address* parameter is ignored if the *entryID* parameter is supplied.

type
Optional. Long. The recipient type; the initial value for the new recipient's **Type** property. The following values are valid:

Recipient type	Value	Description
CdoTo	1	The recipient is on the To line (default).
CdoCc	2	The recipient is on the Cc line.
CdoBcc	3	The recipient is on the Bcc line.

The *type* parameter applies whether the *entryID* parameter is furnished or not.

entryID
Optional. String. The unique identifier of a valid AddressEntry object for this recipient. No default value is supplied for the *entryID* parameter. When it is present, the *name* and *address* parameters are not used. When it is not present, the method uses the *name*, *address*, and *type* parameters to define the recipient.

Remarks

The *name*, *address*, and *type* parameters correspond to the Recipient object's **Name**, **Address**, and **Type** properties, respectively. The *entryID* parameter corresponds to an AddressEntry object's **ID** property. When the *entryID* parameter is present, the *name* and *address* parameters are not used.

The *address* parameter, if set, must contain a *full address*, such as that contained in the recipient's **Address** property. An AddressEntry object's **Address** property is not a full address because it does not contain the address type information found in the AddressEntry object's **Type** property. If the user you are adding is represented by an AddressEntry object, such as is returned by the Session object's **CurrentUser** property, you must concatenate its **Type** and **Address** properties with a connecting colon to construct the full address.

When no parameters are present, an empty Recipient object is created.

The **DisplayType** property of the new Recipient object is set by the address book provider to either **CdoUser** or **CdoDistList**, depending on which kind of recipient is being added. The **DisplayType** property is read-only and cannot subsequently be changed.

Call the **Resolve** method after you add a recipient. After the recipient is resolved, you can access the child AddressEntry object through the Recipient object's **AddressEntry** property.

The **Index** property of the new Recipient object equals the new **Count** property of the Recipients collection.

The new recipient is saved in the MAPI system when you **Update** or **Send** the parent Message object.

Example

This code fragment adds three recipients to a message. The address for the first recipient is resolved using the display name. The second recipient is a custom address, so the **Resolve** operation does not modify it. The third recipient is taken from an existing valid AddressEntry object. The **Resolve** operation is not needed for this recipient.

```
' from the sample function "Using Addresses"
' add 3 recipient objects to a valid message object

' 1. look up entry in address book
Set objOneRecip = objNewMessage.Recipients.Add(Name:=strName, _
                                                Type:=CdoTo)
If objOneRecip Is Nothing Then
    MsgBox "Unable to add recipient using name and type"
    Exit Function
End If
objOneRecip.Resolve ' find its full address in address book

' 2. add a custom recipient
Set objOneRecip = objNewMessage.Recipients.Add( _
                            Address:="SMTP:davidhef@microsoft.com", _
                            Type:=CdoTo)
If objOneRecip Is Nothing Then
    MsgBox "Unable to add recipient using custom address"
    Exit Function
End If
objOneRecip.Resolve ' make it an object and give it an entry ID

' 3. add a valid address entry object, such as Message.Sender
' assume valid address entry ID from an existing message
Set objOneRecip = objNewMessage.Recipients.Add( _
                                                entryID:=strAddrEntryID)
'     or .Add( , , , strAddrEntryID) if you can't use named parameters
If objOneRecip Is Nothing Then
    MsgBox "Unable to add existing AddressEntry using ID"
    Exit Function
End If

objNewMessage.Text = "expect 3 different recipients"
MsgBox ("Count = " & objNewMessage.Recipients.Count)
```

AddMultiple Method (Recipients Collection) Group

The **AddMultiple** method creates zero or more new Recipient objects in the Recipients collection.

Syntax

objRecipColl.**AddMultiple(***names* **[**, *type***])**

objRecipColl
Required. The Recipients collection object.

names
Required. String. A list of zero or more resolvable recipient strings delimited by semicolons. Each resolvable string can be a messaging user's display name or a messaging address with or without the address type. A messaging address without address type must be an SMTP (Simple Mail Transfer Protocol) address usable on the Internet.

type
Optional. Long. The recipient type; the initial value for the **Type** property that is to apply to all the new recipients. The following values are valid:

Recipient type	Value	Description
CdoTo	1	The recipients are on the To line (default).
CdoCc	2	The recipients are on the Cc line.
CdoBcc	3	The recipients are on the Bcc line.

Remarks

The **AddMultiple** method is useful when responding to standard e-mail forms that invite the user to enter a series of recipients in a connected list, such as the To and Cc lines for a Microsoft® Exchange Client message.

The **AddMultiple** method does not resolve the new recipients. You must call either each recipient's **Resolve** method or the Recipients collection's **Resolve** method following the **AddMultiple** call.

Example

This code fragment illustrates the different possibilities of resolvable recipient strings:

```
Dim name1, name2, name3, toStr As String
name1 = "John Doe" ' display name
name2 = "jimdoe@company.com" ' SMTP address without address type
name3 = "Jane Doe[SMTP:janedoe@company.com]" ' full messaging address
toStr = name1 & ";" & name2 & ";" & name3
objRecipients.AddMultiple (toStr, CdoTo)
objRecipients.Resolve()
```

Count Property (Recipients Collection)

Group

The **Count** property returns the number of Recipient objects in the collection. Read-only.

Syntax

objRecipColl.**Count**

Data Type

Long

Example

This code fragment uses the **Count** property as a loop terminator to copy all Recipient objects from one message's Recipients collection to another message's collection. It shows the **Count** and **Item** properties working together. Note how much more code this requires than copying the Message object's **Recipients** property from the original message to the copy.

```
' from the sample function Util_CopyMessage
' Copy all Recipient objects from one message's collection to another
Dim objOneMsg, objCopyMsg as Message
Dim objRecipColl as Recipients ' source message Recipients collection
Dim objOneRecip as Recipient ' individual recipient in target message
' ... verify valid messages ...
Set objRecipColl = objOneMsg.Recipients
For i = 1 To objRecipColl.Count Step 1
    strRecipName = objRecipColl.Item(i).Name
'   could be objRecipColl(i).Name since Item is default property
    If strRecipName <> "" Then
        Set objOneRecip = objCopyMsg.Recipients.Add
        If objOneRecip Is Nothing Then
            MsgBox "Unable to create recipient in message copy"
            Exit Function
        End If
        objOneRecip.Name = strRecipName
        objOneRecip.Address = objRecipColl.Item(i).Address
        objOneRecip.Type = objRecipColl.Item(i).Type
    End If
Next i
```

Delete Method (Recipients Collection)

Group

The **Delete** method removes all the Recipient objects from the Recipients collection.

Syntax

objRecipColl.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Recipient object. If you have another reference to a recipient, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another recipient.

The final **Release** on each Recipient object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Recipient object, use the **Delete** method specific to that object.

The effect of the **Delete** method is not permanent until you use the **Update**, **Send**, or **Delete** method on the parent Message object containing the Recipients collection. A permanently deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

GetFirstUnresolved Method (Recipients Collection) Group

The **GetFirstUnresolved** method returns the first unresolved Recipient object in the Recipients collection. It returns **Nothing** if there are no unresolved recipients in the collection.

Syntax

Set *objRecipient* = *objRecipColl*.**GetFirstUnresolved( )**

objRecipient
On successful return, represents the first unresolved recipient in the collection.

objRecipColl
Required. The Recipients collection object.

Remarks

The **GetFirstUnresolved** and **GetNextUnresolved** methods can be used to find all the ambiguous recipient names in a Recipients collection.

GetFreeBusy Method (Recipients Collection) Group

The **GetFreeBusy** method returns a string representing the combined availability of all recipients for a meeting over a specified period of time.

Syntax

strAvail = *objRecipColl*.**GetFreeBusy(***StartTime, EndTime, Interval***)**

strAvail
On successful return, contains a string indicating the recipients' availability for each of the time slots in the specified time period.

objRecipColl
Required. The Recipients collection object.

StartTime
Required. Variant (**vbDate** format). Specifies the date/time of the beginning of the first time slot.

EndTime
Required. Variant (**vbDate** format). Specifies the date/time of the end of the last time slot.

Interval
Required. Long. Specifies the length of each time slot in minutes.

Remarks

The returned string length equals the number of time slots between *StartTime* and *EndTime*. Each character is the ASCII representation of the appropriate type library constant indicating the recipients' combined availability during a time slot:

ASCII character	Corresponding type library constant	Meaning
"0"	**CdoFree**	Available for appointments or meetings throughout the time slot
"1"	**CdoTentative**	At least one tentative commitment during the time slot
"2"	**CdoBusy**	At least one confirmed commitment during the time slot
"3"	**CdoOutOfOffice**	Designated as out-of-office (OOF) for at least part of the time slot

If there is any overlapping of commitments during a time slot, **GetFreeBusy** returns the most committed state, that is, the highest character value. For example, if one recipient already has a tentative meeting and another has a confirmed meeting scheduled during the same time slot, **GetFreeBusy** returns "2" for that time slot, corresponding to **CdoBusy**. **CdoFree** is not returned unless the entire time slot is free of commitments.

If a recipient represents a distribution list, the status of its individual members cannot be returned to you. A meeting request should be sent only to single messaging users. You can determine if a messaging user is a distribution list by checking the **DisplayType** property of the AddressEntry object representing that user. You can obtain the AddressEntry object underlying a recipient from that Recipient object's **AddressEntry** property.

GetNextUnresolved Method (Recipients Collection) Group

The **GetNextUnresolved** method returns the next unresolved Recipient object in the Recipients collection. It returns **Nothing** if there are no unresolved recipients remaining in the collection.

Syntax

Set *objRecipient* = *objRecipColl*.**GetNextUnresolved( )**

objRecipient
On successful return, represents the next unresolved recipient in the collection.

objRecipColl
Required. The Recipients collection object.

Remarks

The **GetFirstUnresolved** and **GetNextUnresolved** methods can be used to find all the ambiguous recipient names in a Recipients collection.

Item Property (Recipients Collection)

Group

The **Item** property returns a single Recipient object from the Recipients collection. Read-only.

Syntax

objRecipColl.**Item(***index***)**

index

A long integer ranging from 1 to *objRecipColl*.**Count**, or a string that specifies the name of the object.

The **Item** property is the default property of a Recipients collection, meaning that *objRecipColl***(***index***)** is syntactically equivalent to *objRecipColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Recipient)

Remarks

The **Item** property works like an accessor property for small collections.

Although the **Item** property itself is read-only, the Recipient object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together:

```
' list all recipient names in the collection
strRecips = "" ' initialize string
Set objRecipsColl = objOriginalMsg.Recipients
Count = objRecipsColl.Count
For i = 1 To Count Step 1
    Set objOneRecip = objRecipsColl.Item(i) ' or objRecipsColl(i)
    strRecips = strRecips & objOneRecip.Name & "; "
Next i
MsgBox "Message recipients: " & strRecips
```

RawTable Property (Recipients Collection) Group

The **RawTable** property returns an **IUnknown** pointer to the MAPI table object underlying the Recipients collection. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objRecipColl.**RawTable**

Data Type

Variant (**vbDataObject** format)

Remarks

The **RawTable** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **RawTable** property is an **IUnknown** object that returns an **IMAPITable** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

Resolve Method (Recipients Collection)

Group

The **Resolve** method traverses the Recipients collection to resolve every recipient's address information into a full messaging address.

Syntax

objRecipColl.**Resolve([***showDialog***])**

objRecipColl
Required. The Recipients collection object.

showDialog
Optional. Boolean. If **True** (the default value), displays a modal dialog box to prompt the user to resolve ambiguous names.

Remarks

Calling the Recipients collection's **Resolve** method is similar to calling the **Resolve** method for each Recipient object in the collection, except that it also forces an update to the **Count** property and to all Recipient objects in the collection. Any Recipient variable previously set to an object in the collection is invalidated by the collection's **Resolve** method and should be retrieved again from the collection. Note that the individual recipient's **Resolve** method does not invalidate the object.

The **Resolved** property is set to **True** when every recipient in the collection has its address resolved.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)
- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's Reference*.

Example

```
' from the sample function Util_NewConversation
'   create a valid new message object in the Outbox
    With objNewMsg
        .Subject = "used space vehicle wanted"
        ' ... set other properties here ...
        Set objOneRecip = .Recipients.Add(Name:="Car Ads", _
                                          Type:=CdoTo)
        If objOneRecip Is Nothing Then
            MsgBox "Unable to create the public folder recipient"
            Exit Function
        End If
```

```
    .Recipients.Resolve ' resolve and update everything
End With
```

Resolved Property (Recipients Collection) Group

The **Resolved** property contains **True** if all of the recipients in the collection have their address information resolved. Read-only.

Syntax

objRecipColl.**Resolved**

Data Type

Boolean

Remarks

A Recipient object is considered resolved when it has a valid AddressEntry object in its **AddressEntry** property.

You should resolve all addresses. Whenever you obtain an address from the address book or supply a custom address, you should call the **Resolve** method to ensure that the **AddressEntry** property is valid.

When the **Resolved** property is not **True**, use either the collection's **Resolve** method or each individual recipient's **Resolve** method to resolve all the addresses.

When you use existing valid AddressEntry objects, you do not need to explicitly call the **Resolve** method.

RecurrencePattern Object

The RecurrencePattern object describes the recurrence pattern for an AppointmentItem object.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.2
Parent objects:	AppointmentItem
Child objects:	(none)
Default property:	**StartTime**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
DayOfMonth	1.2	Long	Read/write
DayOfWeekMask	1.2	Long	Read/write
Duration	1.2	Long	Read-only
EndTime	1.2	Variant (**vbDate** format)	Read/write
Instance	1.2	Long	Read/write
Interval	1.2	Long	Read/write
MonthOfYear	1.2	Long	Read/write
NoEndDate	1.2	Boolean	Read/write
Occurrences	1.2	Long	Read/write
Parent	1.2	AppointmentItem object	Read-only
PatternEndDate	1.2	Variant (**vbDate** format)	Read/write
PatternStartDate	1.2	Variant (**vbDate** format)	Read/write
RecurrenceType	1.2	Long	Read/write
Session	1.2	Session object	Read-only
StartTime	1.2	Variant (**vbDate** format)	Read/write

Methods

(None.)

Remarks

A RecurrencePattern object contains properties that fully specify the recurrence characteristics of an AppointmentItem object. It is created and linked to the appointment when you first call the AppointmentItem object's **GetRecurrencePattern** method. This sets the **IsRecurring** property to **True** and instantiates a new RecurrencePattern object populated with the default values indicated in the property descriptions.

The RecurrencePattern object applies only to its parent appointment and cannot be used for any other AppointmentItem object. The recurrence pattern can be accessed from any appointment in the recurring series, that is, from an individual recurrence as well as from the appointment that originated the series. The originating appointment can be obtained with the RecurrencePattern object's **Parent** property.

To edit the entire recurring series of appointments, you modify the appropriate properties on either the originating AppointmentItem object or its child RecurrencePattern object. To edit an individual recurrence only, you instantiate it and modify its AppointmentItem properties. You can instantiate an individual recurrence by using a MessageFilter object to restrict the Messages collection containing the appointments. All changes take effect when you call the appointment's **Send** or **Update** method.

The AppointmentItem object's **ClearRecurrencePattern** method resets **IsRecurring** to **False** and calls **Release** on the RecurrencePattern object. This is normally the final **Release** because the RecurrencePattern object should have no other references. The RecurrencePattern object is removed from memory in response to its final **Release**.

The **RecurrenceType** property determines the *recurrence unit*, the basic time unit for recurrence of the appointment. This can be a day, a week, a month, or a year. The appointment can recur on every instance of this recurrence unit, on isolated instances selected by the **Instance** property, or on periodic instances defined by the **Interval** property.

The **DayOfMonth**, **DayOfWeekMask**, and **MonthOfYear** properties specify the days and months when the appointment is to recur. The **StartTime** and **EndTime** properties determine the times of day for each occurrence. The **PatternStartDate**, **PatternEndDate**, **Occurrences**, and **NoEndDate** properties define the overall time period during which the appointment is to recur.

Several of the recurrence pattern properties have interdependent values. When you set one of these properties, related properties are forced into conformance in order to ensure consistency. For example, changing **PatternEndDate** causes **Occurrences** to be recalculated, and changing **Occurrences** causes **PatternEndDate** to be recalculated. The most recent change determines the settings of the interdependent properties. Each property description includes the effects of changing its value.

The pattern you specify in the **DayOfMonth**, **DayOfWeekMask**, **Instance**, **Interval**, and **MonthOfYear** properties is not required to include a recurrence on the day of the original appointment, nor on the days indicated in **PatternStartDate** or **PatternEndDate**. These days are counted in **Occurrences** only if they match the pattern, and a recurrence is generated on the starting or ending day only if that day matches the pattern.

This code fragment defines recurrence patterns for three AppointmentItem objects obtained from the Messages collection of a calendar folder. The first specifies recurrence on the third Friday of every month. The second and third specify recurrence on American Thanksgiving and Canadian Thanksgiving respectively.

```
Dim objApp3rdFri, objAppAmThx, objAppCanThx As AppointmentItem
Dim objRec3rdFri, objRecAmThx, objRecCanThx As RecurrencePattern
' ... assume all three AppointmentItem objects are valid ...
' ... calling the GetRecurrencePattern method makes them recurring ...
Set objRec3rdFri = objApp3rdFri.GetRecurrencePattern
Set objRecAmThx = objAppAmThx.GetRecurrencePattern
Set objRecCanThx = objAppCanThx.GetRecurrencePattern
' every third Friday
objRec3rdFri.RecurrenceType = CdoRecurTypeMonthlyNth
objRec3rdFri.DayOfWeekMask = CdoFriday
objRec3rdFri.Instance = 3 ' third instance of selected day
objApp3rdFri.Update ' needed for settings to take effect in calendar
' American Thanksgiving (fourth Thursday of November)
objRecAmThx.RecurrenceType = CdoRecurTypeYearlyNth
objRecAmThx.DayOfWeekMask = CdoThursday
```

```
objRecAmThx.MonthOfYear = 11 ' November
objRecAmThx.Instance = 4
objAppAmThx.Update ' needed for settings to take effect in calendar
' Canadian Thanksgiving (second Monday of October)
objRecCanThx.RecurrenceType = CdoRecurTypeYearlyNth
objRecCanThx.DayOfWeekMask = CdoMonday
objRecCanThx.MonthOfYear = 10 ' October
objRecCanThx.Instance = 2
objAppCanThx.Update ' needed for settings to take effect in calendar
```

DayOfMonth Property (RecurrencePattern Object) Group

The **DayOfMonth** property returns or sets the day of the month on which the appointment recurs. Read/write.

Syntax

objRecurPatt.**DayOfMonth**

Data Type

Long

Remarks

The **DayOfMonth** property contains the calendar date of each month on which the AppointmentItem is to recur, for example the value 1 to indicate the first day of every month. The last day of every month can be represented by the value 31.

DayOfMonth is only valid if the value of the **RecurrenceType** property is **CdoRecurTypeMonthly** or **CdoRecurTypeYearly**. When **DayOfMonth** is valid on a newly created RecurrencePattern object, it defaults to the current day of the month.

Note If the AppointmentItem object has been made into a meeting, the **DayOfMonth**, **DayOfWeekMask**, and **MonthOfYear** properties are all held internally in the meeting organizer's current time zone. If these properties are displayed or read by a messaging user in a different time zone, they are not converted. The user or application accessing these properties may need to be aware that they represent the organizer's time zone.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

DayOfWeekMask Property (RecurrencePattern Object) Group

The **DayOfWeekMask** property returns or sets the mask for the days of the week on which the appointment recurs. Read/write.

Syntax

objRecurPatt.**DayOfWeekMask**

Data Type

Long

Remarks

The **DayOfWeekMask** property contains the days of the week on each of which the AppointmentItem is to recur. It can include the following values in any combination:

DayOfWeekMask setting	Decimal value	Meaning
CdoSunday	1	The appointment recurs on Sundays.
CdoMonday	2	The appointment recurs on Mondays.
CdoTuesday	4	The appointment recurs on Tuesdays.
CdoWednesday	8	The appointment recurs on Wednesdays.
CdoThursday	16	The appointment recurs on Thursdays.
CdoFriday	32	The appointment recurs on Fridays.
CdoSaturday	64	The appointment recurs on Saturdays.

The maximum value for the **DayOfWeekMask** property is 127, which is the logical inclusive **OR** of all seven days. An attempt to set **DayOfWeekMask** to any value less than 1 or greater than 127 results in a return of **CdoE_INVALID_PARAMETER**.

Note that the **DayOfWeekMask** property is not compatible with the CDO Rendering ContainerRenderer object's **FirstDayOfWeek** property or the Session object's "FirstDayOfWeek" option, which use an enumeration starting with 1 for Monday and ending with 7 for Sunday. The session options are obtained with the **GetOption** method and set with the **SetOption** method. The Session object's "WorkingDays" option, however, is compatible with the mask constants used by **DayOfWeekMask**.

DayOfWeekMask is not valid if the value of the **RecurrenceType** property is **CdoRecurTypeDaily**, **CdoRecurTypeMonthly**, or **CdoRecurTypeYearly**. When **DayOfWeekMask** is valid on a newly created RecurrencePattern object, it defaults to the current day of the week.

Setting **DayOfWeekMask** to multiple days per week is only valid if the value of the **RecurrenceType** property is **CdoRecurTypeWeekly**. Recurrences of type **CdoRecurTypeMonthlyNth** or **CdoRecurTypeYearlyNth** can only use a single day per week.

Note If the AppointmentItem object has been made into a meeting, the **DayOfMonth**, **DayOfWeekMask**, and **MonthOfYear** properties are all held internally in the meeting organizer's current time zone. If these properties are displayed or read by a messaging user in a different time zone, they are not converted. The user or application accessing these properties may need to be aware that they represent the organizer's time zone.

Changes you make to properties on a RecurrencePattern object take effect when you call the

underlying appointment's **Send** or **Update** method.

Duration Property (RecurrencePattern Object) Group

The **Duration** property returns the duration of the recurring appointment in minutes. Read-only.

Syntax

objRecurPatt.**Duration**

Data Type

Long

Remarks

The **Duration** property contains the number of minutes the appointment is to last every time it recurs. **Duration** is always valid on a newly created RecurrencePattern object and defaults to the value of the **Duration** property of the AppointmentItem object that created this recurrence pattern.

The minimum value of **Duration** is 0. The maximum value allows an appointment to last until its next possible recurrence, and is dependent on the settings of the **RecurrenceType**, **Interval**, and **DayOfWeekMask** properties, as follows:

RecurrenceType setting	Maximum Duration value
CdoRecurTypeDaily	(1 day) x (**Interval** value)
CdoRecurTypeMonthly **CdoRecurTypeMonthlyNth**	(28 days) x (**Interval** value)
CdoRecurTypeYearly **CdoRecurTypeYearlyNth**	336 days, that is, 48 weeks, since **Interval** cannot be greater than 1 for yearly recurrence types
CdoRecurTypeWeekly, and **DayOfWeekMask** specifies exactly one day per week	(7 days) x (**Interval** value)
CdoRecurTypeWeekly, and **DayOfWeekMask** specifies more than one day per week	the minimum difference between any two days specified in the mask, for example 3 days if the mask specifies **CdoMonday** and **CdoFriday**

Among its possible values, the **Duration** property can be any multiple of 24 hours that does not exceed its maximum value. If an occurrence has such a value for **Duration**, Microsoft® Schedule+ interprets it as lasting exactly 24 hours. That is, Schedule+ treats **Duration** values of 0, 1440, 2880, 4320, and so on as if they were 1440.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

EndTime Property (RecurrencePattern Object) Group

The **EndTime** property returns or sets the ending date/time for each recurrence of the appointment. Read/write.

Syntax

objRecurPatt.**EndTime**

Data Type

Variant (**vbDate** format)

Remarks

The **EndTime** property contains the time at which the appointment is to terminate every time it recurs. **EndTime** is always valid on a newly created RecurrencePattern object and defaults to the **EndTime** property of the AppointmentItem object that created this recurrence pattern.

The **EndTime** property ignores seconds and truncates the time component to the minute.

EndTime uses both the date and the time component of the **vbDate** format. When you read **EndTime**, you get the date/time of the end of the original appointment.

The recurrence pattern's **StartTime** and **EndTime** properties are always held internally in the organizer's current time zone. By contrast, the AppointmentItem object's **StartTime** and **EndTime** properties are always held internally in UTC (Coordinated Universal Time, also known as GMT). However, all these properties are converted to the local messaging user's current time zone whenever they are displayed or read programmatically.

Setting the **EndTime** property causes CDO to force certain other recurrence pattern properties into conformance. **Duration** is recalculated from **StartTime** and **EndTime**.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

Instance Property (RecurrencePattern Object) Group

The **Instance** property returns or sets the instance of the day within the month on which the appointment recurs. Read/write.

Syntax

objRecurPatt.**Instance**

Data Type

Long

Remarks

The **Instance** property is used when the AppointmentItem is to recur only once during each recurrence unit, such as the second Wednesday of every month or the first Tuesday of every January. The **DayOfWeekMask** property must specify exactly one day of the week, and **Instance** selects the occurrence of that day within the month on which recurrence is enabled. The last occurrence of the day within the month can be represented by the value 5.

Instance is only valid if the value of the **RecurrenceType** property is **CdoRecurTypeMonthlyNth** or **CdoRecurTypeYearlyNth**. When **Instance** is valid on a newly created RecurrencePattern object, it defaults to the current instance of the current day of the week. For example, if the RecurrencePattern object is created on Wednesday 9 December and **RecurrenceType** is set to **CdoRecurTypeYearlyNth**, then **DayOfWeekMask** defaults to 8 (**CdoWednesday**), **Instance** defaults to 2 (the second Wednesday of the month), and **MonthOfYear** defaults to 12 (December).

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

Example

This code fragment uses the **Instance** and **Interval** properties to specify that an appointment is to recur on the third Sunday of every other month:

```
Dim objAppointment As AppointmentItem
Dim objRecurrence As RecurrencePattern
' ... assume AppointmentItem object is valid ...
Set objAppointment = objAppointments.Add
With objAppointment
  .Subject = "Using Instance and Interval with MonthlyNth"
  .Text = "Creating an appointment and making it recur on the " _
          & "3rd Sunday of every other month for one year."
  .Location = "My office"
  Set objRecurrence = .GetRecurrencePattern
  With objRecurrence
    .RecurrenceType = CdoRecurTypeMonthlyNth
    .PatternStartDate = Now
    .PatternEndDate = DateAdd("m", 12, .PatternStartDate)
    .StartTime = .PatternStartDate ' takes only the time component
    .EndTime = DateAdd("h", 1, .StartTime) ' 1-hour appointment
    .DayOfWeekMask = 1 ' CdoSunday
    .Instance = 3 ' third Sunday of month
    .Interval = 2 ' every other month
  End With
  objAppointment.Update ' must do this for settings to take effect
```

```
End With
```

Interval Property (RecurrencePattern Object) Group

The **Interval** property returns or sets the number of recurrence units between recurrences of the appointment. Read/write.

Syntax

objRecurPatt.**Interval**

Data Type

Long

Remarks

The **Interval** property is used when the AppointmentItem is to recur less often than every recurrence unit, such as once every three days, once every two weeks, or once every six months. **Interval** contains a value representing the frequency of recurrence in terms of recurrence units.

Interval is always valid on a newly created RecurrencePattern object and defaults to 1, which is its minimum value. Its maximum value depends on the setting of the **RecurrenceType** property as follows:

RecurrenceType setting	Maximum Interval value
CdoRecurTypeDaily	999
CdoRecurTypeMonthly **CdoRecurTypeMonthlyNth**	99
CdoRecurTypeYearly **CdoRecurTypeYearlyNth**	1
CdoRecurTypeWeekly	99

Setting the **Interval** property causes CDO to force certain other recurrence pattern properties into conformance. **PatternEndDate** is recalculated from **PatternStartDate**, **Occurrences**, and **Interval**. If the resulting **PatternEndDate** is January 1, 4000 or later, **NoEndDate** is automatically reset to **True**, **Occurrences** is reset to 1,490,000, **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001, and the recurrence pattern is considered to extend infinitely far into the future.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

MonthOfYear Property (RecurrencePattern Object) Group

The **MonthOfYear** property returns or sets the month of the year in which the appointment recurs. Read/write.

Syntax

objRecurPatt.**MonthOfYear**

Data Type

Long

Remarks

The **MonthOfYear** property contains the calendar number of the month in which the AppointmentItem is to recur, for example the value 2 to indicate February.

MonthOfYear is only valid if the value of the **RecurrenceType** property is **CdoRecurTypeYearly** or **CdoRecurTypeYearlyNth**. When **MonthOfYear** is valid on a newly created RecurrencePattern object, it defaults to the current month.

Note If the AppointmentItem object has been made into a meeting, the **DayOfMonth**, **DayOfWeekMask**, and **MonthOfYear** properties are all held internally in the meeting organizer's current time zone. If these properties are displayed or read by a messaging user in a different time zone, they are not converted. The user or application accessing these properties may need to be aware that they represent the organizer's time zone.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

NoEndDate Property (RecurrencePattern Object) Group

The **NoEndDate** property indicates whether the recurrence pattern has an ending date. Read/write.

Syntax

objRecurPatt.**NoEndDate**

Data Type

Boolean

Remarks

The **NoEndDate** property contains **True** if the AppointmentItem object is to recur indefinitely and **False** if the recurrence has a terminal date. **NoEndDate** is always valid on a newly created RecurrencePattern object and defaults to **True**.

Setting the **NoEndDate** property causes CDO to force certain other recurrence pattern properties into conformance. If **NoEndDate** is set to **True**, **Occurrences** is reset to 1,490,000 and **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001. If **NoEndDate** is set to **False**, **Occurrences** is reset to 10 and **PatternEndDate** is recalculated from **PatternStartDate** and **Occurrences**. However, no changes are made if **NoEndDate** was already **False**.

CDO imposes a limit of December 31, 3999 on **PatternEndDate** and 1,489,999 on **Occurrences**. If either of these properties exceeds its limit, **NoEndDate** is automatically reset to **True**, **Occurrences** is reset to 1,490,000, **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001, and the recurrence pattern is considered to extend infinitely far into the future.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

Occurrences Property (RecurrencePattern Object) Group

The **Occurrences** property returns or sets the number of occurrences of the recurrence pattern. Read/write.

Syntax

objRecurPatt.**Occurrences**

Data Type

Long

Remarks

The **Occurrences** property is used when the appointment is to recur a specific number of times, such as the next ten Thursdays. **Occurrences** has a minimum value of 1 and represents the total number of occurrences of the AppointmentItem object fitting the recurrence pattern. This qualification is necessary because the days of the original appointment, the **PatternStartDate**, and the **PatternEndDate** are not required to be included in the pattern specified by the **DayOfMonth**, **DayOfWeekMask**, **Instance**, **Interval**, and **MonthOfYear** properties. The original appointment is counted in **Occurrences** only if it matches the pattern.

Occurrences is always valid on a newly created RecurrencePattern object and defaults to its maximum value of 1,490,000. If the **NoEndDate** property is subsequently set to **False**, **Occurrences** defaults to 10.

Setting the **Occurrences** property causes CDO to force certain other recurrence pattern properties into conformance. **PatternEndDate** is recalculated from **PatternStartDate** and **Occurrences**. **NoEndDate** is reset to **False** if **Occurrences** is less than 1,490,000, or to **True** if **Occurrences** is 1,490,000 or greater or the recalculated **PatternEndDate** is January 1, 4000 or later.

CDO imposes a limit of December 31, 3999 on **PatternEndDate** and 1,489,999 on **Occurrences**. If either of these properties exceeds its limit, **NoEndDate** is automatically reset to **True**, **Occurrences** is reset to 1,490,000, **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001, and the recurrence pattern is considered to extend infinitely far into the future.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

PatternEndDate Property (RecurrencePattern Object) Group

The **PatternEndDate** property returns or sets the day on or before which the appointment last recurs. Read/write.

Syntax

objRecurPatt.**PatternEndDate**

Data Type

Variant (**vbDate** format)

Remarks

The **PatternEndDate** property contains the latest possible date of the last occurrence of the appointment. This qualification is necessary because **PatternEndDate** is not required to be included in the pattern specified by the **DayOfMonth**, **DayOfWeekMask**, **Instance**, **Interval**, and **MonthOfYear** properties. A recurrence is generated on **PatternEndDate** only if it matches the pattern.

PatternEndDate is always valid on a newly created RecurrencePattern object and defaults to the month and day of the **PatternStartDate** property in the year 4001.

The time component of the **vbDate** format is ignored when you set the **PatternEndDate** property. When you read **PatternEndDate**, the time component of the **EndTime** property is used to return a full **vbDate** value representing the ending time on the ending date, or on the next day if the appointment crosses over midnight.

The date component of **PatternEndDate** must not be earlier than **PatternStartDate**. These two properties determine the overall time period during which the AppointmentItem object is scheduled for recurrence.

Setting the **PatternEndDate** property causes CDO to force certain other recurrence pattern properties into conformance. **Occurrences** is recalculated from **PatternStartDate** and **PatternEndDate**, and **NoEndDate** is reset to **False**. However, if **PatternEndDate** is January 1, 4000 or later, **NoEndDate** is reset to **True**, **Occurrences** is reset to 1,490,000, and **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001.

You cannot change **PatternEndDate** to a date earlier than the current **PatternStartDate**.

CDO imposes a limit of December 31, 3999 on **PatternEndDate** and 1,489,999 on **Occurrences**. If either of these properties exceeds its limit, **NoEndDate** is automatically reset to **True**, **Occurrences** is reset to 1,490,000, **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001, and the recurrence pattern is considered to extend infinitely far into the future.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

PatternStartDate Property (RecurrencePattern Object) Group

The **PatternStartDate** property returns or sets the day on or after which the appointment first recurs. Read/write.

Syntax

objRecurPatt.**PatternStartDate**

Data Type

Variant (**vbDate** format)

Remarks

The **PatternStartDate** property contains the earliest possible date of the first occurrence of the appointment. This qualification is necessary because **PatternStartDate** is not required to be included in the pattern specified by the **DayOfMonth**, **DayOfWeekMask**, **Instance**, **Interval**, and **MonthOfYear** properties. A recurrence is generated on **PatternStartDate** only if it matches the pattern.

PatternStartDate is always valid on a newly created RecurrencePattern object and defaults to the date component of the **StartTime** property of the AppointmentItem object that created this recurrence pattern.

The time component of the **vbDate** format is ignored when you set the **PatternStartDate** property. When you read **PatternStartDate**, the time component of the **StartTime** property is used to return a full **vbDate** value representing the starting time on the starting date.

The date component of **PatternStartDate** must not be later than **PatternEndDate**. These two properties determine the overall time period during which the AppointmentItem object is scheduled for recurrence.

Setting the **PatternStartDate** property causes CDO to force certain other recurrence pattern properties into conformance. **PatternEndDate** is recalculated from **PatternStartDate** and **Occurrences**. However, if the new **PatternEndDate** is January 1, 4000 or later, **NoEndDate** is reset to **True**, **Occurrences** is reset to 1,490,000, and **PatternEndDate** is reset to the month and day of **PatternStartDate** in the year 4001.

If you change **PatternStartDate** to a date later than the current **PatternEndDate**, **PatternEndDate** is recalculated using the current value of **Occurrences**. Since **PatternEndDate** is always forced to be no earlier than **PatternStartDate**, **Occurrences** always has a minimum value of 1.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

RecurrenceType Property (RecurrencePattern Object) Group

The **RecurrenceType** property returns or sets the recurrence unit and the frequency with which the appointment recurs. Read/write.

Syntax

objRecurPatt.**RecurrenceType**

Data Type

Long

Remarks

The **RecurrenceType** property determines the periodicity with which the AppointmentItem is to recur. It can have exactly one of the following values:

RecurrenceType setting	Decimal value	Other properties used in conjunction with this setting
CdoRecurTypeDaily	0	**Interval**
CdoRecurTypeWeekly	1	**DayOfWeekMask** **Interval**
CdoRecurTypeMonthly	2	**DayOfMonth** **Interval**
CdoRecurTypeMonthlyNth	3	**DayOfWeekMask** **Instance** **Interval**
CdoRecurTypeYearly	5	**DayOfMonth** **Interval** **MonthOfYear**
CdoRecurTypeYearlyNth	6	**DayOfWeekMask** **Instance** **Interval** **MonthOfYear**

RecurrenceType is always valid on a newly created RecurrencePattern object and defaults to **CdoRecurTypeWeekly**.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

StartTime Property (RecurrencePattern Object) Group

The **StartTime** property returns or sets the starting date/time for each recurrence of the appointment. Read/write.

Syntax

objRecurPatt.**StartTime**

Data Type

Variant (**vbDate** format)

Remarks

The **StartTime** property contains the time at which the appointment is to begin every time it recurs. **StartTime** is always valid on a newly created RecurrencePattern object and defaults to the time component of the **StartTime** property of the AppointmentItem object that created this recurrence pattern.

The **StartTime** property ignores seconds and truncates the time component to the minute.

StartTime uses both the date and the time component of the **vbDate** format. When you set **StartTime**, the date component must match the date component of the **PatternStartDate** property, or **CdoE_INVALID_PARAMETER** is returned. When you read **StartTime**, you get the date/time of the start of the original appointment.

If the time component of **EndTime** is earlier than **StartTime**, each occurrence is treated as ending on the day after it starts. **StartTime** and **EndTime** are not allowed to have equal time components.

The recurrence pattern's **StartTime** and **EndTime** properties are always held internally in the organizer's current time zone. By contrast, the AppointmentItem object's **StartTime** and **EndTime** properties are always held internally in UTC (Coordinated Universal Time, also known as GMT). However, all these properties are converted to the local messaging user's current time zone whenever they are displayed or read programmatically.

Setting the **StartTime** property causes CDO to force certain other recurrence pattern properties into conformance. **EndTime** is recalculated from **StartTime** and **Duration**.

Changes you make to properties on a RecurrencePattern object take effect when you call the underlying appointment's **Send** or **Update** method.

Session Object

The Session object contains session-wide settings and options. It also contains properties that return top-level objects, such as **CurrentUser**.

Quick Info

Specified in type library:	OLEMSG32.DLL
First available in:	CDO Library version 1.0.a
Parent objects:	(none)
Child objects:	AddressLists collection Folder (Inbox or Outbox) InfoStores collection
Default property:	**Name**

Properties

Name	Available in version	Type	Access
AddressLists	1.1	AddressList object or AddressLists collection object	Read-only
Application	1.0.a	String	Read-only
Class	1.0.a	Long	Read-only
CurrentUser	1.0.a	AddressEntry object	Read-only
Inbox	1.0.a	Folder object	Read-only
InfoStores	1.0.a	InfoStores collection object	Read-only
MAPIOBJECT	1.0.a	**IUnknown** object	Read/write (Note: Not available to Visual Basic applications)
Name	1.0.a	String	Read-only
OperatingSystem	1.0.a	String	Read-only
Outbox	1.0.a	Folder object	Read-only
OutOfOffice	1.1	Boolean	Read/write
OutOfOfficeText	1.1	String	Read/write
Parent	1.0.a	Object; set to **Nothing**	Read-only
Session	1.0.a	Object; set to **Nothing**	Read-only
Version	1.0.a	String	Read-only

Methods

Name	Available in version	Parameters
AddressBook	1.0.a	(optional) *recipients* as **Object**,

		(optional) *title* as **String**, (optional) *oneAddress* as **Boolean**, (optional) *forceResolution* as **Boolean**, (optional) *recipLists* as **Long**, (optional) *toLabel* as **String**, (optional) *ccLabel* as **String**, (optional) *bccLabel* as **String**, (optional) *parentWindow* as **Long**
CompareIDs	1.1	*ID1* as **String**, *ID2* as **String**
CreateConversationIndex	1.1	(optional) *ParentIndex* as **String**
DeliverNow	1.1	(none)
GetAddressEntry	1.0.a	*entryID* as **String**
GetAddressList	1.2	*ObjectType* as **Long**
GetDefaultFolder	1.2	*ObjectType* as **Long**
GetFolder	1.0.a	*folderID* as **String**, (optional) *storeID* as **String**
GetInfoStore	1.0.a	*storeID* as **String**
GetMessage	1.0.a	*messageID* as **String**, (optional) *storeID* as **String**
GetOption	1.2	*OptType* as **String**
Logoff	1.0.a	(none)
Logon	1.0.a	(optional) *profileName* as **String**, (optional) *profilePassword* as **String**, (optional) *showDialog* as **Boolean**, (optional) *newSession* as **Boolean**, (optional) *parentWindow* as **Long**, (optional) *NoMail* as **Boolean**, (optional) *ProfileInfo* as **String**
SetLocaleIDs	1.1	*LocaleID* as **Long**, *CodePageID* as **Long**
SetOption	1.2	*OptType* as **String**, *OptValue* as **Variant**

Remarks

A Session object is considered a top-level object, meaning it can be created directly from a Microsoft® Visual Basic® program. In the CDO for Exchange Library it has a ProgID of MAPI.Session. This code fragment creates a Session object through early binding:

```
Dim objSession As MAPI.Session
Set objSession = CreateObject ("MAPI.Session")
objSession.Logon
```

This code fragment creates a Session object through late binding:

```
Dim objSession As Object
Set objSession = CreateObject ("MAPI.Session")
objSession.Logon
```

Generally, early binding is preferable, because it enforces type checking and generates more efficient code. Note that you specify the full ProgID “MAPI.Session” instead of just “Session” in order to distinguish a MAPI session from other types of sessions available to a Visual Basic program through other object libraries.

In both cases, after you create a new Session object, you use the **Logon** method to initiate a session with MAPI. No other activities with CDO are permitted prior to a successful logon. The only exception to this rule is the Session object’s **SetLocaleIDs** method.

AddressBook Method (Session Object)

Group

The **AddressBook** method displays a modal dialog box that allows the user to select entries from the address book. The selections are returned in a Recipients collection object.

Syntax

Set *objRecipients* = *objSession*.**AddressBook([***recipients*, *title, oneAddress, forceResolution, recipLists, toLabel, ccLabel, bccLabel, parentWindow* **])**

objRecipients
On successful return, the Recipients collection object. When the user does not select any names from the dialog box, **AddressBook** returns **Nothing**.

objSession
Required. The Session object.

recipients
Optional. Object. A Recipients collection object that provides initial values for the recipient list boxes in the address book dialog box. During the dialog, the user can select recipients from this collection and add other recipients.

title
Optional. String. The title or caption of the address book dialog box. The default value is an empty string.

oneAddress
Optional. Boolean. Allows the user to enter or select only one address entry at a time. The default value is **False**.

forceResolution
Optional. Boolean. If **True**, attempts to resolve all names before closing the address book. Prompts the user to resolve any ambiguous names. The default value is **True**.

recipLists
Optional. Long. The number of recipient list boxes to display in the address book dialog box:

recipLists **setting**	**Action**
0	Displays no list boxes. The user can interact with the address book dialog box but no recipients are returned by this method.
1	Displays one list box for **CdoTo** recipients (default).
2	Displays two list boxes for **CdoTo** and **CdoCc** recipients.
3	Displays three list boxes for **CdoTo**, **CdoCc**, and **CdoBcc** recipients.

toLabel
Optional. String. The caption for the button associated with the first recipient list box. Ignored if *recipLists* is less than 1. If omitted, the default value “To:” is displayed.

ccLabel
Optional. String. The caption for the button associated with the second recipient list box. Ignored if *recipLists* is less than 2. If omitted, the default value “Cc:” is displayed.

bccLabel
Optional. String. The caption for the button associated with the third recipient list box. Ignored if

recipLists is less than 3. If omitted, the default value “Bcc:” is displayed.

parentWindow

Optional. Long. The parent window handle for the address book dialog box. A value of zero (the default) specifies that the dialog box should be application-modal.

Remarks

The **AddressBook** method returns **Nothing** if the user cancels the dialog box.

The *recipients* parameter provides initial values for the recipient list boxes. These values expedite the user’s recipient selection process. A common use of this parameter is to set it to the Recipients collection of a message to which you are generating a reply.

When you use **AddressBook** to let the user select recipients for a new message, you use either two or three different Recipients collections, depending on whether you furnish the *recipients* parameter. Use the following procedure:

1. Optionally, prepare an initial Recipients collection to be submitted in the *recipients* parameter to the **AddressBook** method.
2. Call **AddressBook**, which returns the user-selected Recipients collection.
3. Call the **Add** method on a Messages collection to create a new message.
4. Copy the Recipients collection returned by **AddressBook** to the Recipients property of the new message:

```
Set objNewMessage.Recipients = objRecipients
objNewMessage.Recipients.Resolve ' also updates everything
```

The *oneAddress* parameter indicates whether only one address entry at a time can be selected before being added to the recipients list. If *oneAddress* is set to **False**, the user can select multiple recipients by using the CTRL or SHIFT key during the selection. If *oneAddress* is set to **True**, multiple selection is disabled.

To provide an access key for the recipient list boxes, include an ampersand (&) character in the label argument string, immediately before the character that serves as the access key. For example, if *toLabel* is “Local &Attendees:”, users can press ALT+A to move the focus to the first recipient list box.

The address book dialog box is always modal, meaning the parent window is disabled while the dialog box is active. If the *parentWindow* parameter is set to zero or is not set, all windows belonging to the application are disabled while the dialog box is active. If the *parentWindow* parameter is supplied but is not valid, the call returns **CdoE_INVALID_PARAMETER**.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)
- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's Reference*.

Example

This code fragment displays an address book dialog box labeled “Select Attendees” with three recipient lists:

```
If objSession Is Nothing Then
    MsgBox "Must first create MAPI session and log on"
    Exit Function
End If
Set objRecipColl = objSession.AddressBook( _
                      Title:="Select Attendees", _
                      forceResolution:=True, _
                      recipLists:=3, _
                      toLabel:="&Very Important People", _ ' on button
                      ccLabel:="&Fairly Important People", _
                      bccLabel:="&Secret Important People")
' "recipients:=" parameter not used in preceding call
MsgBox "Name of first recipient = " & objRecipColl.Item(1).Name
' could be objRecipColl(1) since Item and Name are default properties
Exit Function
```

AddressLists Property (Session Object)

Group

The **AddressLists** property returns a single AddressList object or an AddressLists collection object. Read-only.

Syntax

Set *objAddrListsColl* = *objSession.***AddressLists**

Set *objOneAddrList* = *objSession.***AddressLists(***index***)**

Set *objOneAddrList* = *objSession.***AddressLists(***name***)**

objAddrListsColl
Object. An AddressLists collection object.

objSession
Object. The Session object.

objOneAddrList
Object. A single AddressList object.

index
Long. Specifies the number of the address list within the AddressLists collection. Ranges from 1 to the value specified by the AddressLists collection's **Count** property.

name
String. The value of the **Name** property of the AddressList object to be selected.

Data Type

Object (AddressList or AddressLists collection)

Remarks

The AddressLists collection represents the root of the MAPI address book hierarchy for the current session. A particular AddressList object represents one of the available address books. The type of access you obtain depends on the access granted to you by each individual address book provider.

Although the **AddressLists** property itself is read-only, the collection it returns can be accessed in the normal manner, and the properties on its member AddressList objects retain their respective read/write or read-only accessibility.

CompareIDs Method (Session Object)

Group

The **CompareIDs** method determines whether two CDO Library objects are the same object.

Syntax

objSession.**CompareIDs(***ID1, ID2***)**

objSession
Required. The Session object.

ID1
Required. String. The unique identifier of the first object to be compared.

ID2
Required. String. The unique identifier of the second object to be compared.

Remarks

The **CompareIDs** method compares the identifiers of two arbitrary CDO Library objects and returns **True** if they are the same object. Two objects are considered to be the same if and only if they are instantiations of the same physical (persistent) object in the underlying messaging system. Two objects with the same value are still considered different if they do not instantiate the same physical object, for example if one is a copy of the other. In such a case **CompareIDs** returns **False**.

MAPI assigns a permanent, unique identifier when an object is created. This identifier does not change from one MAPI session to another, nor from one messaging domain to another. However, MAPI does not require identifier values to be binary comparable. Accordingly, two identifier values can be different, yet refer to the same object. For more information on entry identifiers, see the *MAPI Programmer's Reference*.

The **CompareIDs** method ultimately calls one of the MAPI **CompareEntryIDs** methods to determine if two objects are the same. Several CDO Library objects also provide the **IsSameAs** method for a comparison of two objects of that particular type.

CreateConversationIndex Method (Session Object) Group

The **CreateConversationIndex** method creates or updates an index for a conversation thread.

Syntax

newIndex = *objSession*.**CreateConversationIndex(***ParentIndex***)**

newIndex
String. The conversation index to be assigned to the first or next message in the thread.

objSession
Required. The Session object.

ParentIndex
Optional. String. The conversation index of a received message for which a reply is being generated.

Remarks

The **CreateConversationIndex** method takes the current value of a conversation index and returns a new value suitable for an outgoing message. If the message to be sent represents the beginning of a new thread, there is no current index, and the *ParentIndex* parameter is not passed in. If the outgoing message is a reply to a received message, the ConversationIndex property of the received message is passed in as the *ParentIndex* parameter.

The **CreateConversationIndex** method ultimately calls the MAPI **ScCreateConversationIndex** function.

Example

This code fragment responds to the first message in the Inbox:

```
Dim objInMsgColl As Messages ' messages in Inbox
Dim objRecMsg As Message     ' received message
Dim objNewMsg As Message     ' outgoing reply message
Dim objRcpColl As Recipients ' recipients for outgoing message
Dim strSenderID As String    ' unique ID of original sender
Dim strCnvIndx As String     ' conversation index

If objSession Is Nothing Then
    MsgBox "Must first create MAPI session and log on"
    Exit Function
End If
Set objInMsgColl = objSession.Inbox.Messages
' ... error handling ...
If objInMsgColl Is Nothing Then
    MsgBox "Could not successfully access Inbox messages"
    Exit Function
End If
Set objRecMsg = objInMsgColl.GetFirst()
If objRecMsg Is Nothing Then
    MsgBox "No messages in Inbox"
    Exit Function
End If
' make new conversation index from old
strCnvIndx = objSession.CreateConversationIndex _
                        (objRecMsg.ConversationIndex)
```

```
strSenderID = objRecMsg.Sender.ID ' save sender's unique ID
Set objNewMsg = objSession.Outbox.Messages.Add ' generate reply
' ... error handling ...
Set objRcpColl = objNewMsg.Recipients
' ... error handling ...
objRcpColl.Add entryID:=strSenderID ' add sender as recipient
' ... error handling ...
With objNewMsg
    .ConversationIndex = strCnvIndx
    .ConversationTopic = objRecMsg.ConversationTopic
    .Subject = "RE: " & objRecMsg.Subject
    .Text = "Please consider this a reply to your message."
    .Update' save everything in the MAPI system
    .Send showDialog:=False
End With
```

CurrentUser Property (Session Object)

Group

The **CurrentUser** property returns the active user as an AddressEntry object. Read-only.

Syntax

objSession.**CurrentUser**

Data Type

Object (AddressEntry)

Remarks

The **CurrentUser** property returns **Nothing** when no user is logged on.

Example

This code fragment checks for logon, then displays the full messaging address of the current user:

```
If objSession Is Nothing Then
    MsgBox ("Must log on first")
    Exit Function
End If
Set objAddrEntry = objSession.CurrentUser
If objAddrEntry Is Nothing Then
    MsgBox "Could not set the address entry object"
    Exit Function
Else
    MsgBox "Full address = " & objAddrEntry.Type & ":" _
                             & objAddrEntry.Address
End If
```

DeliverNow Method (Session Object)

Group

The **DeliverNow** method requests immediate delivery of all undelivered messages submitted in the current session.

Syntax

objSession.**DeliverNow( )**

Remarks

The **DeliverNow** method ultimately calls the MAPI spooler's **IMAPIStatus::FlushQueues** method to request that all messages in all inbound and outbound queues be received or delivered immediately. **FlushQueues** is invoked synchronously, and performance degradation is possible during the processing of this request.

GetAddressEntry Method (Session Object) Group

The **GetAddressEntry** method returns an AddressEntry object.

Syntax

Set *objAddressEntry* **=** *objSession*.**GetAddressEntry(***entryID***)**

objAddressEntry
On successful return, represents the AddressEntry object specified by *entryID*.

objSession
Required. The Session object.

entryID
Required. String. Specifies the unique identifier of the address entry.

Remarks

For more information, see Using Addresses.

Example

This code fragment displays the name of a user from a MAPI address list:

```
' from the function Session_GetAddressEntry
    If objSession Is Nothing Then
        MsgBox "No active session, must log on"
        Exit Function
    End If
    If "" = strAddressEntryID Then
        MsgBox ("Must first set string variable to address entry ID")
        Exit Function
    End If
    Set objAddrEntry = objSession.GetAddressEntry(strAddressEntryID)
    MsgBox "Full address = " & objAddrEntry.Type & ":" _
                             & objAddrEntry.Address
```

GetAddressList Method (Session Object)

Group

The **GetAddressList** method returns an AddressList object from a directory service.

Syntax

Set *objAddressList* = *objSession*.**GetAddressList(***ObjectType***)**

objAddressList
On successful return, represents the default AddressList object specified by *ObjectType*.

objSession
Required. The Session object.

ObjectType
Required. Long. Specifies the address list to be retrieved.

Remarks

The **GetAddressList** method returns the default address list of the specified type for the default directory service of the current session.

The *ObjectType* parameter can have exactly one of the following values:

***ObjectType* setting**	**Value**	**Default Address list retrieved**
CdoAddressListGAL	0	Global address list
CdoAddressListPAB	1	Personal address book

GetDefaultFolder Method (Session Object) Group

The **GetDefaultFolder** method returns a Folder object from a message store.

Syntax

Set *objFolder* = *objSession*.**GetDefaultFolder(***ObjectType***)**

objFolder
On successful return, represents the default Folder object specified by *ObjectType*.

objSession
Required. The Session object.

ObjectType
Required. Long. Specifies the default folder to be retrieved.

Remarks

The **GetDefaultFolder** method returns the default folder of the specified type for the default message store of the current session.

The *ObjectType* parameter can have exactly one of the following values:

***ObjectType* setting**	**Value**	**Default folder retrieved**
CdoDefaultFolderCalendar	0	Calendar
CdoDefaultFolderContacts	5	Contacts
CdoDefaultFolderDeletedItems	4	Deleted Items
CdoDefaultFolderInbox	1	Inbox
CdoDefaultFolderJournal	6	Journal
CdoDefaultFolderNotes	7	Notes
CdoDefaultFolderOutbox	2	Outbox
CdoDefaultFolderSentItems	3	Sent Items
CdoDefaultFolderTasks	8	Tasks

The Contacts, Journal, Notes, and Tasks folders are specific to Microsoft® Outlook™. If your application is running in a purely Microsoft® Schedule+ environment, an attempt to access any of these four folders returns **CdoE_NOT_FOUND**.

GetFolder Method (Session Object)

Group

The **GetFolder** method returns a Folder object from a MAPI message store.

Syntax

Set *objFolder* = *objSession*.**GetFolder(***folderID* **[**, *storeID***])**

objFolder
On successful return, contains the Folder object with the specified identifier. When the folder does not exist, **GetFolder** returns **Nothing**.

objSession
Required. The Session object.

folderID
Required. String that specifies the unique identifier of the folder. When you provide an empty string, some providers return the root folder.

storeID
Optional. String that specifies the unique identifier of the message store containing the folder. The default value is an empty string, which corresponds to the default message store.

Remarks

The **GetFolder** method allows you to obtain any Folder object for which you know the identifier, that is, the folder's **ID** property.

For some message stores, you can obtain the store's root folder by supplying an empty string as the value for *folderID*. If the message store does not support returning its root folder, the call returns the error value **CdoE_NOT_FOUND**.

Note that the store's root folder differs from the IPM root folder. The store's root folder is the parent of the root folder of the the IPM subtree. The IPM subtree contains all interpersonal messages in a hierarchy of folders. Interpersonal messages are those whose message class starts with IPM, such as IPM.Note.

You can obtain the IPM root folder with the InfoStore object's **RootFolder** property. You can obtain the store's root folder through the IPM root folder's **FolderID** property.

If your application is running as a Microsoft® Windows NT® service, you cannot access the Microsoft Exchange Public Folders through the normal hierarchy because of a notification conflict. You must use the InfoStore object's **Fields** property to obtain the Microsoft Exchange property PR_IPM_PUBLIC_FOLDERS_ENTRYID, property tag &H66310102. This represents the top-level public folder and allows you to access all other public folders through its **Folders** property. For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm.

Example

This code fragment uses the **GetFolder** method to obtain a specific folder from a MAPI message store:

```
' from the function Session_GetFolder
' requires a global variable that contains the folder ID
' uses a global variable that contains the message store ID if present
    If strFolderID = "" Then
        MsgBox ("Must first set string variable to folder ID")
        Exit Function
    End If
```

```
If strFolderStoreID = "" Then ' maybe get root folder
    Set objFolder = objSession.GetFolder(strFolderID)
Else
    Set objFolder = objSession.GetFolder(folderID:=strFolderID, _
                                         storeID:=strFolderStoreID)
End If
If objFolder Is Nothing Then
    Set objMessages = Nothing
    MsgBox "Unable to retrieve folder with specified ID"
    Exit Function
Else
    Set objMessages = objFolder.Messages
    MsgBox "Folder set to " & objFolder.Name
End If
```

GetInfoStore Method (Session Object)

Group

The **GetInfoStore** method returns an InfoStore object that can be used to navigate through both public folders and the user's personal folders.

Syntax

Set *objInfoStore* = *objSession*.**GetInfoStore(***storeID***)**

objInfoStore
On successful return, contains the InfoStore object with the specified identifier. When the InfoStore object does not exist, **GetInfoStore** returns **Nothing**.

objSession
Required. The Session object.

storeID
Required. String. Specifies the unique identifier of the InfoStore object to retrieve.

Remarks

The **GetInfoStore** method allows you to obtain any message store for which you know the **ID** property. Within the message store you can then obtain any child Folder object for which you know the **ID** property.

Example

This code fragment uses the **GetInfoStore** method to obtain a specific message store:

```
' from the function Session_GetInfoStore
' requires a global variable that contains the InfoStore ID
Dim strInfoStoreID as String ' ID as hex string
Dim objInfoStore As InfoStore
    If strInfoStoreID = "" Then
        MsgBox ("Must first set string variable to InfoStore ID")
        Exit Function
    End If
    Set objInfoStore = objSession.GetInfoStore( _
                                storeID:=strInfoStoreID)
    ' error handling ...
    MsgBox "InfoStore set to " & objInfoStore.Name
```

GetMessage Method (Session Object)

Group

The **GetMessage** method returns an AppointmentItem, MeetingItem, or Message object from a MAPI message store.

Syntax

Set *objMessage* = *objSession*.**GetMessage(***messageID* **[**, *storeID***])**

objMessage
On successful return, contains the Message object with the specified identifier. When the specified *messageID* does not exist, **GetMessage** returns **Nothing**.

objSession
Required. The Session object.

messageID
Required. String. Specifies the unique identifier of the appointment, meeting, or message.

storeID
Optional. String. Specifies the unique identifier of the message store. The default value is an empty string, which corresponds to the default message store.

Remarks

The **GetMessage** method allows you to obtain directly any AppointmentItem, MeetingItem, or Message object for which you know the **ID** property. You do not have to find and open the folder containing the message or the InfoStore containing the folder.

Example

This code fragment displays the subject of a message from a MAPI message store:

```
' fragment from Session_GetMessage
' requires the parameter strMessageID;
' also uses strMessageStoreID if it is defined
If strMessageID = "" Then
    MsgBox ("Must first set string variable to message ID")
    Exit Function
End If
If strMessageStoreID = "" Then ' not present
    Set objOneMsg = objSession.GetMessage(strMessageID)
Else
    Set objOneMsg = objSession.GetMessage(messageID:=strMessageID, _
                                          storeID:=strMessageStoreID)
End If
```

GetOption Method (Session Object)

Group

The **GetOption** method returns a calendar rendering option for the session.

Syntax

objSession.**GetOption(***OptType***)**

objSession
Required. The Session object.

OptType
Required. String. Selects the option by name.

Remarks

The calendar rendering options are set with the **SetOption** method. A CDO Rendering application can use their values to set the corresponding properties of a ContainerRenderer object when the rendering application logs on to the session. The container renderer properties are used by the **RenderAppointments**, **RenderDateNavigator**, and **RenderEvents** methods of a CalendarView object to render calendar data. The CDO Rendering ObjectRenderer object can also use the value of the "TimeZone" option.

Note that the rendering objects do not automatically assimilate the values of the Session object's calendar rendering options. You must transfer these values yourself between the Session object and the appropriate properties of the rendering object you are using.

GetOption and **SetOption** return **CdoE_CALL_FAILED** if you call them while you are not logged on to the session. Following a successful logon, **GetOption** returns the option settings that were stored in the messaging user's Inbox with **SetOption**. If no options have ever been stored for the messaging user, the default settings are returned.

The "CalendarStore" option can be "Outlook" or "SchedulePlus", depending on the store underlying the messaging user's calendar folder. This option is useful if you have both types of calendar store and need to determine which one is active. It defaults to "Outlook" if you have neither type or both types. Calendar store information is irrelevant to the container renderer, so it has no corresponding property.

The "WorkingDays" option also has no corresponding property. It is a bitmask representing the days of the week that are considered to be part of the work week. "WorkingDays" contains a logical **OR** of one or more of the constants used in the RecurrencePattern object's **DayOfWeekMask** property.

The calendar rendering options that can be selected are as follows:

***OptType* string value**	**Data type**	**Corresponding ContainerRenderer property**	**Default value**
"BusinessDayEndTime"	Variant (**vbDate** format)	**BusinessDayEndTime**	5:00 PM (17:00)
"BusinessDayStartTime"	Variant (**vbDate** format)	**BusinessDayStartTime**	9:00 AM (09:00)
"CalendarStore"	String	(none)	Current calendar store or "Outlook"

"FirstDayOfWeek"	Long	**FirstDayOfWeek**	7 (Sunday)
"Is24HourClock"	Boolean	**Is24HourClock**	**False**
"TimeZone"	Long	**TimeZone**	Current zone on Web server
"WorkingDays"	Long	(none)	62 (**CdoMonday | … | CdoFriday**)

Note that the "FirstDayOfWeek" option and the **FirstDayOfWeek** property are compatible with each other in using an enumeration starting with 1 for Monday and ending with 7 for Sunday, but they are not compatible with the **DayOfWeekMask** property of the RecurrencePattern object, which uses the mask constants **CdoSunday** through **CdoSaturday**. The "WorkingDays" option, however, is compatible with the mask constants.

Inbox Property (Session Object) Group

The **Inbox** property returns a Folder object representing the current user's Inbox folder. Read-only.

Syntax

objSession.**Inbox**

Data Type

Object (Folder)

Remarks

The **Inbox** property returns **Nothing** if the current user does not have an Inbox folder.

In addition to the general ability to navigate through the formal collection and object hierarchy, CDO supports properties that allow your application to directly access the most common Folder objects:

- The InfoStore object's **RootFolder** property for the IPM subtree root folder
- The Session object's **Inbox** property for the Inbox folder
- The Session object's **Outbox** property for the Outbox folder

Example

This code fragment uses the Session object's **Inbox** property to initialize a Folder object:

```
' from the function Session_Inbox
    ' make sure the Session object is valid ...
    Set objFolder = objSession.Inbox
    If objFolder Is Nothing Then
        MsgBox "Failed to open Inbox"
        Exit Function
    End If
    MsgBox "Inbox folder name = " & objFolder.Name
    Set objMessages = objFolder.Messages
    If objMessages Is Nothing Then
        MsgBox "Failed to open folder's Messages collection"
        Exit Function
    End If
```

InfoStores Property (Session Object)

Group

The **InfoStores** property returns an InfoStores collection available to this session. Read-only.

Syntax

objSession.**InfoStores**

Data Type

Object (InfoStores collection)

Remarks

The **InfoStores** property returns a collection of available message stores. Each InfoStore object in the collection represents an individual message store and provides access to its folder hierarchy.

You can access public folders through the InfoStores collection. The public folders are maintained in their own InfoStore object, which is distinct from the InfoStore object that contains the user's personal messages.

When you know the unique identifier for a particular InfoStore object, you can obtain it directly with the Session object's **GetInfoStore** method.

Although the **InfoStores** property itself is read-only, the collection it returns can be accessed in the normal manner, and the properties on its member InfoStore objects retain their respective read/write or read-only accessibility.

Example

```
' from the functions Session_InfoStores and InfoStores_FirstItem
Dim objSession as MAPI.Session
Dim objInfoStoresColl as InfoStores
Dim objInfoStore as InfoStore
' assume valid Session object
Set objInfoStoresColl = objSession.InfoStores
If objInfoStoresColl Is Nothing Then
    MsgBox "Could not set InfoStores collection"
    Exit Function
End If
If 0 = objInfoStoresColl.Count Then
    MsgBox "No InfoStores in the collection"
    Exit Function
End If
collIndex = 1
Set objInfoStore = objInfoStoresColl.Item(collIndex)
' could be objInfoStoresColl(collIndex) since Item is default property
If objInfoStore Is Nothing Then
    MsgBox "Cannot get first InfoStore object"
    Exit Function
Else
    MsgBox "Selected InfoStores item " & collIndex
End If
If "" = objInfoStore.Name Then
    MsgBox "Active InfoStore has no name; ID = " & objInfoStore.Id
Else
    MsgBox "Active InfoStore has name: " & objInfoStore.Name
```

```
End If
```

Logoff Method (Session Object) Group

The **Logoff** method logs off from the MAPI system.

Syntax

objSession.**Logoff( )**

Remarks

The **Logoff** method terminates a MAPI session initiated by the **Logon** method. You can log on to the same Session object again. Attempted access to the Session object before logon results in a return of **CdoE_NOT_INITIALIZED**.

Example

This code fragment logs off from the MAPI system:

```
' from the function Session_Logoff
If Not objSession Is Nothing Then
    objSession.Logoff
    MsgBox "Logged off; reset global variables"
Else
    MsgBox "No active session"
End If
```

Logon Method (Session Object) Group

The **Logon** method logs on to the MAPI system.

Syntax

objSession.**Logon([***profileName, profilePassword, showDialog, newSession, parentWindow, NoMail, ProfileInfo***])**

objSession
Required. The Session object.

profileName
Optional. String. Specifies the profile name to use. To prompt the user to select a profile name, omit *profileName* and set *showDialog* to **True**. The default value is an empty string. The *profileName* parameter is ignored if the *ProfileInfo* parameter is supplied.

profilePassword
Optional. String. Specifies the profile password. To prompt the user to enter a profile password, omit *profilePassword* and set *showDialog* to **True**. The default value is an empty string.

showDialog
Optional. Boolean. If **True**, displays a **Choose Profile** dialog box. The default value is **True**.

newSession
Optional. Boolean. Determines whether the application opens a new MAPI session or uses the current shared MAPI session (the default). If a shared MAPI session does not exist, *newSession* is ignored and a new session is opened. If a shared MAPI session does exist, this parameter governs the following actions:

Value	Action
True	Opens a new MAPI session.
False	Uses the current shared MAPI session (default).

parentWindow
Optional. Long. Specifies the parent window handle for the logon dialog box. A value of zero (the default) specifies that the dialog box should be application-modal. A value of -1 specifies that the currently active window is to be used as the parent window. The *parentWindow* parameter is ignored unless *showDialog* is **True**.

NoMail
Optional. Boolean. Determines whether the session should be registered with the MAPI spooler. This parameter governs the following actions:

Value	Action
True	The MAPI spooler is not informed of the session's existence, and no messages can be sent or received except through a tightly coupled message store and transport.
False	The session is registered with the MAPI spooler and can send and receive messages through spooling (default).

ProfileInfo
Optional. String. Contains the server and mailbox names that **Logon** should use to create a new profile for this session. The profile is deleted after logon is completed or terminated. The *ProfileInfo* parameter is only used by applications interfacing with Microsoft® Exchange Server. The *profileName* parameter is ignored if *ProfileInfo* is supplied.

Remarks

The user must log on before your application can use any MAPI object, any other CDO Library object, or even any other method or property of the Session object. An attempt to access any programming element prior to a successful **Logon** results in an **CdoE_NOT_INITIALIZED** error return. The only exception to this rule is the Session object's **SetLocaleIDs** method.

The **Choose Profile** dialog box is always modal, meaning the parent window is disabled while the dialog box is active. If the *parentWindow* parameter is set to zero or is not set, all windows belonging to the application are disabled while the dialog box is active. If the *parentWindow* parameter is supplied but is not valid, the call returns **CdoE_INVALID_PARAMETER**.

If your application cannot obtain the handle for the currently active window, for example if it is running in VBScript, you can pass -1 in the *parentWindow* parameter. CDO then retrieves the handle from the Microsoft Windows® **GetActiveWindow** function and uses it as the parent window handle.

The common MAPI dialog boxes automatically handle many of the error cases that can be encountered during logon. When you call **Logon** and do not supply the optional profile name parameter, the **Choose Profile** dialog box appears, asking the user to select a profile. When the *profileName* parameter is supplied but is not valid, common dialog boxes indicate the error and prompt the user to enter a valid name from the **Choose Profile** dialog box. When no profiles are defined, the Profile Wizard takes the user through the creation of a new profile.

The *ProfileInfo* parameter is used to create a temporary profile for the session. CDO generates a random name for the profile. For an authenticated profile, the format of the string is

<*server name*> & vbLf & <*mailbox name*>

where the server and mailbox names can be unresolved. Note that the mailbox name is not the messaging user's display name, but rather the alias or account name used internally by the user's organization. For example, "johnd" should be used instead of "John Doe".

For an anonymous profile, the format is

<*server distinguished name*> & vbLf & vbLf & "anon"

where the distinguished name of the server takes the form

/o=<*enterprise*>/ou=<*site*>/cn=Configuration/cn=Servers/cn=<*server*>

and any text between the **vbLf** characters is ignored. At least the /cn=<*server*> entry is required; if it is not specified in the *ProfileInfo* parameter, **Logon** returns **CdoE_INVALID_PARAMETER**.

If you log on with an anonymous profile, the **Name** property of the AddressEntry object returned by the **CurrentUser** property contains "Unknown default".

If both *profileName* and *ProfileInfo* are supplied, *profileName* is ignored and the random profile name is used.

The **Logon** method does not verify the validity of either the server name or the mailbox name in the *ProfileInfo* parameter. You can get a successful return even if you specify one or both of these names incorrectly. In this case the **CurrentUser** property returns the value "Unknown". If you log on using *ProfileInfo*, you should attempt to open the Inbox folder to verify that you can access the message store.

If your application calls the **Logon** method after the user has already successfully logged on to the same session, CDO generates the error **CdoE_LOGON_FAILED**. However, you can create multiple sessions and log on simultaneously each of them.

A session is terminated by the **Logoff** method.

For more information, see Starting a CDO Session.

The following methods can invoke dialog boxes:

- **Details** method (AddressEntry object)
- **Options** and **Send** methods (AppointmentItem, MeetingItem, and Message objects)
- **Resolve** method (Recipient object)
- **Resolve** method (Recipients collection)

- **AddressBook** and **Logon** methods (Session object)

However, if your application is running as a Microsoft® Windows NT® service, for example from Active Server Pages (ASP) script on a Microsoft® Internet Information Server (IIS), no user interface is allowed.

For more information on Windows NT services, see the Win32® Web page *Using MAPI from a Windows NT Service* at http://www.microsoft.com/win32dev/mapi/mapiserv.htm. For more information on running as a service, see "Windows NT Service Client Applications" in the *MAPI Programmer's Reference*.

Example

The first part of this code fragment displays a **Choose Profile** dialog box that prompts the user to enter a profile password. The second part supplies the *profileName* parameter and does not display the dialog box:

```
Dim objSession As MAPI.Session
' (part 1) from the function Session_Logon
Set objSession = CreateObject("MAPI.Session")
If Not objSession Is Nothing Then
    objSession.Logon showDialog:=True
End If

' (part 2) from the function Session_Logon_NoDialog
Function Session_Logon_NoDialog()
On Error GoTo error_actmsg
' can set strProfileName, strPassword from a custom form
' adjust these parameters for your configuration
' create a Session object if necessary here ...
If Not objSession Is Nothing Then
    ' configure these parameters for your needs ...
    objSession.Logon profileName:=strProfileName, _
                     showDialog:=False
End If
Exit Function

error_actmsg:
If 1273 = Err Then ' VB4.0: If Err.Number = CdoE_LOGON_FAILED Then
    MsgBox "Cannot log on: incorrect profile name or password; " _
      & "change global variable strProfileName in Util_Initialize"
    Exit Function
End If
MsgBox "Error " & Str(Err) & ": " & Error$(Err)
Resume Next
End Function
```

MAPIOBJECT Property (Session Object)

Group

The **MAPIOBJECT** property returns an **IUnknown** pointer to the Session object. Not available to Microsoft® Visual Basic® applications. Read/write.

Syntax

objSession.**MAPIOBJECT**

Data Type

Variant (**vbDataObject** format)

Remarks

The **MAPIOBJECT** property is not available to Visual Basic programs. It is accessible only by C/C++ programs that deal with **IUnknown** objects. Visual Basic supports the **IDispatch** interface and not **IUnknown**. The **MAPIOBJECT** property is an **IUnknown** object that returns an **IMAPISession** interface in response to **QueryInterface**. For more information, see Introduction to Automation and How Programmable Objects Work. Also see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

Name Property (Session Object) Group

The **Name** property returns the display name of the profile logged on to this session. Read-only.

Syntax

objSession.**Name**

The **Name** property is the default property of a Session object, meaning that *objSession* is syntactically equivalent to *objSession*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

To **Name** property contains the current profile's display name. To obtain the messaging user's display name, use the **Name** property of the AddressEntry object returned by the **CurrentUser** property.

The **Name** property corresponds to the MAPI property PR_PROFILE_NAME.

Examples

```
' from the function Session_Name
    If objSession Is Nothing Then
        MsgBox "Must log on first: see Session menu"
        Exit Function
    End If
    MsgBox "Profile name for this session = " & objSession.Name
```

OperatingSystem Property (Session Object) Group

The **OperatingSystem** property returns the name and version number of the current operating system. Read-only.

Syntax

objSession.**OperatingSystem**

Data Type

String

Remarks

CDO returns strings in the following formats:

Operating system	String value
Microsoft Windows for Workgroups	Microsoft® Windows(TM) *N.k*
Microsoft Windows 95	Microsoft® Windows 95(TM) *N.k*
Microsoft Windows NT	Microsoft® Windows NT(TM) *N.k*

The *N.k* values are replaced with the actual version numbers. Note that Microsoft® Windows® for Workgroups version 3.11 returns the string “Microsoft® Windows(TM) 3.10”. This is due to that operating system rather than to CDO.

The version number returned in the **OperatingSystem** property is not related to the version number returned in the **Version** property.

Example

This code fragment displays the name and version of the operating system:

```
' from the function Session_OperatingSystem
' assume objSession is a valid Session object
MsgBox "Operating system = " & objSession.OperatingSystem
```

Outbox Property (Session Object) Group

The **Outbox** property returns a Folder object representing the current user's Outbox folder. Read-only.

Syntax

objSession.**Outbox**

Data Type

Object (Folder)

Remarks

The **Outbox** property returns **Nothing** if the current user does not have or has not enabled the Outbox folder.

In addition to the general ability to navigate through the formal collection and object hierarchy, CDO supports properties that allow your application to directly access the most common Folder objects:

- The InfoStore object's **RootFolder** property for the IPM subtree root folder
- The Session object's **Inbox** property for the Inbox folder
- The Session object's **Outbox** property for the Outbox folder

Example

```
' from the function Session_Outbox
Dim objFolder As Object
'
    Set objFolder = objSession.Outbox
    If objFolder Is Nothing Then
        MsgBox "Failed to open Outbox"
        Exit Function
    End If
    MsgBox "Outbox folder name = " & objFolder.Name
    Set objMessages = objFolder.Messages
```

OutOfOffice Property (Session Object)

Group

The **OutOfOffice** property indicates whether the user is currently out-of-office (OOF). Read/write.

Syntax

objSession.**OutOfOffice**

Data Type

Boolean

Remarks

The **OutOfOffice** property is set to **True** when the messaging user wishes to be considered out-of-office and have automatic responses generated to incoming messages. When this property is **True**, CDO signals this condition to the Microsoft® Exchange Client, which then replies to incoming e-mail with the message text contained in the **OutOfOfficeText** property.

For more information on using **OutOfOffice** and **OutOfOfficeText**, see the example in the **OutOfOfficeText** property.

OutOfOfficeText Property (Session Object) Group

The **OutOfOfficeText** property contains the message text for an out-of-office (OOF) response. Read/write.

Syntax

objSession.**OutOfOfficeText**

Data Type

String

Remarks

When the **OutOfOffice** property is set to **True**, the Microsoft® Exchange Client uses the text in the **OutOfOfficeText** property to generate an automatic reply to incoming messages.

Example

This code fragment sets a messaging user to be considered out-of-office and prepares an appropriate response:

```
' Set current user to be out-of-office (OOF)
' assume objSession is a valid Session object
  With objSession
    .OutOfOffice = True
    .OutOfOfficeText = "I'm out of town until next Tuesday"
  End With
  MsgBox "Remember to set .OutOfOffice = False on Tuesday!"
```

SetLocaleIDs Method (Session Object)

Group

The **SetLocaleIDs** method sets identifiers that define a messaging user's locale.

Syntax

objSession.**SetLocaleIDs(***LocaleID*, *CodePageID***)**

objSession
Required. This Session object.

LocaleID
Required. Long. The locale identifier (LCID) to be used for this messaging user.

CodePageID
Required. Long. The code page identifier to be used for this messaging user.

Remarks

A locale is the set of features of a messaging user's environment that are dependent on language, country, culture, and conventions. These features include the character selection, the collating sequence and sort order, and the date, time, and currency formats. The **SetLocaleIDs** method sets identifiers that determine the behavior of locale-sensitive operations.

A locale identifier (LCID) is a 32-bit value containing a 16-bit language identifier and a 4-bit sort identifier. The Microsoft® Windows NT® macros **SORTIDFROMLCID** and **LANGIDFROMLCID** can be used to extract these identifiers from the LCID.

A code page identifier is a long integer specifying the ordered character set to use when displaying text. Information about a code page can be obtained from the Windows NT **GetCPInfo** function.

The **CodePage** property of the CDO Rendering ContainerRenderer, ObjectRenderer, or RenderingApplication object can be used to change the character selection at a later time.

If **SetLocaleIDs** is to be called, it must be called before the Session object's **Logon** method is called. This allows the messaging user's profile to be set for the appropriate locale. A call to **SetLocaleIDs** following logon returns **CdoE_CALL_FAILED**.

Note that the **SetLocaleIDs** method is the sole exception to the rule that a call to a session's **Logon** method must precede any other access to that session.

SetLocaleIDs tests the validity of the code page specified by the *CodePageID* parameter before actually setting the locale identifiers. If the code page is not valid, **CdoE_INVALID_ARGUMENT** is returned.

The *LocaleID* and *CodePageID* parameters correspond to the Microsoft Exchange properties PR_LOCALE_ID and PR_CODE_PAGE_ID.

SetOption Method (Session Object)

Group

The **SetOption** method sets a calendar rendering option for the session.

Syntax

objSession.**SetOption(***OptType, OptValue***)**

objSession
Required. The Session object.

OptType
Required. String. Selects the option by name.

OptValue
Required. String. Contains the value to set the option to.

Remarks

The calendar rendering options can be inspected with the **GetOption** method. A CDO Rendering application can use their values to set the corresponding properties of a ContainerRenderer object when the rendering application logs on to the session. The container renderer properties are used by the **RenderAppointments**, **RenderDateNavigator**, and **RenderEvents** methods of a CalendarView object to render calendar data. The CDO Rendering ObjectRenderer object can also use the value of the "TimeZone" option.

Note that the rendering objects do not automatically assimilate the values of the Session object's calendar rendering options. You must transfer these values yourself between the Session object and the appropriate properties of the rendering object you are using.

GetOption and **SetOption** return **CdoE_CALL_FAILED** if you call them while you are not logged on to the session. Following a successful logon, **GetOption** returns the option settings that were stored in the messaging user's Inbox with **SetOption**. If no options have ever been stored for the messaging user, the default settings are returned.

The "CalendarStore" option can be "Outlook" or "SchedulePlus", depending on the store underlying the messaging user's calendar folder. This option is useful if you have both types of calendar store and need to select between them. It defaults to "Outlook" if you have neither type or both types. Calendar store information is irrelevant to the container renderer, so it has no corresponding property.

The "WorkingDays" option also has no corresponding property. It is a bitmask representing the days of the week that are considered to be part of the work week. "WorkingDays" contains a logical **OR** of one or more of the constants used in the RecurrencePattern object's **DayOfWeekMask** property.

The calendar rendering options that can be selected are as follows:

***OptType* string value**	**Data type**	**Corresponding ContainerRenderer property**	**Default value**
"BusinessDayEndTime"	Variant (**vbDate** format)	**BusinessDayEndTime**	5:00 PM (17:00)
"BusinessDayStartTime"	Variant (**vbDate** format)	**BusinessDayStartTime**	9:00 AM (09:00)
"CalendarStore"	String	(none)	Current calendar

			store or "Outlook"
"FirstDayOfWeek"	Long	**FirstDayOfWeek**	7 (Sunday)
"Is24HourClock"	Boolean	**Is24HourClock**	**False**
"TimeZone"	Long	**TimeZone**	Current zone on Web server
"WorkingDays"	Long	(none)	62 (**CdoMonday | … | CdoFriday**)

Note that the "FirstDayOfWeek" option and the **FirstDayOfWeek** property are compatible with each other in using an enumeration starting with 1 for Monday and ending with 7 for Sunday, but they are not compatible with the **DayOfWeekMask** property of the RecurrencePattern object, which uses the mask constants **CdoSunday** through **CdoSaturday**. The "WorkingDays" option, however, is compatible with the mask constants.

Version Property (Session Object) Group

The **Version** property returns the version number of CDO as a string, for example “1.2”. Read-only.

Syntax

objSession.**Version**

Data Type

String

Remarks

The version number for CDO is represented by a string in the form *N.k*, where *N* represents a major version number and *k* represents a minor version number.

The version number returned in the **Version** property is not related to the version number returned in the **OperatingSystem** property.

Example

```
' see the function Session_Version
Dim objSession As Object ' or Dim objSession As MAPI.Session
Set objSession = CreateObject("MAPI.Session")
' error handling here ...
MsgBox "Welcome to CDO version " _
       & objSession.Version
```

Overview of CDO Rendering

This section is an introduction to the Microsoft® Collaboration Data Objects (CDO) Rendering Library. It describes rendering and how it is accomplished using the objects in the library. It also provides a short description of Automation and a conceptual overview of the CDO Rendering Library.

The CDO Rendering Library is associated with the CDO Library, and the two are interdependent. CDO Rendering entails displaying CDO objects and collections over the World Wide Web. For more information on CDO, see the CDO Library Overview.

The World Wide Web and HTML

The World Wide Web, or Web, is a distributed information retrieval system that employs multiple protocols on the Internet. The Web operates on a client/server model, where the client is a Web browser and the server is a Web server. When a browser requests a resource from a server, it identifies that resource by means of a formalized address known as a Uniform Resource Locator (URL). The format of a URL is:

```
protocol://server.network.domain/path/resource
```

This sample URL uses HTTP (Hypertext Transfer Protocol) to specify the SDK Start Page of the Microsoft® Developer Network Online within Microsoft's home page on the Web:

```
http://www.microsoft.com/msdn/sdk/default.htm
```

A Web server can respond to an HTTP URL with a Hypertext Markup Language (HTML) document. The hypertext in this document is interpreted by the browser to generate an interactive display on the user's screen. An HTML document is commonly stored in an .HTML or .HTM file.

A Web server can also respond to an HTTP URL with an Active Server Pages (ASP) document, which contains hypertext and ASP script, and is stored in an .ASP file. The script is processed by Microsoft® Internet Information Server (IIS), which generates normal HTML output and sends it to the browser. IIS version 3.0 or later is required for proper handling of .ASP files.

The CDO Rendering Library exposes a set of objects that can be used by IIS to render CDO objects and properties into HTML output. The CDO Rendering objects are described in the remainder of this section. The following table lists these objects in alphabetic order and gives the purpose of each one.

Object	Purpose
CalendarView	Specify tabular rendering for a calendar object.
Column	Specify rendering for one property in a table view.
Columns collection	Provide rendering for every renderable property in a table view.
ContainerRenderer	Render a container object.
Format	Specify rendering for one property.
Formats collection	Provide rendering for every renderable property of an object.
ObjectRenderer	Render selected properties of a CDO object.
Pattern	Specify rendering for certain values of a property.
Patterns collection	Provide rendering for all values of a property.
RenderingApplication	Create rendering objects.
TableView	Specify tabular rendering for a container object.
Views collection	Provide a selection of views for rendering a container object.

HTML Rendering

The purpose of CDO Rendering is to generate displayable output from CDO objects and properties. The output is sent in Hypertext Markup Language (HTML) to a Web browser and is generated from objects and properties referenced in an .ASP file invoked by the browser. This process is known as HTML rendering.

An .ASP file is a specialized HTML file containing hypertext, client-side script, and Active Server Pages (ASP) script for a Web page. The script can instantiate objects, call their methods, manipulate their properties, and produce results relating to the Web page. Client-side script is decoded and run by the browser itself. ASP script is decoded and run by Microsoft® Internet Information Server (IIS) to supply Web pages to the browser.

Both client-side and ASP script can be written in any scripting language, such as Microsoft® Visual Basic® Scripting Edition (VBScript), JScript™, or JavaScript. Script can be inserted anywhere in an HTML document, that is, anywhere between the <HTML> and </HTML> tags.

Client-side script is delineated by the <SCRIPT> and </SCRIPT> tags. The scripting language's compiler or interpreter is invoked by the browser. Client-side script typically responds to input from the browser's user. For example, it can create and send an e-mail message when the user clicks a button. For more information on client-side script, see Web Page Support.

ASP script can be delineated by either the <% and %> tags or the <SCRIPT RUNAT=SERVER> and </SCRIPT> tags. The compiler or interpreter is invoked by an IIS component before the document is sent to the browser. ASP script uses the CDO Rendering Library to perform HTML rendering. It can, for example, prepare a displayable rendition of a folder. ASP script is not sent to the browser, but instead is used to generate hypertext that is sent in its place.

ASP script can be embedded within client-side script. This is useful, for example, when an exception condition occurring at the server needs to be displayed at the browser. You can only use one level of embedding, and you must delineate your embedded ASP script with the <% and %> tags.

If the browser invokes a Uniform Resource Locator (URL) specifying an .HTM file, IIS sends the file to the browser without modification, just as any Web server does. If, however, the URL specifies an .ASP file, IIS first searches it for any ASP script. If there is none, the file is treated as a normal .HTM file and sent directly to the browser. If IIS does find ASP script, it calls the appropriate compiler or interpreter to execute the script and generate HTML hypertext. IIS then replaces the script with the hypertext and sends the result to the browser as if it were an .HTM file. Note that when ASP script is executed the server does not retain any persistent file containing the exact stream sent to the browser.

Writing a Rendering Application

To render CDO objects and properties into HTML hypertext, you instantiate a rendering object such as a ContainerRenderer or ObjectRenderer object. These are top-level objects, which can be created directly by your code without deriving them from any other object. For more information, see CDO Rendering Objects.

The recommended approach, however, is to begin by instantiating a RenderingApplication object, from which you can create a family of related rendering objects. The RenderingApplication object allows you to set options which are inherited by every rendering object you create from it. You can choose the verbosity of event logging in each of several categories using the **LoggingLevel** property, set the code page for character representation with the **CodePage** property, and prepare specific rendering information through the **Formats** property. These options act as global presettings for your entire rendering application. The individual rendering objects can change their inherited copies of the code page and the formats if appropriate.

The next step is to use the **CreateRenderer** method to instantiate a specific rendering object, such as a ContainerRenderer or ObjectRenderer object. The rendering object is used to generate HTML hypertext from a CDO object. You create a container renderer if you want to render the contents of a container object, such as an address book container or a folder. You create an object renderer if you only want to render one or more selected properties of an object, such as when a message was sent and received.

After you create the rendering object, you set its **DataSource** property to specify the object or collection you want to render. The container renderer's **DataSource** property accepts an AddressEntries, Folders, Messages, or Recipients collection. The object renderer's **DataSource** property accepts an AddressEntry, AppointmentItem, Attachment, Folder, MeetingItem, Message, or Recipient object.

Every rendering object has a child Formats collection, which is originally inherited from the parent RenderingApplication object but can be modified as needed. You can add a new Format object with the collection's **Add** method and delete a format with the Format object's **Delete** method. You should make changes to the Formats collection before setting the **DataSource** property; otherwise they are not reflected in the rendering of the new data source.

A Format object provides information for rendering one property of the object being rendered, or one property of the items in the container object being rendered. Each format controls exactly one property, and each property to be rendered must be represented by exactly one format. You specify the property in the format's **Property** property. The rendering information is contained in the format's Patterns collection, which is accessed with the format's **Patterns** property.

Each Pattern object furnishes information for rendering a particular set of values of the property. You specify the value set in the pattern's **Value** property and a rendering source for that value set in the **RenderUsing** property. The rendering source is a string containing HTML hypertext and substitution tokens. When the property's value matches a pattern's value set, that pattern's rendering source is used to render the property.

Container Object Rendering

A container object can be a CDO AddressEntries, Folders, Messages, or Recipients collection. To render any container object and its contents, you use a ContainerRenderer object.

When you render a container object you apply a view to it. After you have specified the container object in the container renderer's **DataSource** property, a Views collection is available through the container renderer's **Views** property. From this collection you select the appropriate CalendarView or TableView object and set the **CurrentView** property to that object. If you do not make a selection, the current view remains set to the default view, which is the first view in the collection unless specified otherwise by the underlying store.

A calendar view or table view is normally defined externally to your rendering application. For a folder there are three types of predefined table views: *common views*, *folder views*, and *personal views*. Common views are defined globally for all folders and all messaging users. A set of folder views can be defined for each individual folder, and a set of personal views for each individual messaging user. An address book container has only one common view predefined, and no folder or personal views. The type of a table view is available in its **Source** property.

Modifications you make to predefined views do not persist in storage, but they remain in effect for your application until you change the source of the view. Modifications to folder views last until the **DataSource** property is changed, and modifications to common and personal views last until the ContainerRenderer object is released. Simply changing the **CurrentView** property does not nullify your modifications.

In addition to the predefined views for the container object you are rendering, you can create new *custom views* with the collection's **Add** method. A custom view is nonpersistent and cannot be saved. It ceases to exist when the collection is released, for example when the **DataSource** property is changed. You cannot delete any views from the Views collection.

A CalendarView or TableView object specifies the overall rendering of a container object through its **Columns** property, which returns a child Columns collection for the table view. The order of the columns in the collection determines their display order. You can use the collection's **Add** method to add new columns, which cease to exist when the collection is released, for example when the **DataSource** property is changed. Columns cannot be deleted from their collection.

Each Column object corresponds to one property of the items in the container object being rendered. The Column object specifies the renderable property in its **Property** property and a rendering source for that property in the **RenderUsing** property. As with a pattern, the rendering source is a string containing HTML hypertext and substitution tokens. The Column object also specifies the relative width of the column in its **Width** property and control flags for the rendering in its **Flags** property.

The modifications you can make to a column consist of changing its **Flags**, **RenderUsing**, and **Width** properties. The modifications you can make to an existing calendar view or table view consist of adding and changing columns in its child Columns collection. Column modifications remain in effect until the Columns collection is released, which is usually when the **DataSource** property is changed. Calendar view and table view modifications remain in effect until the source of the view is changed, namely the **DataSource** property for custom and folder views, or the ContainerRenderer object for common and personal views.

Rendering a Table

A tabular rendering is generated by a ContainerRenderer object under control of a CalendarView or TableView object. The calendar view or table view is structured using rows and columns. Each entry in the table, at the intersection of a row and a column, is called a *cell*. A frame in the HTML output normally consists of a heading row containing heading cells, followed by one or more rows containing property cells. The heading row is usually rendered as one HTML table and the remaining rows as a separate table.

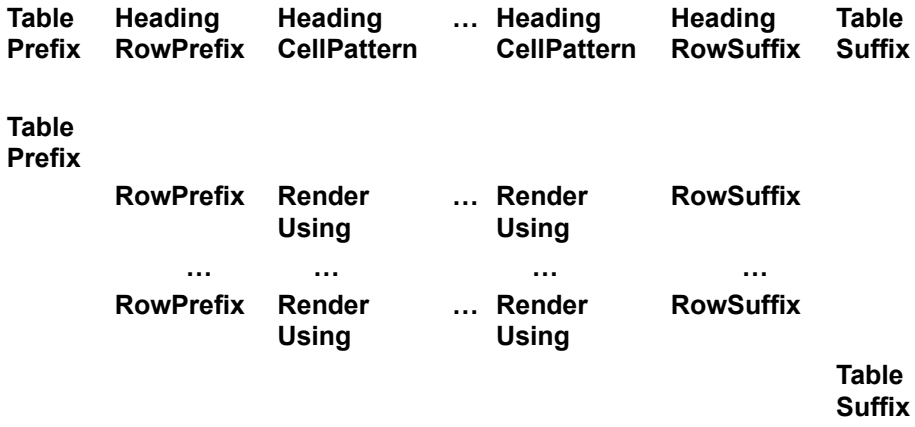
The number of rows after the heading row is determined by the container renderer's **RowsPerPage** property. The row number of each object being rendered corresponds to that object's position in the underlying table that contains it.

The overall rendering of the heading row is controlled by the **HeadingRowPrefix** and **HeadingRowSuffix** properties. Each subsequent row is rendered under control of the **RowPrefix** and **RowSuffix** properties. These prefixes and suffixes delineate the row with HTML table tags and specify rendering characteristics for the entire row, such as bold or italic, font size and color, and alignment within the cells. The table as a whole is enclosed by the **TablePrefix** and **TableSuffix** properties, which delineate the table and specify characteristics such as the table border. All the prefixes and suffixes contain rendering information but no text.

Each heading cell takes its text from the appropriate Column object's **Name** property and renders it according to the information in the container renderer's **HeadingCellPattern** property.

Each property cell in the subsequent rows takes its value directly from the property being rendered in that column. Its rendering information comes from the column's **RenderUsing** property if this has been supplied. Otherwise, if there is a Format object associated with the column property, its Pattern objects are searched for one with a **Value** property matching the column property's value. If such a pattern is found, its **RenderUsing** property supplies the rendering information. If no pattern can be found with a value match, or if no format has been defined for the column property, it is rendered by default according to its data type and value.

The following diagram shows how the CDO Rendering Library properties are used to render the table:



Rendering Object Usage

The following table summarizes the CDO Rendering objects and their principal functions, in their usual order of exploitation.

Object	Principal function
RenderingApplication	Set global rendering options and create container renderers and object renderers using the **CreateRenderer** method.
ContainerRenderer	Specify a container object in the **DataSource** property and render it using the **Render**, **RenderHeading**, **RenderPath**, and **RenderProperty** methods.
ObjectRenderer	Specify a CDO object in the **DataSource** property and render selected properties of that object using the **RenderProperty** method.
Formats collection	Provide rendering control for every renderable property of the object being rendered.
Format	Specify one property to be rendered in the **Property** property and provide rendering information in the patterns accessed with the **Patterns** property.
Patterns collection	Provide rendering information for all possible values of the property being rendered under the control of a format.
Pattern	Specify a particular value set of the property being rendered in the **Value** property and provide rendering information for that value set in the **RenderUsing** property.
Views collection	Provide a selection of views for rendering a container object, from which a container renderer can choose using its **CurrentView** property.
TableView	Provide tabular rendering information for every renderable property of a container object being rendered, which can be accessed with the **Columns** property.
CalendarView	Provide tabular rendering information for every renderable property of a calendar object being rendered, which can be accessed with the **Columns** property.
Columns collection	Provide rendering information for every column to be rendered in a table view, including the display order of the columns.
Column	Specify one property for a table view in the **Property** property and provide column rendering information for that property in the **RenderUsing** property.

All URL strings and .ASP file names must be entirely in 7-bit ASCII representation. This provides maximum code page commonality.

CDO Rendering Library Design

The CDO Rendering Library is designed for flexibility and performance. It implements HTML rendering of the CDO objects most used by client applications. The CDO Rendering Library is not designed for development of service providers.

The CDO Rendering Library is based on the capabilities provided by Automation. It allows you to create instances of programmable rendering *objects* that you can reference with automation controllers. An *automation controller* is a tool that supports Automation, such as Microsoft® Visual Basic®.

For the purposes of this document, an *object* is an Automation object: a software component that exposes its properties and methods. Such an object follows the Visual Basic programming model and lets you get properties, set properties, and call methods. Throughout this document, Visual Basic is used as a concrete example of an automation controller, but the statements about Visual Basic apply to all such tools.

CDO Rendering Objects

Objects in the CDO Rendering Library can be classified as *top-level objects*, *child objects*, and *collections*. A top-level object is one that can be created directly by your code, without having to derive it from any other object. A child object is one that must be derived from another object, for example by an **Add** method. A collection is a group of objects of the same type.

Currently, the top-level CDO Rendering objects are the RenderingApplication, ContainerRenderer, and ObjectRenderer objects. Other objects are accessible only through these top-level objects.

You can create a RenderingApplication object either through early binding:

```
Dim objRenApp As RenderingApplication
Set objRenApp = CreateObject ("AMHTML.Application")
```

or through late binding:

```
Dim objRenApp As Object
Set objRenApp = CreateObject ("AMHTML.Application")
```

and then later on use the **CreateRenderer** method to create specific rendering objects.

C/C++ programmers use globally unique identifiers (GUIDs) for these objects, defined in the type library for the CDO Rendering Library. The following table lists the GUIDs for the top-level objects accessible to C/C++ programmers. Note the close relationship; only the fourth of the 16 bytes differs among the GUIDs.

CDO Rendering Library object	GUID
RenderingApplication	{BC00F701-31AC-11D0-B5F1-00AA00BF3382}
ContainerRenderer	{BC00F703-31AC-11D0-B5F1-00AA00BF3382}
ObjectRenderer	{BC00F702-31AC-11D0-B5F1-00AA00BF3382}

All CDO Rendering Library objects can be considered as relative to a RenderingApplication object. A rendering application's immediate child objects are the ContainerRenderer object and the ObjectRenderer object. These have their own child objects, which in turn have child objects, and so on. See the Rendering Object Model diagram for the logical hierarchy of the CDO Rendering Library.

The object hierarchy is important because it determines the correct syntax to use in your Microsoft® Visual Basic® applications. In your Visual Basic code, the relationship between a parent object and a child object is denoted by the left-to-right sequence of the objects in the Visual Basic statement. For example,

```
objContRend.Formats.Item(2)
```

refers to the second Format object in the Formats collection of the current ContainerRenderer object.

CDO Rendering Collections

The CDO Rendering Library supports the following collections:

- Columns
- Formats
- Patterns
- Views

The Views collection can hold view objects of different classes. The currently supported view classes are represented by the CalendarView and TableView objects.

CDO Rendering Library collections all have a **Count** property, which always contains the current number of member objects. Every collection also has an **Item** property, which can be used to select any arbitrary member of the collection. Each object in a collection has an **Index** property, assigned by the CDO Rendering Library. The **Index** value for the first member object is 1. An object's **Index** property can be used as an attribute of the collection's **Item** property to reselect that object later.

Index properties are valid only during the current access to the collection and can change as your application adds and deletes objects. For example, in a Formats collection with three Format objects, the first format is referred to as Formats.Item(1), the second as Formats.Item(2), and the third as Formats.Item(3). If your application deletes the second format, the third format becomes the second and Formats.Item(3) has the value **Nothing**. The **Count** property is always equal to the highest **Index** currently in the collection. Note that the **Count** is refreshed when you repopulate the collection.

The collections in the CDO Rendering Library are specifically designed for messaging and rendering applications. The definition of collections in this document may differ slightly from other definitions in the OLE programming documentation. Where there are differences, the description of the operation of the CDO Rendering Library supersedes the other documentation.

Rendering Messaging Objects and Collections

Messaging objects and object collections are rendered in order to assemble HTML pages. This is done when server-side Active Server Pages scripts generate HTML into the current HTTP output using the Active Server Pages Response object.

The properties of collections of objects are rendered differently than are properties of individual objects. The following sections illustrate typical steps you would take in each case and the various rendering options available.

Rendering Individual Object Properties

The ObjectRenderer object is used to render one or more properties, rather than an entire object. The following procedure shows the steps you would take to render a property on an object.

Group

To render an object property

1. Open the MAPI object, such as a message or a user's Inbox. For example, to open the Inbox belonging to logged-in user, use objSession.Inbox.
2. If it does not already exist, create the ObjectRenderer object with a call such as objRenderApp.CreateRenderer (class). For more information, see About Renderer Objects.
3. Set the **DataSource** property to the object that contains properties to be rendered with a command such as Set objObjectRenderer.DataSource = objMessage. For more information, see Setting the Data Source.
4. Optionally, depending on the property type of the property to be rendered, set Formats.
5. Render the property. This call specifies what property of the object to render. For example, to render the subject of the message, you would have set the data source to be the message, and call the **RenderProperty** method to render the subject, specifying the MAPI property. You have the choice of rendering either directly to the screen or to a string.

Rendering Collections

The ContainerRenderer object is used to render one or more properties from a collection of MAPI objects, as shown in the following procedure.

Group

To render a collection

1. Open the collection within the MAPI object, such as the Inbox.Messages collection or the Inbox.Folders collection. For example, to open the Messages collection of the logged-in user's Inbox, use objSession.Inbox.Messages.
2. If it does not already exist, create the ContainerRenderer object with a call such as objRenderApp.CreateRenderer Method (class). For more information, see About Renderer Objects.
3. Set the DataSource to the collection to be rendered with a command such as Set objCR.DataSource = Inbox. For more information, see Setting the Data Source.
4. Optionally, to create active links, set the **LinkPattern** property. For more information, see Named Formats.
5. Add any additional Formats needed to render your collection. For example, to render the contents table of an Inbox, you will probably need to include formats for the MAPI properties PR_IMPORTANCE, PR_MESSAGE_CLASS, and PR_HASATTACH.
6. Render the object. For collections, you will generally render directly to the screen.

Creating the RenderingApplication Object

You can usually assume that a RenderingApplication object will at some point be useful for your application. Only rarely would it not; for example, you may want to view mail but your application does not deal exclusively with viewing mail; in this case you can create an ObjectRenderer or ContainerRenderer object when needed, using the Server.CreateObject method instead of using the RenderingApplication object. See About Standalone Renderer Objects.

But even in those rare cases, you may still choose to start by creating a RenderingApplication object. This is because it is faster to create child rendering objects from a RenderingApplication object than by using the Server.CreateObject method.

Therefore, because the **Application_OnStart** procedure in the global.asa file is automatically called by IIS, it is efficient to create the RenderingApplication object by placing the following call in that procedure.

```
CreateObject ("AMHTML.RenderingApp "virtroot" "classpath" ")
```

This call creates two other objects as well, the virtroot and classpath format objects. There is only one RenderingApplication object per virtual root, and therefore only one per application.

Extending the Scope of the RenderingApplication Object

When you create the RenderingApplication object with the Server.CreateObject method in **Application_OnStart**, you assign it to a local variable, which limits its lifetime to that of the **Application_OnStart** function.

Because of this limitation, it is a good idea to store the RenderingApplication object in the Active Server Pages Application object. The Active Server Pages application is global, so storing the RenderingApplication object expands its scope to let it be accessed by other scripts, and extends its lifetime to that of the application. To do this, apply a name to the RenderingApplication object and save it into a table for later reference, using a call like the following:

```
Set Application("RenderingApplication") = objRenderApp
```

You can release the RenderingApplication object by setting its value in the Active Server Pages Application object to Nothing:

```
Set Application("RenderingApplication") = Nothing
```

Configuring the RenderingApplication Object

After creating the RenderingApplication object, you need to configure it by setting its properties. Properties are set using information from these sources:

- Microsoft® Windows NT® registry entries
- Microsoft Exchange directory store

You can configure the RenderingApplication object by calling the **LoadConfiguration** method on the RenderingApplication object. Calling **LoadConfiguration** retrieves information about the Microsoft Exchange Server from the registry and writes it to a table in the RenderingApplication object. In this call, set the *source* parameter to 1 (AMHTML_Config_Registry) to load information from the key associated with the service.

For the Microsoft Exchange Web client, this key is:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSExchangeWeb\Parameters
```

This registry information was originally entered by the administrator who set up the Microsoft Exchange Web client during the installation of Microsoft Exchange Server.

In a separate call, set the *source* parameter to 2 (AMHTML_Config_DS) to load information from the Microsoft Exchange directory service, such as whether HTTP is enabled and what public folders have been published. This call can be found in the **Session_OnStart** function in global.asa:

```
objRenderApp.LoadConfiguration 2, ""
```

Retrieving Configuration Information

Everything that you store using **LoadConfiguration** can later be retrieved through the **ConfigParameter** property of the RenderingApplication object because all this information, whether originally from the registry or from the Microsoft Exchange directory service, is mapped into the same table. You use **ConfigParameter** by passing a single parameter, called *parameter*, to specify the configuration value you want to retrieve. For example,

```
objRendApp.ConfigParameter("Published Public Folders")
```

returns the published public folder shortcuts. Because this information is stored in the registry by name, you can store additional application-specific information in the registry key (with **LoadConfiguration**) and retrieve it later when you need it, using the RenderingApplication object. For example, the following call retrieves the value for the Microsoft Exchange Server saved previously in a registry entry called Server:

```
bstrExchServer = objRenderApp.ConfigParameter("Server")
```

Setting virtroot and classpath

When the RenderingApplication object is created, it contains a Formats collection object as well as two named formats: the virtroot object and the classpath object. To configure these objects, you set the **VirtualRoot** property (to set the virtroot format) and **FormsRoot** property (to set the classpath format) as a part of RenderingApplication object configuration. It is good to make these settings right after the first **LoadConfiguration** command.

As formats in the formats collection of the RenderingApplication object, the virtroot object and the classpath object are global to the application.

The virtroot Format Object

The virtroot format functions like a symbol in a table in that it lets you provide a link that will resolve to the correct location of the current Web application. You can use virtroot as the substitution token %virtroot% in substitution patterns. For more information, see VirtualRoot Property (RenderingApplication Object).

In the Microsoft Exchange Web client, the **VirtualRoot** property is set during configuration of the RenderingApplication object, in the **Application_OnStart** procedure in global.asa:

```
bstrVirtRoot = "/exchange"
objRenderApp.VirtualRoot = bstrVirtRoot
```

The classpath Format Object

The classpath format is used to create links to forms. If you use the classpath format without having set the **FormsRoot** property of the RenderingApplication object, classpath functions as a substitution token, returning the message class of the current object.

The classpath format object obtains a new value when you set the **FormsRoot** property. In the Microsoft Exchange Web client, this property is set during configuration of the RenderingApplication object, in the **Application_OnStart** procedure in global.asa:

```
bstrVirtRoot = "/exchange"
objRenderApp.FormsRoot = Server.MapPath(bstrVirtRoot) & "\usa\forms"
```

In this example, the Server.MapPath method expands the string bstrVirtRoot to the virtual root of /exchange, namely c:\exchsrvr\webdata. This **FormsRoot** call also performs the following actions:

- The objRenderApp.FormsRoot property is set to a value such as c:\exchsrvr\webdata\usa\forms.
- The directory tree starting with the specified physical directory (…\usa\forms) is searched for installed forms—that is, directories containing ASP Files.
- A pattern for each form found in this directory tree is added to the classpath format object.

Optionally, to store information about additional forms directories, you can add more patterns to the classpath format object. Because the classpath contains only the beginning of the path to the forms directories, it is best to place all forms under the same virtual root, such as /exchange.

For more information, see RenderUsing Property (Column Object) and FormsRoot Property (RenderingApplication Object).

About Renderer Objects

There are two kinds of renderer objects (or "renderers"): the ObjectRenderer object and the ContainerRenderer object. Using them in conjunction with Format objects provides the flexibility of displaying information in an interpreted manner.

The rendering of each property of an object is controlled by the various formats contained in the renderer object. By creating a renderer in advance and presetting its properties, you can prepare for rendering an object that later will become or may become the data source. For more information, see When to Create Renderer Objects.

In general, after creating the renderer and setting its formats and data source, you call the **Render** method. When you call the rendering object's **Render** method, it generates HTML in a stream that makes up a page about to be sent to the browser.

When to Create Renderer Objects

Because renderer objects can be stored, you can choose the best time to create them:

- Create the renderer object when needed and discard it afterward.
- Create it beforehand and store it until needed—perhaps reusing it several times.

In fact, it is usually most efficient to create a renderer object before opening the object that it will render. The Microsoft Exchange Web client, for example, creates rendering objects for mailboxes before needing them and stores them in the Active Server Pages Session object. The Web client uses only two rendering objects: one ObjectRenderer and one ContainerRenderer. This means that all its rendering is done through calls to methods on one of these two objects.

Renderer objects were designed to be reused. Stored renderers retain the property values they held for previously rendered objects until these properties are given new values.

Note Do not confuse the **RenderProperty** method of the ContainerRenderer object with that object's **Render** method. The **Render** method renders rows of a folder or address book collection. The **RenderProperty** method renders the designated property of the parent of the object specified by the **DataSource** property. It renders the property in place, either to the Active Server Pages Response object or to a bstr string which will then be displayed. Note that bstr (strHTML) is a Pascal-like string construct used by Microsoft® Visual Basic®; it is a NULL-terminated, Unicode, wide-character string used by **IDispatch**.

About Standalone Renderer Objects

The ContainerRenderer and ObjectRenderer objects are known as top-level objects because they can be created directly by your code, without having to be derived from another object. When created directly, such an object is known as a standalone renderer object because it has no parent link—a pointer to the object it was created by or added to.

Because a standalone renderer has no parent link to the RenderingApplication object, it does not have the support methods of the RenderingApplication object. Nor is there a global format collection, so the virtroot and classpath objects would not exist.

To create a ContainerRenderer or ObjectRenderer standalone object, use the Active Server Pages syntax Server.CreateObject, naming the object AMHTML.ContainerRenderer or AMHTML.ObjectRenderer.

In general, standalone renderer objects are best used for single operations, such as rendering certain properties of the current object. When you use standalone renderer objects, you generally do not intend to read more data from the object or access it in other ways.

Renderers need not be standalone. That is, you can choose to derive objects of these types from a RenderingApplication object, as shown in the following section.

Web Client Example: Creating Renderer Objects

In the Microsoft Exchange Web client, when a ContainerRenderer or ObjectRenderer object is required—for example, to render the Web user's Inbox—and is not found in the Active Server Pages Session object, it is created using the existing RenderingApplication object with a call such as:

```
objRenderApp.CreateRenderer ( class )
```

where *class* is the CDO Rendering class enumeration, in this case AMHTML_Class_ObjectRenderer.

Using CheckSession

The **CheckSession** function is a Web client library function that can be called to determine whether the Active Server Pages session is still valid.

If a Web user times out and then tries to refresh the current page, **CheckSession** determines that the user has indeed timed out—because the Active Server Pages Session object no longer exists. It then requests that the user log in again, providing a dialog box for that purpose (in the Web client, it redirects them to logon.asp). When the Web user logs in again, new MAPI and Active Server Pages sessions are started.

If the Web user logged in anonymously, has timed out, and now refreshes a page, **CheckSession** logs the person in transparently—that is, without requiring user information. This will also be an anonymous login.

It is good to use **CheckSession** on every script page.

Setting the Data Source

To display text or images to represent data in Microsoft® Exchange information stores, you render the MAPI properties that hold that data. Using CDO, you can render properties on individual MAPI objects or properties on entire collections of objects. To determine what is rendered, set the **DataSource** property on the renderer object.

About Collections and Individual Objects

You must set the correct kind of data source—an object or a collection—when rendering an individual object or a collection.

To render a collection, use a ContainerRenderer object. A valid data source for a ContainerRenderer would be a Folders collection or a Messages collection. Collection objects can be CDO AddressEntries, Folders, Messages, or Recipients collections.

In contrast, the ObjectRenderer object renders properties on a single MAPI object. It can take any of the following objects as a valid **DataSource**: AddressEntry, Attachment, Folder, InfoStore, Message, and Session.

Because of similarly named objects, take care when setting the **DataSource**. You can pass a folder object as the **DataSource** on the ObjectRenderer object but if you pass it as the **DataSource** on a ContainerRenderer object, the call will fail. However, you can pass either Folder.Folders or Folder.Messages to the ContainerRenderer object because they are collection objects.

Valid Data Sources

Only the following objects can be used as data sources in CDO rendering:

- An individual object (used with an ObjectRenderer object) that has the **MAPIOBJECT** property.
- A collection object (used with a ContainerRenderer object) that has the **RawTable** property.

For example, the InfoStores collection object cannot be used as a data source because it has neither a **MAPIOBJECT** property nor a **RawTable** property. But an InfoStore object (a child object of the InfoStores collection), can be used as a data source for an ObjectRenderer object because it does have a **MAPIOBJECT** property.

The **MAPIOBJECT** property returns an **IUnknown** pointer to the underlying MAPI (COM) object. The **RawTable** property returns a pointer to the IMAPITable object.

Web Client Example: Setting a Data Source

In the Microsoft Exchange Web client, the data source is set after the creation of the object that will render the data. For example, a ContainerRenderer object is created and saved first (see When to Create Renderer Objects). Then, as the Web user navigates through the folder hierarchy, Web client script sets the **DataSource** property.

For example, the following line sets a MAPI folder as a data source. This is valid because the Folder object contains a **MAPIOBJECT** property.

```
Set objObjectRenderer.DataSource = objFolder
```

In this call, objObjectRenderer is the CDO Rendering object and objFolder is the MAPI folder object obtained through CDO calls. This call adds a reference to the MAPI object (in a manner similar to an **AddRef** call) while setting it as the current **DataSource**.

Using Views

A view is a collection of columns. To render a collection, you apply a view to it, which defines which properties of the collection object are rendered as columns on your Web page. After you have specified the collection in the **DataSource** property of the ContainerRenderer object, a views collection becomes available through the **Views** property of the ContainerRenderer. For more information, see Container Object Rendering.

The following diagram shows how the view and other objects relate in the rendering of collections. A view contains a set of columns to be rendered, each of which represents an object's property. Each column can render a property according to a specific format, which in turn consists of patterns. And patterns map to the various values that a messaging object's property can have.

Object Relationships for Collection Rendering

The column object controls rendering of the property in one of these ways:

1. A named format is referenced in the RenderUsing string of the column.
2. A property-only format is defined, and its **Property** property corresponds to the **Property** property of the column object.
3. No format is defined, and the property is rendered by type, as described in the table Default Output Styles of Supported Property Types in the section About Patterns.

For more information, see About Format Objects and Using Named Properties.

About Format Objects

The format object of the CDO Rendering Library contains specific information that controls how a messaging property of any type is to be rendered. In other words, format objects provide a way to interpret information as you render it.

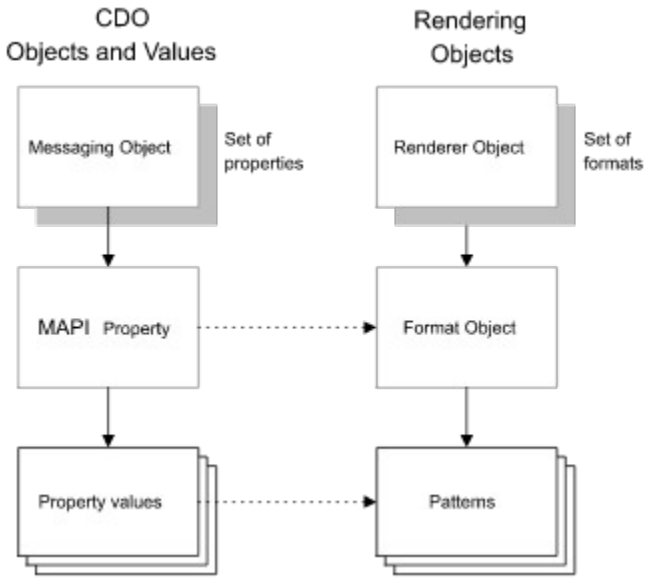
There is a 1:1 relationship between format object and property to be rendered; each format controls exactly one property, and each property to be rendered must be represented by exactly one format. Rendering information is contained in the format's Patterns collection, which is accessed with the format's **Patterns** property.

You need not always render properties using formats. If you used a ContainerRenderer object without adding formats, it would render MAPI data according to certain default rules. For example, it would convert number values into strings and it would convert multivalued string Unicode arrays into a single line of semicolon-separated text. It would also use its own rules for rendering date and time values. Using a format object lets you make exceptions to these default rules by having the renderer display each property value exactly as you want.

There are two mutually exclusive types of formats, whose uses are explained in Property-Only Formats and Named Formats.

The following diagram shows how formats and other objects relate in the rendering of object properties. A format contains a set of patterns, each of which tells exactly how to render a specific property value of the MAPI property being rendered.

Object Relationships for Property Rendering



Example: Results of Using Formats

The following table shows the results of using formats for rendering a typical set of message properties. These seven properties constitute what is commonly known as the Normal view (of a message collection). If you do not set formats, the properties are rendered as shown in the second column, but if you do set formats, you will see the values or images in the third column.

Effect of Using Formats to Render Properties

MAPI property	Without a format	With a format
PR_IMPORTANCE	0, 1, or 2 (long integer)	image ( , nothing, or)
PR_MSG_CLASS	IPM.Note	image ( , or other item specific to the message class)
PR_HASATTACH	0 (or 1)	image ()
PR_SENT_REPRESENTING	(sender, as a string)	(sender, as a string)
PR_SUBJECT	(subject, as a string)	(subject, as a string)
PR_RECEIVED	(date received, in SYSTIME format)	(date received, as a string)
PR_SIZE	1024 (long integer value, in bytes)	1 KB (converted to kilobytes)

In the preceding table, the MAPI PR_HASATTACH property, which contains a 1 or a 0, indicates whether an item has an attachment or not. The meaning of this property is better conveyed with text ("Has an Attachment") or a GIF image of a paper clip, which you can display using an HTML image tag. In this example the image is a pattern that matches the value of 1 for the PR_HASATTACH property.

Property-Only Formats

A property-only format is distinguished by having an empty name property.

The only use of a property-only format is to render the columns of a view. Each column's value is rendered according to the patterns of the format object whose **Property** property has been set to the **Property** property of the column object. This is the most common way of linking a format to a column in a view. For more information, see Using Views.

Using Named Properties

User-defined named properties may also be specified in place of a predefined property value for the **Property** property of a format or column object.

You can identify the property with either a string name (such as "NAMED_PROP") or a numeric identifier (such as 0x7E00). If you use a string name, you may omit the GUID of the property set, and the default value is PS_PUBLIC_STRINGS. If you use the numeric identifier, the GUID of the property set is required.

The correct format of the property set GUID is an undelimited byte string, the same format as required by the CDO Fields.Item property.

The following example adds a format for a user-defined property, using the string name for the property.

```
' Use GUID of property set (excluding delimeters) and string
const AmPidTag_Location = "{EE0392EFA5B91B10ACC100AA00423326} NAMED_PROP"
Set objFormat = objRenderer.Formats.Add(AmPidTag_Location, Null)
```

The following example adds a format for a user-defined property, using the identifier of the property.

```
' Use GUID of property set (excluding delimeters) and numeric ID
const AmPidTag_Location = "{EE0392EFA5B91B10ACC100AA00423326} 0x7E00"
Set objFormat = objRenderer.Formats.Add(AmPidTag_Location, Null)
```

For information on property sets and GUIDs, see the *MAPI Programmer's Reference*.

Named Formats

Named formats are objects that can be created by the user or defined by the CDO Rendering Library. Like property-only formats, these objects can contain any number of patterns which in turn contain values and RenderUsing pattern strings. They do not require a specific property value.

Once defined, the named format may be used like any other substitution token in a pattern string by placing the name between percent (%) symbols. This makes complex layering possible. You cannot do this with property-only formats.

For instance, setting RenderingApplication.VirtualRoot creates the virtroot named format, which contains a single "*" pattern containing the IIS virtual-root setting. The string %virtroot% in a pattern string will be replaced by the value set in RenderingApplication.VirtualRoot.

In this way, named format objects may be used as a table of symbols, containing replacement strings that can be referenced by name. A few reserved named formats contain formatting instructions for specific operations performed by the CDO Rendering Library rendering objects. These reserved names are listed in the following table.

Reserved Named Formats and Usage

Named format	Used by	Function
virtroot	RenderingApplication object	IIS virtual root containing web application.
classpath	RenderingApplication object	Message class to directory mapping for forms, for instance "Ipm/Note/" for the IPM.Note class.
message_Link	ObjectRenderer object	Pattern used by the RenderLink Method (ObjectRenderer Object).
message_Link	ContainerRenderer object	Pattern used as link for objects in a table (messages or address entries). Automatically selects appropriate column based on table cell value.
folderhierarchy_Parent	ContainerRenderer object	Pattern used to render the link to the parent of the current folder when rendering a folder hierarchy.
folderhierarchy_Icon	ContainerRenderer object	Patterns for icons used when rendering subfolders, and special folders, in the folder hierarchy.
folderhierarchy_Link	ContainerRenderer object	Pattern used to render active links to subfolders.

Important In order to render a hierarchy, the named formats folderhierarchy_Parent, folderhierarchy_Icon, and folderhierarchy_Link must be defined. To know what patterns to add, see the examples in the tables in Suggested Formats and Patterns.

Formats Collection Objects

Three objects contain Formats collection objects: ContainerRenderer, ObjectRenderer, and RenderingApplication. The Formats collection object of the RenderingApplication object is used as a global formats collection. This means that if certain formats will always be used, you can store them in the RenderingApplication object and they will exist for all objects that you may render. This added scope is the reason virtroot and classpath exist in the RenderingApplication object and not in the individual renderers. See Setting virtroot and classpath.

A Formats collection object can contain zero or more format objects.

If a named format in the ObjectRenderer object or the ContainerRenderer object duplicates a named format in the RenderingApplication object, the format in the ObjectRenderer or ContainerRenderer will be used.

About Patterns

A pattern object is an object specifying rendering information for a particular set of values of a property on the object being rendered. Each format contains zero or more pattern objects, and each pattern is associated with a specific MAPI property value being rendered.

Pattern objects control the output of the associated MAPI property values by substituting the designated RenderUsing string if a match is found. The Pattern.Value property accepts any VARIANT type, but it is normally set to a string value. If the MAPI property value being matched contains a nonstring type, the Pattern.Value VARIANT is coerced to that type and a test for equality is performed.

The supported nonstring property types are PT_BOOLEAN, PT_I2, PT_LONG, and PT_BINARY. If the MAPI property is PT_UNICODE, it is matched against the BSTR equivalent of the pattern's value VARIANT using the WILDMAT matching standard, described in the section Pattern Matching. If no match is found, or if no patterns are defined for the format, the property is rendered by type, as illustrated in the following table.

Default Output Styles of Supported Property Types

Property type	Rendered value
PT_UNICODE	String is rendered verbatim.
PT_MV_UNICODE	Renders all strings separated by a semicolon (;) and a space.
PT_SYSTIME	Shortened date format followed by time without seconds (localized by LCID).
PT_R4	Rendered as a stringized float value (localized by LCID).
PT_DOUBLE	Rendered as a stringized double value (localized by LCID).
PT_BOOLEAN	Renders 1 for True, 0 for False.
PT_LONG	Rendered as a stringized long integer value.
PT_I2	
PT_ERROR	Ignored if error is MAPI_E_NOT_FOUND, otherwise assumed to be a PT_OBJECT type, which is retrieved with **OpenProperty**. Rendered as UNICODE string or a hexized binary string, depending on object type.
PT_NULL	No output.

The exceptions to this default property-type handling are listed in the following table.

Rendering Support for Special Properties

Property	Rendered value
PR_ENTRYID	Hexized binary string.
PR_LONGTERM_ENTRYID_FROM_TABLE	
PR_BODY	Invokes RTF2HTML conversion engine.
PR_RTF_COMPRESSED	
PR_ATTACH_DATA_BIN	Sends MIME data to output stream, or creates a link to public folder object. Currently only supports ATTACH_BY_VALUE attachment method.

All other property types are not supported.

Pattern Matching

CDO Rendering library Pattern objects support the WILDMAT syntax of pattern matching. The WILDMAT format was developed to provide a uniform mechanism for matching patterns in the same manner that the UNIX shell matches file names. WILDMAT works as follows:

There are five pattern-matching operations other than a strict one-to-one match between the pattern and the source that must be checked for a match. The first is an asterisk (*) to match any sequence of zero or more characters. The second is a question mark (?) to match any single character.

The third operation specifies a specific set of characters. The set is specified as a list of characters, or as a range of characters where the beginning and end of the range are separated by a minus (or hyphen) character, or as any combination of lists and ranges. The hyphen can also be included in the range as a character it if is at the beginning or end of the range. This set is enclosed in square brackets. The close square bracket (]) may be used in a range if it is the first character in the set.

The fourth operation allows you to exclude characters from the set and is specified by adding a caret character (^) at the beginning of the test string just inside the open square bracket. The final operation uses the backslash character to invalidate the special meaning of an open square bracket ([), the asterisk, or the question mark.

Except for characters in a specified range, all patterns in the CDO Rendering library are matched in a case-insensitive fashion. Example patterns are listed in the following table.

Examples of Valid WILDMAT Patterns

Pattern	Matches
a??d	Any four character string which begins with 'a' (or 'A') and ends with 'd' (or 'D').
*bdc	Any string that ends with the string "bdc" (any combination of case, without quotes).
[0-9a-zA-Z]	Any alphanumeric character (in English).
[^]-]	Any character other than a close square bracket or a minus sign/dash.

Link Patterns

A link pattern specifies the HTML that wraps text being rendered, which creates a hyperlink. The link pattern could, for example, be in the HTML "HREF" syntax, in order to create a link. Link patterns are most important when rendering an active table of messages or an active hierarchy of folders, to give each message or folder a hot link the Web user can click to obtain more detail, or to read or compose a message.

You should set up link patterns when you create rendering objects, and they will be used throughout the application.

Setting the **LinkPattern** property changes the "message_Link" named format. This format is created with a default value of %value%, which means that initially, it produces no links. Setting **LinkPattern** provides active hyperlinks that specify the location of a form or the links from a message or folder to the next message or folder. The message_link named format should be changed only by setting the **LinkPattern** property.

For example, the following link pattern specifies the HTML that wraps the contents of a table cell (indicated by %value%) when the objContainerRenderer.Render method is called:

```
objContainerRenderer.LinkPattern = "<A HREF='details.asp?obj=%obj%'>%value%</A>"
```

Another type of link pattern is the "folderhierarchy_Link" format. For more information, see the tables in the section Suggested Formats and Patterns.

RenderUsing Strings

Pattern.RenderUsing strings allow you to specify replacement tokens inside percent symbols (%) to indicate which values should be substituted when the string is constructed. In addition to formatting and rendering the current property value, other information about the MAPI object can be rendered as part of the pattern string.

There are only a few substitution tokens that have special meaning in CDO Rendering. They are listed in the following table.

CDO Rendering Substitution Tokens

Token	Rendered value
%kvalue%	For numeric properties, the value/1024. Does not include 'KB' symbol.
%rowid%	Index of row in the rendered table. Ranges from 0 to RowsPerPage - 1.
%obj%	PR_ENTRYID or PR_LONGTERM_ENTRYID_FROM_TABLE of object.
%parentobj%	PR_PARENT_ENTRYID of the object.
%value%	The value of the property being rendered, based on usage of Format object.

In the previous table, output is fixed for all but the %value% token. In other words, the output is directly related to the underlying MAPI object set as the **DataSource**. For %value%, however, the rendering output changes based on property type and the semantics of the format object containing the pattern string.

For instance, when %value% appears in the ContainerRenderer.LinkPattern string, it is replaced with the entire contents of the table cell before the link.

Creating Rendering Objects, Formats, and Patterns

The following code shows how to create an ObjectRenderer object for a message. It also adds the following:

- One property-only format object to be used by the column object to render the MAPI property PR_IMPORTANCE. The RenderUsing string contains a reference to a named format that will be used to display language-specific strings.
- The named format object referenced in the RenderUsing string.
- A pattern for each possible value of PR_IMPORTANCE.
- A LinkPattern string to enable the use of the RenderLink Method (ObjectRenderer Object), which renders a link to the DataSource object.

```
' Assume Rendering application is stored in
' Active Server Pages Application object
Set objRenderApp = Application ("RenderingApp")

' Create a renderer object using class object renderer
Set objRenderer = objRenderApp.CreateRenderer (AMHTML_Class_ObjectRenderer)
If (Not objRenderer Is Nothing) Then

    ' Add a property-only Format object (for PR_IMPORTANCE)
    ' (The named format will contain language specific strings.)
    Set objFormat = objRenderer.Formats.Add(CdoPR_IMPORTANCE, Null)
    objFormat.Patterns.Add "*", "%langImportance%"

    ' Add a named Format object to the renderer object
    Set objFormat = objRenderer.Formats.Add(0, "langImportance")

    ' Add patterns to Format object (possible property
    ' values and corresponding RenderUsing strings)
    objFormat.Patterns.Add 0, "Low"
    objFormat.Patterns.Add 1, "Normal"
    objFormat.Patterns.Add 2, "High"

    ' Add LinkPattern string (creates "message_Link" named format)
    objRenderer.LinkPattern = "%virtroot%/forms/%classpath%frmroot.asp?obj=%obj
%&command=open"

    ' Store new renderer object in Session for later use
    Set Session("ObjectRenderer") = objRenderer
End If
```

Suggested Formats and Patterns

The following tables suggest formats and patterns you can add and use to render a variety of messaging objects. In each table, the first column lists a property-only format or a named format. When the format in the first column contains the value in the second column, it is rendered using the string or image in the third column.

Formats for RenderingApplication Object

Properties on Format Object	Properties on Pattern Object	
Name or property	**Value**	**RenderUsing**
"virtroot"	"*"	/exchange
"classpath"	"*"	IPM/Note/ and other patterns, as set by FormsRoot

Formats for ObjectRenderer (DataSource = Message object)

Properties on Format Object	Properties on Pattern Object	
Name or property	**Value**	**RenderUsing**
PR_IMPORTANCE	0	"Low"
	1	"Normal"
	2	"High"
"message_Link"	"*"	%virtroot%/Forms/%classpath%read.asp?obj=%obj%

In the preceding table, it is assumed that a read.asp file (which displays the message identified by the URL parameter obj) exists in the directory indicated by classpath.

Formats for ContainerRenderer (DataSource = Messages Collection)

Properties on Format Object	Properties on Pattern Object	
Name or property	**Value**	**RenderUsing**
PR_IMPORTANCE	0	<IMG SRC='low.gif' ALIGN=CENTER ALT="Low" BORDER=0>
	1	Empty
	2	<IMG SRC='urgent.gif' ALIGN=CENTER ALT="High" BORDER=0>
PR_MESSAGE_CLASS	"*"	<IMG SRC='envelope.gif' ALT='%value%' ALIGN=CENTER BORDER=0>‘envelope.gif’.
PR_HASATTACH	0	Empty
	1	<IMG SRC='papclip.gif' ALIGN=CENTER BORDER=0>
PR_MESSAGE_SIZE	"*"	%kvalue%KB
"message_Link"	"*"	%virtroot%/Forms/%classpath%read.asp?obj=%obj%

In the preceding table, it is assumed that a read.asp file (which displays the message identified by the URL parameter obj) exists in the directory indicated by classpath.

Formats for ContainerRenderer (DataSource = Folders Collection)

Properties on Format Object	Properties on Pattern Object

Name or property	Value	RenderUsing
PR_DISPLAY_NAME	InfoStore.RootFolder.Name	InfoStore.Name
"folderhierarchy_Parent"	"*"	<TD BGCOLOR=CCCC99 COLSPAN=2> </TD>
"folderhierarchy_Icon"	"*"	<IMG SRC='folder.gif' ALIGN=CENTER BORDER=0>
"folderhierarchy_Link"	"*"	<A HREF="folders.asp?obj=%obj%"> %value%</A>

In the preceding table, it is assumed that a folder.asp file (which displays the folder hierarchy using the URL parameter obj as the root folder) exists in the current directory.

Formats for ContainerRenderer (DataSource = AddressEntries Collection)

Properties on Format Object	Properties on Pattern Object	
Name or property	**Value**	**RenderUsing**
PR_DISPLAY_NAME	InfoStore.RootFolder.Name	InfoStore.Name
"folderhierarchy_Parent"	"*"	<TD BGCOLOR=CCCC99 COLSPAN=2> </TD>
"folderhierarchy_Icon"	"*"	<IMG SRC='folder.gif' ALIGN=CENTER BORDER=0>
"folderhierarchy_Link"	"*"	<A HREF="address.asp?obj=%obj%"> %value%</A>

In the preceding table, it is assumed that a address.asp file (which displays the messaging user identified by the URL parameter obj) exists in the current directory.

Rendering Objects

This reference contains property and method information for the Microsoft® Collaboration Data Objects (CDO) Rendering Library objects.

The following table summarizes each object's properties and methods.

Object	Available in version	Properties	Methods
CalendarView	1.2	BusyCell, BusyIndicator, Categories, Class, Columns, FreeBusinessCell, FreeIndicator, FreeNonBusinessCell, Index, Interval, Mode, Name, NumberOfUnits, OOFIndicator, Parent, Source, TentativeIndicator	IsSameAs, RenderAppointments, RenderDateNavigator, RenderEvents
Column	1.1	Class, Flags, Index, Name, Parent, Property, RenderUsing, Width	(none)
Columns collection	1.1	Class, Count, Item, Parent	Add
ContainerRenderer	1.1	BusinessDayEndTime, BusinessDayStartTime, CellPattern, Class, CodePage, CurrentStore, CurrentView, DataSource, FirstDayOfWeek, Formats, HeadingCellPattern, HeadingRowPrefix, HeadingRowSuffix, Is24HourClock, LCID, LinkPattern, Parent, PrivateStore, RowsPerPage, RowPrefix, RowSuffix,	Render, RenderDate, RenderHeading, RenderPath, RenderProperty, RenderTime

		TablePrefix, TableSuffix, TimeZone, Views	
Format	1.1	Class, Name, Parent, Patterns, Property	Delete
Formats collection	1.1	Class, Count, Item, Parent	Add
ObjectRenderer	1.1	Class, CodePage, DataSource, Formats, LCID, LinkPattern, Parent	RenderDate, RenderLink, RenderProperty, RenderTime
Pattern	1.1	Class, Parent, RenderUsing, Value	Delete
Patterns collection	1.1	Class, Count, Item, Parent	Add
RenderingApplication	1.1	Class, CodePage, ConfigParameter, Formats, FormsRoot, ImpID, LCID, LoggingLevel, Name, Parent, SecurityID, Version, VirtualRoot	CreateRenderer, Impersonate, LoadConfiguration
TableView	1.1	Categories, Class, Columns, Index, Name, Parent, Source	IsSameAs
Views collection	1.1	Class, Count, Item, Parent	Add

This reference is organized by object. For each object there is a summary topic, followed by reference documentation for each property or method that belongs to the object. The properties and methods are organized alphabetically.

Each property or method topic in the reference displays a **Group** button following the topic title. Clicking this button displays the summary topic for the object to which the property or method belongs. The summary topic includes tables of the object's properties and methods.

To avoid duplication, the section Properties Common to All CDO Rendering Library Objects describes the properties that have the same meaning for all CDO Rendering Library objects. These are:

- **Class**
- **Parent**

Rendering Object Model

The object model for the CDO Rendering Library is hierarchical. The following table shows the containment hierarchy. Each indented object is a child of the object under which it is indented. An object is the parent of every object at the next level of indentation under it. For example, a Formats collection and a Views collection are both child objects of a ContainerRenderer object, and a RenderingApplication object is a parent object of a ContainerRenderer object. However, a RenderingApplication object is not a parent object of a Views collection.

RenderingApplication
- ContainerRenderer
  - Formats collection
    - Format
      - Patterns collection
        - Pattern
  - Views collection
    - CalendarView
    - TableView
      - Columns collection
        - Column
- Formats collection
  - Format
- ObjectRenderer
  - Formats collection
    - Format
      - Patterns collection
        - Pattern

Properties Common to All CDO Rendering Library Objects

All CDO Rendering Library objects expose the **Class** and **Parent** properties. The **Parent** property indicates the immediate parent of the object, and the **Class** property is an integer value that identifies the CDO Rendering Library object.

Both of these common properties have read-only access in all objects. The RenderingApplication object represents the highest level in the CDO Rendering Library object hierarchy and has no parent.

To reduce duplication, the detailed reference for these properties appears only once, in this section. The following table lists the properties that are common to all CDO Rendering Library objects and that have the same meaning for all objects.

Properties

Name	Type	Access
Class	Long	Read-only
Parent	Object	Read-only

Class Property (All CDO Rendering Library Objects)

The **Class** property returns the object class of the object. Read-only.

Syntax

object.**Class**

Data Type

Long

Remarks

The **Class** property contains a numeric constant that identifies the CDO Rendering Library object. The following values are defined:

CDO Rendering Library object	Class value	Type library constant
CalendarView	12	**CdoClassCalendarView**
Column	11	**CdoClassColumn**
Columns collection	10	**CdoClassColumns**
ContainerRenderer	3	**CdoClassContainerRenderer**
Format	4	**CdoClassFormat**
Formats collection	5	**CdoClassFormats**
ObjectRenderer	2	**CdoClassObjectRenderer**
Pattern	7	**CdoClassPattern**
Patterns collection	6	**CdoClassPatterns**
RenderingApplication	1	**CdoClassApplication**
TableView	9	**CdoClassTableView**
Views collection	8	**CdoClassViews**

The CDO Rendering Library reserves the value 0 for an object implementing the OLE **IUnknown** interface.

Example

This code fragment traverses a Views collection to find the class of each view object it contains:

```
Dim colViews
Dim objView ' could be any type of view object
If colViews Is Nothing Then
  objResponse.Write "Need to set the Views collection"
  End
End If
For Each objView in colViews
  strIndex = str(objView.Index) ' get view's index as a string
  If 5 = objView.Class Then ' CdoClassTableView
    objResponse.Write "View " & strIndex & " is a table view"
  ElseIf 12 = objView.Class Then ' CdoClassCalendarView
    objResponse.Write "View " & strIndex & " is a calendar view"
  Else
```

```
    objResponse.Write "Unknown view type: class " & str(objView.Class)
  End If
Next
' error handling here ...
```

Parent Property (All CDO Rendering Library Objects)

The **Parent** property returns the parent of the object. Read-only.

Syntax

Set *objParent* = *object*.**Parent**

Data Type

Object

Remarks

The **Parent** property in the CDO Rendering Library returns the *immediate* parent of an object. The immediate parent for each object is shown in the following table.

CDO Rendering Library object	Immediate parent in object hierarchy
CalendarView	Views collection
Column	Columns collection
Columns collection	TableView
ContainerRenderer	RenderingApplication or **Nothing**
Format	Formats collection
Formats collection	ContainerRenderer, ObjectRenderer, or RenderingApplication
ObjectRenderer	RenderingApplication or **Nothing**
Pattern	Patterns collection
Patterns collection	Format
RenderingApplication	Set to **Nothing**
TableView	Views collection
Views collection	ContainerRenderer

The **Parent** property represents the *immediate* parent of the object, rather than the *logical* parent. For example, a ContainerRenderer object contains a Views collection, which contains various view objects. The **Parent** property for a view is the immediate parent, the Views collection, rather than the logical parent, the ContainerRenderer object.

For more information on the CDO Rendering Library object hierarchy, see Rendering Object Model.

Example

This code fragment displays the **Class** of the **Parent** of a Formats collection object, which could be any rendering object.

```
Dim colFmts As Formats
Dim parentClass as Long
' assume valid Formats collection
parentClass = colFmts.Parent.Class
MsgBox "Formats parent class = " & parentClass
If 3 = parentClass Then ' CdoClassContainerRenderer
    ' parent is ContainerRenderer
ElseIf 2 = parentClass Then ' CdoClassObjectRenderer
```

```
    ' parent is ObjectRenderer
Else
    ' Houston, we have a problem
End If
```

CalendarView Object

The CalendarView object represents a view of a schedule calendar.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.2
Parent objects:	Views collection
Child objects:	Columns collection
Default property:	(none)

Properties

Name	Available in version	Type	Access
BusyCell	1.2	String	Read/write
BusyIndicator	1.2	String	Read/write
Categories	1.2	Long	Read/write
Class	1.2	Long	Read-only
Columns	1.2	Column object or Columns collection object	Read-only
FreeBusinessCell	1.2	String	Read/write
FreeIndicator	1.2	String	Read/write
FreeNonBusinessCell	1.2	String	Read/write
Index	1.2	Long	Read-only
Interval	1.2	Long	Read/write
Mode	1.2	Long	Read/write
Name	1.2	String	Read-only
NumberOfUnits	1.2	Long	Read/write
OOFIndicator	1.2	String	Read/write
Parent	1.2	Views collection object	Read-only
Source	1.2	Long	Read-only
TentativeIndicator	1.2	String	Read/write

Methods

Name	Available in version	Parameters
IsSameAs	1.2	*objView2* as **Object**
RenderAppointments	1.2	(optional) *StartDate* as **Variant**, (optional) *ResponseObject* as

		Object
RenderDateNavigator	1.2	(optional) *StartDate* as **Variant**, (optional) *Months* as **Variant**, (optional) *ResponseObject* as **Object**
RenderEvents	1.2	(optional) *StartDate* as **Variant**, (optional) *ResponseObject* as **Object**

Remarks

A calendar view is a specification of a calendar rendering for a Messages collection in a calendar folder. It is applied to AppointmentItem objects in a Messages collection obtained from a Folder object reserved for calendar data:

```
Dim objSession As Session
Dim objCalendarFolder As Folder
Dim objAppointments As Messages

Set objCalendarFolder = objSession.GetDefaultFolder _
                                   (CdoDefaultFolderCalendar)
Set objAppointments = objCalendarFolder.Messages
```

The Messages collection obtained in this manner should contain AppointmentItem objects exclusively. If presented with objects of other classes, the calendar view's rendering methods attempt to render them as if they were appointments, but unexpected results are likely. In any case, objects not exposing the **StartTime** and **EndTime** properties are not rendered.

The calendar view is applied to the collection in the context of a ContainerRenderer. The container renderer specifies the Messages collection in its **DataSource** property and the calendar view to be applied in its **CurrentView** property.

The calendar view inherits all the functionality of the TableView object, and has additional capability specific to rendering a calendar as a table.

The HTML output of a calendar view is constructed on a principal unit of display, or *time unit*, which is specified by the view's **Mode** property. The time unit can be a day or a week. The view's *time span*, determined by its **NumberOfUnits** property, represents the total amount of calendar time displayed in a single HTML page. Each column of the view covers exactly one day, no matter what the overall time unit and time span have been set to. A column is subdivided into individual cells or *time slots*. The size of these subdivisions is controlled by the view's **Interval** property.

A calendar view is normally generated externally to a CDO application, although a nonpersistent calendar view can be created with the **Add** method of the Views collection. A calendar view created in this way ceases to exist when the collection is released.

BusyCell Property (CalendarView Object)

The **BusyCell** property returns or sets a pattern string for rendering an appointment. Read/write.

Syntax

objCalendarView.**BusyCell**

Data Type

String

Remarks

The **BusyCell** property is used to specify rendering information for AppointmentItem objects. The **BusyCell** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **BusyCell** property is

```
<td rowspan=%apptlength% colspan=%apptwidth% bgcolor=ffffff valign=top
align=left width=100% >%value%</td>
```

for a daily view. For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

BusyIndicator Property (CalendarView Object)

The **BusyIndicator** property returns or sets a pattern string for rendering the indicator bar for a busy time period. Read/write.

Syntax

objCalendarView.**BusyIndicator**

Data Type

String

Remarks

The **BusyIndicator** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **BusyIndicator** property is

```
<td rowspan=%apptlength% colspan=1 bgcolor=0000ff width=3> </td>
```

For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

Categories Property (CalendarView Object)

The **Categories** property returns or sets the number of categories in this calendar view. Read/write.

Syntax

objCalendarView.**Categories**

Data Type

Long

Remarks

The current version of the CDO Rendering Library does not support a tabular view of a calendar. Therefore, the **Categories** property is currently ignored on a CalendarView object.

Columns Property (CalendarView Object)

The **Columns** property returns a single Column object or a Columns collection for this calendar view. Read-only.

Syntax

Set *objColumns* = *objCalendarView*.**Columns**

Set *objColumn* = *objCalendarView*.**Columns(***index***)**

objColumns
Object. The Columns collection of this calendar view.

objCalendarView
Required. The CalendarView object.

objColumn
Object. An individual Column object belonging to this calendar view's Columns collection.

index
Integer. An index into the calendar view's Columns collection.

Data Type

Object (Column or Columns collection)

Remarks

If a Column object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the CalendarView object's Columns collection. This size is available in the collection's **Count** property.

Although the **Columns** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member Column objects retain their respective read/write or read-only accessibility.

A calendar view renders each day as a one-column-wide HTML table. For each time slot, the columns specified in the Columns collection are rendered as successive strings within a single HTML table cell. When you add a column to the collection, you are not causing an additional HTML table column to be rendered. Instead, you are causing the column's contents to be concatenated with the strings for all the other columns in the table cell.

FreeBusinessCell Property (CalendarView Object)

The **FreeBusinessCell** property returns or sets a pattern string for rendering a free time slot during business hours. Read/write.

Syntax

objCalendarView.**FreeBusinessCell**

Data Type

String

Remarks

The **FreeBusinessCell** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **FreeBusinessCell** property is

```
<td rowspan=%apptlength% colspan=%apptwidth% bgcolor=ffffff valign=top
align=left width=100% ><br></td>

for a daily view
```

for a weekly view›. For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

FreeIndicator Property (CalendarView Object)

The **FreeIndicator** property returns or sets a pattern string for rendering the indicator bar for a free time period. Read/write.

Syntax

objCalendarView.**FreeIndicator**

Data Type

String

Remarks

The **FreeIndicator** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **FreeIndicator** property is

```
<td rowspan=%apptlength% colspan=1 bgcolor=ffffff width=3> </td>
```

For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

FreeNonBusinessCell Property (CalendarView Object)

The **FreeNonBusinessCell** property returns or sets a pattern string for rendering a free time slot outside of business hours. Read/write.

Syntax

objCalendarView.**FreeNonBusinessCell**

Data Type

String

Remarks

The **FreeNonBusinessCell** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **FreeNonBusinessCell** property is

```
<td rowspan=%apptlength% colspan=%apptwidth% bgcolor=c0c0c0 valign=top
align=left width=100% ><br></td>
```

for a daily view. For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

Index Property (CalendarView Object)

The **Index** property returns the index number for this CalendarView object within the Views collection. Read-only.

Syntax

objCalendarView.**Index**

Data Type

Long

Remarks

The **Index** property indicates this calendar view's position within the parent Views collection. It can later be used to reselect this calendar view with the collection's **Item** property.

The first view in the Views collection has a **Index** value of 1.

An index value should not be considered a static value that remains constant for the duration of a container renderer. It can be affected when other views are added and deleted.

Interval Property (CalendarView Object)

The **Interval** property returns or sets the length of a time slot in minutes. Read/write.

Syntax

objCalendarView.**Interval**

Data Type

Long

Remarks

The **Interval** property is forced by the CDO Rendering Library to a value between 5 and 60 that divides integrally into 60. The possible resulting values are 5, 6, 10, 12, 15, 20, 30, and 60. The default value of **Interval** is 30 minutes.

The **Interval** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**. If **Mode** is **CdoModeCalendarWeekly**, time slots are not displayed, and each AppointmentItem object is rendered with its **StartTime** and **EndTime** values.

IsSameAs Method (CalendarView Object)

The **IsSameAs** method returns **True** if this CalendarView object is the same as the view object being compared against.

Syntax

objCalendarView.**IsSameAs(***objView2***)**

objCalendarView
Required. This CalendarView object.

objView2
Required. Object. The view object being compared against.

Remarks

The *objView2* parameter should be declared as an **Object** rather than as a **CalendarView**. This allows for comparison among different classes of view objects being held in a Views collection.

Two view objects are considered to be the same if and only if their pointer values are the same, that is, if and only if they are the identical object. Otherwise **IsSameAs** returns **False**.

Mode Property (CalendarView Object)

The **Mode** property returns or sets the time unit of the calendar view. Read/write.

Syntax

objCalendarView.**Mode**

Data Type

Long

Remarks

The **Mode** property specifies the principal unit of display on which the calendar rendering is based. It controls the style of views generated by the **RenderAppointments** and **RenderEvents** methods. Together with the **NumberOfUnits** property it determines the overall time span of the calendar view, that is, the total amount of time rendered onto one HTML page.

Mode can have exactly one of the following values:

Mode setting	Decimal value	Time unit
CdoModeCalendarDaily	0	This calendar view is rendered in multiples of a day.
CdoModeCalendarWeekly	1	This calendar view is rendered in multiples of a week.

The **Mode** property defaults to **CdoModeCalendarDaily**.

Name Property (CalendarView Object)

The **Name** property returns the display name of this CalendarView object. Read-only.

Syntax

objCalendarView.**Name**

Data Type

String

Remarks

The **Name** property represents the display name assigned to this calendar view. It can be used to refer to the calendar view, and to retrieve it by name using the container renderer's **CurrentView** property.

The names of the predefined calendar views are "Daily" for a view with mode **CdoModeCalendarDaily** and "Weekly for a view with mode **CdoModeCalendarWeekly**. The mode of the view is available from its **Mode** property.

NumberOfUnits Property (CalendarView Object)

The **NumberOfUnits** property returns or sets the number of time units to include in a rendering. Read/write.

Syntax

objCalendarView.**NumberOfUnits**

Data Type

Long

Remarks

The **NumberOfUnits** and **Mode** properties together determine the overall time span of the calendar view, that is, the total amount of time rendered onto one HTML page. **NumberOfUnits** defaults to 1.

For example, if **Mode** contains **CdoModeCalendarWeeky** and **NumberOfUnits** is set to 2, each output page displays two weeks of calendar time.

OOFIndicator Property (CalendarView Object)

The **OOFIndicator** property returns or sets a pattern string for rendering the indicator bar for an out-of-office (OOF) time period. Read/write.

Syntax

objCalendarView.**OOFIndicator**

Data Type

String

Remarks

The **OOFIndicator** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **OOFIndicator** property is

```
<td rowspan=%apptlength% colspan=1 bgcolor=660066 width=3> </td>
```

For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

RenderAppointments Method (CalendarView Object)

The **RenderAppointments** method renders AppointmentItem objects in the Messages collection.

Syntax

strHTML = *objCalendarView*.**RenderAppointments([***StartDate***] [***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the appointments. However, if the *ResponseObject* parameter is supplied, **RenderAppointments** returns a value of **Empty**.

objCalendarView
Required. This CalendarView object.

StartDate
Optional. Variant (**vbDate** format). The date/time used to determine the starting date from which to render appointments. The time portion of *StartDate* is ignored. The default value is the current date.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderAppointments** method renders appointments starting with a date calculated from the *StartDate* parameter, but not necessarily equal to its value. The rendering starts at the beginning of the time unit containing the *StartDate* value. For example, if the calendar view's **Mode** property is set to **CdoModeCalendarWeekly**, the ContainerRenderer object's **FirstDayOfWeek** property is set to **CdoMonday**, and the value of *StartDate* indicates a Sunday, appointments are rendered starting with the preceding Monday.

The **RenderAppointments** method generates an HTML table containing one or more cells. If the **Mode** property is **CdoModeCalendarDaily**, the table contains time slots showing free and busy times for the day. The length of the time slots is determined by the **Interval** property. All-day events are shown by the **RenderEvents** method and do not appear in the **RenderAppointments** table.

If **Mode** is **CdoModeCalendarWeekly**, the table contains a list of appointments and events for each of seven days, starting with the day designated in the container renderer's **FirstDayOfWeek** property.

Appointments are rendered for the number of time units indicated by the **NumberOfUnits** property, beginning with the starting date calculated from the *StartDate* parameter. If **NumberOfUnits** is greater than 1, each appointments table appears as a cell within an outer table. If the **Mode** property is **CdoModeCalendarDaily**, the outer table is a single row with **NumberOfUnits** columns. If **Mode** is **CdoModeCalendarWeekly**, the outer table is a single column with **NumberOfUnits** rows.

You must set the **CurrentView** property of the ContainerRenderer object before rendering appointments, even if you are using the normal view. Otherwise **RenderAppointments** can generate unexpected results.

RenderDateNavigator Method (CalendarView Object)

The **RenderDateNavigator** method renders a date navigator that can be used to select a starting date for rendering.

Syntax

strHTML = *objCalendarView*.**RenderDateNavigator([***StartDate***] [***, Months***] [***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the date navigator. However, if the *ResponseObject* parameter is supplied, **RenderDateNavigator** returns a value of **Empty**.

objCalendarView
Required. This CalendarView object.

StartDate
Optional. Variant (**vbDate** format). The date/time used to determine the starting date from which to render the date navigator. The time portion of *StartDate* is ignored. The default value is the current date.

Months
Optional. Long. The number of months for which to render the date navigator. The default value is 2.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderDateNavigator** method renders the date navigator starting with a date calculated from the *StartDate* parameter, but not necessarily equal to its value. The rendering starts at the beginning of the month containing the *StartDate* value.

The **RenderDateNavigator** method generates an HTML table containing one or more cells. It renders a date navigator that can be used to choose the date to view with the **RenderAppointments** or **RenderEvents** method. An entire month is displayed at a time.

Every day of a month is rendered individually within the image of the month. Each day's rendering contains a link to a JavaScript function with a paradigm of **gotoDate(year, month, day)**. The frame containing the date navigator must define and implement the **gotoDate** function for the linking to work correctly. Microsoft® JScript™ can be used to implement **gotoDate**.

RenderDateNavigator also requires the two image files LEFT.GIF and RIGHT.GIF for the arrow pointers used to move to the previous or next month. You must furnish these in the same directory that contains the .ASP file calling **RenderDateNavigator**. You can define your own .GIF files or use the ones provided with Microsoft® Outlook™ Web Access (OWA), typically in a directory with a path similar to \\…\Exchsrvr\webdata\calendar.

The date navigator is rendered for the number of months specified in the *Months* parameter, beginning with the month calculated from the *StartDate* parameter. If *Months* is greater than 1, each month appears as a cell within an outer table. The outer table is a single column with *Months* rows.

RenderEvents Method (CalendarView Object)

The **RenderEvents** method renders the events in the Messages collection.

Syntax

strHTML = *objCalendarView*.**RenderEvents([***StartDate***] [***, *ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the events. However, if the *ResponseObject* parameter is supplied, **RenderEvents** returns a value of **Empty**.

objCalendarView
Required. This CalendarView object.

StartDate
Optional. Variant (**vbDate** format). The date/time used to determine the starting date from which to render events. The time portion of *StartDate* is ignored. The default value is the current date.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderEvents** method renders events starting with a date calculated from the *StartDate* parameter, but not necessarily equal to its value. The rendering starts at the beginning of the time unit containing the *StartDate* value. For example, if the calendar view's **Mode** property is set to **CdoModeCalendarWeekly**, the ContainerRenderer object's **FirstDayOfWeek** property is set to **CdoSunday**, and the value of *StartDate* indicates a Friday, events are rendered starting with the preceding Sunday.

The **RenderEvents** method generates an HTML table containing one or more cells. If the **Mode** property is **CdoModeCalendarDaily**, the table contains the date being rendered in the first row and events for that day, if any, in subsequent rows.

If **Mode** is **CdoModeCalendarWeekly**, the table contains a single row with the starting and ending dates for the week being rendered. The starting date is calculated using the **FirstDayOfWeek** property. No events are rendered because there are no weekly events.

Events are rendered for the number of time units indicated by the **NumberOfUnits** property, beginning with the starting date calculated from the *StartDate* parameter. If **NumberOfUnits** is greater than 1, each events table appears as a cell within an outer table. The outer table is a single row with **NumberOfUnits** columns.

You must set the **CurrentView** property of the ContainerRenderer object before rendering events, even if you are using the normal view. Otherwise **RenderEvents** can generate unexpected results.

Source Property (CalendarView Object)

The **Source** property returns the type of this calendar view. Read-only.

Syntax

objCalendarView.**Source**

Data Type

Long

Remarks

The **Source** property indicates the source of the definition of the calendar view. It can have exactly one of the following values:

Calendar view source	Decimal value	Meaning
CdoViewCommon	0	This calendar view is predefined globally for all folders and all messaging users.
CdoViewCustom	2	This calendar view has been defined in the context of the current setting of the **DataSource** property of the ContainerRenderer object. It ceases to exist when the **DataSource** property is changed.

For more information on calendar view rendering, see Container Object Rendering.

TentativeIndicator Property (CalendarView Object)

The **TentativeIndicator** property returns or sets a pattern string for rendering the indicator bar for a tentatively busy time period. Read/write.

Syntax

objCalendarView.**TentativeIndicator**

Data Type

String

Remarks

The **TentativeIndicator** property applies only when the **Mode** property of the calendar view contains **CdoModeCalendarDaily**.

The default value of the **TentativeIndicator** property is

```
<td rowspan=%apptlength% colspan=1 bgcolor=99ccff width=3> </td>
```

For more information on substitution tokens, see the **RenderUsing** property of the Pattern object.

Column Object

The Column object represents a column within a view.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	Columns collection
Child objects:	(none)
Default property:	(none)

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Flags	1.1	Long	Read/write
Index	1.1	Long	Read-only
Name	1.1	String	Read/write
Parent	1.1	Columns collection object	Read-only
Property	1.1	Long or String	Read-only
RenderUsing	1.1	String	Read/write
Width	1.1	Long	Read/write

Methods

(None.)

Flags Property (Column Object)

The **Flags** property returns or sets the flags specifying certain display attributes of this Column object. Read/write.

Syntax

objColumn.**Flags**

Data Type

Long

Remarks

The **Flags** property contains the following bits, which can be set in any combination:

Attribute flag	Decimal value	Meaning
CdoColumn Bitmap	8	The property rendered in this column is displayed using a bitmap.
CdoColumn NotSortable	32	The display cannot be sorted on the property rendered in this column.

If the **CdoColumnBitmap** flag is set, the column width in the **Width** property is expressed in pixels instead of characters. If you use a bitmap, be sure you set **Width** large enough to render the .GIF image, or you may get unexpected results.

If you are rendering a calendar view, the value of the **Flags** property is ignored. The CalendarView object makes its own alignment calculations.

Index Property (Column Object)

The **Index** property returns the index number for this Column object within the Columns collection. Read-only.

Syntax

objColumn.**Index**

Data Type

Long

Remarks

The **Index** property indicates this column's position within the parent Columns collection. It can later be used to reselect this column with the collection's **Item** property.

The first column in the collection has an **Index** value of 1.

An index value should not be considered a static value that remains constant for the duration of a view. It can be affected when other columns are added and deleted.

Name Property (Column Object)

The **Name** property returns or sets the default heading for this Column object. Read/write.

Syntax

objColumn.**Name**

Data Type

String

Remarks

The **Name** property represents the text to be rendered for this column in the header row. The column header is rendered according to the **HeadingCellPattern** property of the ContainerRenderer object.

The **Name** property is also useful for distinguishing between columns that render the same property. Two different columns, for example, could render the **CdoPR_MESSAGE_CLASS** property, one as an icon and the other as a text string. The two columns would have the same **Property** property, but they should have different **Name** properties, such as “Icon” and “Message Class”.

Property Property (Column Object)

The **Property** property returns the name or tag of the property rendered in this column. Read-only.

Syntax

objColumn.**Property**

Data Type

Variant (Long or String)

Remarks

The **Property** property is a long integer if the column property is specified by a property tag. If it is a named custom property, the **Property** property is a string. The property name in this string can optionally be prefixed with a GUID string identifying its property set. In this case, the GUID should be enclosed in braces.

RenderUsing Property (Column Object)

The **RenderUsing** property returns or sets a rendering source that determines how a column property is rendered. Read/write.

Syntax

objColumn.**RenderUsing**

Data Type

Variant (String)

Remarks

The **RenderUsing** property provides a source for rendering the column property into HTML hypertext. The column property is designated in the column's **Property** property.

If no column rendering information is available, the container renderer searches for a Format object representing the renderable property. If no such format can be found, or if the format contains no Pattern object appropriate for the renderable property's value, the property is rendered by default according to its data type and value.

If the **RenderUsing** string contains substitution tokens within percent signs, such as %value%, the tokens are replaced by the appropriate attributes of the column property to generate the HTML hypertext. If there are no substitution tokens in the string, the string itself is rendered without modification.

For more information on rendering sources and substitution tokens, see the Pattern object's **RenderUsing** property.

Width Property (Column Object)

The **Width** property returns or sets the width for this Column object. Read/write.

Syntax

objColumn.**Width**

Data Type

Long

Remarks

The **Width** property represents the horizontal space the column is to occupy when displayed from the HTML output of the rendering.

For common, folder, and personal views, the column widths are relative. They are specified in integer units typically representing characters. The final display width is arrived at in the following manner:

1. The container renderer determines the overall width of the table view by adding together the **Width** properties of every column in the Columns collection of the TableView object.
2. The container renderer computes the proportional width for each column by dividing its **Width** property by the overall table view width.
3. The proportional width for each column is placed in the HTML output.
4. The browser calculates each column's final display width from its proportional width and the available horizontal space in the browser window.

For custom views, the column widths are absolute and are specified in characters. However, if the **CdoColumnBitmap** flag is set in a column's **Flags** property, that column's width is expressed in pixels.

If you are rendering a calendar view, the value of the **Width** property is ignored. The CalendarView object makes its own calculations for column widths based on the values of its **Mode** and **NumberOfUnits** properties.

Columns Collection Object

The Columns collection object contains zero or more columns in a view.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	CalendarView TableView
Child objects:	Column
Default property:	**Item**

A Columns collection supports count and index values that let you access an individual Column object through the **Item** property. The Columns collection also supports the Microsoft® Visual Basic® **For Each** statement.

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Item	1.1	Column object	Read-only
Parent	1.1	TableView object	Read-only

Methods

Name	Available in version	Parameters
Add	1.1	*name* as **String**, *property* as **Variant**, *width* as **Long**, *flags* as **Long**, *insertAfter* as **Long**

Add Method (Columns Collection)

The **Add** method creates and returns a new Column object in the Columns collection.

Syntax

Set *objColumn* = *objColumnsColl*.**Add(***name, property, width, flags, insertAfter***)**

objColumn
On successful return, contains the new Column object.

objColumnsColl
Required. The Columns collection object.

name
Required. String. The display name to be assigned to the new Column object.

property
Required. Variant (Long or String). The property tag for the predefined property, or the custom name of the user-defined property, that is to be rendered in the new Column object.

width
Required. Long. The unit width of the new Column object.

flags
Required. Long. The flags specifying certain display attributes of the new Column object. For a description of these flags, see the Column object's **Flags** property.

insertAfter
Required. Long. The **Index** value of the column after which the new Column object is to be added to the collection. If this parameter is 0, the new column is added at the beginning of the collection. If *insertAfter* is greater than the size of the collection, the new column is added at the end.

Remarks

The **Add** method parameters correspond to the **Name**, **Property**, **Width**, **Flags**, and **Index** properties of the new Column object, except that the new column's **Index** is greater by 1 than the *insertAfter* parameter.

The first column in the collection has an **Index** value of 1, and the last has an **Index** equal to the size of the collection in the **Count** property. If the value of the *insertAfter* parameter exceeds the collection's size, the new column is added with an **Index** greater by 1 than the previous size. If *insertAfter* is less than the previous size, the **Index** values of all columns after the new column are incremented by 1. In all cases, the collection's **Count** is incremented by 1.

The *property* parameter designates the property to be rendered in the column. The parameter can be a long integer designating the property by property tag, or a string designating it by custom name. In both cases it corresponds to the **Property** property.

If the *property* parameter is a custom name, it can optionally be prefixed with a GUID string identifying its property set. In this case, the GUID should be enclosed in braces.

If you are rendering a calendar view, the value of the *width* parameter is ignored, although it is still required. The CalendarView object makes its own calculations for column widths based on the values of its **Mode** and **NumberOfUnits** properties.

Count Property (Columns Collection)

The **Count** property returns the number of Column objects in the collection. Read-only.

Syntax

objColumnsColl.**Count**

Data Type

Long

Remarks

For more information on using the **Count** and **Item** properties, see the example in the **Item** property.

Item Property (Columns Collection)

The **Item** property returns the specified Column object from the Columns collection. Read-only.

Syntax

objColumnsColl.**Item(***index***)**

objColumnsColl.**Item(***propTag***)**

index
A short integer (less than or equal to 65,535 = &HFFFF) ranging from 1 to *objColumnsColl*.**Count**. Specifies the index within the collection.

propTag
A long integer (greater than or equal to 65,536). Specifies the 32-bit property tag of the renderable property corresponding to a column in the collection. The renderable property is indicated in the Column object's **Property** property.

The **Item** property is the default property of a Columns collection, meaning that *objColumnsColl***(***index***)** is syntactically equivalent to *objColumnsColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Column object

Remarks

The **Item** property works like an accessor property.

If the specified Column object is not found in the collection, the **Item** property returns **Nothing**.

Although the **Item** property itself is read-only, the Column object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together:

```
' Put all column names in a collection into a string array
Dim strItemName(100) as String
Dim i As Integer ' loop counter
' error handling omitted from this fragment ...
For i = 1 To objColumnsColl.Count
    strItemName(i) = objColumnsColl.Item(i).Name
    ' or = objColumnsColl(i) since Item and Name are default properties
    If 100 = i Then ' max size of string array
        Exit Function
    End If
Next i
```

ContainerRenderer Object

The ContainerRenderer object renders the rows of a container object as an HTML table.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	RenderingApplication (or none)
Child objects:	Formats collection Views collection
Default property:	(none)

Properties

Name	Available in version	Type	Access
BusinessDayEndTime	1.2	Variant (**vbDate** format)	Read/write
BusinessDayStartTime	1.2	Variant (**vbDate** format)	Read/write
CellPattern	1.1	String	Read/write
Class	1.1	Long	Read-only
CodePage	1.1	Long, Object, or String	Read/write
CurrentStore	1.2	InfoStore object	Write-only
CurrentView	1.1	TableView object	Read/write
DataSource	1.1	AddressEntries collection object, Folders collection object, Messages collection object, or Recipients collection object	Read/write
FirstDayOfWeek	1.2	Long	Read/write
Formats	1.1	Format object or Formats collection object	Read-only
HeadingCellPattern	1.1	String	Read/write
HeadingRowPrefix	1.1	String	Read/write
HeadingRowSuffix	1.1	String	Read/write
Is24HourClock	1.2	Boolean	Read/write
LCID	1.1	Long	Read-only
LinkPattern	1.1	String	Read/write
Parent	1.1	Object; set to **Nothing**	Read-only
PrivateStore	1.1	InfoStore object	Read/write
RowsPerPage	1.1	Integer	Read/write

RowPrefix	1.1	String	Read/write
RowSuffix	1.1	String	Read/write
TablePrefix	1.1	String	Read/write
TableSuffix	1.1	String	Read/write
TimeZone	1.2	Long	Read/write
Views	1.1	CalendarView object, TableView object, or Views collection object	Read-only

Methods

Name	Available in version	Parameters
Render	1.1	*Style* as **Long**, (optional) *pageNo* as **Long**, (optional) *formatting* as **Boolean**, (optional) *ResponseObject* as **Object**
RenderDate	1.2	*Date* as **Variant**, *Format* as **String**, (optional) *ResponseObject* as **Object**
RenderHeading	1.1	(optional) *cellPattern* as **String**, (optional) *ResponseObject* as **Object**
RenderPath	1.1	*activeLinks* as **Boolean** (optional) *ResponseObject* as **Object**
RenderProperty	1.1	*Property* as **Variant**, (optional) *formatting* as **Boolean**, (optional) *ResponseObject* as **Object**
RenderTime	1.2	*Date* as **Variant**, *Format* as **String**, (optional) *ResponseObject* as **Object**

Remarks

The ContainerRenderer object can render any subset of the rows of a container object. It can accept a CDO AddressEntries, Folders, Messages, or Recipients collection in its **DataSource** property.

The container object contents rendered by the container renderer are as follows:

Data source (container object)	Objects (contents) rendered
AddressEntries collection	AddressEntry
Folders collection	Folder
Messages collection	AppointmentItem, GroupHeader, Message

Recipients collection Recipient

The container renderer inherits all the functionality of the object renderer, and has additional capability specific to rendering an address book container or folder as a table.

BusinessDayEndTime Property (ContainerRenderer Object)

The **BusinessDayEndTime** property returns or sets the time of day the business day is set to end. Read/write.

Syntax

objContRend.**BusinessDayEndTime**

Data Type

Variant (**vbDate** format)

Remarks

The **BusinessDayEndTime** property is used when a CalendarView is applied to the container object's **CurrentView** property. **BusinessDayEndTime** contains only the time portion of a standard date/time field.

The **BusinessDayEndTime** property can be set from the Session object's "BusinessDayEndTime" option. It defaults to 5:00 P.M. (17:00) if not set. The session's options are set by its **SetOption** method and retrieved with its **GetOption** method.

BusinessDayStartTime Property (ContainerRenderer Object)

The **BusinessDayStartTime** property returns or sets the time of day the business day is set to start. Read/write.

Syntax

objContRend.**BusinessDayStartTime**

Data Type

Variant (**vbDate** format)

Remarks

The **BusinessDayStartTime** property is used when a CalendarView is applied to the container object's **CurrentView** property. **BusinessDayStartTime** contains only the time portion of a standard date/time field. The calendar view scrolls the HTML output to the start of the business day before sending it to the browser.

The **BusinessDayStartTime** property can be set from the Session object's "BusinessDayStartTime" option. It defaults to 9:00 A.M. (09:00) if not set. The session's options are set by its **SetOption** method and retrieved with its **GetOption** method.

CellPattern Property (ContainerRenderer Object)

The **CellPattern** property returns or sets a rendering source that determines how every cell in every table row is rendered. Read/write.

Syntax

objContRend.**CellPattern**

Data Type

String

Remarks

The text to be rendered in each cell is taken directly from the property associated with that cell's column. The contents of the **CellPattern** property specify the rendering for all cells in all rows except for the heading row. The rendering for the heading row cells is specified in the **HeadingCellPattern** property.

For example, the **CellPattern** property could contain

```
<I>%value%</I>
```

to cause all the cells in every row of the table to be rendered in italic text.

The default setting of the **CellPattern** property is

```
<FONT COLOR=000000 SIZE=2>
```

CodePage Property (ContainerRenderer Object)

The **CodePage** property returns or sets the code page used by the ContainerRenderer object. Read/write.

Syntax

objContRend.**CodePage**

Data Type

Variant (Long, Object, or String)

Remarks

If the **CodePage** property is a long integer, it represents the code page to be used for character representation. If **CodePage** is an object, it contains an **IDispatch** pointer to an **IRequest** object. The CDO Rendering Library obtains from this object an HTTP Accept-Language header and sets the code page to the value that most closely matches the header. If **CodePage** is a string, it is treated as an International Standards Organization (ISO) language name, and the code page is set from the Microsoft® Windows NT® registry entry for that language.

If a long integer value for **CodePage** is invalid, the code page remains unchanged. If a string value is not a recognizable language name, the appropriate default code page for the locale is used.

The setting of the **CodePage** property affects character selection and any dependent data considerations. The collating sequence, the sort order, and the formats for time, date, and currency representation are set by the Session object's **SetLocaleIDs** method and cannot be changed using the **CodePage** property.

CurrentStore Property (ContainerRenderer Object)

The **CurrentStore** property sets the message store containing the data source. Write-only.

Syntax

objContRend.**CurrentStore**

Data Type

Object (InfoStore)

Remarks

The **CurrentStore** property supplies the InfoStore object that holds the container object to be rendered. Note that not all container objects reside in a message store. An InfoStore object is relevant if the container object is a Folders, Messages, or Recipients collection, but **CurrentStore** is undefined for an AddressEntries collection. The container object to be rendered is supplied by the **DataSource** property.

Example

This code fragment places the value of the message store containing the Session object's **Inbox** folder into the **CurrentStore** property:

```
' assume valid ContainerRenderer and Session objects
Set objInbox = objSession.Inbox
objContRend.DataSource = objInbox.Messages
strStoreID = objInbox.StoreID
Set objDataSourceStore = objSession.GetInfoStore(strStoreID)
objContRend.CurrentStore = objDataSourceStore
```

CurrentView Property (ContainerRenderer Object)

The **CurrentView** property returns or sets the current view used to render an address book container or folder. Read/write.

Syntax

Set *objView* = *objContRend*.**CurrentView**

Set *objContRend*.**CurrentView** = *objNewView*

Set *objContRend*.**CurrentView** = *index*

Set *objContRend*.**CurrentView** = *name*

objView
On successful return, contains the TableView object that is currently applied to the container object being rendered.

objContRend
Required. The ContainerRenderer object.

objNewView
Object. The view that is to become current.

index
Integer. An index into the container renderer's Views collection ranging from 1 to the collection's **Count** property.

name
String. The display name of an individual TableView object in the container renderer's Views collection.

Data Type

TableView object

Remarks

The view object must be a view in the container renderer's Views collection. This collection can be accessed with the container renderer's **Views** property. If you attempt to set the current view with a view object that cannot be found, for example if the *index* is out of range or there is no view with the specified *name*, the current view remains unchanged.

If you use the *index* parameter, the TableView object occupying the indicated position in the Views collection becomes the current view.

If you use the *name* parameter, the first view object in the collection having a matching value in its **Name** property becomes the current view.

Setting the **CurrentView** property applies the view to the container object specified in the **DataSource** property. If the new view is a table view, its Columns collection becomes available through the TableView object's **Columns** property. For more information, see Container Object Rendering.

Setting the **CurrentView** property also causes the underlying AddressEntries, Messages, or Recipients collection to be repopulated. This means that the collection is altered to contain only the items passing the new view's restriction, sorted and grouped as specified by the new view. The collection's **Count** property is also refreshed, and access to its members through the **Item** property reflect the new sort order.

Repopulating the collection also means that the filter is inherited from the new view, and the AddressEntryFilter or MessageFilter object is revised to reflect the new view's restriction. Any previous

settings of the filter are lost.

If you change the **CurrentView** property or alter the collection's filter during execution of an indexed loop, the index reverts to 1 in your next iteration of the loop, and the repopulated collection is accessed starting with the first member according to the new restriction and sort specification.

A newly instantiated Views collection always has a default current view. This default can be specified by the directory or message store underlying the container object. If it is not specified, the CDO Rendering Library sets it to the first view in the Views collection.

DataSource Property (ContainerRenderer Object)

The **DataSource** property contains the CDO collection to be rendered. Read/write.

Syntax

objContRend.**DataSource**

Data Type

Object (AddressEntries collection, Folders collection, Messages collection, or Recipients collection)

Remarks

The **DataSource** property accepts a CDO AddressEntries, Folders, Messages, or Recipients collection.

Setting the **DataSource** property specifies the container object to be rendered and instantiates a new Views collection for the container renderer. The previous Views collection is released, and any custom view created with the **Add** method ceases to exist.

Setting the **DataSource** property repopulates the collection underlying the container object and revises its filter, just as setting the container renderer's **CurrentView** property does. Any previous settings of the filter are lost.

For more information, see Container Object Rendering.

Example

This code fragment assigns the **DataSource** property to the Messages collection of the Session object's **Inbox** folder:

```
' assume valid ContainerRenderer and Session objects
Set objInbox = objSession.Inbox
objContRend.DataSource = objInbox.Messages
```

FirstDayOfWeek Property (ContainerRenderer Object)

The **FirstDayOfWeek** property returns or sets the day on which the week is set to start. Read/write.

Syntax

objContRend.**FirstDayOfWeek**

Data Type

Long

Remarks

The **FirstDayOfWeek** property is used when a CalendarView is applied to the container object's **CurrentView** property. **FirstDayOfWeek** can have exactly one of the following values:

FirstDayOfWeek setting	Meaning
1	The calendar week begins on Monday.
2	The calendar week begins on Tuesday.
3	The calendar week begins on Wednesday.
4	The calendar week begins on Thursday.
5	The calendar week begins on Friday.
6	The calendar week begins on Saturday.
7	The calendar week begins on Sunday.

The **FirstDayOfWeek** property can be set from the Session object's "FirstDayOfWeek" option. It defaults to 7 (Sunday) if not set. The session's options are set by its **SetOption** method and retrieved with its **GetOption** method.

Note that the **FirstDayOfWeek** property and the "FirstDayOfWeek" option are compatible with each other but not with the **DayOfWeekMask** property of the RecurrencePattern object, which uses the mask constants **CdoSunday** through **CdoSaturday**.

Formats Property (ContainerRenderer Object)

The **Formats** property returns a single Format object or a Formats collection. Read-only.

Syntax

Set *objFormats* = *objContRend*.**Formats**

Set *objFormat* = *objContRend*.**Formats(***index***)**

Set *objFormat* = *objContRend*.**Formats(***name***)**

objFormats
On successful return, contains the Formats collection of this container renderer.

objContRend
Required. The ContainerRenderer object.

objFormat
On successful return, contains an individual Format object belonging to this container renderer's Formats collection.

index
Integer. An index into the container renderer's Formats collection.

name
String. The reference name of a special-purpose Format object in the collection.

Data Type

Object (Format or Formats collection)

Remarks

Each format in the collection corresponds to a single property, except for special-purpose formats, which do not represent specific properties. Every property to be rendered should be represented by exactly one Format object.

New formats should be added to the collection before the **DataSource** property is set. If you define a new format after changing the data source, it is ignored during the rendering.

If a Format object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the container renderer's Formats collection. This size is available in the collection's **Count** property.

Although the **Formats** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member Format objects retain their respective read/write or read-only accessibility.

HeadingCellPattern Property (ContainerRenderer Object)

The **HeadingCellPattern** property returns or sets a rendering source that determines how the heading of each table view column is rendered. Read/write.

Syntax

objContRend.**HeadingCellPattern**

Data Type

String

Remarks

The heading cell is the cell that appears in the heading row above a column in a table view. Its text is specified in the **Name** property of the Column object. The contents of the **HeadingCellPattern** property specify the rendering for the heading cell text. The rendering for all the other cells in the table is specified in the **CellPattern** property.

For example, the **Name** properties of the columns might contain “From”, “Subject”, and “Received”, and the **HeadingCellPattern** property could contain

```
<B>%value%</B>
```

to cause all the heading cells to be rendered in bold text.

The default setting of the **HeadingCellPattern** property is

```
<FONT COLOR=000000 SIZE=2>%value%</FONT>
```

The *cellPattern* parameter of the **RenderHeading** method can override the setting of the **HeadingCellPattern** property for a particular rendering.

HeadingRowPrefix Property (ContainerRenderer Object)

The **HeadingRowPrefix** property returns or sets the HTML string to insert at the beginning of a view's heading row. Read/write.

Syntax

objContRend.**HeadingRowPrefix**

Data Type

String

Remarks

The heading row is a single-row table of heading cells each of which serves as a heading for a column in the view. The **HeadingRowPrefix** property can be used to set global rendering for the entire heading row. For example, it could contain

```
<TR><FONT COLOR="FF0000">
```

to render all the heading cells in red.

The default setting of the **HeadingRowPrefix** property is

```
<TR BGCOLOR=CCCC99 VALIGN=TOP>
```

If **HeadingRowPrefix** is changed, it should always contain the <TR> tag.

You can render the heading row each time you output a frame containing table rows, or you can choose to render it only in the first frame.

HeadingRowSuffix Property (ContainerRenderer Object)

The **HeadingRowSuffix** property returns or sets the HTML string to insert at the end of a view's heading row. Read/write.

Syntax

objContRend.**HeadingRowSuffix**

Data Type

String

Remarks

The heading row is a single-row table of heading cells each of which serves as a heading for a column in the view. The **HeadingRowSuffix** property can be used to terminate the heading row rendering. For example, it could contain

```
</FONT></TR>
```

to revert the font to its previous value.

The default setting of the **HeadingRowSuffix** property is

```
</TR>
```

If **HeadingRowSuffix** is changed, it should always contain the </TR> tag.

You can render the heading row each time you output a frame containing table rows, or you can choose to render it only in the first frame.

Is24HourClock Property (ContainerRenderer Object)

The **Is24HourClock** property indicates whether the calendar is to be rendered in 12-hour or 24-hour mode. Read/write.

Syntax

objContRend.**Is24HourClock**

Data Type

Boolean

Remarks

The **Is24HourClock** property is used when a CalendarView is applied to the container object's **CurrentView** property. Set **Is24HourClock** to **True** to render in 24-hour mode, or **False** to render in 12-hour mode.

The **Is24HourClock** property can be set from the Session object's "Is24HourClock" option. It defaults to **False** if not set. The session's options are set by its **SetOption** method and retrieved with its **GetOption** method.

LCID Property (ContainerRenderer Object)

The **LCID** property returns the locale identifier for the current messaging user. Read-only.

Syntax

objContRend.**LCID**

Data Type

Long

Remarks

A locale is the set of features of a messaging user's environment that are dependent on language, country, culture, and conventions. These features include the character selection, the collating sequence and sort order, and the date, time, and currency formats. The Session object's **SetLocaleIDs** method sets the locale identifier, which cannot be subsequently changed during the session. The character selection, however, can be changed by setting the **CodePage** property.

A locale identifier (LCID) is a 32-bit value containing a 16-bit language identifier and a 4-bit sort identifier. The Microsoft® Windows NT® macros **SORTIDFROMLCID** and **LANGIDFROMLCID** can be used to extract these identifiers from the LCID.

The **LCID** property corresponds to the MAPI property PR_LOCALE_ID.

LinkPattern Property (ContainerRenderer Object)

The **LinkPattern** property returns or sets a rendering source that determines how a link in a table row is rendered. Read/write.

Syntax

objContRend.**LinkPattern**

Data Type

String

Remarks

The **LinkPattern** property supplies rendering information for a link to the object represented in a row of a table view. This link should normally use the complete HTTP syntax.

In a calendar view, a link is rendered from each AppointmentItem object to its related appointment form. The link is rendered on a nonblank property such as **Location** or **Subject**, or on **StartTime** if no other nonblank property can be found on the appointment.

The CDO Rendering Library generates a link for exactly one cell in each row of a table. It attempts to link the cell in the first column that represents a nonempty string property other than the message class. If no such column can be found, the last cell in the row is linked.

The **LinkPattern** property determines the appearance of the link in the HTML output. The following table shows which substitution tokens can be used. Note that their interpretations are not the same as those for either a column's **RenderUsing** property or a pattern's **RenderUsing** property.

Substitution token	Attribute of object being linked
%classpath%	A special-purpose format with the name "classpath" for rendering a message object's message class.
%obj%	The object's unique identifier, expressed as a hexadecimal string.
%rowid%	The object's index in its containing table.
%<formatname>%	Any user-defined or system-defined named format.

Setting **LinkPattern** generates a Format object with the name "message_Link" and adds it to the container renderer's Formats collection. This named format is for internal use only. You should always use the combination of **Render** and **LinkPattern** to render any link.

PrivateStore Property (ContainerRenderer Object)

The **PrivateStore** property returns or sets the InfoStore object to be used to access personal views for a container object. Read/write.

Syntax

objContRend.**PrivateStore**

Data Type

Object (InfoStore)

Remarks

The **PrivateStore** property represents a messaging user's default message store, which contains that user's personal views. The default message store is the InfoStore containing the user's active Inbox folder.

PrivateStore should be set when the container renderer is instantiated. If it is not set, personal views are not available to the rendering application.

Example

This code fragment determines the user's default message store from the Session object and sets the **PrivateStore** property accordingly:

```
Dim objSess As MAPI.Session
Dim objStore As InfoStore
Dim strStoreID As String
' ... assume objects are valid ...
strStoreID = objSess.Inbox.StoreID
Set objStore = objSess.GetInfoStore(strStoreID)
Set objContRend.PrivateStore = objStore
MsgBox "Your default store is " & objStore.Name
```

Render Method (ContainerRenderer Object)

The **Render** method renders the specified rows of a container object.

Syntax

strHTML = *objContRend*.**Render(***Style* **[***, pageNo***] [***, formatting***] [***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the rows of the folder or address book container. However, if the *ResponseObject* parameter is supplied, **Render** returns a value of **Empty**.

objContRend
Required. The ContainerRenderer object.

Style
Required. Long. Determines which objects are to be rendered into HTML hypertext. The *Style* parameter must match the setting of the **DataSource** property as follows:

***Style* setting**	**Value**	**Data source**	**Objects rendered**
CdoFolder Contents	1	AddressEntries, Messages, Recipients	Address entries, group headers and messages, or recipients, but not child folders
CdoFolder Hierarchy	2	Folders	Child folders, but not address entries, group headers, messages, or recipients

pageNo
Optional. Long. The page at which the rendering is to begin. The default value is 1.

formatting
Optional. Boolean. Reserved. Do not use.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The *Style* parameter applies to all container objects. You must set it to correspond to the value of the **DataSource** property. If you set it incorrectly, for example to **CdoFolderHierarchy** for a Recipients collection, or if you do not set it, **Render** returns **CdoE_INVALID_PARAMETER**.

Normally only enough rows to fill one frame should be rendered in one call to the **Render** method. The programmer can control this by setting the **RowsPerPage** property. Note that the appropriate number of rows depends on several factors, including the frame size, the font size, what other items are being displayed together with the table tows, and download time to the browser.

The HTML output of the **Render** and **RenderHeading** methods is treated as two separate tables, one for the header row and one for the container contents rows. The **TablePrefix** and **TableSuffix** property strings are inserted around each of these tables. If you want to force the generated HTML hypertext to make a single table, you can alter **TablePrefix** and **TableSuffix** before and after your calls to **Render** and **RenderHeading**.

Example

If the container contains 40 messages, this code fragment processes them in three renderings:

```
Dim pStart As Long ' current starting page
Dim rType As Integer ' type of rows to be rendered
Dim objResp As Object ' Active Server response object
' assume ContainerRenderer object already defined and initialized
objContRend.RowsPerPage = 15 ' 15 rows might fit reasonably in a frame
rType = CdoFolderContents
' ...
pStart = 1
objContRend.Render(rType, pStart, , objResp) ' pStart = 2 on return
objContRend.Render(rType, pStart, , objResp) ' pStart = 3 on return
objContRend.Render(rType, pStart, , objResp) ' pStart = 3 on return
```

RenderDate Method (ContainerRenderer Object)

The **RenderDate** method renders the date portion of the supplied date/time.

Syntax

strHTML = *objContRend*.**RenderDate(***Date, Format* **[***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the date. However, if the *ResponseObject* parameter is supplied, **RenderDate** returns a value of **Empty**.

objContRend
Required. This ContainerRenderer object.

Date
Required. Variant (**vbDate** format). The date/time to be rendered as a date.

Format
Required. String. The format picture string to use for the date output.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderDate** method ignores the time component of the **vbDate** format. You can render the time component with the **RenderTime** method.

The *Format* parameter specifies a picture for the output. Its contents are defined in the Win32® function **GetDateFormat**.

RenderHeading Method (ContainerRenderer Object)

The **RenderHeading** method renders a table containing the current view's column headers.

Syntax

strHTML = *objContRend*.**RenderHeading([***cellPattern***] [***, *ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the headers. However, if the *ResponseObject* parameter is supplied, **RenderHeading** returns a value of **Empty**.

objContRend
Required. The ContainerRenderer object.

cellPattern
Optional. String. A rendering source specifying the rendering of the heading cell for each column. If supplied, the *cellPattern* parameter overrides the specification in the **HeadingCellPattern** property.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The HTML output of the **Render** and **RenderHeading** methods is treated as two separate tables, one for the header row and one for the container contents rows. The **TablePrefix** and **TableSuffix** property strings are inserted around each of these tables. If you want to force the generated HTML hypertext to make a single table, you can alter **TablePrefix** and **TableSuffix** before and after your calls to **Render** and **RenderHeading**.

RenderPath Method (ContainerRenderer Object)

The **RenderPath** method renders the path to a folder or address book container.

Syntax

strHTML = *objContRend*.**RenderPath(***activeLinks* **[***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the path. However, if the *ResponseObject* parameter is supplied, **RenderPath** returns a value of **Empty**.

objContRend
Required. The ContainerRenderer object.

activeLinks
Required. Boolean. If this parameter is **True**, the folder path is rendered with an HTML link to each folder in the path hierarchy. If it is **False**, the path is rendered as plain text.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

RenderProperty Method (ContainerRenderer Object)

The **RenderProperty** method renders the designated property of the parent of the object specified by the **DataSource** property.

Syntax

strHTML = *objContRend*.**RenderProperty(***Property* **[***, formatting***] [***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the specified property. However, if the *ResponseObject* parameter is supplied, **RenderProperty** returns a value of **Empty**.

objContRend
Required. The ContainerRenderer object.

Property
Required. Variant (Long or String). The property tag for the predefined property, or the custom name of the user-defined property, that is to be rendered.

formatting
Optional. Boolean. Reserved. Do not use.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The container object specified by the **DataSource** property does not expose any renderable properties. The **RenderProperty** method renders a property on the parent object of the container object. The correspondence of these objects is as follows:

Container object in DataSource	Parent object whose properties are rendered by RenderProperty
AddressEntries collection	AddressList
Messages collection	Folder
Recipients collection	Message

The individual properties that can be rendered with the **RenderProperty** method are indicated in the parent object property descriptions.

The *Property* parameter designates the property to be rendered. The parameter can be a long integer designating the property by property tag, or a string designating it by custom name. In both cases it corresponds to the **Property** property of the Format object controlling the property to be rendered.

If the *Property* parameter is a custom name, it can optionally be prefixed with a GUID string identifying its property set. In this case, the GUID should be enclosed in braces.

RenderTime Method (ContainerRenderer Object)

The **RenderTime** method renders the time portion of the supplied date/time.

Syntax

strHTML = *objContRend*.**RenderTime(***Date, Format* **[***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the time. However, if the *ResponseObject* parameter is supplied, **RenderDate** returns a value of **Empty**.

objContRend
Required. This ContainerRenderer object.

Date
Required. Variant (**vbDate** format). The date/time to be rendered as a time.

Format
Required. String. The format picture string to use for the time output.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderTime** method ignores the date component of the **vbDate** format. You can render the date component with the **RenderDate** method.

The *Format* parameter specifies a picture for the output. Its contents are defined in the Win32® function **GetTimeFormat**.

RowPrefix Property (ContainerRenderer Object)

The **RowPrefix** property returns or sets the HTML string to insert at the beginning of the rendering of each row. Read/write.

Syntax

objContRend.**RowPrefix**

Data Type

String

Remarks

The default setting of the **RowPrefix** property is

```
<TR BGCOLOR=FFFFFF VALIGN=TOP ALIGN=LEFT>
```

If **RowPrefix** is changed, it should always contain the <TR> tag.

RowsPerPage Property (ContainerRenderer Object)

The **RowsPerPage** property returns or sets the number of rows to be rendered with the Render method. Read/write.

Syntax

objContRend.**RowsPerPage**

Data Type

Integer

Remarks

The **RowsPerPage** property is set to the number of rows that are to appear together in a single display, that is, the number or rows in each frame of the rendering. This number typically varies between 10 and 25, but could be outside that range under certain conditions. **RowsPerPage** defaults to 25.

Several factors can determine the appropriate number of rows per frame:

- The larger the frame used for the table rendering, the more rows it can hold.
- The smaller the maximum font size used in each row, the more rows can fit in a frame.
- The more rows a frame has, the longer it takes to transmit it to the browser.

If you call the **RenderHeading** method only for the first frame and do not render the heading row in subsequent frames, then you could increase **RowsPerPage** after the first frame.

If your frames include display items such as artwork in addition to the table rows, the space usable for the rows is reduced.

RowSuffix Property (ContainerRenderer Object)

The **RowSuffix** property returns or sets the HTML string to insert at the end of the rendering of each row. Read/write.

Syntax

objContRend.**RowSuffix**

Data Type

String

Remarks

The default setting of the **RowSuffix** property is

```
</TR>
```

If **RowSuffix** is changed, it should always contain the </TR> tag.

TablePrefix Property (ContainerRenderer Object)

The **TablePrefix** property returns or sets the HTML string to insert at the beginning of the rendering of a folder or address book container table. Read/write.

Syntax

objContRend.**TablePrefix**

Data Type

String

Remarks

The HTML output of the **Render** and **RenderHeading** methods is treated as two separate tables, one for the header row and one for the item rows. The **TablePrefix** and **TableSuffix** property strings are inserted around each of these tables. If you want to force the generated HTML hypertext to make a single table, you can alter **TablePrefix** and **TableSuffix** as follows:

1. Put <TABLE> in **TablePrefix** and remove </TABLE> from **TableSuffix**.
2. Call **RenderHeading**.
3. Remove <TABLE> from **TablePrefix** and restore </TABLE> to **TableSuffix**.
4. Call **Render**.
5. Restore <TABLE> to **TablePrefix**.

You might choose to call **RenderHeading** only in the first frame and then display only item rows in subsequent frames.

You can set the width of the table to be a percentage of the available horizontal space, or you can use the %tablewidth% substitution token for a fixed value representing the sum of the widths of all the columns. The substitution tokens are described in the **RenderUsing** property of the Pattern object.

The default setting of the **TablePrefix** property is

```
<TABLE BORDER=0 CELLSPACING=0 CELLPADDING=1 WIDTH=%tablewidth%>
```

If **TablePrefix** is changed, it should normally contain the <TABLE> tag.

TableSuffix Property (ContainerRenderer Object)

The **TableSuffix** property returns or sets the HTML string to insert at the end of the rendering of a folder or address book container table. Read/write.

Syntax

objContRend.**TableSuffix**

Data Type

String

Remarks

The HTML output of the **Render** and **RenderHeading** methods is treated as two separate tables, one for the header row and one for the item rows. The **TablePrefix** and **TableSuffix** property strings are inserted around each of these tables. If you want to force the generated HTML hypertext to make a single table, you can alter **TablePrefix** and **TableSuffix** as follows:

1. Put <TABLE> in **TablePrefix** and remove </TABLE> from **TableSuffix**.
2. Call **RenderHeading**.
3. Remove <TABLE> from **TablePrefix** and restore </TABLE> to **TableSuffix**.
4. Call **Render**.
5. Restore <TABLE> to **TablePrefix**.

You might choose to call **RenderHeading** only in the first frame and then display only item rows in subsequent frames.

The default setting of the **TableSuffix** property is

```
</TABLE>
```

If **TableSuffix** is changed, it should normally contain the </TABLE> tag.

TimeZone Property (ContainerRenderer Object)

The **TimeZone** property returns or sets the time zone in which the calendar is to be rendered. Read/write.

Syntax

objContRend.**TimeZone**

Data Type

Long

Remarks

The **TimeZone** property is used when a CalendarView is applied to the container renderer's **CurrentView** property.

The **TimeZone** property can have exactly one of the following values:

TimeZone setting	Decimal value	Time zone to render calendar in	Difference from GMT
CdoTmzAbuDhabi	24	The time zone used in the United Arab Emirates	+ 4:00
CdoTmzAdelaide	19	The time zone used in central Australia	+ 9:30
CdoTmzAlaska	14	Alaska time zone (North America)	- 9:00
CdoTmzAlmaty	46	The time zone used in Kazakhstan	+ 6:00
CdoTmzArizona	38	The time zone used in Arizona (USA)	- 7:00
CdoTmzAthens	7	The time zone used in Greece	+ 2:00
CdoTmzAtlantic Canada	9	Atlantic time zone (North America)	- 4:00
CdoTmzAzores	29	The time zone used in the Azores	- 1:00
CdoTmzBaghdad	26	The time zone used in Iraq	+ 3:00
CdoTmzBangkok	22	The time zone used in Thailand	+ 7:00
CdoTmzBeijing	45	The time zone used in mainland China	+ 8:00
CdoTmzBerlin	4	The time zone used in Germany	+ 1:00
CdoTmzBogota	35	The time zone used in Colombia	- 5:00
CdoTmzBombay	23	The time zone used in India	+ 5:30

CdoTmzBrisbane	18	The time zone used in eastern Australia	+ 10:00
CdoTmzBuenosAires	32	The time zone used in Argentina	- 3:00
CdoTmzCairo	49	The time zone used in Egypt	+ 2:00
CdoTmzCaracas	33	The time zone used in Venezuela	- 4:00
CdoTmzCentral	11	Central time zone (North America)	- 6:00
CdoTmzDarwin	44	The time zone used in northern Australia	+ 9:30
CdoTmzEastern	10	Eastern time zone (North America)	- 5:00
CdoTmzEastern Europe	5	The time zone used in Latvia, Lithuania, and Romania	+ 2:00
CdoTmzEnewetak	39	The time zone used on Enewetak	- 12:00
CdoTmzFiji	40	The time zone used on the Fijian Islands	+ 12:00
CdoTmzGuam	43	The time zone used on Guam	+ 10:00
CdoTmzGMT	1	Greenwich Mean Time, also called UTC (Coordinated Universal Time)	+ 0
CdoTmzHarare	50	The time zone used in Zimbabwe	+ 2:00
CdoTmzHawaii	15	Hawaii time zone (North America)	- 10:00
CdoTmzHobart	42	The time zone used in Tasmania	+ 10:00
CdoTmzHongKong	21	The time zone used in Hong Kong	+ 8:00
CdoTmzIndiana	34	The time zone used in Indiana (USA)	- 5:00
CdoTmzIslamabad	47	The time zone used in Pakistan	+ 5:00
CdoTmzIsrael	27	The time zone used in Israel	+ 2:00
CdoTmzKabul	48	The time zone used in Afghanistan	+ 4:30
CdoTmzLisbon	2	The time zone used in Portugal	+ 0
CdoTmzMagadan	41	The time zone used in eastern Russia	+ 11:00
CdoTmzMexicoCity	37	The time zone used in central Mexico	- 6:00

CdoTmzMidAtlantic	30	The time zone used on the mid-Atlantic islands	- 2:00
CdoTmzMidway Island	16	The time zone used on Midway Island	- 11:00
CdoTmzMonrovia	31	The time zone used in Liberia	+ 0
CdoTmzMoscow	51	The time zone used in western Russia	+ 3:00
CdoTmzMountain	12	Mountain time zone (North America)	- 7:00
CdoTmzNewfoundlad	28	The time zone used in far eastern Canada	- 3:30
CdoTmzOrigin	0	The time zone of the International Date Line, where each calendar day begins	+ 12:00
CdoTmzPacific	13	Pacific time zone (North America)	- 8:00
CdoTmzParis	3	The time zone used in France	+ 1:00
CdoTmzPrague	6	The time zone used in Czechoslovakia	+ 1:00
CdoTmzRiode Janeiro	8	The time zone used in Brazil	- 3:00
CdoTmzSaskatchewan	36	The time zone used in Saskatchewan (Canada)	- 6:00
CdoTmzTehran	25	The time zone used in Iran	+ 3:30
CdoTmzTokyo	20	The time zone used in Japan	+ 9:00
CdoTmzWellington	17	The time zone used in New Zealand	+ 12:00

The **TimeZone** property can be set from the Session object's "TimeZone" option. It defaults to the Web server's current time zone if not set. The session's options are set by its **SetOption** method and retrieved with its **GetOption** method.

Views Property (ContainerRenderer Object)

The **Views** property returns a single CalendarView or TableView object or a Views collection object containing all the views on a container object. Read-only.

Syntax

Set *objViewsColl* = *objContRend*.**Views**

Set *objView* = *objContRend*.**Views(***index***)**

objViewsColl
Object. The Views collection of this container renderer.

objContRend
Required. The ContainerRenderer object.

objView
Object. An individual CalendarView or TableView object belonging to this container renderer's Views collection.

index
Integer. An index into the container renderer's Views collection.

Data Type

Object (TableView or Views collection)

Remarks

The Views collection returned by the **Views** property contains all the predefined common, folder, and personal views on the container object. If you have modified any of these predefined views, your changes are still in effect provided the Views collection has not been released in the meantime. Custom views you have added to the collection are also in effect until the collection is released. Setting the **DataSource** property releases the collection, but setting the **CurrentView** property does not.

To select the view to be used to render the container object, set the **CurrentView** property to one of the views returned in the **Views** property.

If a view object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the container renderer's Views collection. This size is available in the collection's **Count** property.

Although the **Views** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member CalendarView and TableView objects retain their respective read/write or read-only accessibility.

Format Object

The Format object contains information that controls how a particular property is to be rendered.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	Formats collection
Child objects:	Patterns collection
Default property:	(none)

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Name	1.1	String	Read/write
Parent	1.1	Formats collection object	Read-only
Patterns	1.1	Pattern object or Patterns collection object	Read-only
Property	1.1	Long or String	Read-only

Methods

Name	Available in version	Parameters
Delete	1.1	(none)

Remarks

The Format object provides rendering information for exactly one property of the object being rendered. The property is designated by either property tag or property name in the corresponding Format object's **Property** property.

A format contains a collection of patterns that control how all values of the property are to be rendered, available through the format's **Patterns** property. Each pattern in the Patterns collection governs the rendering for a particular set of values of the property.

It is recommended that a format be defined for every renderable property, but it is possible to render a property without a format. If the property is associated with a column in a table view, that Column object may have a **RenderUsing** property providing a rendering source for the column. If a property is rendered without a format or a rendering source, either in a column or with the **RenderProperty** method, it is rendered by data type using default rendering information.

Delete Method (Format Object)

The **Delete** method removes the Format object from the Formats collection.

Syntax

objFormat.**Delete( )**

objFormat
Required. The Format object.

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Format object. If you have another reference to the format, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another format.

The final **Release** on the Format object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The action of the **Delete** method is permanent, and the Format object cannot be restored to the collection. Before calling **Delete**, your application can prompt the user to verify whether the format should be permanently deleted.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Format object. That reference survives the call to **Delete** and has to be reassigned. The second Format object is deleted without creating another reference, and no other action is necessary.

```
' assume valid ObjectRenderer object
Set objFormat = objObjectRenderer.Formats.Item(1)
objFormat.Delete ' still have a reference from Set statement
' ... other operations on objFormat possible but pointless ...
Set objFormat = Nothing ' necessary to remove reference
' ...
objObjectRenderer.Formats.Item(2).Delete ' no reference to remove
```

Name Property (Format Object)

The **Name** property returns or sets the reference name of this Format object. Read/write.

Syntax

objFormat.**Name**

Data Type

String

Remarks

The **Name** property represents the name used to identify a special-purpose format, which does not represent a specific property.

Patterns Property (Format Object)

The **Patterns** property returns a single Pattern object or a Patterns collection belonging to this format. Read-only.

Syntax

Set *objPatterns* = *objFormat*.**Patterns**

Set *objPattern* = *objFormat*.**Patterns(***index***)**

objPatterns
Object. The Patterns collection of this format.

objFormat
Required. The Format object.

objPattern
Object. An individual Pattern object belonging to this format's Patterns collection.

index
Integer. An index into the format's Patterns collection.

Data Type

Object (Pattern or Patterns collection)

Remarks

Each pattern in the collection specifies rendering for a particular set of values of the property represented by the Format object.

If a Pattern object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the format's Patterns collection. This size is available in the collection's **Count** property.

Although the **Patterns** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member Pattern objects retain their respective read/write or read-only accessibility.

Property Property (Format Object)

The **Property** property returns the name or tag of the property to be rendered. Read-only.

Syntax

objFormat.**Property**

Data Type

Variant (Long or String)

Remarks

The **Property** property is a long integer if the property being rendered is specified by a property tag. If it is a named custom property, the **Property** property is a string. The property name in this string can optionally be prefixed with a GUID string identifying its property set. In this case, the GUID should be enclosed in braces.

Formats Collection Object

The Formats collection object contains zero or more formats for a rendering.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	ContainerRenderer ObjectRenderer RenderingApplication
Child objects:	Format
Default property:	**Item**

A Formats collection supports count and index values that let you access an individual Format object through the **Item** property. The Formats collection also supports the Microsoft® Visual Basic® **For Each** statement.

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Item	1.1	Format object	Read-only
Parent	1.1	ContainerRenderer object or ObjectRenderer object	Read-only

Methods

Name	Available in version	Parameters
Add	1.1	*property* as **Variant**, (optional) *name* as **String**

Remarks

The Formats collection object controls how the values of certain properties are rendered. A property represented by a Format object in the collection is rendered according to the patterns in that format. Every property to be rendered should be represented by exactly one Format object.

Add Method (Formats Collection)

The **Add** method creates and returns a new Format object in the Formats collection.

Syntax

Set *objFormat* = *objFormatsColl*.**Add(***property* **[***, name***])**

objFormat
On successful return, contains the new Format object.

objFormatsColl
Required. The Formats collection object.

property
Required. Variant (Long or String). The property tag for the predefined property, or the custom name of the user-defined property, that is to be formatted by the new Format object. A value of zero is used to indicate a special-purpose format not representing any property.

name
Optional. String. The name to be assigned to the new Format object. The *name* parameter is for special-purpose formats only. If it is specified, the *property* parameter must be set to zero.

Remarks

The **Add** method parameters correspond to the **Property** and **Name** properties of the Format object.

The *property* parameter designates the property to be rendered. The parameter can be a long integer designating the property by property tag, or a string designating it by custom name. In both cases it corresponds to the **Property** property.

If the *property* parameter is a custom name, it can optionally be prefixed with a GUID string identifying its property set. In this case, the GUID should be enclosed in braces.

The *name* parameter designates a reference name for a special-purpose format, which does not represent a specific property.

Every property to be rendered should have exactly one format. The Formats collection cannot contain more than one Format object for any one property.

You can add a format corresponding to a predefined property at any time, but if you wish to add a format corresponding to a user-defined property, you must first set the data source of the rendering object you are working with, that is, either the ContainerRenderer object's **DataSource** property or the ObjectRenderer object's **DataSource** property.

If you attempt to add a user-defined property without the data source being set, you get an error return from **Add**. Because the CDO Rendering Library runs primarily in server-side script, which does not support exception handling, you must explicitly test for errors:

```
Set objFormat = objFormatsColl.Add("CustomPropName")
If Err.Number <> 0 Then
  If Err.Number = &H8000FFFF Then ' E_UNEXPECTED - no data source
    ' handle error - perhaps set DataSource property and try again
  End If
End If
```

Count Property (Formats Collection)

The **Count** property returns the number of Format objects in the collection. Read-only.

Syntax

objFormatsColl.**Count**

Data Type

Long

Remarks

For more information on using the **Count** and **Item** properties, see the example in the **Item** property.

Item Property (Formats Collection)

The **Item** property returns the specified Format object from the Formats collection. Read-only.

Syntax

objFormatsColl.**Item(***index***)**

objFormatsColl.**Item(***name***)**

objFormatsColl.**Item(***propTag***)**

index
A short integer (less than or equal to 65,535 = &HFFFF) ranging from 1 to *objFormatsColl*.**Count**. Specifies the index within the collection.

name
The display name of the Format object to be selected from the collection.

propTag
A long integer (greater than or equal to 65,536). Specifies the 32-bit property tag of the renderable property corresponding to a format in the collection. The renderable property is indicated in the Format object's **Property** property.

The **Item** property is the default property of a Formats collection, meaning that *objFormatsColl***(***index***)** is syntactically equivalent to *objFormatsColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Format object

Remarks

The **Item** property works like an accessor property.

If the specified Format object is not found in the collection, the **Item** property returns **Nothing**.

Although the **Item** property itself is read-only, the Format object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together:

```
' Put all format names in a collection into a string array
Dim strItemName(100) as String
Dim i As Integer ' loop counter
' error handling omitted from this fragment ...
For i = 1 To objFormatsColl.Count Step 1
    strItemName(i) = objFormatsColl.Item(i).Name
    ' or = objFormatsColl(i) since Item and Name are default properties
    If 100 = i Then ' max size of string array
        Exit Function
    End If
Next i
```

ObjectRenderer Object

The ObjectRenderer object renders selected properties of a specified CDO object.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	RenderingApplication (or none)
Child objects:	Formats collection
Default property:	(none)

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
CodePage	1.1	Long, Object, or String	Read/write
DataSource	1.1	AddressEntry, AppointmentItem, Attachment, Folder, MeetingItem, Message, or Recipient object	Read/write
Formats	1.1	Format object or Formats collection object	Read-only
LCID	1.1	Long	Read-only
LinkPattern	1.1	String	Read/write
Parent	1.1	RenderingApplication object or set to **Nothing**	Read-only

Methods

Name	Available in version	Parameters
RenderDate	1.2	*Date* as **Variant**, *Format* as **String**, (optional) *ResponseObject* as **Object**
RenderLink	1.1	(optional) *ResponseObject* as **Object**
RenderProperty	1.1	*Property* as **Variant**, (optional) *formatting* as **Boolean**, (optional) *ResponseObject* as **Object**

RenderTime	1.2	*Date* as **Variant**, *Format* as **String**, (optional) *ResponseObject* as **Object**

Remarks

The ObjectRenderer object can be applied to a CDO object to render selected properties. For example, you can use it to render the subject properties of a Message object or the subfolders of a Folder object. The object renderer is easier and faster to use than a specialized renderer such as the ContainerRenderer object. You use the object renderer when you need only a few properties and not the full tabular functionality of the specialized rendering object.

CodePage Property (ObjectRenderer Object)

The **CodePage** property returns or sets the code page used by the ObjectRenderer object. Read/write.

Syntax

objObjectRend.**CodePage**

Data Type

Variant (Long, Object, or String)

Remarks

If the **CodePage** property is a long integer, it represents the code page to be used for character representation. If **CodePage** is an object, it contains an **IDispatch** pointer to an **IRequest** object. The CDO Rendering Library obtains from this object an HTTP Accept-Language header and sets the code page to the value that most closely matches the header. If **CodePage** is a string, it is treated as an International Standards Organization (ISO) language name, and the code page is set from the Microsoft® Windows NT® registry entry for that language.

If a long integer value for **CodePage** is invalid, the code page remains unchanged. If a string value is not a recognizable language name, the appropriate default code page for the locale is used.

The setting of the **CodePage** property affects character selection and any dependent data considerations. The collating sequence, the sort order, and the formats for time, date, and currency representation are set by the Session object's **SetLocaleIDs** method and cannot be changed using the **CodePage** property.

DataSource Property (ObjectRenderer Object)

The **DataSource** property contains the CDO object for which certain properties are to be rendered. Read/write.

Syntax

objObjectRend.**DataSource**

Data Type

Object (AddressEntry, AppointmentItem, Attachment, Folder, MeetingItem, Message, or Recipient)

Remarks

The **DataSource** property accepts a AddressEntry, AppointmentItem, Attachment, Folder, MeetingItem, Message, or Recipient object.

Formats Property (ObjectRenderer Object)

The **Formats** property returns a single Format object or a Formats collection. Read-only.

Syntax

Set *objFormats* = *objObjectRend*.**Formats**

Set *objFormat* = *objObjectRend*.**Formats(***index***)**

Set *objFormat* = *objObjectRend*.**Formats(***name***)**

objFormats
Object. The Formats collection of this object renderer.

objObjectRend
Required. The ObjectRenderer object.

objFormat
Object. An individual Format object belonging to this object renderer's Formats collection.

index
Integer. An index into the object renderer's Formats collection.

name
String. The reference name of a special-purpose Format object in the collection.

Data Type

Object (Format or Formats collection)

Remarks

Each format in the collection corresponds to a single property, except for special-purpose formats, which do not represent specific properties. Every property to be rendered should be represented by exactly one Format object.

New formats should be added to the collection before the **DataSource** property is set. If you define a new format after changing the data source, it is ignored during the rendering.

If a Format object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the object renderer's Formats collection. This size is available in the collection's **Count** property.

Although the **Formats** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member Format objects retain their respective read/write or read-only accessibility.

LCID Property (ObjectRenderer Object)

The **LCID** property returns the locale identifier for the current messaging user. Read-only.

Syntax

objObjectRend.**LCID**

Data Type

Long

Remarks

A locale is the set of features of a messaging user's environment that are dependent on language, country, culture, and conventions. These features include the character selection, the collating sequence and sort order, and the date, time, and currency formats. The Session object's **SetLocaleIDs** method sets the locale identifier, which cannot be subsequently changed during the session. The character selection, however, can be changed by setting the **CodePage** property.

A locale identifier (LCID) is a 32-bit value containing a 16-bit language identifier and a 4-bit sort identifier. The Microsoft® Windows NT® macros **SORTIDFROMLCID** and **LANGIDFROMLCID** can be used to extract these identifiers from the LCID.

The **LCID** property corresponds to the MAPI property PR_LOCALE_ID.

LinkPattern Property (ObjectRenderer Object)

The **LinkPattern** property returns or sets a rendering source that determines how a link is rendered. Read/write.

Syntax

objObjectRend.**LinkPattern**

Data Type

String

Remarks

The **LinkPattern** property supplies rendering information for a link to the object currently specified in the **DataSource** property. The link is rendered by the **RenderLink** method. It can use the complete HTTP syntax or simply render a URL.

The **LinkPattern** property determines the appearance of the link in the HTML output. The following table shows which substitution tokens can be used. Note that their interpretations are not the same as for a pattern's **RenderUsing** property.

Substitution token	Attribute of object being linked
%classpath%	A special-purpose format with the name "classpath" for rendering a message object's message class.
%obj%	The object's unique identifier, expressed as a hexadecimal string.
%<formatname>%	Any user-defined or system-defined named format.

Setting **LinkPattern** generates a Format object with the name "message_Link" and adds it to the object renderer's Formats collection. This named format is for internal use only. You should always use the combination of **RenderLink** and **LinkPattern** to render any link.

RenderDate Method (ObjectRenderer Object)

The **RenderDate** method renders the date portion of the supplied date/time.

Syntax

strHTML = *objObjectRend*.**RenderDate(***Date, Format* **[***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the date. However, if the *ResponseObject* parameter is supplied, **RenderDate** returns a value of **Empty**.

objObjectRend
Required. This ObjectRenderer object.

Date
Required. Variant (**vbDate** format). The date/time to be rendered as a date.

Format
Required. String. The format picture string to use for the date output.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderDate** method ignores the time component of the **vbDate** format. You can render the time component with the **RenderTime** method.

The *Format* parameter specifies a picture for the output. Its contents are defined in the Win32® function **GetDateFormat**.

RenderLink Method (ObjectRenderer Object)

The **RenderLink** method renders an HTML link to a specified object.

Syntax

strHTML = *objObjectRend*.**RenderLink([***ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the link. However, if the *ResponseObject* parameter is supplied, **RenderLink** returns a value of **Empty**.

objObjectRend
Required. The ObjectRenderer object.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderLink** method renders a link to the object currently specified in the **DataSource** property. The rendering information is supplied in the **LinkPattern** property.

RenderProperty Method (ObjectRenderer Object)

The **RenderProperty** method renders the designated property of the object specified by the **DataSource** property.

Syntax

strHTML = *objObjectRend*.**RenderProperty(***Property* **[***, formatting***] [***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the specified property. However, if the *ResponseObject* parameter is supplied, **RenderProperty** returns a value of **Empty**.

objObjectRend
Required. The ObjectRenderer object.

Property
Required. Variant (Long or String). The property tag for the predefined property, or the custom name of the user-defined property, that is to be rendered.

formatting
Optional. Boolean. Reserved. Do not use.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The individual properties that can be rendered with the **RenderProperty** method are indicated in the appropriate object property descriptions.

The *Property* parameter designates the property to be rendered. The parameter can be a long integer designating the property by property tag, or a string designating it by custom name. In both cases it corresponds to the **Property** property of the Format object controlling the property to be rendered.

If the *Property* parameter is a custom name, it can optionally be prefixed with a GUID string identifying its property set. In this case, the GUID should be enclosed in braces.

RenderTime Method (ObjectRenderer Object)

The **RenderTime** method renders the time portion of the supplied date/time.

Syntax

strHTML = *objObjectRend*.**RenderTime(***Date, Format* **[***, ResponseObject***])**

strHTML
On successful return, contains a string with the HTML hypertext representing the time. However, if the *ResponseObject* parameter is supplied, **RenderTime** returns a value of **Empty**.

objObjectRend
Required. This ObjectRenderer object.

Date
Required. Variant (**vbDate** format). The date/time to be rendered as a time.

Format
Required. String. The format picture string to use for the time output.

ResponseObject
Optional. Object. An Active Server response object used to send HTML output to the browser. If this parameter is not supplied, HTML output is written to *strHTML*.

Remarks

The **RenderTime** method ignores the date component of the **vbDate** format. You can render the date component with the **RenderDate** method.

The *Format* parameter specifies a picture for the output. Its contents are defined in the Win32® function **GetTimeFormat**.

Pattern Object

The Pattern object represents a rendering pattern within a format.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	Patterns collection
Child objects:	(none)
Default property:	(none)

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Parent	1.1	Patterns collection object	Read-only
RenderUsing	1.1	String	Read/write
Value	1.1	Variant	Read/write

Methods

Name	Available in version	Parameters
Delete	1.1	(none)

Remarks

The Pattern object governs how a particular set of values of a property are to be rendered. The property is specified by the **Property** property of the Format object owning the parent Patterns collection. Each Pattern object in the collection specifies the rendering for the property when its value matches the contents of the pattern's **Value** property.

Delete Method (Pattern Object)

The **Delete** method removes the Pattern object from the Patterns collection.

Syntax

objPattern.**Delete( )**

objPattern
Required. The Pattern object.

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Pattern object. If you have another reference to the pattern, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another pattern.

The final **Release** on the Pattern object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The action of the **Delete** method is permanent, and the Pattern object cannot be restored to the collection. Before calling **Delete**, your application can prompt the user to verify whether the pattern should be permanently deleted.

When you delete a member of a collection, the collection is immediately refreshed, meaning that its **Count** property is reduced by one and its members are reindexed. To access a member following the deleted member, you must use its new index value. For more information, see Looping Through a Collection.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Pattern object. That reference survives the call to **Delete** and has to be reassigned. The second Pattern object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Format object
Set objPattern = objFormat.Patterns.Item(1)
objPattern.Delete ' still have a reference from Set statement
' ... other operations on objPattern possible but pointless ...
Set objPattern = Nothing ' necessary to remove reference
' ...
objFormat.Patterns.Item(2).Delete ' no reference to remove
```

RenderUsing Property (Pattern Object)

The **RenderUsing** property returns or sets a rendering source that determines how a particular value set of a designated property is rendered. Read/write.

Syntax

objPattern.**RenderUsing**

Data Type

Variant (String)

Remarks

The **RenderUsing** property provides a source for rendering a property into HTML hypertext. The property to be rendered is designated in the parent Format object's **Property** property. If that property has the value or values specified in this pattern's **Value** property, this **RenderUsing** string is used to render it. Otherwise, the rendering uses a pattern with a matching **Value** property.

If the renderable property is a column property in a table view, the rendering information is taken from the Column object's **RenderUsing** property. If no column rendering information is available, the rendering object searches for a format representing the renderable property. If no such format can be found, or if the format contains no pattern with a value match, the property is rendered by default according to its data type and value.

If the **RenderUsing** string contains substitution tokens within percent signs, such as %value%, the tokens are replaced by the appropriate attributes of the designated property to generate the HTML hypertext. If there are no substitution tokens in the string, the string itself is rendered without modification.

This approach lets you keep compact values in a property, such as enumerated integers instead of lengthier strings. You can then use the integer value as an index into the Patterns collection through each pattern's **Value** property. The pattern's **RenderUsing** property can contain the rendering string appropriate for that particular integer value.

The substitution tokens that can be inserted in a rendering source are as follows:

Substitution token	Attribute of property being rendered
%apptlength%	For a property on an AppointmentItem object being viewed in **CdoModeCalendarDaily** mode, the number of rows spanned by the appointment or free block.
%apptwidth%	For a property on an AppointmentItem object being viewed in **CdoModeCalendarDaily** mode, the number of columns spanned by the appointment or free block.
%classpath%	For a property on a Message object, the message class expressed as a lowercase string, such as ipm.note. For a report message class, only the first and last elements are retained, so that REPORT.IPM.Note.NDR is expressed as report.ndr. When the application sets the **FormsRoot** property of the RenderingApplication object, a special-purpose format named %classpath% is created, which further processes the output of this token.
%columns%	For a property on an AppointmentItem object being viewed in **CdoModeCalendarDaily** mode, the total number of columns in the view.

%date%	For a property on an AppointmentItem object, the day for which appointments are being rendered, expressed as a string.
%kvalue%	For a numeric property, its value expressed in kilobytes, that is, the value divided by 1024. This value is rendered without a “K” character.
%obj%	For a property on any object, the unique identifier of the object, expressed as a hexadecimal string.
%parentobj%	For a property on a Message object, the unique identifier of the parent folder of the message, expressed as a hexadecimal string.
%rowid%	For a property on an object in a calendar view or a table view, the position of the object in its containing table. This position is also the row number in the view.
%time%	For a property on an AppointmentItem object being viewed in **CdoModeCalendarDaily** mode, the time of the time slot currently being rendered, expressed as a string. If the slot begins on an hour boundary, the string contains the hour and either "AM" or "PM". Otherwise, the string contains the time separator character and the starting minute.
%tablewidth%	For a property on an object in a calendar view or a table view, the sum of the pixel widths of all the columns in the view, expressed in pixels. The %tablewidth% token is primarily useful for the **TablePrefix** property of the ContainerRenderer object.
%value%	For a property on any object, the value of the property, rendered according to the property’s data type.

A substitution token can also contain the name of a Format object between the percent signs. If the token matches a format’s **Name** property, the patterns of that format are searched to find the **RenderUsing** string. This approach lets you bypass the predefined tokens and customize your rendering.

If the character string between the percent signs is not a valid substitution token or format name, the property is rendered by data type. If a token is valid but does not apply to the property being rendered, for example a %kvalue% token for a string property, nothing is rendered in place of the token.

More than one substitution token can be included in a **RenderUsing** string, for example %value%, %obj%, and %parentobj%.

The %classpath% token is rendered from the MAPI property PR_MESSAGE_CLASS. The %obj% token is rendered from a long-term entry identifier if one is available in the underlying table, and otherwise from the MAPI property PR_ENTRYID. The %parentobj% token is rendered from the MAPI property PR_PARENT_ENTRYID, and the %rowid% token from the MAPI property PR_ROWID.

Example

The renderable property is specified in a column’s **Property** property, or a format’s **Property** property if the column does not supply rendering information.

If the renderable property contains a string:

```
www.microsoft.com
```

and the **RenderUsing** string contains a substitution token:

```
<A HREF=http://%value%>Microsoft Corporation</A>
```

the column property is rendered with the token replaced:

```
<A HREF=http://www.microsoft.com>Microsoft Corporation</A>
```

If the **RenderUsing** string contains no substitution token:

```
<A HREF=http://msft.com>Microsoft Corporation</A>
```

it is rendered unchanged for the column property:

```
<A HREF=http://msft.com>Microsoft Corporation</A>
```

If the **RenderUsing** string contains an invalid token:

```
<A HREF=http://%valu%>Microsoft Corporation</A>
```

the column property is rendered based on its data type:

```
<A HREF=http://www.microsoft.com>Microsoft Corporation</A>
```

If the **RenderUsing** property contains an inapplicable token:

```
<A HREF=http://%kvalue%>Microsoft Corporation</A>
```

it is rendered without any output for the token:

```
<A HREF=http://>Microsoft Corporation</A>
```

Value Property (Pattern Object)

The **Value** property indicates which property value or values are to be rendered using this pattern. Read/write.

Syntax

objPattern.**Value**

Data Type

Variant

Remarks

The **Value** property specifies a set of values for the property designated in the Format object's **Property** property. If the designated property contains a value within this set of values, it is rendered as specified in the **RenderUsing** property.

A string value consisting of a single asterisk (*) can be used to match all possible values of the designated property. A string value can also have the following regular expressions embedded within it:

Regular expression	Matching values
*	Zero or more characters of any values.
?	Exactly one character of any value.
[…]	A single character matching any character within the brackets.
[x1-x2]	A single character matching any character in the range between the characters x1 and x2 inclusive.

A valid hexadecimal string in the **Value** property can be converted to a binary value for purposes of matching, if appropriate to the data type of the designated property.

If no pattern can be found with a value match, or if no format has been defined for the renderable property, it is rendered by default according to its data type and value.

Common values of the **Value** property include:

```
"*"
True
CdoLow
CdoCc
CdoFileLink
"*Urgent*"
"\\PAYROLL\ARCHIVE\198?\B.XLS"
"All[ae]n H. Anders[eo]n"
"\\SERVER[1-5]\PRODUCTS"
```

Patterns Collection Object

The Patterns collection object contains zero or more patterns in a format.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	Format
Child objects:	Pattern
Default property:	**Item**

A Patterns collection supports count and index values that let you access an individual Pattern object through the **Item** property. The Patterns collection also supports the Microsoft® Visual Basic® **For Each** statement.

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Item	1.1	Pattern object	Read-only
Parent	1.1	Format object	Read-only

Methods

Name	Available in version	Parameters
Add	1.1	*value* as **Variant**, *renderUsing* as **Variant**

Remarks

The parent Format object represents a property to be rendered. The Patterns collection should contain enough patterns to cover all possible values of this property. Each Pattern object's **Value** property indicates the set of values to be rendered by that pattern. If only one Pattern object is included in the collection, its **Value** property should contain a string value consisting of a single asterisk (*), which matches all possible values of the property to be rendered.

Add Method (Patterns Collection)

The **Add** method creates and returns a new Pattern object in the Patterns collection.

Syntax

Set *objPattern* = *objPatternsColl*.**Add(***value, renderUsing***)**

objPattern
On successful return, contains the new Pattern object.

objPatternsColl
Required. The Patterns collection object.

value
Required. Variant. Specifies which property values are to be rendered using the new Pattern object.

renderUsing
Required. Variant. Specifies how a property is to be rendered using the new Pattern object.

Remarks

The **Add** method parameters correspond to the **Value** and **RenderUsing** properties of the new Pattern object.

Count Property (Patterns Collection)

The **Count** property returns the number of Pattern objects in the collection. Read-only.

Syntax

objPatternsColl.**Count**

Data Type

Long

Remarks

For more information on using the **Count** and **Item** properties, see the example in the **Item** property.

Item Property (Patterns Collection)

The **Item** property returns the specified Pattern object from the Patterns collection. Read-only.

Syntax

objPatternsColl.**Item(***index***)**

index
A short integer ranging from 1 to *objPatternsColl*.**Count**.

The **Item** property is the default property of a Patterns collection, meaning that *objPatternsColl***(***index***)** is syntactically equivalent to *objPatternsColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Pattern object

Remarks

The **Item** property works like an accessor property.

If the specified Pattern object is not found in the collection, the **Item** property returns **Nothing**.

Although the **Item** property itself is read-only, the Pattern object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together:

```
' Put all pattern names in a collection into a string array
Dim strItemName(100) as String
Dim i As Integer ' loop counter
' error handling omitted from this fragment ...
For i = 1 To objPatternsColl.Count Step 1
    strItemName(i) = objPatternsColl.Item(i).Name
    ' or = objPatternsColl(i) since Item and Name are default properties
    If 100 = i Then ' max size of string array
        Exit Function
    End If
Next i
```

RenderingApplication Object

The RenderingApplication object provides a framework and support for specific rendering objects.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	(none)
Child objects:	ContainerRenderer Formats collection ObjectRenderer
Default property:	(none)

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
CodePage	1.1	Long, Object, or String	Read/write
ConfigParameter	1.1	Variant	Read-only
Formats	1.1	Formats collection object	Read-only
FormsRoot	1.1	String	Read/write
ImpID	1.2	Double	Read-only
LCID	1.1	Long	Read-only
LoggingLevel	1.1	Long	Read/write
Name	1.1	String	Read/write
Parent	1.1	Object; set to **Nothing**	Read-only
SecurityID	1.2	Double	Read-only
Version	1.1	String	Read-only
VirtualRoot	1.1	String	Read/write

Methods

Name	Available in version	Parameters
CreateRenderer	1.1	*class* as **Integer**
Impersonate	1.2	*dwImpID* as **Double**
LoadConfiguration	1.1	*source* as **Integer**, *section* as **String**

Remarks

The RenderingApplication object provides a framework for a rendering application. You can set options on the RenderingApplication object that are inherited by all rendering objects created by the **CreateRenderer** method. The interface instantiated by the RenderingApplication object also provides for event logging and performance monitoring.

CodePage Property (RenderingApplication Object)

The **CodePage** property returns or sets the code page to be used by all rendering objects created with the **CreateRenderer** method. Read/write.

Syntax

objRendApp.**CodePage**

Data Type

Variant (Long, Object, or String)

Remarks

If the **CodePage** property is a long integer, it represents the code page to be used for character representation. If **CodePage** is an object, it contains an **IDispatch** pointer to an **IRequest** object. The CDO Rendering Library obtains from this object an HTTP Accept-Language header and sets the code page to the value that most closely matches the header. If **CodePage** is a string, it is treated as an International Standards Organization (ISO) language name, and the code page is set from the Microsoft® Windows NT® registry entry for that language.

If a long integer value for **CodePage** is invalid, the code page remains unchanged. If a string value is not a recognizable language name, the appropriate default code page for the locale is used.

The setting of the **CodePage** property affects character selection and any dependent data considerations. The collating sequence, the sort order, and the formats for time, date, and currency representation are set by the Session object's **SetLocaleIDs** method and cannot be changed using the **CodePage** property.

ConfigParameter Property (RenderingApplication Object)

The **ConfigParameter** property returns the value of a named configuration parameter. Read-only.

Syntax

objRendApp.**ConfigParameter(***parameter***)**

parameter
Required. String. The named of the parameter read from a configuration section.

Data Type

Variant

Remarks

The **ConfigParameter** property accesses the values of the named configuration parameters read in by the **LoadConfiguration** method. The following table lists each parameter and its corresponding user interface setting in the HTTP Protocol property sheets:

Configuration parameter	Data type	HTTP Protocol property sheet setting
"Admin Display Name"	String	Display name
"Admin Note"	String	Administrative note
"Anonymous Access"	Boolean	Allow anonymous users to access the public folders
"AnonymousSessionTimeout"	Long	(Registry) Session timeout for anonymous users (default 20 minutes)
"AuthenticatedSessionTimeout"	Long	(Registry) Session timeout for authenticated users (default 60 minutes)
"Debug"	Long	Verbosity level of error messages sent to the browser (used by Debug build)
"Directory Name"	String	Directory name
"Enterprise"	String	Organization name (corresponding to the X.400 "o=")
"HTTP Enabled"	Boolean	Enable protocol
"HTTP Servers"	String array	List of all HTTP-enabled servers in the site
"Language Pack Directory"	String	Physical directory location of langpack DLLs
"Publish AB Attributes"	String array	List of GAL attributes to publish
"Publish GAL"	Boolean	Allow anonymous users to browse the global address list
"Publish GAL Limit"	Long	Maximum number of entries (Advanced page)

"Published Public Folders"	String array	Public folder shortcuts (Folder Shortcuts page)
"RFC1867NoCleanupAt Unload"	Long used as Boolean	(Registry) Do not attempt to delete files in the temporary Web server directory at shutdown
"RFC1867SaveDirectory"	String	(Registry) Path to a temporary directory on the Web server to hold attachments to messages still being composed
"RFC1867Trace"	Long used as Boolean	(Registry) Log all file uploads to a TRCnnnnn.TMP file in the temporary Web server directory
"Server"	String	Name of Microsoft® Exchange 5.0 Server
"Site"	String	Organizational Unit name (corresponding to the X.400 "ou=")

The user interface can be accessed at

```
Exchange Administrator\Site name\Configration\Protocol\HTTP(Web) Site
Setting Properties
```

You can also use **ConfigParameter** to set and retrieve registry values that are unrelated to CDO Rendering. If you do this, such values are ignored by the CDO Rendering Library.

CreateRenderer Method (RenderingApplication Object)

The **CreateRenderer** method creates a rendering object attached to the rendering application.

Syntax

Set *objRenderer* = *objRendApp*.**CreateRenderer(***class***)**

objRenderer
On successful return, contains the new rendering object.

objRendApp
Required. The RenderingApplication object.

class
Required. Integer. The class of rendering object to create. The *class* parameter can have exactly one of the following values:

***class* setting**	**Decimal value**	**Meaning**
CdoClass ContainerRenderer	3	Create a ContainerRenderer object.
CdoClass ObjectRenderer	2	Create an ObjectRenderer object.

Remarks

The rendering object created by the **CreateRenderer** method inherits the code page and formats from this application, as well as logging capability. You could create a container renderer or object renderer directly by calling the Microsoft® Visual Basic® **CreateObject** function, but you would sacrifice the inheritance.

Formats Property (RenderingApplication Object)

The **Formats** property returns a single Format object or a Formats collection. Read-only.

Syntax

Set *objFormats* = *objRendApp*.**Formats**

Set *objFormat* = *objRendApp*.**Formats(***index***)**

Set *objFormat* = *objRendApp*.**Formats(***name***)**

objFormats
Object. The Formats collection of this rendering application.

objRendApp
Required. The RenderingApplication object.

objFormat
Object. An individual Format object belonging to this rendering application's Formats collection.

index
Integer. An index into the rendering application's Formats collection.

name
String. The reference name of a special-purpose Format object in the collection.

Data Type

Object (Format or Formats collection)

Remarks

Each format in the collection corresponds to a single property, except for special-purpose formats, which do not represent specific properties. Every property to be rendered should be represented by exactly one Format object.

The collection of rendering formats returned by the **Formats** property is inherited by all rendering objects created by the **CreateRenderer** method. Each format corresponds to one property to be rendered.

If a Format object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the rendering application's Formats collection. This size is available in the collection's **Count** property.

Although the **Formats** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member Format objects retain their respective read/write or read-only accessibility.

FormsRoot Property (RenderingApplication Object)

The **FormsRoot** property returns or sets the absolute path to a forms directory tree on Microsoft® Internet Information Server (IIS). Read/write.

Syntax

objRendApp.**FormsRoot**

Data Type

String

Remarks

The **FormsRoot** property contains the complete path to an IIS disk directory used as the root of a tree of subdirectories containing .ASP files. Each of these subdirectories corresponds to a message class which can be rendered into HTML hypertext. The tree is considered to have its root at a path node ending with the string "\Forms". If the path specified in **FormsRoot** does not end with this string, it is appended to **FormsRoot** to access the tree.

Setting the **FormsRoot** property causes the rendering application to generate a special-purpose format with the name “classpath”. This format contains a pattern for each subdirectory in the tree that contains at least one .ASP file. The %classpath% format is used to process the output of the %classpath% substitution token when it appears in the **RenderUsing** property of a Pattern object.

Note that the the **FormsRoot** property contains an absolute disk directory path at IIS, while the **VirtualRoot** property contains an HTTP path at the browser.

If the **FormsRoot** property has not been set, the %classpath% format is not defined, and the output of the %classpath% substitution token in the pattern's **RenderUsing** property is used without modification. You must set **FormsRoot** to the appropriate path if %classpath% is to be used to access a disk directory.

Example

Assuming the following IIS disk directory structure:

```
C:\exchsvr\webdata\usa\forms
        \ipm
            \note\*.asp
            \post\*.asp
            \document\*.asp
        \report
            \dr [with no .ASP files]
            \ndr\*.asp
            \ipnrn\*.asp
```

the %classpath% format is generated to contain the following patterns:

Value property	**RenderUsing property**
*	ipm/note/
ipm.post*	ipm/post/
ipm.document*	ipm/document/
report.ndr*	report/ndr/
report.ipnrn*	report/ipnrn/

Impersonate Method (RenderingApplication Object)

The **Impersonate** method uses a saved security context handle to impersonate an authenticated messaging user.

Syntax

objRendApp.**Impersonate(***dwImpID***)**

objRendApp
Required. The RenderingApplication object.

dwImpID
Required. Double. The saved security context handle, or zero to revert to unauthenticated access.

Remarks

The handle to the Microsoft® Windows NT® security context can be obtained from the **ImpID** property and saved in the Session object while the authenticated messaging user is logged on to the Microsoft® Exchange Server. For more information, see Impersonation.

ImpID Property (RenderingApplication Object)

The **ImpID** property returns the security context handle for the current messaging user. Read-only.

Syntax

objRendApp.**ImpID**

Data Type

Double

Remarks

The handle points to the Microsoft® Windows NT® security context that permits the current messaging user to make authenticated access to the Microsoft® Exchange Server, for example to open a mailbox. The security context can be saved in the Session object and used later by the **Impersonate** method to impersonate the current messaging user on an unauthenticated thread. For more information, see Impersonation.

LCID Property (RenderingApplication Object)

The **LCID** property returns the locale identifier for the current messaging user. Read-only.

Syntax

objRendApp.**LCID**

Data Type

Long

Remarks

A locale is the set of features of a messaging user's environment that are dependent on language, country, culture, and conventions. These features include the character selection, the collating sequence and sort order, and the date, time, and currency formats. The Session object's **SetLocaleIDs** method sets the locale identifier, which cannot be subsequently changed during the session. The character selection, however, can be changed by setting the **CodePage** property.

A locale identifier (LCID) is a 32-bit value containing a 16-bit language identifier and a 4-bit sort identifier. The Microsoft® Windows NT® macros **SORTIDFROMLCID** and **LANGIDFROMLCID** can be used to extract these identifiers from the LCID.

The **LCID** property corresponds to the MAPI property PR_LOCALE_ID.

LoadConfiguration Method (RenderingApplication Object)

The **LoadConfiguration** method loads configuration information from the specified source.

Syntax

objRendApp.**LoadConfiguration(***source, section***)**

objRendApp
Required. The RenderingApplication object.

source
Required. Integer. The enumerated value of the AMHTML configuration source. The *source* parameter can have exactly one of the following values:

***source* setting**	**Decimal value**	**Meaning**
CdoConfigRegistry	1	The standard registry key name for the CDO Rendering Library.
CdoConfigDS	2	The Microsoft® Exchange directory server.

section
Required. String. The name of the section in the configuration source to load the information from. This parameter is ignored if the *source* parameter is set to **CdoConfigDS**.

Remarks

The **LoadConfiguration** method is normally called twice. A newly created rendering application calls **LoadConfiguration** with the *source* parameter set to **CdoConfigRegistry** to read data from the registry, including the location of the directory server. Later, when a session is started, **LoadConfiguration** is called with *source* set to **CdoConfigDS** to read information from the protocol settings for HTTP in the directory server's database.

If the *source* parameter is **CdoConfigRegistry**, the *section* parameter should be the key to the registry section containing values for Enterprise, Server, and Site. A standard value for this key name is:

```
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeWeb\
Parameters
```

If the *source* parameter is set to **CdoConfigDS**, the *section* parameter is ignored because the directory server only has one configuration object. The registry information must already be loaded before you call **LoadConfiguration** with **CdoConfigDS**, since the Enterprise, Server, and Site must be set in order to read from the directory server.

All values read in by **LoadConfiguration** can be retrieved with the **ConfigParameter** method.

LoggingLevel Property (RenderingApplication Object)

The **LoggingLevel** property returns or sets the verbosity level for the specified logging category. Read/write.

Syntax

objRendApp.**LoggingLevel(***category***)**

category
Required. Long. The logging category.

Data Type

Long

Remarks

The logging level construct is an array with five elements, one for each logging category. Each element in the array can have a value from 0 to 5, representing the logging verbosity for that category.

The verbosity level bears an inverse relationship to the severity of the events being logged. The lower the verbosity level for a category, the fewer events are logged, that is, only the more severe ones. Each successive logging level logs all events logged by lower levels and also includes events of lesser severity introduced at its own level.

Level 0, the default, is the least verbose and logs only the most severe errors for that logging category. Level 5 is the most verbose and logs all events at all levels of severity.

The logging level for each category can have the following values:

Verbosity level	Event logging in this category
0	Critical - log only the most severe failure events (default).
1	Minimal - include nearly all error events.
2	Basic - include certain important success events.
3	Extensive - include most routine success events.
4	Verbose - include all events not related to internal workings.
5	Internal - include events of interest only to users familiar with the internal workings of the CDO Rendering Library.

The logging categories are as follows:

Logging category	Value	Meaning
CATEGORY_STARTUP	1	Events that occur during the creation of the rendering object
CATEGORY_GENERAL	2	Events that occur while the rendering object is generating HTML output
CATEGORY_CONTENT	3	Unused
CATEGORY_SECURITY	4	Unused
CATEGORY_INTERNAL	5	Unused
CATEGORY_SHUTDOWN	6	Unused

Name Property (RenderingApplication Object)

The **Name** property returns or sets the display name of this rendering application. Read/write.

Syntax

objRendApp.**Name**

Data Type

String

Remarks

The **Name** property originally contains the string “AMHTML Application Class”. It should normally be left unchanged, but it can be modified to distinguish between entries in an event log.

SecurityID Property (RenderingApplication Object)

The **SecurityID** property returns the security identification for the current messaging user. Read-only.

Syntax

objRendApp.**SecurityID**

Data Type

Double

Remarks

For more information, see Impersonation.

Version Property (RenderingApplication Object)

The **Version** property returns a string representing the current version of the AMHTML.DLL library. Read-only.

Syntax

objRendApp.**Version**

Data Type

String

Remarks

The **Version** property contains the string “1.1” in the current release of the CDO Rendering Library.

VirtualRoot Property (RenderingApplication Object)

The **VirtualRoot** property returns or sets the beginning of a URL. Read/write.

Syntax

objRendApp.**VirtualRoot**

Data Type

String

Remarks

The **VirtualRoot** property contains the common beginning of a set of HTTP paths, which normally correspond to disk paths on the server specified in the URL. **VirtualRoot** should always start with a forward slash (/).

Setting the **VirtualRoot** property causes the rendering application to create a special-purpose format with the name “virtroot”. This format contains the string that was last set in **VirtualRoot**. The %virtroot % format can be used as a common beginning for HTTP paths when creating links to objects such as attachments.

Note that the **VirtualRoot** property contains an HTTP path at the browser, while the **FormsRoot** property contains an absolute disk directory path at Microsoft® Internet Information Server (IIS).

The **VirtualRoot** property defaults to “/exchange”.

TableView Object

The TableView object represents a tabular view of an address book container or a folder.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	Views collection
Child objects:	Columns collection
Default property:	(none)

Properties

Name	Available in version	Type	Access
Categories	1.1	Long	Read/write
Class	1.1	Long	Read-only
Columns	1.1	Column object or Columns collection object	Read-only
Index	1.1	Long	Read-only
Name	1.1	String	Read-only
Parent	1.1	Views collection object	Read-only
Source	1.1	Long	Read-only

Methods

Name	Available in version	Parameters
IsSameAs	1.1	*objView2* as **Object**

Remarks

A table view is a specification of a tabular rendering for a container object. The container object can be an address book container or a folder. The table view is applied to the container object in the context of a ContainerRenderer. The container renderer specifies the container object in its **DataSource** property and the table view to be applied in its **CurrentView** property.

The table view in turn contains a collection of Column objects. The collection is obtainable from the table view's **Columns** property. Each Column object specifies a property to be rendered in its **Property** property and the manner of rendering that property in its **RenderUsing** property. The display order of the columns is determined by the ordering of the table view's Columns collection. The leftmost column is the one obtained from the collection's **Item** property with an *index* value of 1, and the rightmost is obtained with an *index* value equal to the collection's **Count** property.

A table view is normally generated externally to a CDO application, although a nonpersistent table view can be created with the **Add** method of the Views collection. A table view created in this way ceases to exist when the collection is released.

An externally generated table view can specify restrictions, sorting, and grouping. A restriction specifies which entries in the underlying container object are to be rendered. A sort specifies the order in which they are to be rendered. Grouping specifies how the sorted entries are to be categorized in the rendering.

A restriction is based on selected properties of the container object's entries and can be arbitrarily complex. A table view defined on a Messages collection, for example, can restrict the collection so that the only messages rendered are those that were received since August 18, 1997, have not yet been read, and have either a subject starting with "Bonus" or a message text containing "Bonus Calculation".

A table view's sort can be up to four levels deep. Each level corresponds to a property of the entries being sorted.

In addition to restrictions and sorting, a table view can be grouped, or categorized. Like a sort, a grouping can be up to four levels deep. Specifying grouping on a table view generates a sort on the same properties, in the same nesting order, as in the grouping.

If a restricted table view on a Messages collection is also grouped, GroupHeader objects are rendered along with the Message objects. Only the group headers corresponding to the messages that pass the restriction are rendered. AddressEntries collection views are not grouped, and only AddressEntry objects are rendered.

Categories Property (TableView Object)

The **Categories** property returns or sets the number of categories in this table view. Read/write.

Syntax

objTableView.**Categories**

Data Type

Long

Remarks

The **Categories** property indicates how many levels of grouping are present in the table view. If the view is grouped, or categorized, **Categories** can contain from 1 through 4, the maximum permitted grouping depth. If the view is not categorized, **Categories** contains 0.

The nesting depth of a particular group within the table view is given by the **Level** property of the GroupHeader object that heads that group.

Columns Property (TableView Object)

The **Columns** property returns a single Column object or a Columns collection for this table view. Read-only.

Syntax

Set *objColumns* = *objTableView*.**Columns**

Set *objColumn* = *objTableView*.**Columns(***index***)**

objColumns
Object. The Columns collection of this table view.

objTableView
Required. The TableView object.

objColumn
Object. An individual Column object belonging to this table view's Columns collection.

index
Integer. An index into the table view's Columns collection.

Data Type

Object (Column or Columns collection)

Remarks

If a Column object is to be accessed with the *index* parameter, the value of *index* must be between 1 and the size of the TableView object's Columns collection. This size is available in the collection's **Count** property.

Although the **Columns** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** method, and the properties on its member Column objects retain their respective read/write or read-only accessibility.

Index Property (TableView Object)

The **Index** property returns the index number for this TableView object within the Views collection. Read-only.

Syntax

objTableView.**Index**

Data Type

Long

Remarks

The **Index** property indicates this table view's position within the parent Views collection. It can later be used to reselect this table view with the collection's **Item** property.

The first view in the Views collection has a **Index** value of 1.

An index value should not be considered a static value that remains constant for the duration of a container renderer. It can be affected when other views are added and deleted.

IsSameAs Method (TableView Object)

The **IsSameAs** method returns **True** if this TableView object is the same as the view object being compared against.

Syntax

objTableView.**IsSameAs(***objView2***)**

objTableView
Required. This TableView object.

objView2
Required. Object. The view object being compared against.

Remarks

The *objView2* parameter should be declared as an **Object** rather than as a **TableView**. This allows for comparison among different classes of view objects being held in a Views collection.

Two view objects are considered to be the same if and only if their pointer values are the same, that is, if and only if they are the identical object. Otherwise **IsSameAs** returns **False**.

Name Property (TableView Object)

The **Name** property returns the display name of this TableView object. Read-only.

Syntax

objTableView.**Name**

Data Type

String

Remarks

The **Name** property represents the display name assigned to this table view. It can be used to refer to the table view, and to retrieve it by name using the container renderer's **CurrentView** property.

Source Property (TableView Object)

The **Source** property returns the type of this table view. Read-only.

Syntax

objTableView.**Source**

Data Type

Long

Remarks

The **Source** property indicates the source of the definition of the table view. It can have exactly one of the following values:

Table view source	Decimal value	Meaning
CdoViewCommon	0	This table view is predefined globally for all folders and all messaging users.
CdoViewCustom	2	This table view has been defined in the context of the current setting of the **DataSource** property of the ContainerRenderer object. It ceases to exist when the **DataSource** property is changed.
CdoViewFolder	3	This table view is predefined for the particular folder currently being rendered. It is no longer available when the **DataSource** property is changed.
CdoViewPersonal	1	This table view is predefined for the messaging user associated with the current session represented by the Session object.

For more information on table view rendering, see Container Object Rendering.

Views Collection Object

The Views collection object contains one or more views for a container object.

Quick Info

Specified in type library:	AMHTML.DLL
First available in:	CDO Rendering Library version 1.1
Parent objects:	ContainerRenderer
Child objects:	CalendarView TableView
Default property:	**Item**

An Views collection supports count and index values that let you access an individual TableView object through the **Item** property. The Views collection also supports the Microsoft® Visual Basic® **For Each** statement.

Properties

Name	Available in version	Type	Access
Class	1.1	Long	Read-only
Count	1.1	Long	Read-only
Item	1.1	TableView object	Read-only
Parent	1.1	ContainerRenderer object	Read-only

Methods

Name	Available in version	Parameters
Add	1.1	*Name* as **String**, (optional) *Class* as **Long**, (optional) *SortBy* as **Variant**, (optional) *SortAscending* as **Boolean**

Remarks

The Views collection can contain a variety of different classes of view objects. The classes currently implemented are represented by the CalendarView and TableView objects.

The Views collection is used by a ContainerRenderer object to render a container object, such as an address book container or a folder. The Views collection comes into being when a rendering application sets the container renderer's **DataSource** property to the container object. The collection is released when the parent ContainerRenderer object is released, or when a new container object is set in the **DataSource** property.

The classes of views that can be held in a Views collection and rendered by a ContainerRenderer object are as follows:

View class	View source container object
CalendarView	Messages collection

TableView	AddressEntries collection, Folders collection, Messages collection, or Recipients collection

The various view objects initially in the collection are those that were already generated externally to the rendering application. These views persist in the underlying store, typically a directory or message store. New views can be defined and contributed to the collection using the **Add** method, but they do not persist after the collection is released.

The view to be applied to the container object is specified in the container renderer's **CurrentView** property. A newly instantiated Views collection always has a default current view. This default can be specified by the store underlying the container object. If it is not specified, the CDO Rendering Library sets it to the first view in the collection.

Changing the current view causes a new AddressEntries, Folders, Messages, or Recipients collection to be instantiated. This collection contains only the items that pass the restriction specified by the new view. The AddressEntry, Folder, Message, or Recipient objects in the collection are sorted as specified by the view. If a folder view is categorized, GroupHeader objects appear in the collection along with the messages.

The initial filter on the AddressEntries, Folders, Messages, or Recipients collection is inherited from the view's restriction. It can be used without modification, but it cannot be read or changed by the rendering application. Any attempt to read a property on an inherited AddressEntryFilter or MessageFilter object results in an error return. Writing any property on an inherited filter disinherits it and refreshes the collection. This means that the collection is reinstantiated with a new filter specifying only the property just written. This new filter, however, is no longer inherited, and the application can read its properties and set additional restrictions within it.

Add Method (Views Collection)

The **Add** method creates and returns a new CalendarView or TableView object in the Views collection.

Syntax

Set *objView* = *objViewsColl*.**Add(***Name* **[***, Class***] [***, SortBy***] [***, SortAscending***])**

objView
On successful return, contains the new CalendarView or TableView object.

objViewsColl
Required. The Views collection object.

Name
Required. String. The display name to be assigned to the new CalendarView or TableView object.

Class
Optional. Long. The class of the view to be created. The currently supported classes are **CdoClassCalendarView** and **CdoClassTableView**. The default value is **CdoClassTableView**.

SortBy
Optional. Variant (Long or String). The property on which to sort the new view. The default value is **CdoPR_MESSAGE_DELIVERY_TIME** if a corresponding column is present in the view. If no such column is present and the *SortBy* parameter is not furnished, there is no default value and the sort is undefined.

SortAscending
Optional. Boolean. The sort direction of the new view. Set to **True** to sort in ascending order. The default value is **False**.

Remarks

The **Add** method's *Name* parameter corresponds to the **Name** property of the new CalendarView or TableView object.

The calendar view's **Name** property and the table view's **Name** property are both read-only. After you set the display name of a new view, you cannot subsequently change it.

The *SortBy* parameter must designate a property represented by a Column object within the new view's Columns collection. *SortBy* can contain the property tag of a predefined property or the property name of a custom property.

Count Property (Views Collection)

The **Count** property returns the number of CalendarView or TableView objects in the collection. Read-only.

Syntax

objViewsColl.**Count**

Data Type

Long

Remarks

For more information on using the **Count** and **Item** properties, see the example in the **Item** property.

Item Property (Views Collection)

The **Item** property returns the specified CalendarView or TableView object from the Views collection. Read-only.

Syntax

objViewsColl.**Item(***index***)**

objViewsColl.**Item(***name***)**

index
A short integer ranging from 1 to *objViewsColl*.**Count**.

name
The display name of the CalendarView or TableView object to be selected from the Views collection.

The **Item** property is the default property of a Views collection, meaning that *objViewsColl***(***index***)** is syntactically equivalent to *objViewsColl*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

TableView object

Remarks

The **Item** property works like an accessor property.

If the specified view object is not found in the collection, the **Item** property returns **Nothing**.

Although the **Item** property itself is read-only, the CalendarView or TableView object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together:

```
' Put all view names in a collection into a string array
Dim strItemName(100) as String
Dim i As Integer ' loop counter
' error handling omitted from this fragment ...
For i = 1 To objViewsColl.Count Step 1
    strItemName(i) = objViewsColl.Item(i).Name
    ' or = objViewsColl(i) since Item and Name are default properties
    If 100 = i Then ' max size of string array
        Exit Function
    End If
Next i
```

Collaboration Data Objects for NTS Component

[This is preliminary documentation and subject to change.]

The Microsoft® CDO for NTS Library (Collaboration Data Objects for Windows NT Server) exposes messaging objects for use by Microsoft® Visual Basic®, C/C++, and Microsoft® Visual C++® applications. The library lets you quickly and easily add to your Visual Basic application the ability to send and receive messages. You can create programmable messaging objects, then use their properties and methods to meet the needs of your application.

The CDO for NTS objects are described in the remainder of this section. The following table lists these objects in alphabetic order and gives the purpose of each one.

Object	Purpose
AddressEntry	Specify addressing information for an individual messaging user.
Attachment	Associate an additional object with a message.
Attachments collection	Access all attachments on a message; create new attachments.
Folder	Open the default Inbox or Outbox folder in a message store.
Message	Compose, populate, send, and receive an e-mail document.
Messages collection	Access all messages in a folder; create new messages.
NewMail	Send a message without having to log on to a session.
Recipient	Specify information for a messaging user intended to receive a message.
Recipients collection	Access all recipients of a message; create new recipients.
Session	Establish a connection between an application and a messaging system.

The CDO for NTS Library interfaces with the SMTP server component of Microsoft® Internet Information Server (IIS) version 4.0 and later. The Session object uses the **LogonSMTP** method to differentiate the access from the **Logon** method of the the CDO for Exchange Library, which interfaces with the Microsoft® Exchange Server.

The SMTP server component of IIS has its own message store mechanism. The Inbox and Outbox are mapped to directories in the file system, and no other folders exist. Message transfer takes place in such a way that spooling appears instantaneous, so the Inbox has no incoming queue and the Outbox is always empty.

The Inbox is a single common folder shared by all SMTP recipients and applications. It contains all messages received by IIS and destined for the local domains the SMTP server is configured for. However, the incoming messages are segregated by the CDO for NTS Library according to their recipients. An application can only access messages destined for the address it used when it logged on.

Objects, Properties, and Methods

[This is preliminary documentation and subject to change.]

This reference contains property and method information for the CDO for NTS Library objects.

The following table summarizes each object's properties and methods.

Object	Available in version	Properties	Methods
AddressEntry	1.2	Address, Application, Class, Name, Parent, Session, Type	(none)
Attachment	1.2	Application, Class, ContentBase, ContentID, ContentLocation, Name, Parent, Session, Source, Type	Delete, ReadFromFile, WriteToFile
Attachments collection	1.2	Application, Class, Count, Item, Parent, Session	Add, Delete
Folder	1.2	Application, Class, Messages, Name, Parent, Session	(none)
Message	1.2	Application, Attachments, Class, ContentBase, ContentID, ContentLocation, HTMLText, Importance, MessageFormat, Parent, Recipients, Sender, Session, Size, Subject, Text, TimeReceived, TimeSent	Delete, Send
Messages collection	1.2	Application, Class, Count, Item, Parent, Session	Add, Delete, GetFirst, GetLast, GetNext, GetPrevious
NewMail	1.2	BCC, Body, BodyBaseURL, BodyFormat, BodyURL, CC, From, Importance, MailFormat, Subject, To, Value,	AttachFile, AttachURL, Send

		Version	
Recipient	1.2	Address, Application, Class, Name, Parent, Session, Type	Delete
Recipients collection	1.2	Application, Class, Count, Item, Parent, Session	Add, Delete
Session	1.2	Application, Class, Inbox, MessageFormat, Name, Outbox, Parent, Session, Version	GetDefaultFolder, Logoff, LogonSMTP, SetLocaleIDs

This reference is organized by object. For each object there is a summary topic, followed by reference documentation for each property or method that belongs to the object. The properties and methods are organized alphabetically.

Object Model

[This is preliminary documentation and subject to change.]

The object model for the CDO for NTS Library is hierarchical. The following table shows the containment hierarchy. Each indented object is a child of the object under which it is indented. An object is the parent of every object at the next level of indentation under it. For example, an Attachments collection and a Recipients collection are both child objects of a Message object, and a Messages collection is a parent object of a Message object. However, a Messages collection is not a parent object of a Recipients collection.

Session
- Folder (Inbox or Outbox)
  - Messages collection
    - Message
      - Attachments collection
        - Attachment
      - Recipients collection
        - Recipient
      - (AddressEntry)

NewMail

The AddressEntry object is not hierarchically contained by the Message object, but its only access is through the message's **Sender** property. The NewMail object is independent of the rest of the hierarchy and and does not access any of the other objects.

Properties Common to All CDO for NTS Library Objects

[This is preliminary documentation and subject to change.]

All Microsoft® CDO for NTS Library objects except the NewMail object expose the properties **Application**, **Class**, **Parent**, and **Session**. The **Application** and **Session** properties have the same values for all objects within a given session. The **Parent** property indicates the immediate parent of the object, and the **Class** property is an integer value that identifies the CDO for NTS Library object.

The NewMail object is self-contained and does not expose any of these properties.

All four of these common properties have read-only access in all objects. Note that for the Session object, the **Parent** and **Session** properties are assigned the value **Nothing**. The Session object represents the highest level in the CDO for NTS Library object hierarchy and has no parent.

To reduce duplication, the detailed reference for these properties appears only once, in this section. The following table lists the properties that are common to all CDO for NTS Library objects and that have the same meaning for all objects.

Properties

Name	Type	Access
Application	String	Read-only
Class	Long	Read-only
Parent	Object	Read-only
Session	Session object	Read-only

Application Property (All CDO for NTS Library Objects)

[This is preliminary documentation and subject to change.]

The **Application** property returns the name of the active application, namely the Microsoft® CDO for NTS Library. Read-only.

Syntax

object.**Application**

Data Type

String

Remarks

The **Application** property always contains the string "Collaboration Data Objects for NTS version 1.2".

The version number of the CDO for NTS Library is available through the Session object's **Version** property.

Example

```
' Function: Session_Application
' Purpose: Display the Application property of the Session object
' See documentation topic: Application property
Function Session_Application()
Dim objSession As Object ' or Dim objSession As CDONTS.Session
' error handling ...
Set objSession = CreateObject("CDONTS.Session")
If Not objSession Is Nothing Then
    MsgBox "Session's Application property = " & objSession.Application
End If
' error handling
End Function
```

Class Property (All CDO for NTS Library Objects)

[This is preliminary documentation and subject to change.]

The **Class** property returns the object class of the object. Read-only.

Syntax

object.**Class**

Data Type

Long

Remarks

The **Class** property contains a numeric constant that identifies the CDO for NTS Library object. The following values are defined:

CDO for NTS Library object	Class value	Type library constant
AddressEntry	8	**CdoAddressEntry**
Attachment	5	**CdoAttachment**
Attachments collection	18	**CdoAttachments**
Folder	2	**CdoFolder**
Message	3	**CdoMsg**
Messages collection	16	**CdoMessages**
Recipient	4	**CdoRecipient**
Recipients collection	17	**CdoRecipients**
Session	0	**CdoSession**

Example

```
' Function: Util_DecodeObjectClass
' Purpose: Decode the long integer class value,
'          show the related object name
' See documentation topic: Class property
Function Util_DecodeObjectClass(lClass As Long)
' error handling here ...
Select Case (lClass)
    Case CdoSession:
        MsgBox ("Session object; Class = " & lClass)
    Case CdoMsg:
        MsgBox ("Message object; Class = " & lClass)
End Select
' error handling ...
End Function

' Function: TestDrv_Util_DecodeObjectClass
' Purpose: Call the utility function DecodeObjectClass for Class values
' See documentation topic: Class property
Function TestDrv_Util_DecodeObjectClass()
' error handling here ...
If objSession Is Nothing Then
    MsgBox "Need to set the Session object: Session->LogonSMTP"
    Exit Function
End If
```

```
' expect type CdoSession = 0 for Session object
Util_DecodeObjectClass (objSession.Class)
Set objMessages = objSession.Inbox.Messages
Set objOneMsg = objMessages.GetFirst
If objOneMsg Is Nothing Then
    MsgBox "Inbox is empty"
    Exit Function
End If
' expect type CdoMessage = 3 for Message object
Util_DecodeObjectClass (objOneMsg.Class)
' error handling here ...
End Function
```

Parent Property (All CDO for NTS Library Objects)

[This is preliminary documentation and subject to change.]

The **Parent** property returns the parent of the object. Read-only.

Syntax

Set *objParent* = *object*.**Parent**

Data Type

Object

Remarks

The **Parent** property in the CDO for NTS Library returns the *immediate* parent of an object. The immediate parent for each object is shown in the following table.

CDO for NTS Library object	Immediate parent in object hierarchy
AddressEntry	Set to **Nothing**
Attachment	Attachments collection
Attachments collection	Message
Folder	Session
Message	Messages collection
Messages collection	Folder, including Inbox or Outbox
Recipient	Recipients collection
Recipients collection	Message
Session	Set to **Nothing**

The **Parent** property represents the *immediate* parent of the object, rather than the *logical* parent. For example, a folder contains a Messages collection, which contains Message objects. The **Parent** property for a message is the immediate parent, the Messages collection, rather than the logical parent, the Folder object.

The Session object represents the highest level in the hierarchy of CDO for NTS Library objects and its **Parent** property is set to **Nothing**. The AddressEntry object does not have a hierarchical parent and can only be obtained through the **Sender** property of a Message object. Its **Parent** property is also set to **Nothing**.

For more information on the CDO for NTS Library object hierarchy, see Object Model.

Example

This code fragment displays the **Class** of the parent Messages collection of a Message object:

```
' Function: Message_Parent
Function Message_Parent()
' error handling here ...
If objOneMsg Is Nothing Then
    MsgBox "Need to select a message; see Messages->Get*"
    Exit Function
End If
' Immediate parent of message is the Messages collection
MsgBox "Message immediate parent class = " & objOneMsg.Parent.Class
' error handling code ...
End Function
```

To get to the Folder object, you have to take the parent of the Messages collection:

```
' Function: Messages_Parent
' Purpose: Display the Messages collection Parent class value
' See documentation topic: Parent property
Function Messages_Parent()
Set objMessages = objOneMsg.Parent
' error handling here ...
If objMessages Is Nothing Then
    MsgBox "No active Messages collection"
    Exit Function
End If
MsgBox "Messages collection parent class = " & objMessages.Parent.Class
Exit Function
' error handling here ...
End Function
```

Session Property (All CDO for NTS Library Objects)

[This is preliminary documentation and subject to change.]

The **Session** property returns the top-level Session object associated with the specified CDO for NTS Library object. Read-only.

Syntax

Set *objSession* = *object*.**Session**

Data Type

Object (Session)

Remarks

The Session object represents the highest level in the CDO for NTS Library object hierarchy. If you invoke the **Session** property of a Session object, it returns the same Session object.

Example

```
' Function: Folder_Session
' Purpose: Access the Folder's Session property and display its name
' See documentation topic: Session property
Function Folder_Session()
Dim objSession2 As Session ' Session object to get the property
' error handling here ...
If objFolder Is Nothing Then
    MsgBox "No active folder; please select Session->Inbox"
    Exit Function
End If
Set objSession2 = objFolder.Session
If objSession2 Is Nothing Then
    MsgBox "Unable to access Session property"
    Exit Function
End If
MsgBox "Folder's Session property's Name = " & objSession2.Name
Set objSession2 = Nothing
' error handling here ...
End Function
```

AddressEntry Object

[This is preliminary documentation and subject to change.]

The AddressEntry object defines addressing information valid for a given messaging system.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	(obtainable through **Sender** property of Message object)
Child objects:	(none)
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Address	1.2	String	Read-only
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Name	1.2	String	Read-only
Parent	1.2	Recipient object	Read-only
Session	1.2	Session object	Read-only
Type	1.2	String	Read-only

Methods

(None.)

Remarks

An address usually represents a person or process to which the messaging system can deliver messages.

The AddressEntry object is only available through the **Sender** property of a Message object. It is used to obtain the sender's name, e-mail address, and address type for use in constructing a new Recipient object on an outbound message.

Address Property (AddressEntry Object)

[This is preliminary documentation and subject to change.]

The **Address** property specifies the messaging address of an address entry or a message recipient. Read-only.

Syntax

objAddressEntry.**Address**

Data Type

String

Remarks

The AddressEntry object's **Address** property contains a unique string that identifies a message recipient and provides routing information for messaging systems. The format of the address string is specific to each messaging system.

Example

```
' Set up a series of object variables
' assume valid Session object
Set objInbox = objSession.GetDefaultFolder(CdoFolderInbox)
Set collInMessages = objInbox.Messages
Set objMessage = collInMessages.GetFirst
Set objAddrEntry = objMessage.Sender
strMsg = "Sender name " & objAddrEntry.Name
strMsg = strMsg & "; address type = " & objAddrEntry.Type
strMsg = strMsg & "; e-mail address = " & objAddrEntry.Address
MsgBox strMsg
```

Name Property (AddressEntry Object)

[This is preliminary documentation and subject to change.]

The **Name** property returns the display name or alias of the AddressEntry object as a string. Read-only.

Syntax

objAddressEntry.**Name**

The **Name** property is the default property of an AddressEntry object, meaning that *objAddressEntry* is syntactically equivalent to *objAddressEntry*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Example

See the example for the AddressEntry object's **Address** property.

Type Property (AddressEntry Object)

[This is preliminary documentation and subject to change.]

The **Type** property specifies the address type, such as SMTP. Read-only.

Syntax

objAddressEntry.**Type**

Data Type

String

Remarks

The address type is usually a tag referring to the messaging system that routes messages to this address, such as SMTP.

Example

See the example for the AddressEntry object's **Address** property.

Attachment Object

[This is preliminary documentation and subject to change.]

The Attachment object represents an object that is an attachment of a message.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Attachments collection
Child objects:	(none)
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
ContentBase	1.2	String	Read-only
ContentID	1.2	String	Read-only
ContentLocation	1.2	String	Read-only
Name	1.2	String	Read/write
Parent	1.2	Attachments collection object	Read-only
Session	1.2	Session object	Read-only
Source	1.2	String or Message object	Read/write
Type	1.2	Long	Read/write

Methods

Name	Available in version	Parameters
Delete	1.2	(none)
ReadFromFile	1.2	*fileName* as **String**
WriteToFile	1.2	*fileName* as **String**

Remarks

An attachment is an object, such as a file or another object, that is associated with and transmitted with a Message object. The Attachment object does not specify its location within the message. The client application makes all the display decisions for a message, including whether its attachments are to be displayed, and if so, when and where.

The CDO for NTS Library does not manage the actual display of the attachment. The properties of the Attachment object simply provide information that the displaying application can use to find and open the attachment, and to convert its contents into a display.

ContentBase Property (Attachment Object)

[This is preliminary documentation and subject to change.]

The **ContentBase** property returns the Content-Base header of a MIME (Multipurpose Internet Mail Extensions) message attachment. Read-only.

Syntax

objAttach.**ContentBase**

Data Type

String

Remarks

The **ContentBase** property is used for MHTML (MIME HTML) support. It represents the Content-Base header for the appropriate MIME body part.

For more information on MHTML, see the RFC 2110 document.

ContentID Property (Attachment Object)

[This is preliminary documentation and subject to change.]

The **ContentID** property returns the Content-ID header of a MIME (Multipurpose Internet Mail Extensions) message attachment. Read-only.

Syntax

objAttach.**ContentID**

Data Type

String

Remarks

The **ContentID** property is used for MHTML (MIME HTML) support. It represents the Content-ID header for the appropriate MIME body part.

For more information on MHTML, see the RFC 2110 document.

ContentLocation Property (Attachment Object)

[This is preliminary documentation and subject to change.]

The **ContentLocation** property returns the Content-Location header of a MIME (Multipurpose Internet Mail Extensions) message attachment. Read-only.

Syntax

objAttach.**ContentLocation**

Data Type

String

Remarks

The **ContentLocation** property is used for MHTML (MIME HTML) support. It represents the Content-Location header for the appropriate MIME body part.

For more information on MHTML, see the RFC 2110 document.

Delete Method (Attachment Object)

[This is preliminary documentation and subject to change.]

The **Delete** method removes the Attachment object from the Attachments collection.

Syntax

objAttach.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Attachment object. If you have another reference to the attachment, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another attachment.

The final **Release** on the Attachment object takes place when you call **Delete** if you had no other reference, or when you assign your reference variable to **Nothing**. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The effect of the **Delete** operation is not permanent until you use the **Send** or **Delete** method on the Message object to which this attachment belongs.

The immediate parent of this Attachment object is an Attachments collection, which is a child of the message. You can delete all the message's attachments by calling the collection's **Delete** method.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Attachment object. That reference survives the call to **Delete** and has to be reassigned. The second Attachment object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Message object
Set objAttach = objMessage.Attachments.Item(1)
objAttach.Delete ' still have a reference from Set statement
' ... other operations on objAttachment possible but pointless ...
Set objAttach = Nothing ' necessary to remove reference
' ...
objMessage.Attachments.Item(2).Delete ' no reference to remove
```

Name Property (Attachment Object)

[This is preliminary documentation and subject to change.]

The **Name** property returns or sets the display name of the Attachment object as a string. Read/write.

Syntax

objAttach.**Name**

The **Name** property is the default property of an Attachment object, meaning that *objAttach* is syntactically equivalent to *objAttach*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

Before setting or changing the **Name** property, you should be sure that the **Source** property is already set. Setting **Source** after setting **Name** can result in an incorrect value for **Name**.

The **Name** property can also be set at the time of creation of the attachment by supplying the *name* parameter to the **Add** method of the Attachments collection.

ReadFromFile Method (Attachment Object)

[This is preliminary documentation and subject to change.]

The **ReadFromFile** method loads the contents of an attachment from a file.

Syntax

objAttach.**ReadFromFile(***fileName***)**

objAttach
Required. The Attachment object.

fileName
Required. String. The full path and file name to read from, for example C:\DOCUMENT\BUDGET.XLS.

Remarks

The **ReadFromFile** method replaces the existing contents of the Attachment object, if any.

The **ReadFromFile** method operates differently, depending on the value of the Attachment object's **Type** property. The following table describes its operation:

Attachment Type property	ReadFromFile operation
CdoFileData	Copies the contents of the specified file to the attachment.
CdoEmbeddedMessage	(Not supported)

Note The current version of the CDO for NTS Library does not support **ReadFromFile** for **CdoEmbeddedMessage** attachments. These calls generate the run-time error **CdoE_NO_SUPPORT**.

You can load the contents of an attachment when you first create it by specifying the *type* and *source* parameters when you call the **Add** method of the Attachments collection.

Source Property (Attachment Object)

[This is preliminary documentation and subject to change.]

The **Source** property returns or sets information specifying the location of the data for the attachment. Read/write.

Syntax

objAttach.**Source**

Data Type

String or Object (Message)

Remarks

The **Source** property is not used for **CdoFileData** attachments. For **CdoEmbeddedMessage** attachments, the **Source** property returns or sets the Message object to be embedded. An embedded message is copied into the attachment at creation time.

Note The **Source** property is a string except when it returns the source of a **CdoEmbeddedMessage** attachment.

The return value or setting of the **Source** property depends on the value of the **Type** property, as described in the following table:

Type property	Source property
CdoFileData	Not used; contains an empty string. The source for this type of attachment must be specified in the call to the **Add** method.
CdoEmbeddedMessage	Specifies the unique identifier of the message to be embedded; returns the embedded Message object.

Note You should set the **Source** property before you set the **Type** property. Failure to do this can result in a return of **CdoE_NOT_FOUND** from the **ReadFromFile** or **WriteToFile** method.

The **Source** property can also be set at the time of creation of the attachment by supplying the *source* parameter to the **Add** method of the Attachments collection. For attachments of type **CdoFileData**, the **Add** method is the only place the source file can be specified. However, you can reset it later with the Attachment object's **ReadFromFile** method.

Type Property (Attachment Object)

[This is preliminary documentation and subject to change.]

The **Type** property describes the attachment type. Read/write.

Syntax

objAttach.**Type**

Data Type

Long

Remarks

The following attachment types are supported:

Type property	Value	Description
CdoFileData	1	Attachment is the contents of a file. (Default value.)
CdoEmbeddedMessage	4	Attachment is an embedded message.

The value of the **Type** property determines the valid values for the **Source** property. You should, however, set **Source** before setting **Type** in order for the **ReadFromFile** and **WriteToFile** methods to work correctly.

The **Type** property can also be set at the time of creation of the attachment by supplying the *type* parameter to the **Add** method of the Attachments collection.

Example

See the example for the Attachment object's **Source** property.

WriteToFile Method (Attachment Object)

[This is preliminary documentation and subject to change.]

The **WriteToFile** method saves the attachment to a file in the file system.

Syntax

objAttach.**WriteToFile(***fileName***)**

objAttach
Required. The Attachment object.

fileName
Required. String. The full path and file name for the saved attachment, for example C:\DOCUMENT\BUDGET.XLS.

Remarks

The **WriteToFile** method overwrites the file without warning if a file of that name already exists. Your application should check for the existence of the file before calling **WriteToFile**.

The **WriteToFile** method operates differently, depending on the value of the Attachment object's **Type** property. The following table describes its operation:

Attachment Type property	WriteToFile operation
CdoFileData	Copies the contents of the attachment to the specified file.
CdoEmbeddedMessage	(Not supported)

Note The current version of the CDO for NTS Library does not support **WriteToFile** for **CdoEmbeddedMessage** attachments. These calls generate the run-time error **CdoE_NO_SUPPORT**.

Attachments Collection Object

[This is preliminary documentation and subject to change.]

The Attachments collection object contains zero or more Attachment objects.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Message
Child objects:	Attachment
Default property:	**Item**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Count	1.2	Long	Read-only
Item	1.2	Attachment object	Read-only
Parent	1.2	Message object	Read-only
Session	1.2	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.2	(optional) *name* as **String**, (optional) *type* as **Long**, (optional) *source* as **String**, (optional) *ContentLocation* as **String**, (optional) *ContentBase* as **String**
Delete	1.2	(none)

Add Method (Attachments Collection)

[This is preliminary documentation and subject to change.]

The **Add** method creates and returns a new Attachment object in the Attachments collection.

Syntax

Set *objAttach* = *collAttachments*.**Add([***name, type, source, ContentLocation, ContentBase***])**

objAttach
On successful return, contains the new Attachment object.

collAttachments
Required. The Attachments collection object.

name
Optional. String. The display name of the attachment. The default value is an empty string. To allow a user to click on the attachment that appears in the message and activate an associated application, supply the full file name, including the file extension.

type
Optional. Long. The type of attachment; either **CdoFileData** or **CdoEmbeddedMessage**. The default value is **CdoFileData**.

source
Optional. String. The path and file name of the file containing the data for the attachment, or the unique identifier of the message to be embedded. The path and file name must be in the appropriate format for the attachment type, specified by the *type* parameter. The default value is an empty string.

ContentLocation
Optional. String. The content location header for the appropriate body part of a MIME message attachment.

ContentBase
Optional. String. The content base header for the appropriate body part of a MIME message attachment.

Remarks

The *name*, *type*, *source*, *ContentLocation*, and *ContentBase* parameters correspond to the **Name**, **Type**, **Source**, **ContentLocation**, and **ContentBase** properties of the Attachment object. The *source* parameter is also closely related to the **ReadFromFile** method's *fileName* parameter.

You can supply the data for the attachment at the same time that you add it to the collection. The **Add** method operates differently depending on the value of the *type* parameter. The following table describes its operation.

Value of *type* parameter	**Value of *source* parameter**
CdoFileData	Specifies a full path and file name that contains the data for the attachment, for example C:\DOCUMENT\BUDGET.XLS. Must be supplied with the **Add** method. The data is read into the attachment.
CdoEmbeddedMessage	Specifies the Message object to be embedded. The message is copied into the attachment.

The attachment is saved in persistent storage when you call the **Send** method on the Message object containing the Attachments collection.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Count Property (Attachments Collection)

[This is preliminary documentation and subject to change.]

The **Count** property returns the number of Attachment objects in the collection. Read-only.

Syntax

collAttachments.**Count**

Data Type

Long

Example

This code fragment stores in an array the names of all Attachment objects in the collection. It shows the **Count** and **Item** properties working together.

```
' from the sample function, TstDrv_Util_SmallCollectionCount
' collAttachments is an Attachments collection
x = Util_SmallCollectionCount(collAttachments)

Function Util_SmallCollectionCount(objColl As Object)
Dim strItemName(100) As String ' Names of objects in collection
Dim i As Integer               ' loop counter
    On Error GoTo error_amsmtp
    If objColl Is Nothing Then
        MsgBox "Must supply a valid collection object as a parameter"
        Exit Function
    End If
    If 0 = objColl.Count Then
        MsgBox "No messages in the collection"
        Exit Function
    End If
    For i = 1 To objColl.Count Step 1
        strItemName(i) = objColl.Item(i).Name
        If 100 = i Then ' max size of string array
            Exit Function
        End If
    Next i
    ' error handling here...
End Function
```

Delete Method (Attachments Collection)

[This is preliminary documentation and subject to change.]

The **Delete** method removes all the Attachment objects from the Attachments collection.

Syntax

collAttachments.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Attachment object. If you have another reference to an attachment, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another attachment.

The final **Release** on each Attachment object takes place when you call **Delete** if you had no other reference, or when you assign your reference variable to **Nothing**. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Attachment object, use the **Delete** method specific to that object.

The effect of the **Delete** method is not permanent until you use the **Send** or **Delete** method on the Message object containing the Attachments collection. A permanently deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Item Property (Attachments Collection)

[This is preliminary documentation and subject to change.]

The **Item** property returns a single Attachment object from the Attachments collection. Read-only.

Syntax

collAttachments.**Item(***index***)**

index
Long. An integer ranging from 1 to *collAttachments*.**Count**.

The **Item** property is the default property of an Attachments collection, meaning that *collAttachments***(***index***)** is syntactically equivalent to *collAttachments*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Attachment)

Remarks

The **Item** property works like an accessor property for small collections.

The **Item(***index***)** syntax selects an arbitrary Attachment object within the Attachments collection.

Although the **Item** property itself is read-only, the Attachment object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together to traverse the collection:

```
' from Util_SmallCollectionCount(collAttachments As Object)
Dim strItemName(100) as String
Dim i As Integer ' loop counter
' error handling omitted from this fragment ...
For i = 1 To collAttachments.Count Step 1
    strItemName(i) = collAttachments.Item(i).Name
    ' or = collAttachments(i) since Item and Name are default properties
    If 100 = i Then ' max size of string array
        Exit Function
    End If
Next i
```

Folder Object

[This is preliminary documentation and subject to change.]

The Folder object represents a folder or container in a message store.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Session
Child objects:	Messages collection
Default property:	**Messages**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Messages	1.2	Messages collection object	Read-only
Name	1.2	String	Read/write
Parent	1.2	Session object	Read-only
Session	1.2	Session object	Read-only

Methods

(None.)

Remarks

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Messages Property (Folder Object)

[This is preliminary documentation and subject to change.]

The **Messages** property returns a Messages collection object within the folder. Read-only.

Syntax

objFolder.**Messages**

The **Messages** property is the default property of a Folder object, meaning that *objFolder* is syntactically equivalent to *objFolder*.**Messages** in Microsoft® Visual Basic® code.

Data Type

Object (Messages collection)

Remarks

Although the **Messages** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Message objects retain their respective read/write or read-only accessibility.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment shows how a Messages collection of Message objects is obtained from a folder which is in turn obtained from a Session object:

```
Dim objInbox as Folder
Dim collInMessages as Messages
' assume valid Session object
Set objInbox = objSession.GetDefaultFolder(CdoDefaultFolderInbox)
Set collInMessages = objInbox.Messages
```

Name Property (Folder Object)

[This is preliminary documentation and subject to change.]

The **Name** property returns or sets the name of the Folder object as a string. Read/write.

Syntax

objFolder.**Name**

Data Type

String

Example

```
Dim objFolder As Object ' assume valid folder
MsgBox "Folder name = " & objFolder.Name
```

Message Object

[This is preliminary documentation and subject to change.]

The Message object represents a single message, item, document, or form in a folder.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Messages collection
Child objects:	Attachments collection Recipients collection
Default property:	**Subject**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Attachments	1.2	Attachment object or Attachments collection object	Read-only
Class	1.2	Long	Read-only
ContentBase	1.2	String	Read/write
ContentID	1.2	String	Read/write
ContentLocation	1.2	String	Read/write
HTMLText	1.2	**IStream** object or String	Read/write
Importance	1.2	Long	Read/write
MessageFormat	1.2	Long	Read/write
Parent	1.2	Messages collection object	Read-only
Recipients	1.2	Recipient object or Recipients collection object	Read/write
Sender	1.2	AddressEntry object	Read-only
Session	1.2	Session object	Read-only
Size	1.2	Long	Read-only
Subject	1.2	String	Read/write
Text	1.2	**IStream** object or String	Read/write
TimeReceived	1.2	Variant (**vbDate** format)	Read-only

TimeSent	1.2	Variant (**vbDate** format)	Read-only

Methods

Name	Available in version	Parameters
Delete	1.2	(none)
Send	1.2	(none)

Remarks

Microsoft® Visual Basic® programmers can create new Message objects using the Messages collection's **Add** method.

A message can be obtained from its parent Messages collection using the collection's **Item** property. To get to the Messages collection in a folder, use the Folder object's **Messages** property.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Attachments Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Attachments** property returns a single Attachment object or an Attachments collection object. Read-only.

Syntax

Set *collAttachments* **=** *objMessage.***Attachments**

Set *objAttach* = *objMessage.***Attachments(***index***)**

collAttachments
Object. An Attachments collection object.

objMessage
Object. The Message object.

objAttach
Object. A single Attachment object.

index
Long. Specifies the number of the attachment within the Attachments collection. Ranges from 1 to the value specified by the Attachments collection's **Count** property.

Data Type

Object (Attachment or Attachments collection)

Remarks

You can change individual Attachment objects within the Attachments collection, **Add** them to the collection, and **Delete** them from the collection.

Although the **Attachments** property itself is read-only, the collection it returns can be accessed in the normal manner through its **Add** and **Delete** methods, and the properties on its member Attachment objects retain their respective read/write or read-only accessibility.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment uses the **Attachments** property to retrieve an attachment of the message:

```
Set collAttachments = objMessage.Attachments
If collAttachments Is Nothing Then
    MsgBox "Unable to set Attachments collection"
    Exit Function
Else
    MsgBox "Attachments count for this message: " & collAttachments.Count
    iAttachCollIndex = 0 ' reset global index variable
End If
' from the sample function Attachments_FirstItem
iAttachCollIndex = 1
Set objAttach = collAttachments.Item(iAttachCollIndex)
```

ContentBase Property (Message Object)

[This is preliminary documentation and subject to change.]

The **ContentBase** property returns or sets the Content-Base header of a MIME (Multipurpose Internet Mail Extensions) message body. Read/write.

Syntax

objMessage.**ContentBase**

Data Type

String

Remarks

The **ContentBase** property is used for MHTML (MIME HTML) support. It represents the Content-Base header for the appropriate MIME body part.

For more information on MHTML, see the RFC 2110 document.

ContentID Property (Message Object)

[This is preliminary documentation and subject to change.]

The **ContentID** property returns or sets the Content-ID header of a MIME (Multipurpose Internet Mail Extensions) message body. Read/write.

Syntax

objAttach.**ContentID**

Data Type

String

Remarks

The **ContentID** property is used for MHTML (MIME HTML) support. It represents the Content-ID header for the appropriate MIME body part.

For more information on MHTML, see the RFC 2110 document.

ContentLocation Property (Message Object)

[This is preliminary documentation and subject to change.]

The **ContentLocation** property returns or sets the Content-Location header of a MIME (Multipurpose Internet Mail Extensions) message body. Read/write.

Syntax

objMessage.**ContentLocation**

Data Type

String

Remarks

The **ContentLocation** property is used for MHTML (MIME HTML) support. It represents the Content-Location header for the appropriate MIME body part.

For more information on MHTML, see the RFC 2110 document.

Delete Method (Message Object)

[This is preliminary documentation and subject to change.]

The **Delete** method removes the Message object from the Messages collection.

Syntax

objMessage.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Message object. If you have another reference to the message, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another message.

The final **Release** on the Message object takes place when you call **Delete** if you had no other reference, or when you assign your reference variable to **Nothing**. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The action of the **Delete** method is permanent, and the Message object cannot be restored to the collection. Before calling **Delete**, your application can prompt the user to verify whether the message should be permanently deleted.

You can delete all the messages in the Messages collection by calling the collection's **Delete** method. The ability to delete any message depends on the permissions granted to the user. The **Delete** method returns an error code if called with insufficient permissions.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Message object. That reference survives the call to **Delete** and has to be reassigned. The second Message object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Folder object (Inbox or Outbox)
Set objMessage = objFolder.Messages.Item(1)
objMessage.Delete ' still have a reference from Set statement
' ... other operations on objMessage possible but pointless ...
Set objMessage = Nothing ' necessary to remove reference
' ...
objFolder.Messages.Item(2).Delete ' no reference to remove
```

HTMLText Property (Message Object)

[This is preliminary documentation and subject to change.]

The **HTMLText** property returns or sets the Hypertext Markup Language (HTML) representation of the message's text. Read/write.

Syntax

objMessage.**HTMLText**

Data Type

Object (**IStream**) or String

Remarks

The text is the principal content of an interpersonal message, typically displayed to each recipient as an immediate result of opening the message. It specifically excludes various other message properties such as **Subject**, **Attachments**, and **Recipients**.

The text of a message is represented by its **HTMLText** and **Text** properties. The CDO for NTS Library always keeps these two properties in synchronization with each other. A sending client can set either property and the other is automatically computed. A receiving client can read either property depending on its content type preference.

Only C/C++ and Java programs can use an **IStream** object for this property. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

The maximum size of the text can be limited by the tool that you use to manipulate string variables (for example, Visual Basic).

Importance Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Importance** property returns or sets the importance of the message. Read/write.

Syntax

objMessage.**Importance**

Data Type

Long

Remarks

The following values are defined:

Constant	Value	Description
CdoLow	0	Low importance
CdoNormal	1	Normal importance (default)
CdoHigh	2	High importance

Example

This code fragment sets the importance of a message as high:

```
' assume valid Outbox folder object from GetDefaultFolder method
Set objMessage = objOutbox.Messages.Add
' ... check here to verify the message was created ...
objMessage.Subject = "Gift of droids"
objMessage.Text = "Help us, Obi-wan. You are our only hope."
objMessage.Importance = CdoHigh
objMessage.Send
```

See Also

Send Method (Message Object)

MessageFormat Property (Message Object)

[This is preliminary documentation and subject to change.]

The **MessageFormat** property returns or sets the encoding format of the message. Read/write.

Syntax

objMessage.**MessageFormat**

Data Type

Long

Remarks

The **MessageFormat** property determines how a message is encoded. The following values are defined:

MessageFormat setting	Value	Description
CdoMime	0	The message is in MIME format.
CdoText	1	The message is in uninterrupted plain text.

The **MessageFormat** property defaults to the setting of the **MessageFormat** property of the Session object.

Recipients Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Recipients** property returns a single Recipient object or a Recipients collection object. Read/write.

Syntax

Set *collRecips* = *objMessage*.**Recipients**

Set *objRecip* = *objMessage*.**Recipients(***index***)**

collRecips
Object. A Recipients collection object.

objMessage
Object. The Message object.

objRecip
Object. A single Recipient object.

index
Long. Specifies the number of the recipient within the Recipients collection. Ranges from 1 to the value specified by the Recipients collection's **Count** property.

Data Type

Object (Recipient or Recipients collection)

Remarks

You can change individual Recipient objects within the Recipients collection, **Add** them to the collection, and **Delete** them from the collection.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment uses a loop to create a copy of every valid recipient of the original message *objMessage* in the copy message *objCopyItem*. For each copied recipient, it also copies important properties from the original. Note how much more code this requires than copying the **Recipients** property from the original message.

```
For i = 1 To objMessage.Recipients.Count Step 1
    Set objRecip = objMessage.Recipients.Item(i)
    If objRecip Is Not Nothing Then
        Set objCopyRecip = objCopyItem.Recipients.Add
        If objCopyRecip Is Nothing Then
            MsgBox "Unable to create recipient in message copy"
            Exit Function
        End If
        ' Now copy the most important properties
        objCopyRecip.Address = objRecip.Address
        objCopyRecip.Name = objOnRecip.Name
        objCopyRecip.Type = objOnRecip.Type
    End If
Next i
```

Send Method (Message Object)

[This is preliminary documentation and subject to change.]

The **Send** method sends the message to the recipients through the messaging system.

Syntax

objMessage.**Send( )**

objMessage
Required. The Message object.

Remarks

The **Send** method saves all changes to the message in the messaging system and moves the message to the current user's Outbox folder. Messaging systems retrieve messages from the Outbox and transport them to the recipients. After it is transported, a message is removed from the Outbox and deleted.

You must compose your new messages in your Outbox. The Send method only deals with messages located in the Outbox and returns **CdoE_NO_ACCESS** for any attempt to create a message in the Inbox.

The **Send** method invalidates the composed Message object but does not remove it from memory. The programmer should **Set** the invalidated object to **Nothing** to remove it from memory, or reassign it to another message. Attempted access to a sent message results in a return of **CdoE_INVALID_OBJECT**.

Sender Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Sender** property returns or sets the sender of a message as an AddressEntry object. Read-only.

Syntax

Set *objAddrEntry* **=** *objMessage*.**Sender**

objAddrEntry
Object. The returned AddressEntry object that represents the messaging user that sent the message.

objMessage
Object. The Message object.

Data Type

Object (AddressEntry)

Example

This code fragment displays the name of the sender of a message:

```
' from the sample function Message_Sender
Set objAddrEntry = objMessage.Sender
If objAddrEntry Is Nothing Then
    MsgBox "Could not set the AddressEntry object from the Sender"
    Exit Function
End If
MsgBox "Message was sent by " & objAddrEntry.Name
```

Size Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Size** property returns the approximate size in bytes of the message. Read-only.

Syntax

objMessage.**Size**

Data Type

Long

Remarks

The **Size** property contains the sum, in bytes, of the sizes of all properties on this Message object, including in particular the **Attachments** property. It can be considerably greater than the size of the **Text** property alone.

The **Size** property is computed by the message store and is not valid until after the **Send** operation. Note that not all message stores support this property.

Subject Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Subject** property returns or sets the subject of the message as a string. Read/write.

Syntax

objMessage.**Subject**

The **Subject** property is the default property of a Message object, meaning that *objMessage* is syntactically equivalent to *objMessage*.**Subject** in Microsoft® Visual Basic® code.

Data Type

String

Example

This code fragment sets the subject of a message:

```
Dim objMessage As Message ' assume valid message
objMessage.Subject = "Test message"
```

See Also

Text Property (Message Object)

Text Property (Message Object)

[This is preliminary documentation and subject to change.]

The **Text** property returns or sets the plain text representation of the message's text. Read/write.

Syntax

objMessage.**Text**

Data Type

Object (**IStream**) or String

Remarks

The text is the principal content of an interpersonal message, typically displayed to each recipient as an immediate result of opening the message. It specifically excludes various other message properties such as **Subject**, **Attachments**, and **Recipients**.

The text of a message is represented by its **HTMLText** and **Text** properties. The CDO for NTS Library always keeps these two properties in synchronization with each other. A sending client can set either property and the other is automatically computed. A receiving client can read either property depending on its content type preference.

Only C/C++ and Java programs can use an **IStream** object for this property. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

The maximum size of the text can be limited by the tool that you use to manipulate string variables (for example, Visual Basic).

Example

This code fragment sets the text of a message:

```
Dim objMessage As Message ' assume valid message
objMessage.Text = "Text of test message."
```

TimeReceived Property (Message Object)

[This is preliminary documentation and subject to change.]

The **TimeReceived** property sets or returns the date and time the message was received as a **vbDate** variant data type. Read-only.

Syntax

objMessage.**TimeReceived**

Data Type

Variant (**vbDate** format)

Remarks

The **TimeReceived** and **TimeSent** properties set and return dates and times as the local time for the user's system.

When you send messages using the Message object's **Send** method, the messaging system sets the **TimeReceived** and **TimeSent** properties for you.

Example

This code fragment displays the date and time a message was sent and received:

```
' from the sample function Message_TimeSentAndReceived
' verify that objMessage is valid, then ...
With objMessage
    strMsg = "Message sent " & Format(.TimeSent, "Short Date")
    strMsg = strMsg & ", " & Format(.TimeSent, "Long Time")
    strMsg = strMsg & "; received "
    strMsg = strMsg & Format(.TimeReceived, "Short Date") & ", "
    strMsg = strMsg & Format(.TimeReceived, "Long Time")
    MsgBox strMsg
End With
```

TimeSent Property (Message Object)

[This is preliminary documentation and subject to change.]

The **TimeSent** property sets or returns the date and time the message was sent as a **vbDate** variant data type. Read-only.

Syntax

objMessage.**TimeSent**

Data Type

Variant (**vbDate** format)

Remarks

The **TimeReceived** and **TimeSent** properties set and return dates and times as the local time for the user's system.

When you send messages using the Message object's **Send** method, the messaging system sets the **TimeReceived** and **TimeSent** properties for you.

Example

See the example for the Message object's **TimeReceived** property.

Messages Collection Object

[This is preliminary documentation and subject to change.]

The Messages collection object contains zero or more Message objects.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Folder
Child objects:	Message
Default property:	**Item**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Count	1.2	Long	Read-only
Item	1.2	Message object	Read-only
Parent	1.2	Folder object	Read-only
Session	1.2	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.2	(optional) *subject* as **String**, (optional) *text* as **Object** or **String**, (optional) *importance* as **Long**
Delete	1.2	(none)
GetFirst	1.2	(none)
GetLast	1.2	(none)
GetNext	1.2	(none)
GetPrevious	1.2	(none)

Remarks

The order that messages are returned by **GetFirst**, **GetLast**, **GetNext**, and **GetPrevious** is not predictable. The best programming approach to use with unsorted collections is to assume that the access functions are able to access all messages within the collection, but that the order of the objects is not defined.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Add Method (Messages Collection)

[This is preliminary documentation and subject to change.]

The **Add** method creates and returns a new Message object in the Messages collection.

Syntax

Set *objMessage* = *collMessages*.**Add([***subject, text, importance***])**

objMessage
On successful return, represents the new Message object added to the collection.

collMessages
Required. The Messages collection object.

subject
Optional. String. The subject line for the message.

text
Optional. **IStream** object or String. The text of the message.

importance
Optional. Long. The importance associated with the message.

Remarks

The *subject*, *text*, and *importance* parameters correspond to the **Subject**, **Text**, and **Importance** properties on the Message object.

You must create all new messages in the Outbox folder.

Only C/C++ and Java programs can use an **IStream** object for the *text* parameter. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

Example

This code fragment adds a new message to a folder to reply to an original message:

```
' from the sample function Util_ReplyToConversation
Set objOutbox = objSession.GetDefaultFolder(CdoDefaultFolderOutbox)
Set objNewMessage = objOutbox.Messages.Add
' verify objNewMessage created successfully ... then supply properties
With objNewMessage
    .Text = "Here is a reply to your message." ' new text
    .Subject = objOriginalMessage.Subject ' copy original properties
    Set objRecip = .Recipients.Add( _
                   name:=objOriginalMessage.Recipients.Item(1).Name, _
                   type:=CdoTo)
    .Send
End With
```

Count Property (Messages Collection)

[This is preliminary documentation and subject to change.]

The **Count** property returns the number of Message objects in the collection, or a very large number if the exact count is not available. Read-only.

Syntax

collMessages.**Count**

Data Type

Long

Remarks

The use of the **Item** property in conjunction with the **Count** property in a large collection can be seen in the following example.

Example

This code fragment searches for a Message object with subject "Bonus":

```
Dim i As Integer ' loop index / object counter
Dim collMessages As Messages ' assume collection already provided
Dim objMessage As Message
If collMessages Is Nothing Then
    MsgBox "Messages collection object is invalid"
    ' Exit
ElseIf 0 = collMessages.Count Then ' collection is empty
    MsgBox "No messages in collection"
    ' Exit
End If
' look for message about "Bonus" in collection
For i = 1 To collMessages.Count Step 1
    Set objMessage = collMessages.Item(i)
    ' or collMessages(i) since Item is default property
    If objMessage Is Nothing Then ' end of collection
        MsgBox "No such message found in collection"
        Exit For
    ElseIf 0 = StrComp(objMsg.Subject, "Bonus") Then
    ' or objMessage since Subject is default property
        MsgBox "Desired message is at index " & i
        Exit For
    End If
Next i
```

Delete Method (Messages Collection)

[This is preliminary documentation and subject to change.]

The **Delete** method removes all the Message objects from the Messages collection.

Syntax

collMessages.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Message object. If you have another reference to a message, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another item.

The final **Release** on each Message object takes place when you call **Delete** if you had no other reference, or when you assign your reference variable to **Nothing**. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Message object, use the **Delete** method specific to that object.

The **Delete** method on a large collection takes effect immediately and is permanent. A deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

GetFirst Method (Messages Collection)

[This is preliminary documentation and subject to change.]

The **GetFirst** method returns the first Message object in the Messages collection. It returns **Nothing** if no first object exists.

Syntax

Set *objMessage* **=** *collMessages*.**GetFirst( )**

objMessage
On successful return, represents the first Message object in the collection.

collMessages
Required. The Messages collection object.

GetLast Method (Messages Collection)

[This is preliminary documentation and subject to change.]

The **GetLast** method returns the last Message object in the Messages collection. It returns **Nothing** if no last object exists.

Syntax

Set *objMessage* **=** *collMessages*.**GetLast( )**

objMessage
On successful return, represents the last Message object in the collection.

collMessages
Required. The Messages collection object.

GetNext Method (Messages Collection)

[This is preliminary documentation and subject to change.]

The **GetNext** method returns the next Message object in the Messages collection. It returns **Nothing** if no next object exists, for example if already positioned at the end of the collection.

Syntax

Set *objMessage* **=** *collMessages*.**GetNext( )**

objMessage
On successful return, represents the next Message object in the collection.

collMessages
Required. The Messages collection object.

Remarks

If the **GetFirst** method has not been called since the Messages collection was initialized, the behavior of the **GetNext** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to **Set** an explicit variable for the collection before entering the loop.

GetPrevious Method (Messages Collection)

[This is preliminary documentation and subject to change.]

The **GetPrevious** method returns the previous Message object in the Messages collection. It returns **Nothing** if no previous object exists, for example if already positioned at the beginning of the collection.

Syntax

Set *objMessage* **=** *collMessages*.**GetPrevious( )**

objMessage
On successful return, represents the previous Message object in the collection.

collMessages
Required. The Messages collection object.

Remarks

If the **GetLast** method has not been called since the Messages collection was initialized, the behavior of the **GetPrevious** method is not defined. This can produce unexpected results if the collection is reinitialized with a **Set** statement in every iteration of a loop. The recommended procedure is to **Set** an explicit variable for the collection before entering the loop.

Item Property (Messages Collection)

[This is preliminary documentation and subject to change.]

The **Item** property returns a single Message object from the Messages collection. Read-only.

Syntax

collMessages.**Item(***index***)**

index
A long integer ranging from 1 to the size of the Messages collection.

The **Item** property is the default property of a Messages collection, meaning that *collMessages***(***index***)** is syntactically equivalent to *collMessages*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Message)

Remarks

The **Item(***index***)** syntax returns the Message object at the indicated position in the collection. It can be used in an indexed loop, such as the **For ... Next** construction in Visual Basic. The first item in the collection has an index of 1.

Although the **Item** property itself is read-only, the Message object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

For more information on using the **Count** and **Item** properties in a collection, see the example in the **Count** property.

NewMail Object

[This is preliminary documentation and subject to change.]

The NewMail object provides for sending a message with very few lines of code.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	(none)
Child objects:	(none)
Default property:	**Value**

Properties

Name	Available in version	Type	Access
BCC	1.2	String	Write-only
Body	1.2	**IStream** object or String	Write-only
BodyBaseURL	1.2	String	Write-only
BodyFormat	1.2	Long	Write-only
BodyURL	1.2	String	Write-only
CC	1.2	String	Write-only
From	1.2	String	Write-only
Importance	1.2	Long	Write-only
MailFormat	1.2	Long	Write-only
Subject	1.2	String	Write-only
To	1.2	String	Write-only
Value	1.2	String	Write-only
Version	1.2	String	Read-only

Methods

Name	Available in version	Parameters
AttachFile	1.2	*Source* as **Object** or **String**, (optional) *FileName* as **String**, (optional) *EncodingMethod* as **Long**
AttachURL	1.2	*Source* as **Object** or **String**, *URL* as **String**, (optional) *BaseURL* as **String**, (optional) *EncodingMethod* as **Long**
Send	1.2	(optional) *From* as **String**, (optional) *To* as **String**, (optional) *Subject* as **String**,

(optional) *Body* as **Object** or **String**,

(optional) *Importance* as **Long**

Remarks

The NewMail object is not built on the normal API architecture. It is meant for rapid generation of notification mail by an automated process running in the Microsoft® Windows NT® Server. No user interface is supplied, and no interaction with human users is expected during the generation and sending of the message. Therefore the NewMail object's properties are not designed to be read back and inspected. With the sole exception of **Version**, they can only be written.

Attachments and recipients, once added to the NewMail object, cannot be removed, and the NewMail object itself cannot be deleted. When the **Send** method completes successfully, the NewMail object is invalidated but not removed from memory. The programmer should **Set** the invalid object to **Nothing** to remove it from memory, or reassign it to another NewMail object. Attempted access to a sent NewMail object results in a return of **CdoE_INVALID_OBJECT**.

The NewMail object does not belong to the hierarchy encompassing the other CDO for NTS Library objects. It cannot access, nor can it be accessed from, any of the other objects. Like the Session object, it is considered a top-level object and is created directly from a Microsoft® Visual Basic® program. Its ProgID is CDONTS.NewMail. This code fragment creates a NewMail object through early binding:

```
Dim objNewMail As CDONTS.NewMail
Set objNewMail = CreateObject("CDONTS.NewMail")
```

The main advantage of the NewMail object is the ease and simplicity with which you can generate and send a message. You do not have to log on to a session nor deal with a folder or a messages collection. You have only to create the NewMail object, send it, and **Set** it to **Nothing**. You can supply critical information in the parameters of the **Send** method. In many cases you only need three lines of code:

```
Set objNewMail = CreateObject("CDONTS.NewMail")
objNewMail.Send("me@company.com", "you@company.com", "Hello", _
                "I sent this in 3 statements!", 0) ' low importance
Set objNewMail = Nothing ' canNOT reuse it for another message
```

Including an attachment can add as little as one statement to your code, because you can pass information in the parameters of the **AttachFile** method:

```
Set objNewMail = CreateObject("CDONTS.NewMail")
objNewMail.AttachFile("\\server\schedule\sched.xls", "SCHED.XLS")
objNewMail.Send("Automated Schedule Generator", "you@company.com", _
                "Schedule", "Here's the latest master schedule", 0)
Set objNewMail = Nothing
```

AttachFile Method (NewMail Object)

[This is preliminary documentation and subject to change.]

The **AttachFile** method adds an attachment to the message by reading a file.

Syntax

objNewMail.**AttachFile(***Source* **[***, FileName, EncodingMethod***])**

objNewMail
Required. This NewMail object.

Source
Required. **IStream** object or String. The full path and file name of the file to be attached to the message, or a pointer to an **IStream** object containing the file data.

FileName
Optional. String. The file name to appear in the attachment's placeholder in the message. If *FileName* is not supplied, the file name from the *Source* parameter is used.

EncodingMethod
Optional. Long. The manner of encoding the attachment. The following values are possible:

***EncodingMethod* setting**	**Value**	**Description**
CdoEncodingUUEncoded	0	The attachment is to be in UUEncode format (default).
CdoEncodingBase64	1	The attachment is to be in base 64 format.

Remarks

The default value for the *EncodingMethod* parameter can change if you set the **MailFormat** property. If **MailFormat** is set to **CdoMailFormatText**, the default value is **CdoEncodingUUEncoded**. If **MailFormat** is set to **CdoMailFormatMIME**, the default value is **CdoEncodingBase64**. However, if you add an attachment encoded in base 64 format, the value of the **MailFormat** property is automatically set to **CdoMailFormatMIME**.

Only C/C++ and Java programs can use an **IStream** object for the *Source* parameter. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

AttachURL Method (NewMail Object)

[This is preliminary documentation and subject to change.]

The **AttachURL** method adds an attachment to the message and associates a Uniform Resource Locator (URL) with the attachment.

Syntax

objNewMail.**AttachURL(***Source, URL* **[***, BaseURL, EncodingMethod***])**

objNewMail
Required. This NewMail object.

Source
Required. **IStream** object or String. The full path and file name of the resource to be attached to the message, or a pointer to an **IStream** object containing the file data.

URL
Required. String. The absolute or relative prefix for the URL that the rendering client can use to reference this attachment.

BaseURL
Optional. String. A base for the URL used to reference this attachment.

EncodingMethod
Optional. Long. The manner of encoding the attachment. The following values are possible:

***EncodingMethod* setting**	**Value**	**Description**
CdoEncodingUUEncoded	0	The attachment is to be in UUEncode format (default).
CdoEncodingBase64	1	The attachment is to be in base 64 format.

Remarks

You must supply at least the *URL* parameter to specify a URL for the attachment. If you also supply the *BaseURL* parameter, it is combined with the *URL* parameter to define the full URL path by which this attachment is to be referenced. For more information on constructing URL paths, see the **BodyURL** property.

The default value for the *EncodingMethod* parameter can change if you set the **MailFormat** property. If **MailFormat** is set to **CdoMailFormatText**, the default value is **CdoEncodingUUEncoded**. If **MailFormat** is set to **CdoMailFormatMIME**, the default value is **CdoEncodingBase64**. However, if you add an attachment encoded in base 64 format, the value of the **MailFormat** property is automatically set to **CdoMailFormatMIME**.

Only C/C++ and Java programs can use an **IStream** object for the *Source* parameter. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

BCC Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **BCC** property adds to the list of blind copy (Bcc) recipients for the NewMail object. Write-only.

Syntax

objNewMail.**BCC**

Data Type

String

Remarks

The value you use to set the **BCC** property can represent a single recipient or a list of recipients. Each recipient must be represented by a full messaging address:

```
"useraddress@company.com"
```

Multiple recipients on the list are separated by semicolons:

```
"user1@company1.com;user2@company2.com;user3@company3.com"
```

A recipient can include the display name along with the messaging address:

```
"John Q. Doe<jdoe@company.com>"
```

Each time you set the **BCC** property, the CDO for NTS library appends the value you supply to any previous Bcc recipients, preceded by a semicolon. For example, if you set the **BCC** property twice in succession:

```
objNewMail.BCC = "someuser@ABC.com"
' ...
objNewMail.BCC = "anotheruser@XYZ.org"
```

the resulting contents of the **BCC** property are:

```
"someuser@ABC.com;anotheruser@XYZ.org"
```

Body Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **Body** property sets the text of the NewMail object. Write-only.

Syntax

objNewMail.**Body**

Data Type

Object (**IStream**) or String

Remarks

The **Body** property can contain either plain text or HTML. The **BodyFormat** property should be set to indicate whether or not the **Body** property includes any HTML.

Only C/C++ and Java programs can use an **IStream** object for this property. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

BodyBaseURL Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **BodyBaseURL** property sets a base for all URLs relating to the NewMail object's message body. Write-only.

Syntax

objNewMail.**BodyBaseURL**

Data Type

String

Remarks

The **BodyBaseURL** property is used for MHTML (MIME HTML) support. It represents the Content-Base header for URLs pertaining to the main body of a MIME message. **BodyBaseURL** corresponds to the **ContentBase** property of a Message object.

The **BodyBaseURL** property is used in conjunction with the **BodyURL** property to provide an absolute path for all URLs pertaining to the message body. These include the URL used to reference the message body itself, and also any URLs within HTML tags in the **Body** property of the NewMail object.

BodyBaseURL is meant to be combined with **BodyURL** to produce an absolute path. For more information on constructing URL paths, see the **BodyURL** property.

For more information on MHTML, see the RFC 2110 document.

BodyFormat Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **BodyFormat** property sets the text format of the NewMail object. Write-only.

Syntax

objNewMail.**BodyFormat**

Data Type

Long

Remarks

BodyFormat can contain exactly one of the following values:

BodyFormat setting	Value	Description
CdoBodyFormatHTML	0	The **Body** property is to include Hypertext Markup Language (HTML).
CdoBodyFormatText	1	The **Body** property is to be exclusively in plain text (default value).

BodyURL Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **BodyURL** property sets an absolute or relative path for all URLs relating to the NewMail object's message body. Write-only.

Syntax

objNewMail.**BodyURL**

Data Type

String

Remarks

The **BodyURL** property is used for MHTML (MIME HTML) support. It represents the Content-Location header for URLs pertaining to the main body of a MIME message. **BodyURL** corresponds to the **ContentLocation** property of a Message object.

If the **BodyURL** property is set, it is taken as an absolute or relative URL that can be used to refer to the message body of the NewMail object. If the **BodyBaseURL** property is also set, **BodyURL** is taken as relative and is joined to the base provided by **BodyBaseURL**.

The **Body** property of the NewMail object can also contain HTML tags that use URLs, for example <IMG> and <FORM>. If the resource for such a URL is not local to the recipient of the NewMail object, you must provide a path to locate the URL on the Internet. One way to do this is to provide the full path in the URL itself:

```
<IMG SRC=HTTP://www.abc.com/graphs/August/15Aug97/today.gif>
```

It is often more flexible, however, to supply the path externally and put only the resource name in the URL:

```
<IMG SRC=today.gif>
```

When this approach is taken, the **BodyURL** and **BodyBaseURL** properties can be used to supply the path. **BodyURL** can contain an absolute path:

```
objNewMail.BodyURL = "HTTP://www.abc.com/graphs/August/15Aug97/"
```

or a relative path:

```
objNewMail.BodyURL = "August/15Aug97/"
```

If **BodyURL** contains a relative path, the base URL is supplied in **BodyBaseURL**:

```
objNewMail.BodyBaseURL = "HTTP://www.abc.com/graphs/"
```

When **BodyBaseURL** and **BodyURL** are combined using standard URL combination rules, the result is an absolute path to the resource referenced by the URL.

Often a resource is included as an attachment to the NewMail object. When this is the case, the *URL* and *BaseURL* parameters of the **AttachURL** method are used to specify the attachment's URL. They are combined the same way the **BodyURL** and **BodyBaseURL** properties are combined. The URL specified by the attachment must match the URL requested by the HTML tag in the **Body** property, or the tag is not successfully resolved.

The simplest case of attaching with URLs is when your message body refers to the attachments by their *URL* parameter values. In this case you do not need either the **BodyURL** or the **BodyBaseURL** property, and the attachments only need resource names in their *URL* parameters. This code fragment

sends a weekly review of sales activity with two chart images attached:

```
Set objNewMail = CreateObject("CDONTS.NewMail")
strBody = "<HTML><HEAD></HEAD><BODY>" _
        & "This is the sales chart for the past week:" & vbCrLf _
        & "<IMG SRC=week.gif>" & vbCrLf _
        & "and this is the sales chart for the month:" & vbCrLf _
        & "<IMG SRC=month.gif>" & "</BODY></HTML>"
objNewMail.AttachURL("\\myserver\sales\pastweek.gif", week.gif)
objNewMail.AttachURL("\\myserver\sales\thismnth.gif", month.gif)
objNewMail.Send("Automated Sales Report", "you@company.com", _
                "Sales Charts", strBody, 0)
Set objNewMail = Nothing ' canNOT reuse it for another message
```

Note that the URL string specified in the *URL* parameter of the **AttachURL** method does not have to match the file name of the underlying resource. The only requirement is that it match the URL requested by the HTML tag in the message body.

For more information on MHTML, see the RFC 2110 document.

CC Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **CC** property adds to the list of copy (Cc) recipients for the NewMail object. Write-only.

Syntax

objNewMail.**CC**

Data Type

String

Remarks

The value you use to set the **CC** property can represent a single recipient or a list of recipients. Each recipient must be represented by a full messaging address:

```
"useraddress@company.com"
```

Multiple recipients on the list are separated by semicolons:

```
"user1@company1.com;user2@company2.com;user3@company3.com"
```

A recipient can include the display name along with the messaging address:

```
"John Q. Doe<jdoe@company.com>"
```

Each time you set the **CC** property, the CDO for NTS library appends the value you supply to any previous Cc recipients, preceded by a semicolon. For example, if you set the **CC** property twice in succession:

```
objNewMail.CC = "someuser@ABC.com"
' ...
objNewMail.CC = "anotheruser@XYZ.org"
```

the resulting contents of the **CC** property are:

```
"someuser@ABC.com;anotheruser@XYZ.org"
```

For more information on MHTML, see the RFC 2110 document.

From Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **From** property sets the full messaging address to be used for the sender of this NewMail object. Write-only.

Syntax

objNewMail.**From**

Data Type

String

Remarks

The full messaging address must take the form

```
"senderaddress@company.com"
```

You can optionally include the display name along with the messaging address:

```
"John Q. Doe<jdoe@company.com>"
```

Importance Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **Importance** property sets the importance associated with the NewMail object. Write-only.

Syntax

objNewMail.**Importance**

Data Type

Long

Remarks

The following values are defined:

Constant	Value	Description
CdoLow	0	Low importance
CdoNormal	1	Normal importance (default)
CdoHigh	2	High importance

MailFormat Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **MailFormat** property sets the encoding for the NewMail object. Write-only.

Syntax

objNewMail.**MailFormat**

Data Type

Long

Remarks

MailFormat can contain exactly one of the following values:

MailFormat setting	Value	Description
CdoMailFormatMIME	0	The NewMail object is to be in MIME format.
CdoMailFormatText	1	The NewMail object is to be in uninterrupted plain text (default value).

The setting of the **MailFormat** property determines the default value for the *EncodingMethod* parameter in the **AttachFile** and **AttachURL** methods. However, if you add an attachment encoded in base 64 format, the value of the **MailFormat** property is automatically set to **CdoMailFormatMIME**.

For more information on Multipurpose Internet Mail Extensions (MIME), see the RFC 1341 document.

Send Method (NewMail Object)

[This is preliminary documentation and subject to change.]

The **Send** method sends the NewMail object to the specified recipients.

Syntax

objNewMail.**Send([***From, To, Subject, Body, Importance***])**

objNewMail
Required. This NewMail object.

From
Optional. String. The full messaging address to be identified as the sender.

To
Optional. String. A list of full messaging addresses of recipients. The individual recipient addresses are separated by semicolons.

Subject
Optional. String. The subject line for the message.

Body
Optional. **IStream** object or String. The text of the message.

Importance
Optional. Long. The importance associated with the message.

Remarks

The *From*, *To*, *Subject*, *Body*, and *Importance* parameters correspond to the **From**, **To**, **Subject**, **Body**, and **Importance** properties on the NewMail object.

If both the **To** property and the *To* parameter of the **Send** method are supplied, the NewMail object is sent to all recipients on both lists.

Only C/C++ and Java programs can use an **IStream** object for the *Body* parameter. They should pass an **IUnknown** object that returns an **IStream** interface in response to **QueryInterface**. Microsoft® Visual Basic® supports the **IDispatch** interface and not **IUnknown**, so it cannot use an **IStream** object.

The NewMail object becomes invalid upon successful completion of the **Send** method, and you cannot reuse it for another message. You should **Set** it to **Nothing** to release the memory. Attempted access to a sent NewMail object results in a return of **CdoE_INVALID_OBJECT**.

Subject Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **Subject** property sets the subject of the NewMail object as a string. Write-only.

Syntax

objNewMail.**Subject**

Data Type

String

To Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **To** property adds to the list of principal (To) recipients for the NewMail object. Write-only.

Syntax

objNewMail.**To**

Data Type

String

Remarks

The value you use to set the **To** property can represent a single recipient or a list of recipients. Each recipient must be represented by a full messaging address:

```
"useraddress@company.com"
```

Multiple recipients on the list are separated by semicolons:

```
"user1@company1.com;user2@company2.com;user3@company3.com"
```

A recipient can include the display name along with the messaging address:

```
"John Q. Doe<jdoe@company.com>"
```

Each time you set the **To** property, the CDO for NTS Library appends the value you supply to any previous To recipients, preceded by a semicolon. For example, if you set the **To** property twice in succession:

```
objNewMail.To = "someuser@ABC.com"
' ...
objNewMail.To = "anotheruser@XYZ.org"
```

the resulting contents of the **To** property are:

```
"someuser@ABC.com;anotheruser@XYZ.org"
```

If both the **To** property and the *To* parameter of the **Send** method are supplied, the NewMail object is sent to all recipients on both lists.

Value Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **Value** property sets the value and contents of an additional header for the NewMail object. Write-only.

Syntax

objNewMail.**Value**

The **Value** property is the default property of a NewMail object, meaning that *objNewMail* is syntactically equivalent to *objNewMail*.**Value** in Microsoft® Visual Basic® code.

Data Type

String

Remarks

The **Value** property is used to add one or more headers to the automatically generated headers such as "To", "From", "Subject", and "Date". Possibilities for additional headers are "Reply To", "Keywords", and "Ref Number".

You can set the **Value** property more than once. Each setting generates another header to be included with the existing headers.

Example

This code fragment adds two headers to a NewMail object before sending it:

```
' strBody set in advance for message body
objNewMail.Value("Reply To") = "The Boss<myemail@mycompany.com>"
objNewMail.Value("Confidential") = "For my direct reports only"
objNewMail.Send("myemail@mycompany.com", "myreports@mycompany.com" _
                "Reorganization", strBody, 2) ' high importance
Set objNewMail = Nothing
```

Version Property (NewMail Object)

[This is preliminary documentation and subject to change.]

The **Version** property returns the version of the CDO for NTS Library. Read-only.

Syntax

objNewMail.**Version**

Data Type

String

Remarks

The **Version** property currently returns "1.2".

Recipient Object

[This is preliminary documentation and subject to change.]

The Recipient object represents a recipient of a message.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Recipients collection
Child objects:	AddressEntry
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Address	1.2	String	Read/write
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Name	1.2	String	Read/write
Parent	1.2	Recipients collection object	Read-only
Session	1.2	Session object	Read-only
Type	1.2	Long	Read/write

Methods

Name	Available in version	Parameters
Delete	1.2	(none)

Address Property (Recipient Object)

[This is preliminary documentation and subject to change.]

The **Address** property specifies the full messaging address for the recipient. Read/write.

Syntax

objRecip.**Address**

Data Type

String

Remarks

The Recipient object's **Address** property represents the complete messaging address used by the messaging system.

Example

```
' assume valid Recipient object
  objRecip.Address = "myname@mycompany.com"
```

Delete Method (Recipient Object)

[This is preliminary documentation and subject to change.]

The **Delete** method removes the Recipient object from the Recipients collection.

Syntax

objRecip.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to the Recipient object. If you have another reference to the recipient, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another recipient.

The final **Release** on the Recipient object takes place when you assign your reference variable to **Nothing**, or when you call **Delete** if you had no other reference. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

The effect of the **Delete** operation is not permanent until you use the **Send** or **Delete** method on the Message object to which this recipient belongs.

The immediate parent of this Recipient object is a Recipients collection, which is a child of the message. You can delete all the message's recipients by calling the collection's **Delete** method.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment illustrates the two situations previously explained. The **Set** statement calls **AddRef** on the first Recipient object. That reference survives the call to **Delete** and has to be reassigned. The second Recipient object is deleted without creating another reference, and no other action is necessary.

```
' assume valid Message object
Set objRecip = objMessage.Recipients.Item(1)
objRecip.Delete ' still have a reference from Set statement
' ... other operations on objRecip possible but pointless ...
Set objRecip = Nothing ' necessary to remove reference
' ...
objMessage.Recipients.Item(2).Delete ' no reference to remove
```

Name Property (Recipient Object)

[This is preliminary documentation and subject to change.]

The **Name** property returns or sets the name of the Recipient object as a string. Read/write.

Syntax

objRecip.**Name**

The **Name** property is the default property of a Recipient object, meaning that *objRecip* is syntactically equivalent to *objRecip*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Example

```
Dim strMsg As String
' ... validate objects ... then display
    strMsg = "Recipient full address = " & objRecip.Address
    strMsg = strMsg & "; Recipient name = " & objRecip.Name
    MsgBox strMsg ' display recipient parts
```

Type Property (Recipient Object)

[This is preliminary documentation and subject to change.]

The **Type** property specifies the recipient type of the Recipient object, that is, whether it is a To, Cc, or Bcc recipient. Read/write.

Syntax

objRecip.**Type**

Data Type

Long

Remarks

The **Type** property has the following defined values:

Recipient type	Value	Description
CdoTo	1	The recipient is on the To line (default).
CdoCc	2	The recipient is on the Cc line.
CdoBcc	3	The recipient is on the Bcc line.

See Also

Address Property (Recipient Object)

Recipients Collection Object

[This is preliminary documentation and subject to change.]

The Recipients collection object contains zero or more Recipient objects and specifies the recipients of a message.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	Message
Child objects:	Recipient
Default property:	**Item**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Count	1.2	Long	Read-only
Item	1.2	Recipient object	Read-only
Parent	1.2	Message object	Read-only
Session	1.2	Session object	Read-only

Methods

Name	Available in version	Parameters
Add	1.2	(optional) *name* as **String**, (optional) *address* as **String**, (optional) *type* as **Long**
Delete	1.2	(none)

Add Method (Recipients Collection)

[This is preliminary documentation and subject to change.]

The **Add** method creates and returns a new Recipient object in the Recipients collection.

Syntax

Set *objRecip* = *collRecips*.**Add([***name, address, type***])**

objRecip
On successful return, represents the new Recipient object added to the collection.

collRecips
Required. The Recipients collection object.

name
Optional. String. The display name of the recipient. When this parameter is not present, the new Recipient object's **Name** property is set to an empty string.

address
Optional. String. The full messaging address of the recipient. When this parameter is not present, the new Recipient object's **Address** property is set to an empty string.

type
Optional. Long. The recipient type; the initial value for the new recipient's **Type** property. The following values are valid:

Recipient type	Value	Description
CdoTo	1	The recipient is on the To line (default).
CdoCc	2	The recipient is on the Cc line.
CdoBcc	3	The recipient is on the Bcc line.

Remarks

The *name*, *address*, and *type* parameters correspond to the Recipient object's **Name**, **Address**, and **Type** properties, respectively.

The *address* parameter, if set, must contain a *full address*, such as that contained in the recipient's **Address** property. An AddressEntry object's **Address** property is not a full address because it does not contain the address type information found in the **Type** property. If the user you are adding is represented by an AddressEntry object, you must concatenate its **Type** and **Address** properties with a connecting colon to construct the full address.

When no parameters are present, an empty Recipient object is created.

The new recipient is saved in persistent storage when you call the **Send** method on the Message object containing the Recipients collection.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Example

This code fragment adds a recipient to a message using information from an existing valid AddressEntry object

```
' from the sample function "Using Addresses"
' assume valid address entry ID from an existing message
Set objRecip = objNewMessage.Recipients.Add(type:=CdoTo, _
                                            name:=objAdrEnt.Name)
objRecip.Address = objAddrEnt.Type & ":" & objAddrEnt.Address
```

```
If objRecip Is Nothing Then
    MsgBox "Unable to add existing AddressEntry using ID"
    Exit Function
End If

objNewMessage.Text = "Expect 1 recipient."
MsgBox ("Count = " & objNewMessage.Recipients.Count)
```

Count Property (Recipients Collection)

[This is preliminary documentation and subject to change.]

The **Count** property returns the number of Recipient objects in the collection. Read-only.

Syntax

collRecips.**Count**

Data Type

Long

Example

This code fragment uses the **Count** property as a loop terminator to copy all Recipient objects from one message's Recipients collection to another message's collection. It shows the **Count** and **Item** properties working together. Note how much more code this requires than copying the Message object's **Recipients** property from the original message to the copy.

```
' Copy all Recipient objects from one message's collection to another
Dim objMessage, objCopyItem as Message
Dim collRecips as Recipients ' source message Recipients collection
Dim objRecip as Recipient ' individual recipient in target message
' ... verify valid messages ...
Set collRecips = objMessage.Recipients
For i = 1 To collRecips.Count Step 1
    strRecipName = collRecips.Item(i).Name
'   could be collRecips(i).Name since Item is default property
    If strRecipName <> "" Then
        Set objRecip = objCopyItem.Recipients.Add
        If objRecip Is Nothing Then
            MsgBox "Unable to create recipient in message copy"
            Exit Function
        End If
        objRecip.Name = strRecipName
        objRecip.Address = collRecips.Item(i).Address
        objRecip.Type = collRecips.Item(i).Type
    End If
Next i
```

Delete Method (Recipients Collection)

[This is preliminary documentation and subject to change.]

The **Delete** method removes all the Recipient objects from the Recipients collection.

Syntax

collRecips.**Delete( )**

Remarks

The **Delete** method performs an irreversible operation on the collection. It calls **Release** on the collection's reference to every Recipient object. If you have another reference to a recipient, you can still access its properties and methods, but you can never again associate it with any collection because the **Add** method always creates a new object. You should **Set** your reference variable either to **Nothing** or to another recipient.

The final **Release** on each Recipient object takes place when you call **Delete** if you had no other reference, or when you assign your reference variable to **Nothing**. At this point the object is removed from memory. Attempted access to a released object results in an error return of **CdoE_INVALID_OBJECT**.

Be cautious using the **Delete** method with a collection, because it deletes all the collection's member objects. To delete only one Recipient object, use the **Delete** method specific to that object.

The effect of the **Delete** method is not permanent until you use the **Send** or **Delete** method on the Message object containing the Recipients collection. A permanently deleted member cannot be recovered. However, the collection itself is still valid, and you can **Add** new members to it.

The CDO for NTS Library does not permit any modifications to messages in the Inbox, other than deleting the entire message. Prohibited modifications include adding, deleting, or modifying any attachment; adding, deleting, or modifying any recipient; and modifying any message property.

Item Property (Recipients Collection)

[This is preliminary documentation and subject to change.]

The **Item** property returns a single Recipient object from the Recipients collection. Read-only.

Syntax

collRecips.**Item(***index***)**

index
A long integer ranging from 1 to *collRecips*.**Count**, or a string that specifies the name of the object.

The **Item** property is the default property of a Recipients collection, meaning that *collRecips***(***index***)** is syntactically equivalent to *collRecips*.**Item(***index***)** in Microsoft® Visual Basic® code.

Data Type

Object (Recipient)

Remarks

The **Item** property works like an accessor property for small collections.

Although the **Item** property itself is read-only, the Recipient object it returns can be accessed in the normal manner, and its properties retain their respective read/write or read-only accessibility.

Example

This code fragment shows the **Count** and **Item** properties working together:

```
' list all recipient names in the collection
strRecips = "" ' initialize string
Set collRecips = objMessage.Recipients
Count = collRecips.Count
For i = 1 To Count Step 1
    Set objRecip = collRecips.Item(i) ' or collRecips(i)
    strRecips = strRecips & objRecip.Name & "; "
Next i
MsgBox "Message recipients: " & strRecips
```

Session Object

[This is preliminary documentation and subject to change.]

The Session object contains session-wide settings and options.

Quick Info

Specified in type library:	CDONTS.DLL
First available in:	CDO for NTS Library version 1.2
Parent objects:	(none)
Child objects:	Folder
Default property:	**Name**

Properties

Name	Available in version	Type	Access
Application	1.2	String	Read-only
Class	1.2	Long	Read-only
Inbox	1.2	Folder object	Read-only
MessageFormat	1.2	Long	Read/write
Name	1.2	String	Read-only
Outbox	1.2	Folder object	Read-only
Parent	1.2	Object; set to **Nothing**	Read-only
Session	1.2	Object; set to **Nothing**	Read-only
Version	1.2	Folder object	Read-only

Methods

Name	Available in version	Parameters
GetDefaultFolder	1.2	*folderType* as **Long**
Logoff	1.2	(none)
LogonSMTP	1.2	*DisplayName* as **String**, *Address* as **String**
SetLocaleIDs	1.2	*LocaleID* as **Long**, *CodePageeID* as **Long**

Remarks

A Session object is considered a top-level object, meaning it can be created directly from a Microsoft® Visual Basic® program. In the CDO for NTS Library it has a ProgID of CDONTS.Session. This code fragment creates a Session object through early binding:

```
Dim objSession As CDONTS.Session
Set objSession = CreateObject ("CDONTS.Session")
objSession.LogonSMTP
```

This code fragment creates a Session object through late binding:

```
Dim objSession As Object
Set objSession = CreateObject ("CDONTS.Session")
objSession.LogonSMTP
```

Generally, early binding is preferable, because it enforces type checking and generates more efficient code. Note that you specify the full ProgID "CDONTS.Session" instead of just "Session" in order to distinguish a CDO application from other types of applications available to a Visual Basic program through other object libraries.

In both cases, after you create a new Session object, you call its **LogonSMTP** method to initialize it. No other activities with the CDO for NTS Library are permitted prior to a successful **LogonSMTP** call. The only exception to this rule is the Session object's **SetLocaleIDs** method.

GetDefaultFolder Method (Session Object)

[This is preliminary documentation and subject to change.]

The **GetDefaultFolder** method returns a Folder object from a message store.

Syntax

Set *objFolder* = *objSession*.**GetDefaultFolder(***folderType***)**

objFolder
On successful return, contains the store's default Folder object of the specified type. When the folder does not exist, **GetDefaultFolder** returns **Nothing**.

objSession
Required. The Session object.

folderType
Required. Long. The folder type. This parameter can have exactly one of the following values:

folderType setting	Decimal value	Meaning
CdoDefaultFolderInbox	1	The CDO for NTS Library's Inbox.
CdoDefaultFolderOutbox	2	The CDO for NTS Library's Outbox.

Remarks

The **GetDefaultFolder** method allows you to obtain the message store's default Inbox or Outbox folder. No other folders are accessible through this method.

Example

This code fragment uses the **GetDefaultFolder** method to obtain the Inbox folder from a message store:

```
Dim objSession As Session
Dim objInbox As Folder ' default Inbox or Outbox
Dim collMessages As Messages ' messages in folder

Set objSession = CreateObject ("CDONTS.Session")
objSession.LogonSMTP
Set objInbox = objSession.GetDefaultFolder(CdoDefaultFolderInbox)
If objInbox Is Nothing Then
    Set collMessages = Nothing
    MsgBox "Unable to retrieve default folder"
    Exit Function
Else
    Set collMessages = objInbox.Messages
    MsgBox "Folder set to " & objInbox.Name
End If
```

Inbox Property (Session Object)

[This is preliminary documentation and subject to change.]

The **Inbox** property returns a Folder object representing the current messaging user's Inbox folder. Read-only.

Syntax

objSession.**Inbox**

Data Type

Object (Folder)

Logoff Method (Session Object)

[This is preliminary documentation and subject to change.]

The **Logoff** method uninitializes the Session object.

Syntax

objSession.**Logoff( )**

Remarks

The **Logoff** method terminates all activity on the Session object initialized by the **LogonSMTP** method. You can call **LogonSMTP** on the same Session object again. Attempted access to the Session object before initialization results in a return of **CdoE_NOT_INITIALIZED**.

Objects you create while you are active on a Session object become invalid when you call **Logoff**. You should **Set** your reference variables to **Nothing** for all such objects.

Example

This code fragment logs off from the messaging system:

```
' from the function Session_Logoff
If Not objSession Is Nothing Then
    objSession.Logoff
    MsgBox "Logged off; reset global variables"
Else
    MsgBox "No active session; cannot log off"
End If
```

LogonSMTP Method (Session Object)

[This is preliminary documentation and subject to change.]

The **LogonSMTP** method initializes the Session object.

Syntax

objSession.**LogonSMTP(***DisplayName, Address***)**

objSession
Required. The Session object.

DisplayName
Required. String. The display name to use for the messaging user logging on, such as "John Q. Doe".

Address
Required. String. The full e-mail address to use for the messaging user logging on, such as "jdoe@company.com".

Remarks

Your application must call **LogonSMTP** before it can use any CDO for NTS Library object, including the Session object. An attempt to access any programming element prior to a successful **LogonSMTP** call results in a **CdoE_NOT_INITIALIZED** error return. The only exception to this rule is the Session object's **SetLocaleIDs** method.

An application using the CDO for NTS Library binds by address to the mailbox you specify in the **LogonSMTP** parameters:

```
objSession.LogonSMTP("My Name", "myaddress@mycompany.com")
```

The identity of a user logging on with this syntax is not authenticated. The user can assume any arbitrary identity.

The CDO for NTS Inbox is a common folder shared by all recipients and applications, and containing all undeleted messages received by Microsoft® Internet Information Server (IIS). However, your application can access only those messages destined for the mailbox you bind to in the **LogonSMTP** call.

The session is terminated by the **Logoff** method.

MessageFormat Property (Session Object)

[This is preliminary documentation and subject to change.]

The **MessageFormat** property returns or sets the default message encoding. Read/write.

Syntax

objSession.**MessageFormat**

Data Type

Long

Remarks

The **MessageFormat** property has the following defined values:

MessageFormat setting	Value	Description
CdoMime	0	The message is in MIME format.
CdoText	1	The message is in uninterrupted plain text.

The **MessageFormat** property defaults to **CdoMime**. It serves as the default value for the **MessageFormat** property of the Message object.

Name Property (Session Object)

[This is preliminary documentation and subject to change.]

The **Name** property returns the display name used to log on to this session. Read-only.

Syntax

objSession.**Name**

The **Name** property is the default property of a Session object, meaning that *objSession* is syntactically equivalent to *objSession*.**Name** in Microsoft® Visual Basic® code.

Data Type

String

Example

```
' from the function Session_Name
If objSession Is Nothing Then
    MsgBox "Must log on first: see Session menu"
    Exit Function
End If
MsgBox "Profile name for this session = " & objSession.Name
```

Outbox Property (Session Object)

[This is preliminary documentation and subject to change.]

The **Outbox** property returns a Folder object representing the current messaging user's Outbox folder. Read-only.

Syntax

objSession.**Outbox**

Data Type

Object (Folder)

SetLocaleIDs Method (Session Object)

[This is preliminary documentation and subject to change.]

The **SetLocaleIDs** method sets identifiers that define a messaging user's locale.

Syntax

objSession.**SetLocaleIDs(***LocaleID, CodePageID***)**

objSession
Required. The Session object.

LocaleID
Required. Long. The locale identifier (LCID) to be used for this messaging user.

CodePageID
Required. Long. The code page identifier to be used for this messaging user.

Remarks

A locale is the set of features of a messaging user's environment that are dependent on language, country, culture, and conventions. These features include the character selection, the collating sequence and sort order, and the date, time, and currency formats. The **SetLocaleIDs** method sets identifiers that determine the behavior of locale-sensitive operations.

A locale identifier (LCID) is a 32-bit value containing a 16-bit language identifier and a 4-bit sort identifier. The Microsoft® Windows NT® macros **SORTIDFROMLCID** and **LANGIDFROMLCID** can be used to extract these identifiers from the LCID.

A code page identifier is a long integer specifying the ordered character set to use when displaying text. Information about a code page can be obtained from the Windows NT **GetCPInfo** function.

If **SetLocaleIDs** is to be called, it must be called before the Session object's **LogonSMTP** method is called. This allows the messaging user's profile to be set for the appropriate locale. A call to **SetLocaleIDs** following logon returns **CdoE_CALL_FAILED**.

Note that the **SetLocaleIDs** method is the sole exception to the rule that a call to a session's **LogonSMTP** method must precede any other access to that session.

SetLocaleIDs tests the validity of the code page specified by the *CodePageID* parameter before actually setting the locale identifiers. If the code page is not valid, **CdoE_INVALID_ARGUMENT** is returned.

Version Property (Session Object)

[This is preliminary documentation and subject to change.]

The **Version** property returns the version of the CDO for NTS Library. Read-only.

Syntax

objSession.**Version**

Data Type

String

Remarks

The **Version** property currently returns "1.2".

Error Codes

When the CDO Library or the CDO Rendering Library calls MAPI, the desired return value is zero, meaning the call was successful and produced the expected results. MAPI can also return either a warning value or an error value to the CDO libraries. A warning means the call was at least partially successful but may have produced an unexpected result or side effect. An error means the call was not successful. All warning and error return codes are nonzero. Warning values have the high-order bit zero, while error values set it to one.

For the convenience of the Microsoft® Visual Basic® programmer, the CDO libraries define 32-bit type library constants for all relevant warning and error codes. These are provided here in alphabetic and then in numeric order.

A program running on a 16-bit platform cannot use these type library constants. Such a program must test against the low-order word of the constant's value incremented by decimal 1000. For more information on error checking, see Handling Errors.

Note MAPI returns 32-bit values to Visual Basic for both warnings and errors, but Visual Basic treats the two cases differently. Errors are passed to the CDO libraries as 32-bit codes, while warnings are returned as the sum of decimal 1000 and the low-order word of the warning, even on a 32-bit platform. This means that a partial completion, for example, is returned as &H0680 + 1000, or 2664, instead of &H00040680, the full value of **CdoW_PARTIAL_COMPLETION**.

To test for a MAPI warning in a Visual Basic program, you can code the decimal value from the following tables directly into your program. Alternatively, if you prefer to use the type constant for improved readability, you can prepare it for comparison by subtracting the &H40000 bit and then adding 1000 decimal. This is equivalent to subtracting decimal 261144 from the constant:

```
If Err() = CdoW_PARTIAL_COMPLETION - 261144 Then ...
```

Microsoft Visual Basic Scripting Edition (VBScript) and Microsoft® JScript™ do not support any predefined constants. If your application is running as server-side or client-side script, you must use the appropriate hexadecimal or decimal values instead of these type library constants.

The following table lists the return values from MAPI in alphabetic order:

Warning or error code value (error code constants available only in 32-bit type libraries)	HRESULT [VB4 error value] (hexadecimal)	Low-order word + 1000 (decimal)
CdoE_ACCOUNT_DISABLED	&H80040124	1292
CdoE_AMBIGUOUS_RECIP	&H80040700	2792
CdoE_BAD_CHARWIDTH	&H80040103	1259
CdoE_BAD_COLUMN	&H80040118	1280
CdoE_BAD_VALUE	&H80040301	1769
CdoE_BUSY	&H8004010B	1267
CdoE_CALL_FAILED	&H8000400	17389

	5	
CdoE_CANCEL	&H80040501	2281
CdoE_COLLISION	&H80040604	2540
CdoE_COMPUTED	&H8004011A	1282
CdoE_CORRUPT_DATA	&H8004011B	1283
CdoE_CORRUPT_STORE	&H80040600	2536
CdoE_DECLINE_COPY	&H80040306	1774
CdoE_DISK_ERROR	&H80040116	1278
CdoE_END_OF_SESSION	&H80040200	1512
CdoE_EXTENDED_ERROR	&H80040119	1281
CdoE_FAILONEPROVIDER	&H8004011D	1285
CdoE_FOLDER_CYCLE	&H8004060B	2547
CdoE_HAS_FOLDERS	&H80040609	2545
CdoE_HAS_MESSAGES	&H8004060A	2546
CdoE_INTERFACE_NOT_SUPPORTED	&H80004002	17386
CdoE_INVALID_ACCESS_TIME	&H80040123	1291
CdoE_INVALID_BOOKMARK	&H80040405	2029
CdoE_INVALID_ENTRYID	&H80040107	1263
CdoE_INVALID_OBJECT	&H80040108	1264
CdoE_INVALID_PARAMETER	&H80070057	1087
CdoE_INVALID_TYPE	&H80040302	1770
CdoE_INVALID_WORKSTATION_ACCOUNT	&H80040122	1290
CdoE_LOGON_FAILED	&H80040111	1273
CdoE_MISSING_REQUIRED_COLUMN	&H80040202	1514
CdoE_NETWORK_ERROR	&H80040115	1277
CdoE_NO_ACCESS	&H80070005	1005

	5	
CdoE_NO_RECIPIENTS	&H8004060 7	2543
CdoE_NO_SUPPORT	&H8004010 2	1258
CdoE_NO_SUPPRESS	&H8004060 2	2538
CdoE_NON_STANDARD	&H8004060 6	2542
CdoE_NOT_ENOUGH_DISK	&H8004010 D	1269
CdoE_NOT_ENOUGH_MEMORY	&H8007000 E	1014
CdoE_NOT_ENOUGH_RESOURCES	&H8004010 E	1270
CdoE_NOT_FOUND	&H8004010 F	1271
CdoE_NOT_IN_QUEUE	&H8004060 1	2537
CdoE_NOT_INITIALIZED	&H8004060 5	2541
CdoE_NOT_ME	&H8004050 2	2282
CdoE_OBJECT_CHANGED	&H8004010 9	1265
CdoE_OBJECT_DELETED	&H8004010 A	1266
CdoE_PASSWORD_CHANGE_REQUIRED	&H8004012 0	1288
CdoE_PASSWORD_EXPIRED	&H8004012 1	1289
CdoE_SESSION_LIMIT	&H8004011 2	1274
CdoE_STRING_TOO_LONG	&H8004010 5	1261
CdoE_SUBMITTED	&H8004060 8	2544
CdoE_TABLE_EMPTY	&H8004040 2	2026
CdoE_TABLE_TOO_BIG	&H8004040 3	2027
CdoE_TIMEOUT	&H8004040 1	2025
CdoE_TOO_BIG	&H8004030 5	1773
CdoE_TOO_COMPLEX	&H8004011 7	1279
CdoE_TYPE_NO_SUPPORT	&H8004030 3	1771

CdoE_UNABLE_TO_ABORT	&H80040114	1276
CdoE_UNABLE_TO_COMPLETE	&H80040400	2024
CdoE_UNCONFIGURED	&H8004011C	1284
CdoE_UNEXPECTED_ID	&H80040307	1775
CdoE_UNEXPECTED_TYPE	&H80040304	1772
CdoE_UNKNOWN_CPID	&H8004011E	1286
CdoE_UNKNOWN_ENTRYID	&H80040201	1513
CdoE_UNKNOWN_FLAGS	&H80040106	1262
CdoE_UNKNOWN_LCID	&H8004011F	1287
CdoE_USER_CANCEL	&H80040113	1275
CdoE_VERSION	&H80040110	1272
CdoE_WAIT	&H80040500	2280
CdoW_APPROX_COUNT	&H00040482	2154
CdoW_CANCEL_MESSAGE	&H00040580	2408
CdoW_ERRORS_RETURNED	&H00040380	1896
CdoW_NO_SERVICE	&H00040203	1515
CdoW_PARTIAL_COMPLETION	&H00040680	2664
CdoW_POSITION_CHANGED	&H00040481	2153

The following table lists the return values from MAPI in numeric order:

HRESULT [VB4 error value] (hexadecimal)	**Low-order word + 1000 (decimal)**	**Warning or error code value (error code constants available only in 32-bit type libraries)**
&H00040203	1515	**CdoW_NO_SERVICE**
&H00040380	1896	**CdoW_ERRORS_RETURNED**
&H00040481	2153	**CdoW_POSITION_CHANGED**

&H00040482	2154	**CdoW_APPROX_COUNT**
&H00040580	2408	**CdoW_CANCEL_MESSAGE**
&H00040680	2664	**CdoW_PARTIAL_COMPLETION**
&H80004002	17386	**CdoE_INTERFACE_NOT_SUPPORTED**
&H80004005	17389	**CdoE_CALL_FAILED**
&H80040102	1258	**CdoE_NO_SUPPORT**
&H80040103	1259	**CdoE_BAD_CHARWIDTH**
&H80040105	1261	**CdoE_STRING_TOO_LONG**
&H80040106	1262	**CdoE_UNKNOWN_FLAGS**
&H80040107	1263	**CdoE_INVALID_ENTRYID**
&H80040108	1264	**CdoE_INVALID_OBJECT**
&H80040109	1265	**CdoE_OBJECT_CHANGED**
&H8004010A	1266	**CdoE_OBJECT_DELETED**
&H8004010B	1267	**CdoE_BUSY**
&H8004010D	1269	**CdoE_NOT_ENOUGH_DISK**
&H8004010E	1270	**CdoE_NOT_ENOUGH_RESOURCES**
&H8004010F	1271	**CdoE_NOT_FOUND**
&H80040110	1272	**CdoE_VERSION**
&H80040111	1273	**CdoE_LOGON_FAILED**
&H80040112	1274	**CdoE_SESSION_LIMIT**
&H80040113	1275	**CdoE_USER_CANCEL**
&H80040114	1276	**CdoE_UNABLE_TO_ABORT**
&H80040115	1277	**CdoE_NETWORK_ERROR**
&H80040116	1278	**CdoE_DISK_ERROR**
&H80040117	1279	**CdoE_TOO_COMPLEX**

&H80040118	1280	**CdoE_BAD_COLUMN**
&H80040119	1281	**CdoE_EXTENDED_ERROR**
&H8004011A	1282	**CdoE_COMPUTED**
&H8004011B	1283	**CdoE_CORRUPT_DATA**
&H8004011C	1284	**CdoE_UNCONFIGURED**
&H8004011D	1285	**CdoE_FAILONEPROVIDER**
&H8004011E	1286	**CdoE_UNKNOWN_CPID**
&H8004011F	1287	**CdoE_UNKNOWN_LCID**
&H80040120	1288	**CdoE_PASSWORD_CHANGE_REQUIRED**
&H80040121	1289	**CdoE_PASSWORD_EXPIRED**
&H80040122	1290	**CdoE_INVALID_WORKSTATION_ACCOUNT**
&H80040123	1291	**CdoE_INVALID_ACCESS_TIME**
&H80040124	1292	**CdoE_ACCOUNT_DISABLED**
&H80040200	1512	**CdoE_END_OF_SESSION**
&H80040201	1513	**CdoE_UNKNOWN_ENTRYID**
&H80040202	1514	**CdoE_MISSING_REQUIRED_COLUMN**
&H80040301	1769	**CdoE_BAD_VALUE**
&H80040302	1770	**CdoE_INVALID_TYPE**
&H80040303	1771	**CdoE_TYPE_NO_SUPPORT**
&H80040304	1772	**CdoE_UNEXPECTED_TYPE**
&H80040305	1773	**CdoE_TOO_BIG**
&H80040306	1774	**CdoE_DECLINE_COPY**
&H80040307	1775	**CdoE_UNEXPECTED_ID**
&H80040400	2024	**CdoE_UNABLE_TO_COMPLETE**
&H80040400	2025	**CdoE_TIMEOUT**

1		
&H80040402	2026	**CdoE_TABLE_EMPTY**
&H80040403	2027	**CdoE_TABLE_TOO_BIG**
&H80040405	2029	**CdoE_INVALID_BOOKMARK**
&H80040500	2280	**CdoE_WAIT**
&H80040501	2281	**CdoE_CANCEL**
&H80040502	2282	**CdoE_NOT_ME**
&H80040600	2536	**CdoE_CORRUPT_STORE**
&H80040601	2537	**CdoE_NOT_IN_QUEUE**
&H80040602	2538	**CdoE_NO_SUPPRESS**
&H80040604	2540	**CdoE_COLLISION**
&H80040605	2541	**CdoE_NOT_INITIALIZED**
&H80040606	2542	**CdoE_NON_STANDARD**
&H80040607	2543	**CdoE_NO_RECIPIENTS**
&H80040608	2544	**CdoE_SUBMITTED**
&H80040609	2545	**CdoE_HAS_FOLDERS**
&H8004060A	2546	**CdoE_HAS_MESSAGES**
&H8004060B	2547	**CdoE_FOLDER_CYCLE**
&H80040700	2792	**CdoE_AMBIGUOUS_RECIP**
&H80070005	1005	**CdoE_NO_ACCESS**
&H8007000E	1014	**CdoE_NOT_ENOUGH_MEMORY**
&H80070057	1087	**CdoE_INVALID_PARAMETER**

Property Tags

For the convenience of the Microsoft® Visual Basic® programmer, the CDO libraries define 32-bit type library constants for all predefined MAPI properties. These are provided here in alphabetic and then in numeric order.

Most of the string properties can also be used in the Unicode format. When you reference a property for Unicode, you should change its property type from &H001E to &H001F. For example, the standard property tag for PR_SUBJECT is &H0037001E, but if your application is using Unicode you should refer to PR_SUBJECT with &H0037001F.

Microsoft Visual Basic Scripting Edition (VBScript) and Microsoft® JScript™ do not support any predefined constants. If your application is running as server-side or client-side script, you must use the appropriate hexadecimal or decimal values instead of these type library constants.

The following table lists the MAPI property tags in alphabetic order:

Property tag value (constants available only in 32-bit type libraries)	**Hexadecimal value**
CdoPR_7BIT_DISPLAY_NAME	&H39FF001E
CdoPR_AB_DEFAULT_DIR	&H3D060102
CdoPR_AB_DEFAULT_PAB	&H3D070102
CdoPR_AB_PROVIDER_ID	&H36150102
CdoPR_AB_PROVIDERS	&H3D010102
CdoPR_AB_SEARCH_PATH	&H3D051102
CdoPR_AB_SEARCH_PATH_UPDATE	&H3D110102
CdoPR_ACCESS	&H0FF40003
CdoPR_ACCESS_LEVEL	&H0FF70003
CdoPR_ACCOUNT	&H3A00001E
CdoPR_ACKNOWLEDGEMENT_MODE	&H00010003
CdoPR_ADDRTYPE	&H3002001E
CdoPR_ALTERNATE_RECIPIENT	&H3A010102
CdoPR_ALTERNATE_RECIPIENT_ALLOWED	&H0002000B
CdoPR_ANR	&H360C001E
CdoPR_ASSISTANT	&H3A30001

	E
CdoPR_ASSISTANT_TELEPHONE_NUMBER	&H3A2E001E
CdoPR_ASSOC_CONTENT_COUNT	&H36170003
CdoPR_ATTACH_ADDITIONAL_INFO	&H370F0102
CdoPR_ATTACH_DATA_BIN	&H37010102
CdoPR_ATTACH_DATA_OBJ	&H3701000D
CdoPR_ATTACH_ENCODING	&H37020102
CdoPR_ATTACH_EXTENSION	&H3703001E
CdoPR_ATTACH_FILENAME	&H3704001E
CdoPR_ATTACH_LONG_FILENAME	&H3707001E
CdoPR_ATTACH_LONG_PATHNAME	&H370D001E
CdoPR_ATTACH_METHOD	&H37050003
CdoPR_ATTACH_MIME_TAG	&H370E001E
CdoPR_ATTACH_NUM	&H0E210003
CdoPR_ATTACH_PATHNAME	&H3708001E
CdoPR_ATTACH_RENDERING	&H37090102
CdoPR_ATTACH_SIZE	&H0E200003
CdoPR_ATTACH_TAG	&H370A0102
CdoPR_ATTACH_TRANSPORT_NAME	&H370C001E
CdoPR_ATTACHMENT_X400_PARAMETERS	&H37000102
CdoPR_AUTHORIZING_USERS	&H00030102
CdoPR_AUTO_FORWARD_COMMENT	&H0004001E
CdoPR_AUTO_FORWARDED	&H0005000B
CdoPR_BEEPER_TELEPHONE_NUMBER	&H3A21001E
CdoPR_BIRTHDAY	&H3A420040

CdoPR_BODY	&H1000001E
CdoPR_BODY_CRC	&H0E1C0003
CdoPR_BUSINESS_ADDRESS_CITY	&H3A27001E
CdoPR_BUSINESS_ADDRESS_COUNTRY	&H3A26001E
CdoPR_BUSINESS_ADDRESS_POST_OFFICE_BOX	&H3A2B001E
CdoPR_BUSINESS_ADDRESS_POSTAL_CODE	&H3A2A001E
CdoPR_BUSINESS_ADDRESS_STATE_OR_PROVINCE	&H3A28001E
CdoPR_BUSINESS_ADDRESS_STREET	&H3A29001E
CdoPR_BUSINESS_FAX_NUMBER	&H3A24001E
CdoPR_BUSINESS_HOME_PAGE	&H3A51001E
CdoPR_BUSINESS_TELEPHONE_NUMBER	&H3A08001E
CdoPR_BUSINESS2_TELEPHONE_NUMBER	&H3A1B001E
CdoPR_CALLBACK_TELEPHONE_NUMBER	&H3A02001E
CdoPR_CAR_TELEPHONE_NUMBER	&H3A1E001E
CdoPR_CELLULAR_TELEPHONE_NUMBER	&H3A1C001E
CdoPR_CHILDRENS_NAMES	&H3A58101E
CdoPR_CLIENT_SUBMIT_TIME	&H00390040
CdoPR_COMMENT	&H3004001E
CdoPR_COMMON_VIEWS_ENTRYID	&H35E60102
CdoPR_COMPANY_MAIN_PHONE_NUMBER	&H3A57001E
CdoPR_COMPANY_NAME	&H3A16001E
CdoPR_COMPUTER_NETWORK_NAME	&H3A49001E
CdoPR_CONTACT_ADDRTYPES	&H3A54101E
CdoPR_CONTACT_DEFAULT_ADDRESS_INDEX	&H3A550003
CdoPR_CONTACT_EMAIL_ADDRESSES	&H3A56101

	E
CdoPR_CONTACT_ENTRYIDS	&H3A531102
CdoPR_CONTACT_VERSION	&H3A520048
CdoPR_CONTAINER_CLASS	&H3613001E
CdoPR_CONTAINER_CONTENTS	&H360F000D
CdoPR_CONTAINER_FLAGS	&H36000003
CdoPR_CONTAINER_HIERARCHY	&H360E000D
CdoPR_CONTAINER_MODIFY_VERSION	&H36140014
CdoPR_CONTENT_CONFIDENTIALITY_ALGORITHM_ID	&H00060102
CdoPR_CONTENT_CORRELATOR	&H00070102
CdoPR_CONTENT_COUNT	&H36020003
CdoPR_CONTENT_IDENTIFIER	&H0008001E
CdoPR_CONTENT_INTEGRITY_CHECK	&H0C000102
CdoPR_CONTENT_LENGTH	&H00090003
CdoPR_CONTENT_RETURN_REQUESTED	&H000A000B
CdoPR_CONTENT_UNREAD	&H36030003
CdoPR_CONTENTS_SORT_ORDER	&H360D1003
CdoPR_CONTROL_FLAGS	&H3F000003
CdoPR_CONTROL_ID	&H3F070102
CdoPR_CONTROL_STRUCTURE	&H3F010102
CdoPR_CONTROL_TYPE	&H3F020003
CdoPR_CONVERSATION_INDEX	&H00710102
CdoPR_CONVERSATION_KEY	&H000B0102
CdoPR_CONVERSATION_TOPIC	&H0070001E
CdoPR_CONVERSION_EITS	&H000C0102

CdoPR_CONVERSION_PROHIBITED	&H3A03000B
CdoPR_CONVERSION_WITH_LOSS_PROHIBITED	&H000D000B
CdoPR_CONVERTED_EITS	&H000E0102
CdoPR_CORRELATE	&H0E0C000B
CdoPR_CORRELATE_MTSID	&H0E0D0102
CdoPR_COUNTRY	&H3A26001E
CdoPR_CREATE_TEMPLATES	&H3604000D
CdoPR_CREATION_TIME	&H30070040
CdoPR_CREATION_VERSION	&H0E190014
CdoPR_CURRENT_VERSION	&H0E000014
CdoPR_CUSTOMER_ID	&H3A4A001E
CdoPR_DEF_CREATE_DL	&H36110102
CdoPR_DEF_CREATE_MAILUSER	&H36120102
CdoPR_DEFAULT_PROFILE	&H3D04000B
CdoPR_DEFAULT_STORE	&H3400000B
CdoPR_DEFAULT_VIEW_ENTRYID	&H36160102
CdoPR_DEFERRED_DELIVERY_TIME	&H000F0040
CdoPR_DELEGATION	&H007E0102
CdoPR_DELETE_AFTER_SUBMIT	&H0E01000B
CdoPR_DELIVER_TIME	&H00100040
CdoPR_DELIVERY_POINT	&H0C070003
CdoPR_DELTAX	&H3F030003
CdoPR_DELTAY	&H3F040003
CdoPR_DEPARTMENT_NAME	&H3A18001E
CdoPR_DEPTH	&H3005000

	3
CdoPR_DETAILS_TABLE	&H3605000D
CdoPR_DISC_VAL	&H004A000B
CdoPR_DISCARD_REASON	&H00110003
CdoPR_DISCLOSE_RECIPIENTS	&H3A04000B
CdoPR_DISCLOSURE_OF_RECIPIENTS	&H0012000B
CdoPR_DISCRETE_VALUES	&H0E0E000B
CdoPR_DISPLAY_BCC	&H0E02001E
CdoPR_DISPLAY_CC	&H0E03001E
CdoPR_DISPLAY_NAME	&H3001001E
CdoPR_DISPLAY_NAME_PREFIX	&H3A45001E
CdoPR_DISPLAY_TO	&H0E04001E
CdoPR_DISPLAY_TYPE	&H39000003
CdoPR_DL_EXPANSION_HISTORY	&H00130102
CdoPR_DL_EXPANSION_PROHIBITED	&H0014000B
CdoPR_EMAIL_ADDRESS	&H3003001E
CdoPR_END_DATE	&H00610040
CdoPR_ENTRYID	&H0FFF0102
CdoPR_EXPIRY_TIME	&H00150040
CdoPR_EXPLICIT_CONVERSION	&H0C010003
CdoPR_FILTERING_HOOKS	&H3D080102
CdoPR_FINDER_ENTRYID	&H35E70102
CdoPR_FOLDER_ASSOCIATED_CONTENTS	&H3610000D
CdoPR_FOLDER_TYPE	&H36010003
CdoPR_FORM_CATEGORY	&H3304001E

CdoPR_FORM_CATEGORY_SUB	&H3305001E
CdoPR_FORM_CLSID	&H33020048
CdoPR_FORM_CONTACT_NAME	&H3303001E
CdoPR_FORM_DESIGNER_GUID	&H33090048
CdoPR_FORM_DESIGNER_NAME	&H3308001E
CdoPR_FORM_HIDDEN	&H3307000B
CdoPR_FORM_HOST_MAP	&H33061003
CdoPR_FORM_MESSAGE_BEHAVIOR	&H330A0003
CdoPR_FORM_VERSION	&H3301001E
CdoPR_FTP_SITE	&H3A4C001E
CdoPR_GENDER	&H3A4D0002
CdoPR_GENERATION	&H3A05001E
CdoPR_GIVEN_NAME	&H3A06001E
CdoPR_GOVERNMENT_ID_NUMBER	&H3A07001E
CdoPR_HASATTACH	&H0E1B000B
CdoPR_HEADER_FOLDER_ENTRYID	&H3E0A0102
CdoPR_HOBBIES	&H3A43001E
CdoPR_HOME_ADDRESS_CITY	&H3A59001E
CdoPR_HOME_ADDRESS_COUNTRY	&H3A5A001E
CdoPR_HOME_ADDRESS_POST_OFFICE_BOX	&H3A5E001E
CdoPR_HOME_ADDRESS_POSTAL_CODE	&H3A5B001E
CdoPR_HOME_ADDRESS_STATE_OR_PROVINCE	&H3A5C001E
CdoPR_HOME_ADDRESS_STREET	&H3A5D001E
CdoPR_HOME_FAX_NUMBER	&H3A25001E
CdoPR_HOME_TELEPHONE_NUMBER	&H3A09001

	E
CdoPR_HOME2_TELEPHONE_NUMBER	&H3A2F001E
CdoPR_ICON	&H0FFD0102
CdoPR_IDENTITY_DISPLAY	&H3E00001E
CdoPR_IDENTITY_ENTRYID	&H3E01010 2
CdoPR_IDENTITY_SEARCH_KEY	&H3E05010 2
CdoPR_IMPLICIT_CONVERSION_PROHIBITED	&H0016000B
CdoPR_IMPORTANCE	&H0017000 3
CdoPR_INCOMPLETE_COPY	&H0035000B
CdoPR_INITIAL_DETAILS_PANE	&H3F08000 3
CdoPR_INITIALS	&H3A0A001E
CdoPR_INSTANCE_KEY	&H0FF6010 2
CdoPR_INTERNET_APPROVED	&H1030001E
CdoPR_INTERNET_ARTICLE_NUMBER	&H0E23000 3
CdoPR_INTERNET_CONTROL	&H1031001E
CdoPR_INTERNET_DISTRIBUTION	&H1032001E
CdoPR_INTERNET_FOLLOWUP_TO	&H1033001E
CdoPR_INTERNET_LINES	&H1034000 3
CdoPR_INTERNET_MESSAGE_ID	&H1035001E
CdoPR_INTERNET_NEWSGROUPS	&H1036001E
CdoPR_INTERNET_NNTP_PATH	&H1038001E
CdoPR_INTERNET_ORGANIZATION	&H1037001E
CdoPR_INTERNET_PRECEDENCE	&H1041001E
CdoPR_INTERNET_REFERENCES	&H1039001E
CdoPR_IPM_ID	&H0018010 2

CdoPR_IPM_OUTBOX_ENTRYID	&H35E20102
CdoPR_IPM_OUTBOX_SEARCH_KEY	&H34110102
CdoPR_IPM_RETURN_REQUESTED	&H0C02000B
CdoPR_IPM_SENTMAIL_ENTRYID	&H35E40102
CdoPR_IPM_SENTMAIL_SEARCH_KEY	&H34130102
CdoPR_IPM_SUBTREE_ENTRYID	&H35E00102
CdoPR_IPM_SUBTREE_SEARCH_KEY	&H34100102
CdoPR_IPM_WASTEBASKET_ENTRYID	&H35E30102
CdoPR_IPM_WASTEBASKET_SEARCH_KEY	&H34120102
CdoPR_ISDN_NUMBER	&H3A2D001E
CdoPR_KEYWORD	&H3A0B001E
CdoPR_LANGUAGE	&H3A0C001E
CdoPR_LANGUAGES	&H002F001E
CdoPR_LAST_MODIFICATION_TIME	&H30080040
CdoPR_LATEST_DELIVERY_TIME	&H00190040
CdoPR_LOCALITY	&H3A27001E
CdoPR_LOCATION	&H3A0D001E
CdoPR_MAIL_PERMISSION	&H3A0E000B
CdoPR_MANAGER_NAME	&H3A4E001E
CdoPR_MAPPING_SIGNATURE	&H0FF80102
CdoPR_MDB_PROVIDER	&H34140102
CdoPR_MESSAGE_ATTACHMENTS	&H0E13000D
CdoPR_MESSAGE_CC_ME	&H0058000B
CdoPR_MESSAGE_CLASS	&H001A001E
CdoPR_MESSAGE_DELIVERY_ID	&H001B010

	2
CdoPR_MESSAGE_DELIVERY_TIME	&H0E060040
CdoPR_MESSAGE_DOWNLOAD_TIME	&H0E180003
CdoPR_MESSAGE_FLAGS	&H0E070003
CdoPR_MESSAGE_RECIP_ME	&H0059000B
CdoPR_MESSAGE_RECIPIENTS	&H0E12000D
CdoPR_MESSAGE_SECURITY_LABEL	&H001E0102
CdoPR_MESSAGE_SIZE	&H0E080003
CdoPR_MESSAGE_SUBMISSION_ID	&H00470102
CdoPR_MESSAGE_TO_ME	&H0057000B
CdoPR_MESSAGE_TOKEN	&H0C030102
CdoPR_MHS_COMMON_NAME	&H3A0F001E
CdoPR_MIDDLE_NAME	&H3A44001E
CdoPR_MINI_ICON	&H0FFC0102
CdoPR_MOBILE_TELEPHONE_NUMBER	&H3A1C001E
CdoPR_MODIFY_VERSION	&H0E1A0014
CdoPR_MSG_STATUS	&H0E170003
CdoPR_NDR_DIAG_CODE	&H0C050003
CdoPR_NDR_REASON_CODE	&H0C040003
CdoPR_NEWSGROUP_NAME	&H0E24001E
CdoPR_NICKNAME	&H3A4F001E
CdoPR_NNTP_XREF	&H1040001E
CdoPR_NON_RECEIPT_NOTIFICATION_REQUESTED	&H0C06000B
CdoPR_NON_RECEIPT_REASON	&H003E0003
CdoPR_NORMALIZED_SUBJECT	&H0E1D001E

CdoPR_OBJECT_TYPE	&H0FFE0003
CdoPR_OBSOLETED_IPMS	&H001F0102
CdoPR_OFFICE_LOCATION	&H3A19001E
CdoPR_OFFICE_TELEPHONE_NUMBER	&H3A08001E
CdoPR_OFFICE2_TELEPHONE_NUMBER	&H3A1B001E
CdoPR_ORGANIZATIONAL_ID_NUMBER	&H3A10001E
CdoPR_ORIG_MESSAGE_CLASS	&H004B001E
CdoPR_ORIGIN_CHECK	&H00270102
CdoPR_ORIGINAL_AUTHOR_ADDRTYPE	&H0079001E
CdoPR_ORIGINAL_AUTHOR_EMAIL_ADDRESS	&H007A001E
CdoPR_ORIGINAL_AUTHOR_ENTRYID	&H004C0102
CdoPR_ORIGINAL_AUTHOR_NAME	&H004D001E
CdoPR_ORIGINAL_AUTHOR_SEARCH_KEY	&H00560102
CdoPR_ORIGINAL_DELIVERY_TIME	&H00550040
CdoPR_ORIGINAL_DISPLAY_BCC	&H0072001E
CdoPR_ORIGINAL_DISPLAY_CC	&H0073001E
CdoPR_ORIGINAL_DISPLAY_NAME	&H3A13001E
CdoPR_ORIGINAL_DISPLAY_TO	&H0074001E
CdoPR_ORIGINAL_EITS	&H00210102
CdoPR_ORIGINAL_ENTRYID	&H3A12010 2
CdoPR_ORIGINAL_SEARCH_KEY	&H3A14010 2
CdoPR_ORIGINAL_SENDER_ADDRTYPE	&H0066001E
CdoPR_ORIGINAL_SENDER_EMAIL_ADDRESS	&H0067001E
CdoPR_ORIGINAL_SENDER_ENTRYID	&H005B0102
CdoPR_ORIGINAL_SENDER_NAME	&H005A001

	E
CdoPR_ORIGINAL_SENDER_SEARCH_KEY	&H005C0102
CdoPR_ORIGINAL_SENSITIVITY	&H002E0003
CdoPR_ORIGINAL_SENT_REPRESENTING_ADDRTYPE	&H0068001E
CdoPR_ORIGINAL_SENT_REPRESENTING_EMAIL_ADDRESS	&H0069001E
CdoPR_ORIGINAL_SENT_REPRESENTING_ENTRYID	&H005E0102
CdoPR_ORIGINAL_SENT_REPRESENTING_NAME	&H005D001E
CdoPR_ORIGINAL_SENT_REPRESENTING_SEARCH_KEY	&H005F0102
CdoPR_ORIGINAL_SUBJECT	&H0049001E
CdoPR_ORIGINAL_SUBMIT_TIME	&H004E0040
CdoPR_ORIGINALLY_INTENDED_RECIP_ADDRTYPE	&H007B001E
CdoPR_ORIGINALLY_INTENDED_RECIP_EMAIL_ADDRESS	&H007C001E
CdoPR_ORIGINALLY_INTENDED_RECIP_ENTRYID	&H10120102
CdoPR_ORIGINALLY_INTENDED_RECIPIENT_NAME	&H00200102
CdoPR_ORIGINATING_MTA_CERTIFICATE	&H0E250102
CdoPR_ORIGINATOR_AND_DL_EXPANSION_HISTORY	&H10020102
CdoPR_ORIGINATOR_CERTIFICATE	&H00220102
CdoPR_ORIGINATOR_DELIVERY_REPORT_REQUESTED	&H0023000B
CdoPR_ORIGINATOR_NON_DELIVERY_REPORT_REQUESTED	&H0C08000B
CdoPR_ORIGINATOR_REQUESTED_ALTERNATE_RECIPIENT	&H0C090102
CdoPR_ORIGINATOR_RETURN_ADDRESS	&H00240102
CdoPR_OTHER_ADDRESS_CITY	&H3A5F001E
CdoPR_OTHER_ADDRESS_COUNTRY	&H3A60001E
CdoPR_OTHER_ADDRESS_POST_OFFICE_BOX	&H3A64001E
CdoPR_OTHER_ADDRESS_POSTAL_CODE	&H3A61001E

CdoPR_OTHER_ADDRESS_STATE_OR_PROVINCE	&H3A62001E
CdoPR_OTHER_ADDRESS_STREET	&H3A63001E
CdoPR_OTHER_TELEPHONE_NUMBER	&H3A1F001E
CdoPR_OWN_STORE_ENTRYID	&H3E060102
CdoPR_OWNER_APPT_ID	&H00620003
CdoPR_PAGER_TELEPHONE_NUMBER	&H3A21001E
CdoPR_PARENT_DISPLAY	&H0E05001E
CdoPR_PARENT_ENTRYID	&H0E090102
CdoPR_PARENT_KEY	&H00250102
CdoPR_PERSONAL_HOME_PAGE	&H3A50001E
CdoPR_PHYSICAL_DELIVERY_BUREAU_FAX_DELIVERY	&H0C0A000B
CdoPR_PHYSICAL_DELIVERY_MODE	&H0C0B0003
CdoPR_PHYSICAL_DELIVERY_REPORT_REQUEST	&H0C0C0003
CdoPR_PHYSICAL_FORWARDING_ADDRESS	&H0C0D0102
CdoPR_PHYSICAL_FORWARDING_ADDRESS_REQUESTED	&H0C0E000B
CdoPR_PHYSICAL_FORWARDING_PROHIBITED	&H0C0F000B
CdoPR_PHYSICAL_RENDITION_ATTRIBUTES	&H0C100102
CdoPR_POST_FOLDER_ENTRIES	&H103B0102
CdoPR_POST_FOLDER_NAMES	&H103C001E
CdoPR_POST_OFFICE_BOX	&H3A2B001E
CdoPR_POST_REPLY_DENIED	&H103F0102
CdoPR_POST_REPLY_FOLDER_ENTRIES	&H103D0102
CdoPR_POST_REPLY_FOLDER_NAMES	&H103E001E
CdoPR_POSTAL_ADDRESS	&H3A15001E
CdoPR_POSTAL_CODE	&H3A2A001

	E
CdoPR_PREFERRED_BY_NAME	&H3A47001E
CdoPR_PREPROCESS	&H0E22000B
CdoPR_PRIMARY_CAPABILITY	&H39040102
CdoPR_PRIMARY_FAX_NUMBER	&H3A23001E
CdoPR_PRIMARY_TELEPHONE_NUMBER	&H3A1A001E
CdoPR_PRIORITY	&H00260003
CdoPR_PROFESSION	&H3A46001E
CdoPR_PROFILE_NAME	&H3D12001E
CdoPR_PROOF_OF_DELIVERY	&H0C110102
CdoPR_PROOF_OF_DELIVERY_REQUESTED	&H0C12000B
CdoPR_PROOF_OF_SUBMISSION	&H0E260102
CdoPR_PROOF_OF_SUBMISSION_REQUESTED	&H0028000B
CdoPR_PROVIDER_DISPLAY	&H3006001E
CdoPR_PROVIDER_DLL_NAME	&H300A001E
CdoPR_PROVIDER_ORDINAL	&H300D0003
CdoPR_PROVIDER_SUBMIT_TIME	&H00480040
CdoPR_PROVIDER_UID	&H300C0102
CdoPR_RADIO_TELEPHONE_NUMBER	&H3A1D001E
CdoPR_RCVD_REPRESENTING_ADDRTYPE	&H0077001E
CdoPR_RCVD_REPRESENTING_EMAIL_ADDRESS	&H0078001E
CdoPR_RCVD_REPRESENTING_ENTRYID	&H00430102
CdoPR_RCVD_REPRESENTING_NAME	&H0044001E
CdoPR_RCVD_REPRESENTING_SEARCH_KEY	&H00520102
CdoPR_READ_RECEIPT_ENTRYID	&H00460102

CdoPR_READ_RECEIPT_REQUESTED	&H0029000B
CdoPR_READ_RECEIPT_SEARCH_KEY	&H00530102
CdoPR_RECEIPT_TIME	&H002A0040
CdoPR_RECEIVE_FOLDER_SETTINGS	&H3415000D
CdoPR_RECEIVED_BY_ADDRTYPE	&H0075001E
CdoPR_RECEIVED_BY_EMAIL_ADDRESS	&H0076001E
CdoPR_RECEIVED_BY_ENTRYID	&H003F0102
CdoPR_RECEIVED_BY_NAME	&H0040001E
CdoPR_RECEIVED_BY_SEARCH_KEY	&H00510102
CdoPR_RECIPIENT_CERTIFICATE	&H0C130102
CdoPR_RECIPIENT_NUMBER_FOR_ADVICE	&H0C14001E
CdoPR_RECIPIENT_REASSIGNMENT_PROHIBITED	&H002B000B
CdoPR_RECIPIENT_STATUS	&H0E150003
CdoPR_RECIPIENT_TYPE	&H0C150003
CdoPR_RECORD_KEY	&H0FF90102
CdoPR_REDIRECTION_HISTORY	&H002C0102
CdoPR_REFERRED_BY_NAME	&H3A47001E
CdoPR_REGISTERED_MAIL_TYPE	&H0C160003
CdoPR_RELATED_IPMS	&H002D0102
CdoPR_REMOTE_PROGRESS	&H3E0B0003
CdoPR_REMOTE_PROGRESS_TEXT	&H3E0C001E
CdoPR_REMOTE_VALIDATE_OK	&H3E0D000B
CdoPR_RENDERING_POSITION	&H370B0003
CdoPR_REPLY_RECIPIENT_ENTRIES	&H004F0102
CdoPR_REPLY_RECIPIENT_NAMES	&H0050001

	E
CdoPR_REPLY_REQUESTED	&H0C17000B
CdoPR_REPLY_TIME	&H00300040
CdoPR_REPORT_ENTRYID	&H00450102
CdoPR_REPORT_NAME	&H003A001E
CdoPR_REPORT_SEARCH_KEY	&H00540102
CdoPR_REPORT_TAG	&H00310102
CdoPR_REPORT_TEXT	&H1001001E
CdoPR_REPORT_TIME	&H00320040
CdoPR_REPORTING_DL_NAME	&H1003010 2
CdoPR_REPORTING_MTA_CERTIFICATE	&H1004010 2
CdoPR_REQUESTED_DELIVERY_METHOD	&H0C18000 3
CdoPR_RESOURCE_FLAGS	&H3009000 3
CdoPR_RESOURCE_METHODS	&H3E02000 3
CdoPR_RESOURCE_PATH	&H3E07001E
CdoPR_RESOURCE_TYPE	&H3E03000 3
CdoPR_RESPONSE_REQUESTED	&H0063000B
CdoPR_RESPONSIBILITY	&H0E0F000B
CdoPR_RETURNED_IPM	&H0033000B
CdoPR_ROW_TYPE	&H0FF5000 3
CdoPR_ROWID	&H3000000 3
CdoPR_RTF_COMPRESSED	&H1009010 2
CdoPR_RTF_IN_SYNC	&H0E1F000B
CdoPR_RTF_SYNC_BODY_COUNT	&H1007000 3
CdoPR_RTF_SYNC_BODY_CRC	&H1006000 3

CdoPR_RTF_SYNC_BODY_TAG	&H1008001E
CdoPR_RTF_SYNC_PREFIX_COUNT	&H10100003
CdoPR_RTF_SYNC_TRAILING_COUNT	&H10110003
CdoPR_SEARCH	&H3607000D
CdoPR_SEARCH_KEY	&H300B0102
CdoPR_SECURITY	&H00340003
CdoPR_SELECTABLE	&H3609000B
CdoPR_SEND_INTERNET_ENCODING	&H3A710003
CdoPR_SEND_RICH_INFO	&H3A40000B
CdoPR_SENDER_ADDRTYPE	&H0C1E001E
CdoPR_SENDER_EMAIL_ADDRESS	&H0C1F001E
CdoPR_SENDER_ENTRYID	&H0C190102
CdoPR_SENDER_NAME	&H0C1A001E
CdoPR_SENDER_SEARCH_KEY	&H0C1D0102
CdoPR_SENSITIVITY	&H00360003
CdoPR_SENT_REPRESENTING_ADDRTYPE	&H0064001E
CdoPR_SENT_REPRESENTING_EMAIL_ADDRESS	&H0065001E
CdoPR_SENT_REPRESENTING_ENTRYID	&H00410102
CdoPR_SENT_REPRESENTING_NAME	&H0042001E
CdoPR_SENT_REPRESENTING_SEARCH_KEY	&H003B0102
CdoPR_SENTMAIL_ENTRYID	&H0E0A0102
CdoPR_SERVICE_DELETE_FILES	&H3D10101E
CdoPR_SERVICE_DLL_NAME	&H3D0A001E
CdoPR_SERVICE_ENTRY_NAME	&H3D0B001E
CdoPR_SERVICE_EXTRA_UIDS	&H3D0D010

	2
CdoPR_SERVICE_NAME	&H3D09001E
CdoPR_SERVICE_SUPPORT_FILES	&H3D0F101E
CdoPR_SERVICE_UID	&H3D0C0102
CdoPR_SERVICES	&H3D0E0102
CdoPR_SPOOLER_STATUS	&H0E100003
CdoPR_SPOUSE_NAME	&H3A48001E
CdoPR_START_DATE	&H00600040
CdoPR_STATE_OR_PROVINCE	&H3A28001E
CdoPR_STATUS	&H360B0003
CdoPR_STATUS_CODE	&H3E040003
CdoPR_STATUS_STRING	&H3E08001E
CdoPR_STORE_ENTRYID	&H0FFB0102
CdoPR_STORE_PROVIDERS	&H3D000102
CdoPR_STORE_RECORD_KEY	&H0FFA0102
CdoPR_STORE_STATE	&H340E0003
CdoPR_STORE_SUPPORT_MASK	&H340D0003
CdoPR_STREET_ADDRESS	&H3A29001E
CdoPR_SUBFOLDERS	&H360A000B
CdoPR_SUBJECT	&H0037001E
CdoPR_SUBJECT_IPM	&H00380102
CdoPR_SUBJECT_PREFIX	&H003D001E
CdoPR_SUBMIT_FLAGS	&H0E140003
CdoPR_SUPERSEDES	&H103A001E
CdoPR_SUPPLEMENTARY_INFO	&H0C1B001E

CdoPR_SURNAME	&H3A11001E
CdoPR_TELEX_NUMBER	&H3A2C001E
CdoPR_TEMPLATEID	&H39020102
CdoPR_TITLE	&H3A17001E
CdoPR_TNEF_CORRELATION_KEY	&H007F0102
CdoPR_TRANSMITABLE_DISPLAY_NAME	&H3A20001E
CdoPR_TRANSPORT_KEY	&H0E160003
CdoPR_TRANSPORT_MESSAGE_HEADERS	&H007D001E
CdoPR_TRANSPORT_PROVIDERS	&H3D02010 2
CdoPR_TRANSPORT_STATUS	&H0E110003
CdoPR_TTYTDD_PHONE_NUMBER	&H3A4B001E
CdoPR_TYPE_OF_MTS_USER	&H0C1C0003
CdoPR_USER_CERTIFICATE	&H3A22010 2
CdoPR_USER_X509_CERTIFICATE	&H3A70110 2
CdoPR_VALID_FOLDER_MASK	&H35DF0003
CdoPR_VIEWS_ENTRYID	&H35E5010 2
CdoPR_WEDDING_ANNIVERSARY	&H3A41004 0
CdoPR_X400_CONTENT_TYPE	&H003C010 2
CdoPR_X400_DEFERRED_DELIVERY_CANCEL	&H3E09000B
CdoPR_XPOS	&H3F050003
CdoPR_YPOS	&H3F060003

The following table lists the MAPI property tags in numeric order:

Hexadecimal value	**Property tag value (constants available only in 32-bit type libraries)**
&H00010003	**CdoPR_ACKNOWLEDGEMENT_MODE**

&H0002000B **CdoPR_ALTERNATE_RECIPIENT_ALLOWED**

&H0003010 2 **CdoPR_AUTHORIZING_USERS**

&H0004001E **CdoPR_AUTO_FORWARD_COMMENT**

&H0005000B **CdoPR_AUTO_FORWARDED**

&H0006010 2 **CdoPR_CONTENT_CONFIDENTIALITY_ALGORITHM_ID**

&H0007010 2 **CdoPR_CONTENT_CORRELATOR**

&H0008001E **CdoPR_CONTENT_IDENTIFIER**

&H0009000 3 **CdoPR_CONTENT_LENGTH**

&H000A000B **CdoPR_CONTENT_RETURN_REQUESTED**

&H000B010 2 **CdoPR_CONVERSATION_KEY**

&H000C010 2 **CdoPR_CONVERSION_EITS**

&H000D000B **CdoPR_CONVERSION_WITH_LOSS_PROHIBITED**

&H000E010 2 **CdoPR_CONVERTED_EITS**

&H000F004 0 **CdoPR_DEFERRED_DELIVERY_TIME**

&H0010004 0 **CdoPR_DELIVER_TIME**

&H0011000 3 **CdoPR_DISCARD_REASON**

&H0012000B **CdoPR_DISCLOSURE_OF_RECIPIENTS**

&H0013010 2 **CdoPR_DL_EXPANSION_HISTORY**

&H0014000B **CdoPR_DL_EXPANSION_PROHIBITED**

&H0015004 0 **CdoPR_EXPIRY_TIME**

&H0016000B **CdoPR_IMPLICIT_CONVERSION_PROHIBITED**

&H0017000 3 **CdoPR_IMPORTANCE**

&H0018010 2 **CdoPR_IPM_ID**

&H0019004 0 **CdoPR_LATEST_DELIVERY_TIME**

&H001A001 **CdoPR_MESSAGE_CLASS**

E

&H001B010 **CdoPR_MESSAGE_DELIVERY_ID**
2

&H001E010 **CdoPR_MESSAGE_SECURITY_LABEL**
2

&H001F010 **CdoPR_OBSOLETED_IPMS**
2

&H0020010 **CdoPR_ORIGINALLY_INTENDED_RECIPIENT_NAME**
2

&H0021010 **CdoPR_ORIGINAL_EITS**
2

&H0022010 **CdoPR_ORIGINATOR_CERTIFICATE**
2

&H0023000 **CdoPR_ORIGINATOR_DELIVERY_REPORT_REQUESTED**
B

&H0024010 **CdoPR_ORIGINATOR_RETURN_ADDRESS**
2

&H0025010 **CdoPR_PARENT_KEY**
2

&H0026000 **CdoPR_PRIORITY**
3

&H0027010 **CdoPR_ORIGIN_CHECK**
2

&H0028000 **CdoPR_PROOF_OF_SUBMISSION_REQUESTED**
B

&H0029000 **CdoPR_READ_RECEIPT_REQUESTED**
B

&H002A004 **CdoPR_RECEIPT_TIME**
0

&H002B000 **CdoPR_RECIPIENT_REASSIGNMENT_PROHIBITED**
B

&H002C010 **CdoPR_REDIRECTION_HISTORY**
2

&H002D010 **CdoPR_RELATED_IPMS**
2

&H002E000 **CdoPR_ORIGINAL_SENSITIVITY**
3

&H002F001 **CdoPR_LANGUAGES**
E

&H0030004 **CdoPR_REPLY_TIME**
0

&H0031010 **CdoPR_REPORT_TAG**
2

&H0032004 **CdoPR_REPORT_TIME**
0

&H0033000 **CdoPR_RETURNED_IPM**
B

&H0034000 **CdoPR_SECURITY**
3

&H0035000B **CdoPR_INCOMPLETE_COPY**

&H00360003 **CdoPR_SENSITIVITY**

&H0037001E **CdoPR_SUBJECT**

&H00380102 **CdoPR_SUBJECT_IPM**

&H00390040 **CdoPR_CLIENT_SUBMIT_TIME**

&H003A001E **CdoPR_REPORT_NAME**

&H003B0102 **CdoPR_SENT_REPRESENTING_SEARCH_KEY**

&H003C0102 **CdoPR_X400_CONTENT_TYPE**

&H003D001E **CdoPR_SUBJECT_PREFIX**

&H003E0003 **CdoPR_NON_RECEIPT_REASON**

&H003F0102 **CdoPR_RECEIVED_BY_ENTRYID**

&H0040001E **CdoPR_RECEIVED_BY_NAME**

&H0041010 **CdoPR_SENT_REPRESENTING_ENTRYID**

&H0042001E **CdoPR_SENT_REPRESENTING_NAME**

&H0043010 **CdoPR_RCVD_REPRESENTING_ENTRYID**

&H0044001E **CdoPR_RCVD_REPRESENTING_NAME**

&H0045010 **CdoPR_REPORT_ENTRYID**

&H0046010 **CdoPR_READ_RECEIPT_ENTRYID**

&H0047010 **CdoPR_MESSAGE_SUBMISSION_ID**

&H0048004 **CdoPR_PROVIDER_SUBMIT_TIME**

&H0049001E **CdoPR_ORIGINAL_SUBJECT**

&H004A000B **CdoPR_DISC_VAL**

&H004B001E **CdoPR_ORIG_MESSAGE_CLASS**

&H004C010 **CdoPR_ORIGINAL_AUTHOR_ENTRYID**

&H004D001E **CdoPR_ORIGINAL_AUTHOR_NAME**

E

&H004E0040 **CdoPR_ORIGINAL_SUBMIT_TIME**

&H004F0102 **CdoPR_REPLY_RECIPIENT_ENTRIES**

&H0050001E **CdoPR_REPLY_RECIPIENT_NAMES**

&H00510102 **CdoPR_RECEIVED_BY_SEARCH_KEY**

&H00520102 **CdoPR_RCVD_REPRESENTING_SEARCH_KEY**

&H00530102 **CdoPR_READ_RECEIPT_SEARCH_KEY**

&H00540102 **CdoPR_REPORT_SEARCH_KEY**

&H00550040 **CdoPR_ORIGINAL_DELIVERY_TIME**

&H00560102 **CdoPR_ORIGINAL_AUTHOR_SEARCH_KEY**

&H0057000B **CdoPR_MESSAGE_TO_ME**

&H0058000B **CdoPR_MESSAGE_CC_ME**

&H0059000B **CdoPR_MESSAGE_RECIP_ME**

&H005A001E **CdoPR_ORIGINAL_SENDER_NAME**

&H005B0102 **CdoPR_ORIGINAL_SENDER_ENTRYID**

&H005C0102 **CdoPR_ORIGINAL_SENDER_SEARCH_KEY**

&H005D001E **CdoPR_ORIGINAL_SENT_REPRESENTING_NAME**

&H005E0102 **CdoPR_ORIGINAL_SENT_REPRESENTING_ENTRYID**

&H005F0102 **CdoPR_ORIGINAL_SENT_REPRESENTING_SEARCH_KEY**

&H00600040 **CdoPR_START_DATE**

&H00610040 **CdoPR_END_DATE**

&H00620003 **CdoPR_OWNER_APPT_ID**

&H0063000B **CdoPR_RESPONSE_REQUESTED**

&H0064001E **CdoPR_SENT_REPRESENTING_ADDRTYPE**

&H0065001E **CdoPR_SENT_REPRESENTING_EMAIL_ADDRESS**

&H0066001E	**CdoPR_ORIGINAL_SENDER_ADDRTYPE**
&H0067001E	**CdoPR_ORIGINAL_SENDER_EMAIL_ADDRESS**
&H0068001E	**CdoPR_ORIGINAL_SENT_REPRESENTING_ADDRTYPE**
&H0069001E	**CdoPR_ORIGINAL_SENT_REPRESENTING_EMAIL_ADDRESS**
&H0070001E	**CdoPR_CONVERSATION_TOPIC**
&H0071010 2	**CdoPR_CONVERSATION_INDEX**
&H0072001E	**CdoPR_ORIGINAL_DISPLAY_BCC**
&H0073001E	**CdoPR_ORIGINAL_DISPLAY_CC**
&H0074001E	**CdoPR_ORIGINAL_DISPLAY_TO**
&H0075001E	**CdoPR_RECEIVED_BY_ADDRTYPE**
&H0076001E	**CdoPR_RECEIVED_BY_EMAIL_ADDRESS**
&H0077001E	**CdoPR_RCVD_REPRESENTING_ADDRTYPE**
&H0078001E	**CdoPR_RCVD_REPRESENTING_EMAIL_ADDRESS**
&H0079001E	**CdoPR_ORIGINAL_AUTHOR_ADDRTYPE**
&H007A001E	**CdoPR_ORIGINAL_AUTHOR_EMAIL_ADDRESS**
&H007B001E	**CdoPR_ORIGINALLY_INTENDED_RECIP_ADDRTYPE**
&H007C001E	**CdoPR_ORIGINALLY_INTENDED_RECIP_EMAIL_ADDRESS**
&H007D001E	**CdoPR_TRANSPORT_MESSAGE_HEADERS**
&H007E0102	**CdoPR_DELEGATION**
&H007F0102	**CdoPR_TNEF_CORRELATION_KEY**
&H0C000102	**CdoPR_CONTENT_INTEGRITY_CHECK**
&H0C010003	**CdoPR_EXPLICIT_CONVERSION**
&H0C02000B	**CdoPR_IPM_RETURN_REQUESTED**
&H0C030102	**CdoPR_MESSAGE_TOKEN**
&H0C04000	**CdoPR_NDR_REASON_CODE**

3

&H0C05000 **CdoPR_NDR_DIAG_CODE**
3

&H0C06000 **CdoPR_NON_RECEIPT_NOTIFICATION_REQUESTED**
B

&H0C07000 **CdoPR_DELIVERY_POINT**
3

&H0C08000 **CdoPR_ORIGINATOR_NON_DELIVERY_REPORT_**
B **REQUESTED**

&H0C09010 **CdoPR_ORIGINATOR_REQUESTED_ALTERNATE_**
2 **RECIPIENT**

&H0C0A000 **CdoPR_PHYSICAL_DELIVERY_BUREAU_FAX_DELIVERY**
B

&H0C0B000 **CdoPR_PHYSICAL_DELIVERY_MODE**
3

&H0C0C000 **CdoPR_PHYSICAL_DELIVERY_REPORT_REQUEST**
3

&H0C0D010 **CdoPR_PHYSICAL_FORWARDING_ADDRESS**
2

&H0C0E000 **CdoPR_PHYSICAL_FORWARDING_ADDRESS_**
B **REQUESTED**

&H0C0F000 **CdoPR_PHYSICAL_FORWARDING_PROHIBITED**
B

&H0C10010 **CdoPR_PHYSICAL_RENDITION_ATTRIBUTES**
2

&H0C11010 **CdoPR_PROOF_OF_DELIVERY**
2

&H0C12000 **CdoPR_PROOF_OF_DELIVERY_REQUESTED**
B

&H0C13010 **CdoPR_RECIPIENT_CERTIFICATE**
2

&H0C14001 **CdoPR_RECIPIENT_NUMBER_FOR_ADVICE**
E

&H0C15000 **CdoPR_RECIPIENT_TYPE**
3

&H0C16000 **CdoPR_REGISTERED_MAIL_TYPE**
3

&H0C17000 **CdoPR_REPLY_REQUESTED**
B

&H0C18000 **CdoPR_REQUESTED_DELIVERY_METHOD**
3

&H0C19010 **CdoPR_SENDER_ENTRYID**
2

&H0C1A001 **CdoPR_SENDER_NAME**
E

&H0C1B001 **CdoPR_SUPPLEMENTARY_INFO**
E

&H0C1C000 **CdoPR_TYPE_OF_MTS_USER**
3

&H0C1D0102 **CdoPR_SENDER_SEARCH_KEY**

&H0C1E001E **CdoPR_SENDER_ADDRTYPE**

&H0C1F001E **CdoPR_SENDER_EMAIL_ADDRESS**

&H0E000014 **CdoPR_CURRENT_VERSION**

&H0E01000B **CdoPR_DELETE_AFTER_SUBMIT**

&H0E02001E **CdoPR_DISPLAY_BCC**

&H0E03001E **CdoPR_DISPLAY_CC**

&H0E04001E **CdoPR_DISPLAY_TO**

&H0E05001E **CdoPR_PARENT_DISPLAY**

&H0E060040 **CdoPR_MESSAGE_DELIVERY_TIME**

&H0E070003 **CdoPR_MESSAGE_FLAGS**

&H0E080003 **CdoPR_MESSAGE_SIZE**

&H0E090102 **CdoPR_PARENT_ENTRYID**

&H0E0A0102 **CdoPR_SENTMAIL_ENTRYID**

&H0E0C000B **CdoPR_CORRELATE**

&H0E0D0102 **CdoPR_CORRELATE_MTSID**

&H0E0E000B **CdoPR_DISCRETE_VALUES**

&H0E0F000B **CdoPR_RESPONSIBILITY**

&H0E100003 **CdoPR_SPOOLER_STATUS**

&H0E110003 **CdoPR_TRANSPORT_STATUS**

&H0E12000D **CdoPR_MESSAGE_RECIPIENTS**

&H0E13000D **CdoPR_MESSAGE_ATTACHMENTS**

&H0E140003 **CdoPR_SUBMIT_FLAGS**

&H0E150003 **CdoPR_RECIPIENT_STATUS**

&H0E160000 **CdoPR_TRANSPORT_KEY**

3
&H0E17000 **CdoPR_MSG_STATUS**
3
&H0E18000 **CdoPR_MESSAGE_DOWNLOAD_TIME**
3
&H0E19001 **CdoPR_CREATION_VERSION**
4
&H0E1A001 **CdoPR_MODIFY_VERSION**
4
&H0E1B000 **CdoPR_HASATTACH**
B
&H0E1C000 **CdoPR_BODY_CRC**
3
&H0E1D001 **CdoPR_NORMALIZED_SUBJECT**
E
&H0E1F000 **CdoPR_RTF_IN_SYNC**
B
&H0E20000 **CdoPR_ATTACH_SIZE**
3
&H0E21000 **CdoPR_ATTACH_NUM**
3
&H0E22000 **CdoPR_PREPROCESS**
B
&H0E23000 **CdoPR_INTERNET_ARTICLE_NUMBER**
3
&H0E24001 **CdoPR_NEWSGROUP_NAME**
E
&H0E25010 **CdoPR_ORIGINATING_MTA_CERTIFICATE**
2
&H0E26010 **CdoPR_PROOF_OF_SUBMISSION**
2
&H0FF4000 **CdoPR_ACCESS**
3
&H0FF5000 **CdoPR_ROW_TYPE**
3
&H0FF6010 **CdoPR_INSTANCE_KEY**
2
&H0FF7000 **CdoPR_ACCESS_LEVEL**
3
&H0FF8010 **CdoPR_MAPPING_SIGNATURE**
2
&H0FF9010 **CdoPR_RECORD_KEY**
2
&H0FFA010 **CdoPR_STORE_RECORD_KEY**
2
&H0FFB010 **CdoPR_STORE_ENTRYID**
2
&H0FFC010 **CdoPR_MINI_ICON**
2

&H0FFD010 **CdoPR_ICON**
2
&H0FFE000 **CdoPR_OBJECT_TYPE**
3
&H0FFF010 **CdoPR_ENTRYID**
2
&H1000001 **CdoPR_BODY**
E
&H1001001 **CdoPR_REPORT_TEXT**
E
&H1002010 **CdoPR_ORIGINATOR_AND_DL_EXPANSION_HISTORY**
2
&H1003010 **CdoPR_REPORTING_DL_NAME**
2
&H1004010 **CdoPR_REPORTING_MTA_CERTIFICATE**
2
&H1006000 **CdoPR_RTF_SYNC_BODY_CRC**
3
&H1007000 **CdoPR_RTF_SYNC_BODY_COUNT**
3
&H1008001 **CdoPR_RTF_SYNC_BODY_TAG**
E
&H1009010 **CdoPR_RTF_COMPRESSED**
2
&H1010000 **CdoPR_RTF_SYNC_PREFIX_COUNT**
3
&H1011000 **CdoPR_RTF_SYNC_TRAILING_COUNT**
3
&H1012010 **CdoPR_ORIGINALLY_INTENDED_RECIP_ENTRYID**
2
&H1030001 **CdoPR_INTERNET_APPROVED**
E
&H1031001 **CdoPR_INTERNET_CONTROL**
E
&H1032001 **CdoPR_INTERNET_DISTRIBUTION**
E
&H1033001 **CdoPR_INTERNET_FOLLOWUP_TO**
E
&H1034000 **CdoPR_INTERNET_LINES**
3
&H1035001 **CdoPR_INTERNET_MESSAGE_ID**
E
&H1036001 **CdoPR_INTERNET_NEWSGROUPS**
E
&H1037001 **CdoPR_INTERNET_ORGANIZATION**
E
&H1038001 **CdoPR_INTERNET_NNTP_PATH**
E
&H1039001 **CdoPR_INTERNET_REFERENCES**

E

&H103A001E **CdoPR_SUPERSEDES**

&H103B0102 **CdoPR_POST_FOLDER_ENTRIES**

&H103C001E **CdoPR_POST_FOLDER_NAMES**

&H103D0102 **CdoPR_POST_REPLY_FOLDER_ENTRIES**

&H103E001E **CdoPR_POST_REPLY_FOLDER_NAMES**

&H103F0102 **CdoPR_POST_REPLY_DENIED**

&H1040001E **CdoPR_NNTP_XREF**

&H1041001E **CdoPR_INTERNET_PRECEDENCE**

&H30000003 **CdoPR_ROWID**

&H3001001E **CdoPR_DISPLAY_NAME**

&H3002001E **CdoPR_ADDRTYPE**

&H3003001E **CdoPR_EMAIL_ADDRESS**

&H3004001E **CdoPR_COMMENT**

&H30050003 **CdoPR_DEPTH**

&H3006001E **CdoPR_PROVIDER_DISPLAY**

&H30070040 **CdoPR_CREATION_TIME**

&H30080040 **CdoPR_LAST_MODIFICATION_TIME**

&H30090003 **CdoPR_RESOURCE_FLAGS**

&H300A001E **CdoPR_PROVIDER_DLL_NAME**

&H300B0102 **CdoPR_SEARCH_KEY**

&H300C0102 **CdoPR_PROVIDER_UID**

&H300D0003 **CdoPR_PROVIDER_ORDINAL**

&H3301001E **CdoPR_FORM_VERSION**

&H33020048 **CdoPR_FORM_CLSID**

&H3303001E **CdoPR_FORM_CONTACT_NAME**

&H3304001E **CdoPR_FORM_CATEGORY**

&H3305001E **CdoPR_FORM_CATEGORY_SUB**

&H33061003 **CdoPR_FORM_HOST_MAP**

&H3307000B **CdoPR_FORM_HIDDEN**

&H3308001E **CdoPR_FORM_DESIGNER_NAME**

&H33090048 **CdoPR_FORM_DESIGNER_GUID**

&H330A0003 **CdoPR_FORM_MESSAGE_BEHAVIOR**

&H3400000B **CdoPR_DEFAULT_STORE**

&H340D0003 **CdoPR_STORE_SUPPORT_MASK**

&H340E0003 **CdoPR_STORE_STATE**

&H34100102 **CdoPR_IPM_SUBTREE_SEARCH_KEY**

&H34110102 **CdoPR_IPM_OUTBOX_SEARCH_KEY**

&H34120102 **CdoPR_IPM_WASTEBASKET_SEARCH_KEY**

&H34130102 **CdoPR_IPM_SENTMAIL_SEARCH_KEY**

&H34140102 **CdoPR_MDB_PROVIDER**

&H3415000D **CdoPR_RECEIVE_FOLDER_SETTINGS**

&H35DF0003 **CdoPR_VALID_FOLDER_MASK**

&H35E00102 **CdoPR_IPM_SUBTREE_ENTRYID**

&H35E20102 **CdoPR_IPM_OUTBOX_ENTRYID**

&H35E30102 **CdoPR_IPM_WASTEBASKET_ENTRYID**

&H35E40102 **CdoPR_IPM_SENTMAIL_ENTRYID**

&H35E50102 **CdoPR_VIEWS_ENTRYID**

&H35E60102 **CdoPR_COMMON_VIEWS_ENTRYID**

&H35E70102 **CdoPR_FINDER_ENTRYID**

2
&H3600000 **CdoPR_CONTAINER_FLAGS**
3
&H3601000 **CdoPR_FOLDER_TYPE**
3
&H3602000 **CdoPR_CONTENT_COUNT**
3
&H3603000 **CdoPR_CONTENT_UNREAD**
3
&H3604000 **CdoPR_CREATE_TEMPLATES**
D
&H3605000 **CdoPR_DETAILS_TABLE**
D
&H3607000 **CdoPR_SEARCH**
D
&H3609000 **CdoPR_SELECTABLE**
B
&H360A000 **CdoPR_SUBFOLDERS**
B
&H360B000 **CdoPR_STATUS**
3
&H360C001 **CdoPR_ANR**
E
&H360D100 **CdoPR_CONTENTS_SORT_ORDER**
3
&H360E000 **CdoPR_CONTAINER_HIERARCHY**
D
&H360F000 **CdoPR_CONTAINER_CONTENTS**
D
&H3610000 **CdoPR_FOLDER_ASSOCIATED_CONTENTS**
D
&H3611010 **CdoPR_DEF_CREATE_DL**
2
&H3612010 **CdoPR_DEF_CREATE_MAILUSER**
2
&H3613001 **CdoPR_CONTAINER_CLASS**
E
&H3614001 **CdoPR_CONTAINER_MODIFY_VERSION**
4
&H3615010 **CdoPR_AB_PROVIDER_ID**
2
&H3616010 **CdoPR_DEFAULT_VIEW_ENTRYID**
2
&H3617000 **CdoPR_ASSOC_CONTENT_COUNT**
3
&H3700010 **CdoPR_ATTACHMENT_X400_PARAMETERS**
2
&H3701000 **CdoPR_ATTACH_DATA_OBJ**
D

&H3701010 **CdoPR_ATTACH_DATA_BIN**
2
&H3702010 **CdoPR_ATTACH_ENCODING**
2
&H3703001 **CdoPR_ATTACH_EXTENSION**
E
&H3704001 **CdoPR_ATTACH_FILENAME**
E
&H3705000 **CdoPR_ATTACH_METHOD**
3
&H3707001 **CdoPR_ATTACH_LONG_FILENAME**
E
&H3708001 **CdoPR_ATTACH_PATHNAME**
E
&H3709010 **CdoPR_ATTACH_RENDERING**
2
&H370A010 **CdoPR_ATTACH_TAG**
2
&H370B000 **CdoPR_RENDERING_POSITION**
3
&H370C001 **CdoPR_ATTACH_TRANSPORT_NAME**
E
&H370D001 **CdoPR_ATTACH_LONG_PATHNAME**
E
&H370E001 **CdoPR_ATTACH_MIME_TAG**
E
&H370F010 **CdoPR_ATTACH_ADDITIONAL_INFO**
2
&H3900000 **CdoPR_DISPLAY_TYPE**
3
&H3902010 **CdoPR_TEMPLATEID**
2
&H3904010 **CdoPR_PRIMARY_CAPABILITY**
2
&H39FF001 **CdoPR_7BIT_DISPLAY_NAME**
E
&H3A00001 **CdoPR_ACCOUNT**
E
&H3A01010 **CdoPR_ALTERNATE_RECIPIENT**
2
&H3A02001 **CdoPR_CALLBACK_TELEPHONE_NUMBER**
E
&H3A03000 **CdoPR_CONVERSION_PROHIBITED**
B
&H3A04000 **CdoPR_DISCLOSE_RECIPIENTS**
B
&H3A05001 **CdoPR_GENERATION**
E
&H3A06001 **CdoPR_GIVEN_NAME**

E

&H3A07001 **CdoPR_GOVERNMENT_ID_NUMBER**
E

&H3A08001 **CdoPR_BUSINESS_TELEPHONE_NUMBER**
E

&H3A08001 **CdoPR_OFFICE_TELEPHONE_NUMBER**
E

&H3A09001 **CdoPR_HOME_TELEPHONE_NUMBER**
E

&H3A0A001 **CdoPR_INITIALS**
E

&H3A0B001 **CdoPR_KEYWORD**
E

&H3A0C001 **CdoPR_LANGUAGE**
E

&H3A0D001 **CdoPR_LOCATION**
E

&H3A0E000 **CdoPR_MAIL_PERMISSION**
B

&H3A0F001 **CdoPR_MHS_COMMON_NAME**
E

&H3A10001 **CdoPR_ORGANIZATIONAL_ID_NUMBER**
E

&H3A11001 **CdoPR_SURNAME**
E

&H3A12010 **CdoPR_ORIGINAL_ENTRYID**
2

&H3A13001 **CdoPR_ORIGINAL_DISPLAY_NAME**
E

&H3A14010 **CdoPR_ORIGINAL_SEARCH_KEY**
2

&H3A15001 **CdoPR_POSTAL_ADDRESS**
E

&H3A16001 **CdoPR_COMPANY_NAME**
E

&H3A17001 **CdoPR_TITLE**
E

&H3A18001 **CdoPR_DEPARTMENT_NAME**
E

&H3A19001 **CdoPR_OFFICE_LOCATION**
E

&H3A1A001 **CdoPR_PRIMARY_TELEPHONE_NUMBER**
E

&H3A1B001 **CdoPR_BUSINESS2_TELEPHONE_NUMBER**
E

&H3A1B001 **CdoPR_OFFICE2_TELEPHONE_NUMBER**
E

&H3A1C001 **CdoPR_CELLULAR_TELEPHONE_NUMBER**
E

&H3A1C001E **CdoPR_MOBILE_TELEPHONE_NUMBER**

&H3A1D001E **CdoPR_RADIO_TELEPHONE_NUMBER**

&H3A1E001E **CdoPR_CAR_TELEPHONE_NUMBER**

&H3A1F001E **CdoPR_OTHER_TELEPHONE_NUMBER**

&H3A20001E **CdoPR_TRANSMITABLE_DISPLAY_NAME**

&H3A21001E **CdoPR_BEEPER_TELEPHONE_NUMBER**

&H3A21001E **CdoPR_PAGER_TELEPHONE_NUMBER**

&H3A22010102 **CdoPR_USER_CERTIFICATE**

&H3A23001E **CdoPR_PRIMARY_FAX_NUMBER**

&H3A24001E **CdoPR_BUSINESS_FAX_NUMBER**

&H3A25001E **CdoPR_HOME_FAX_NUMBER**

&H3A26001E **CdoPR_BUSINESS_ADDRESS_COUNTRY**

&H3A26001E **CdoPR_COUNTRY**

&H3A27001E **CdoPR_BUSINESS_ADDRESS_CITY**

&H3A27001E **CdoPR_LOCALITY**

&H3A28001E **CdoPR_BUSINESS_ADDRESS_STATE_OR_PROVINCE**

&H3A28001E **CdoPR_STATE_OR_PROVINCE**

&H3A29001E **CdoPR_BUSINESS_ADDRESS_STREET**

&H3A29001E **CdoPR_STREET_ADDRESS**

&H3A2A001E **CdoPR_BUSINESS_ADDRESS_POSTAL_CODE**

&H3A2A001E **CdoPR_POSTAL_CODE**

&H3A2B001E **CdoPR_BUSINESS_ADDRESS_POST_OFFICE_BOX**

&H3A2B001E **CdoPR_POST_OFFICE_BOX**

&H3A2C001E **CdoPR_TELEX_NUMBER**

&H3A2D001 **CdoPR_ISDN_NUMBER**

E

&H3A2E001 **CdoPR_ASSISTANT_TELEPHONE_NUMBER**
E

&H3A2F001 **CdoPR_HOME2_TELEPHONE_NUMBER**
E

&H3A30001 **CdoPR_ASSISTANT**
E

&H3A40000 **CdoPR_SEND_RICH_INFO**
B

&H3A41004 **CdoPR_WEDDING_ANNIVERSARY**
0

&H3A42004 **CdoPR_BIRTHDAY**
0

&H3A43001 **CdoPR_HOBBIES**
E

&H3A44001 **CdoPR_MIDDLE_NAME**
E

&H3A45001 **CdoPR_DISPLAY_NAME_PREFIX**
E

&H3A46001 **CdoPR_PROFESSION**
E

&H3A47001 **CdoPR_PREFERRED_BY_NAME**
E

&H3A47001 **CdoPR_REFERRED_BY_NAME**
E

&H3A48001 **CdoPR_SPOUSE_NAME**
E

&H3A49001 **CdoPR_COMPUTER_NETWORK_NAME**
E

&H3A4A001 **CdoPR_CUSTOMER_ID**
E

&H3A4B001 **CdoPR_TTYTDD_PHONE_NUMBER**
E

&H3A4C001 **CdoPR_FTP_SITE**
E

&H3A4D000 **CdoPR_GENDER**
2

&H3A4E001 **CdoPR_MANAGER_NAME**
E

&H3A4F001 **CdoPR_NICKNAME**
E

&H3A50001 **CdoPR_PERSONAL_HOME_PAGE**
E

&H3A51001 **CdoPR_BUSINESS_HOME_PAGE**
E

&H3A52004 **CdoPR_CONTACT_VERSION**
8

&H3A53110 **CdoPR_CONTACT_ENTRYIDS**
2

&H3A54101 **CdoPR_CONTACT_ADDRTYPES**
E
&H3A55000 **CdoPR_CONTACT_DEFAULT_ADDRESS_INDEX**
3
&H3A56101 **CdoPR_CONTACT_EMAIL_ADDRESSES**
E
&H3A57001 **CdoPR_COMPANY_MAIN_PHONE_NUMBER**
E
&H3A58101 **CdoPR_CHILDRENS_NAMES**
E
&H3A59001 **CdoPR_HOME_ADDRESS_CITY**
E
&H3A5A001 **CdoPR_HOME_ADDRESS_COUNTRY**
E
&H3A5B001 **CdoPR_HOME_ADDRESS_POSTAL_CODE**
E
&H3A5C001 **CdoPR_HOME_ADDRESS_STATE_OR_PROVINCE**
E
&H3A5D001 **CdoPR_HOME_ADDRESS_STREET**
E
&H3A5E001 **CdoPR_HOME_ADDRESS_POST_OFFICE_BOX**
E
&H3A5F001 **CdoPR_OTHER_ADDRESS_CITY**
E
&H3A60001 **CdoPR_OTHER_ADDRESS_COUNTRY**
E
&H3A61001 **CdoPR_OTHER_ADDRESS_POSTAL_CODE**
E
&H3A62001 **CdoPR_OTHER_ADDRESS_STATE_OR_PROVINCE**
E
&H3A63001 **CdoPR_OTHER_ADDRESS_STREET**
E
&H3A64001 **CdoPR_OTHER_ADDRESS_POST_OFFICE_BOX**
E
&H3A70110 **CdoPR_USER_X509_CERTIFICATE**
2
&H3A71000 **CdoPR_SEND_INTERNET_ENCODING**
3
&H3D00010 **CdoPR_STORE_PROVIDERS**
2
&H3D01010 **CdoPR_AB_PROVIDERS**
2
&H3D02010 **CdoPR_TRANSPORT_PROVIDERS**
2
&H3D04000 **CdoPR_DEFAULT_PROFILE**
B
&H3D05110 **CdoPR_AB_SEARCH_PATH**
2
&H3D06010 **CdoPR_AB_DEFAULT_DIR**

2

&H3D07010 **CdoPR_AB_DEFAULT_PAB**
2

&H3D08010 **CdoPR_FILTERING_HOOKS**
2

&H3D09001 **CdoPR_SERVICE_NAME**
E

&H3D0A001 **CdoPR_SERVICE_DLL_NAME**
E

&H3D0B001 **CdoPR_SERVICE_ENTRY_NAME**
E

&H3D0C010 **CdoPR_SERVICE_UID**
2

&H3D0D010 **CdoPR_SERVICE_EXTRA_UIDS**
2

&H3D0E010 **CdoPR_SERVICES**
2

&H3D0F101 **CdoPR_SERVICE_SUPPORT_FILES**
E

&H3D10101 **CdoPR_SERVICE_DELETE_FILES**
E

&H3D11010 **CdoPR_AB_SEARCH_PATH_UPDATE**
2

&H3D12001 **CdoPR_PROFILE_NAME**
E

&H3E00001 **CdoPR_IDENTITY_DISPLAY**
E

&H3E01010 **CdoPR_IDENTITY_ENTRYID**
2

&H3E02000 **CdoPR_RESOURCE_METHODS**
3

&H3E03000 **CdoPR_RESOURCE_TYPE**
3

&H3E04000 **CdoPR_STATUS_CODE**
3

&H3E05010 **CdoPR_IDENTITY_SEARCH_KEY**
2

&H3E06010 **CdoPR_OWN_STORE_ENTRYID**
2

&H3E07001 **CdoPR_RESOURCE_PATH**
E

&H3E08001 **CdoPR_STATUS_STRING**
E

&H3E09000 **CdoPR_X400_DEFERRED_DELIVERY_CANCEL**
B

&H3E0A010 **CdoPR_HEADER_FOLDER_ENTRYID**
2

&H3E0B000 **CdoPR_REMOTE_PROGRESS**
3

&H3E0C001E **CdoPR_REMOTE_PROGRESS_TEXT**

&H3E0D000B **CdoPR_REMOTE_VALIDATE_OK**

&H3F000003 **CdoPR_CONTROL_FLAGS**

&H3F010102 **CdoPR_CONTROL_STRUCTURE**

&H3F020003 **CdoPR_CONTROL_TYPE**

&H3F030003 **CdoPR_DELTAX**

&H3F040003 **CdoPR_DELTAY**

&H3F050003 **CdoPR_XPOS**

&H3F060003 **CdoPR_YPOS**

&H3F070102 **CdoPR_CONTROL_ID**

&H3F080003 **CdoPR_INITIAL_DETAILS_PANE**

Web Page Support

The CDO libraries offer programmatic support for Hypertext Markup Language (HTML) script on a Web page. Script can be server-side, which is decoded and run at the Web server, or client-side, which is decoded and run at the browser. The CDO Rendering Library supports server-side script, and the CDO Library supports client-side script. For more information on server-side script support, see HTML Rendering.

The language used for the script subroutine can be Microsoft® Visual Basic® Scripting Edition (VBScript), Microsoft® JScript™, or JavaScript. For simplicity of browser implementation, and also for security reasons, not all Visual Basic functionality is available in VBScript. In particular, you cannot use:

- Early binding, for example `Dim objRecip As Recipient` .
- Type library constants, such as **CdoPR_DISPLAY_TYPE**.
- Named parameters in calls to methods.
- Dialog boxes, for example in the **Logon** method.

For more information on VBScript and its feature restrictions, see the *Microsoft Visual Basic Scripting Edition Language Reference*.

To use the CDO Library in client-side script, you instantiate a CDO Session object in the body of a Web page, and then log on to this session from a script subroutine. Following logon, you can instantiate and use other objects subsidiary to the session object.

During logon, a MAPI client can only reference a profile that is stored in its own local MAPISVC.INF configuration file. A browser is not likely to be able to access a profile defined and stored at the Web server. Therefore, script running at a browser should create a profile dynamically so that it is local to the browser. This can be done by using the *ProfileInfo* parameter of the **Logon** method, or, as in the following example, by calling **Logon** without parameters and letting the browser user choose a profile.

Dynamic profile creation is only possible on a message service that is tightly coupled with MAPI, such as the Microsoft® Exchange server. Loosely coupled message services cause the MAPI spooler to be started, and if another message service or user tries to access MAPI, serious errors result.

This client-side script fragment sends a feedback message to the Customer Support department when the user clicks the **Send Feedback** button. It demonstrates a script subroutine in VBScript showing instantiation of a Session object with an HTML <OBJECT> tag. It also shows the subsequent instantiation of a Message object and its Recipients collection, and the preparation and submission of an e-mail message.

```
<HTML>
<BODY LANGUAGE=VBS>
 ...
<SCRIPT LANGUAGE=VBS>
Sub Send_Feedback
    Dim objFBMess ' feedback message from Web page
    Dim objRecips ' can't do "Dim As" (early binding) in VBScript
' ... validate objWebSession object instantiated by HTML, then ...
    objWebSession.Logon ' let user choose profile if not logged on
    Set objFBMess = objWebSession.Outbox.Messages.Add
    objFBMess.Subject = "Feedback from Web page"
    objFBMess.Text = Feedback.Value
    Set objRecips = objFBMess.Recipients
    objRecips.Add "custsupp" ' send to Customer Support
    objRecips.Resolve
    objFBMess.Send ' defaults to save copy and no user dialog
```

```
    objWebSession.Logoff
End Sub
</SCRIPT>
 ...
<H1><CENTER>CUSTOMER FEEDBACK WEB PAGE</H1>
<B><P>Welcome to the Customer Support Feedback Web page.
<P>If you have any additional suggestions or requests,
<P>please send
<A HREF=MAILTO:custsupp@mycompany.com>Customer Support</A>
some e-mail.
<P>Please enter your feedback here:
<INPUT NAME=Feedback TYPE=Text SIZE=80>
<INPUT ONCLICK=Send_Feedback TYPE=Button VALUE="Send Feedback">
<OBJECT CLASSID="clsid:3FA7DEB3-6438-101B-ACC1-00AA00423326"
ID=objWebSession>
<! The OBJECT tag instantiates the CDO Session object>
</OBJECT>
</BODY>
</HTML>
```

Note The <OBJECT> and <SCRIPT> tags and the <LANGUAGE> and <ONCLICK> attributes are defined in the HTML 3.2 specification of the World Wide Web Consortium (W3C). Not all Internet browsers support HTML 3.2 or all of its elements. For more information on HTML 3.2, see the Web page *HTML 3.2 Reference Specification* at http://www.w3.org/pub/WWW/TR/REC-html32.html.

For more information on the programming elements in the script fragment, see the Session object's **Logon** and **Logoff** methods, the Messages collection's **Add** method, the Message object's **Recipients** property and **Send** method, and the Recipients collection's **Add** and **Resolve** methods.

How Programmable Objects Work

How do programmable objects work? How do the CDO libraries offer their powerful ability to create, manage, and render messaging objects?

This appendix provides a very short introduction to the Microsoft® Component Object Model (COM), Automation, and the OLE programmability interface **IDispatch**. For complete details, see the "COM and ActiveX Object Services" section of the Microsoft Platform SDK.

You do not need to understand this material in order to use the CDO libraries.

COM Interfaces

With the combination of Microsoft® RPC (Remote Procedure Call) and Microsoft OLE technology, Microsoft began to shift the C/C++ programming model from individual functions to a distributed object model that is based on *interfaces*. An interface is simply a group of logically related functions. Note that the interface consists only of functions (called *methods*). There are no facilities for directly accessing data within an interface, except through the methods.

The benefit of such a distributed object model is that it allows developers to create small, independent, self-managing software objects. This modular approach allows software functionality to be developed in small "building blocks" that are then fitted together. Your application no longer has to handle every possible data format or possible application feature, as long as it can be integrated with other objects that can handle the desired formats and features.

The notion of objects is very familiar to Microsoft® Visual Basic® developers. Many software industry analysts have noted that the most visible success of object-oriented programming to date is the widespread use of Visual Basic custom controls.

One of the benefits of the modular, interface-based approach to software development is that individual interfaces usually contain significantly fewer functions than libraries, with the promise of more efficient use of memory. Whenever you want to use one function in a library, the entire library must be loaded into memory. Splitting function libraries into smaller interfaces makes it more likely that you load only the functions that you actually need, or at least fewer that you don't.

By convention, interface names start with the letter **I**. The methods are given a specific ordering within the interface. Knowing the order of the methods is important for developers who must define their own *vtables*, or function dispatch tables. The C++ compiler creates vtables for you, but if you are writing in C, you must create your own.

The methods of an interface still physically reside in an .EXE or .DLL file, but Microsoft has defined new rules for how these files are registered on the system and how they are loaded and unloaded from memory. Microsoft refers to the new rules as the *Component Object Model,* or *COM*.

According to the rules, the first three methods in all interfaces are always **QueryInterface**, **AddRef**, and **Release**, in that order. These methods provide a pointer to the interface when someone asks for it, keep track of the number of programs that are being served by the interface, and control how the physical .DLL or .EXE file gets loaded and unloaded. Any other methods in the interface are defined by the person who creates the interface. The interface that consists of these three common methods, **QueryInterface**, **AddRef**, and **Release**, is called **IUnknown**. Developers can always obtain a pointer to an **IUnknown** object.

The Component Object Model, like RPC before it, makes a strong distinction between the definition of the interface and its implementation. The interface methods and the data items (called *properties*) that make up the parameters are defined in a very precise way, using a special language designed specifically for defining interfaces. These languages (such as MIDL, the Microsoft Interface Definition Language, and ODL, the Object Definition Language) do not allow you to use indefinite type names, such as **void ***, or types that change from computer to computer, such as **int**. The goal is to force you to specify the exact size of all data. This makes it possible for one person to define an interface, a second person to implement the interface, and a third person to write a program that calls the interface.

Developers who write C and C++ code that use these types of interfaces read the object's interface definition language (IDL) files. They know exactly what methods are present in the interface and what properties are required. They can call the interfaces directly.

For developers who are not writing in C and C++, or do not have access to the object's IDL files, Microsoft's Component Object Model defines another way to use software components. This is based on an interface named **IDispatch**.

IDispatch

IDispatch is a COM interface that is designed in such a way that it can call virtually any other COM interface. Developers working in Microsoft® Visual Basic® often cannot call COM interfaces directly, as they would from C or C++. However, when their tool supports **IDispatch**, as Visual Basic does, and when the object they want to call supports **IDispatch**, they can call its COM interfaces *indirectly*.

The main method offered by **IDispatch** is called **Invoke**. This method adds a level of indirection to the control flow of the Component Object Model. In the standard COM model, an object obtains a pointer to an interface and then calls a member method of the interface. With **IDispatch**, instead of directly calling the member method, the program calls **IDispatch::Invoke**, and **IDispatch::Invoke** calls the member method for you.

Invoke is a general method-calling machine. Its parameters include a value that identifies the method that is to be called and the parameters that are to be sent to it. In order to be able to handle the wide variety of parameters that other COM methods use, **Invoke** uses a self-describing data structure called a VARIANTARG.

The VARIANTARG structure contains two parts: a type field, which represents the data type, and a data field, which represents the actual value of the data. The data type, known also as *variant type*, contains a constant such as VT_I2 or VT_DATE, which defines valid values for the data types. For more information on variant types, see the **Type** property of the Field object.

Associated with **IDispatch** is the notion of a *type library*. The type library publishes information about an interface so that it is available to Visual Basic programs. The type library, or *typelib*, contains the same kind of information that C or C++ programmers would obtain from a header file: the name of the method and the sequence and types of its parameters.

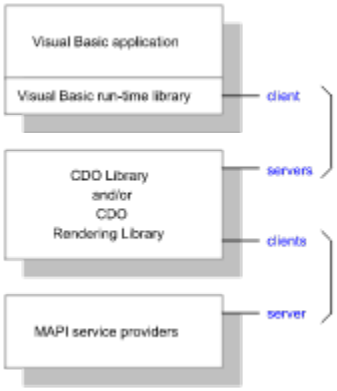
An executable file or DLL that exposes **IDispatch** and its type library is known as an *Automation server*. The CDO Library and the CDO Rendering Library are both Automation servers. In version 1.1 and later they are also in-process servers, residing in .DLL files and linking dynamically with the calling modules.

The CDO Libraries as Automation Servers

So, let's put it all together, from the bottom up, to see how the CDO libraries work.

- Service providers implement COM interfaces – specifically, the MAPI interfaces – as described in the MAPI documentation.
- The CDO libraries implement several objects (Session, Message, ContainerRenderer, Format, and so on) that act as *clients* to these MAPI interfaces. That is, the CDO library objects obtain pointers to the MAPI interfaces and call MAPI methods.
- The CDO libraries implement **IDispatch** and act as Automation servers so that they can be called by tools that can use **IDispatch**, such as Microsoft® Visual Basic®. That is, they allow other programs to call them through the **IDispatch** interface. Beginning with version 1.1, the CDO libraries are self-registering as Automation servers.
- The CDO libraries publish type libraries that contain information about the objects they make available through **IDispatch**.
- Your Visual Basic application acts as a client to the CDO libraries. It reads their type libraries to obtain information about their objects, methods, and properties. When your Visual Basic application declares a variable as an object (with code such as `Dim objSession as Object` or `Dim objSession as MAPI.Session`) and uses that object's properties and methods (with code such as `MsgBox objSession.Class`), Visual Basic makes calls to **IDispatch** on your behalf.

The relationships between these programs are shown in the following diagram. Visual Basic is a client to one or both of the CDO libraries, which are the Automation servers. The CDO libraries, in turn, act as clients to the MAPI services.



The CDO Libraries and MAPI

The CDO libraries call Microsoft COM and MAPI interfaces for you. The following table describes the MAPI interfaces that the CDO Library calls when you manipulate a CDO Library object.

CDO Library object	COM or MAPI interface called by the CDO Library
AddressEntry	**IMailUser**
AddressEntryFilter	**IMAPITable** (with **Restrict** method)
AddressList	**IABContainer**
Attachment	**IAttach**
Field	**IMAPIProp**, **IStream**
Folder	**IMAPIFolder**
InfoStore	**IMsgStore**
Message	**IMessage**
MessageFilter	**IMAPITable** (with **Restrict** method)
Recipient	**IMAPITable** row (recipient table from **IMessage**)
Session	**IMAPISession**

For collection objects, the CDO libraries call the MAPI interface **IMAPITable**.

The CDO libraries also call the MAPI interface **IMAPIProp**. Many of the properties exposed by the CDO libraries are based on MAPI properties. The following table describes the mapping between these CDO library properties and the underlying MAPI properties.

CDO library object	Property	MAPI property	MAPI property type
AddressEntry	Address	PR_EMAIL_ADDRESS	PT_TSTRING
AddressEntry	DisplayType	PR_DISPLAY_TYPE	PT_LONG
AddressEntry	ID	PR_ENTRYID	PT_BINARY
AddressEntry	Name	PR_DISPLAY_NAME	PT_TSTRING
AddressEntry	Type	PR_ADDRTYPE	PT_TSTRING
AddressList	ID	PR_ENTRYID	PT_BINARY
AddressList	Name	PR_DISPLAY_NAME	PT_TSTRING
Attachment	Index	PR_ATTACH_NUM	PT_LONG
Attachment	Name	PR_ATTACH_ FILENAME	PT_TSTRING
Attachment	Position	PR_RENDERING_ POSITION	PT_LONG
Attachment	Source	PR_ATTACH_ PATHNAME	PT_TSTRING
Attachment	Type	PR_ATTACH_ METHOD	PT_LONG
Folder	FolderID	PR_PARENT_ ENTRYID	PT_BINARY
Folder	ID	PR_ENTRYID	PT_BINARY
Folder	Name	PR_DISPLAY_NAME	PT_TSTRING
Folder	StoreID	PR_STORE_ENTRYID	PT_BINARY

InfoStore	ID	PR_ENTRYID	PT_BINARY
InfoStore	Name	PR_DISPLAY_NAME	PT_TSTRING
InfoStore	ProviderName	PR_PROVIDER_DISPLAY	PT_TSTRING
Message	Conversation	PR_CONVERSATION_KEY	PT_BINARY
Message	Conversation Index	PR_CONVERSATION_INDEX	PT_BINARY
Message	Conversation Topic	PR_CONVERSATION_TOPIC	PT_STRING
Message	Delivery Receipt	PR_ORIGINATOR_DELIVERY_REPORT_REQUESTED	PT_BOOLEAN
Message	Encrypted	PR_SECURITY	PT_LONG
Message	FolderID	PR_PARENT_ENTRYID	PT_BINARY
Message	ID	PR_ENTRYID	PT_BINARY
Message	Importance	PR_IMPORTANCE	PT_LONG
Message	ReadReceipt	PR_READ_RECEIPT_REQUESTED	PT_BOOLEAN
Message	Sender	PR_SENDER_ENTRYID	PT_BINARY
Message	Sent	PR_MESSAGE_FLAGS	PT_LONG
Message	Signed	PR_SECURITY	PT_LONG
Message	Size	PR_MESSAGE_SIZE	PT_LONG
Message	StoreID	PR_STORE_ENTRYID	PT_BINARY
Message	Subject	PR_SUBJECT	PT_TSTRING
Message	Submitted	PR_MESSAGE_FLAGS	PT_LONG
Message	Text	PR_BODY	PT_TSTRING
Message	Time Received	PR_MESSAGE_DELIVERY_TIME	PT_SYSTIME
Message	TimeSent	PR_CLIENT_SUBMIT_TIME	PT_SYSTIME
Message	Type	PR_MESSAGE_CLASS	PT_TSTRING
Message	Unread	PR_MESSAGE_FLAGS	PT_LONG
Recipient	Address	combination of PR_ADDRTYPE and PR_EMAIL_ADDRESS	PT_TSTRING
Recipient	DisplayType	PR_DISPLAY_TYPE	PT_LONG
Recipient	Name	PR_DISPLAY_NAME	PT_TSTRING
Recipient	Type	PR_RECIPIENT_TYPE	PT_LONG
Session	Name	PR_DISPLAY_NAME	PT_TSTRING

For more information about MAPI properties, see the *MAPI Programmer's Reference*.

Additional References

The following references provide additional information about OLE and Automation:

- "COM and ActiveX Object Services" section of the Microsoft Platform SDK
- *Inside OLE, Second Edition*, by Kraig Brockschmidt, published by Microsoft Press

Note that this document contains the latest known information about the Microsoft® CDO libraries at the time of publication. Where terms in this document differ from other Microsoft® Visual Basic®, OLE, or Component Object Model (COM) terms, this document should be viewed as the definition of the specific implementation represented by the CDO libraries.

Java Programming Considerations

Accessing the CDO Library and CDO Rendering Library objects from Java requires different procedures from those used with Microsoft® Visual Basic®. This section describes the important differences and provides some examples of Java access.

You do not need to understand this material if you are only using Visual Basic for the CDO libraries.

CDO Classes in Java

To take advantage of the CDO libraries in a Java program, you must first create Java class wrappers from their type libraries. The type library for the CDO Library is embedded in OLEMSG32.DLL. The type library for the CDO Rendering Library is embedded in AMHTML.DLL.

To create a class wrapper

1. Run the Microsoft® Visual J++™ Development Environment.
2. From the**Tools** menu, choose the **Java Type Library Wizard**.
3. From the list of available Automation servers, select **Active Messaging Object Library** or **Active Messaging Rendering Object Library**.
4. Click **OK** to tell the wizard to create the needed classes.

The preceding steps cause the Java classes to reside in the subdirectory …\Java\TrustLib\olemsg32 or …\Java\TrustLib\amhtml, depending on your choice of Automation server. You may wish to print out the SUMMARY.TXT file located in this directory. It is a useful reference for Java support for the CDO libraries.

Java Language Features

The Java language is based on C++ and shows considerable similarity to it. In particular, Java code is case-sensitive. There are, however, significant differences between the two languages.

Because it is interpreted instead of compiled, Java cannot process **#define** directives. This means that the constants defined in the CDO and CDO Rendering type libraries cannot be used in a Java program. You have to use numeric equivalents, which can be found in the Error Codes and Property Tags appendixes. For more information, see Platform Differences.

Java does not provide any error trapping mechanism equivalent to the Microsoft® Visual Basic® **On Error GoTo** statement. All errors must be anticipated and explicitly tested for after each call that could generate them.

Like all alphanumeric elements in Java, the keywords are case-sensitive. Their predefined values are all lowercase, such as **true**, **false**, and **null**. This means Java does not recognize capitalized keywords such as **True**, **False**, or **Null**, which you may be accustomed to using in Visual Basic.

Java objects expose only methods and no properties. CDO library properties are referenced through accessor methods defined for each property by prefixing **get** or **put** to the property name, for example **getInbox** and **putSubject**. Parameters to methods are referenced by accessor methods with **get** or **put** prefixed to the data type, such as **getString** and **putBoolean**.

Read-only properties use the corresponding **get** accessor method. The **Inbox** property of the Session object, for example, can be read with the **getInbox** method:

```
Variant inboxFolder = new Variant();
inboxFolder = session.getInbox();
```

Read/write properties use the corresponding **get** and **put** accessor methods. For example, the **Subject** property of the Message object can be read with **getSubject** and written with **putSubject**, after the parameter is prepared with the help of the **getString** and **putString** methods:

```
Variant inSubject = new Variant();
StringBuffer newSubject = new StringBuffer( "RE: " );
Variant outSubject = new Variant();
...
inSubject = inMessage.getSubject();
newSubject.append( inSubject.getString() ); // already have "RE: "
outSubject.putString( newSubject.toString() );
outMessage.putSubject( outSubject );
```

The property accessor methods such as **getInbox** always return a Variant object. If your code assigns them to another Variant object, as in the preceding code fragments, the types already match. If, however, you cast an object returned from an accessor method to another object type, you need to use the **getDispatch** method to obtain a type match:

```
Folder inboxFolder;
inboxFolder = (Folder) session.getInbox().getDispatch();
```

The CDO libraries support the **IDispatch** interface, which allows a program to access the underlying messaging and rendering objects. Invocation of the **getDispatch** method signals Java to call **QueryInterface** on a Variant object and obtain the appropriate messaging or rendering interface for it. For more information, see IDispatch.

Java methods do not allow for optional parameters. Calls to methods must present every parameter included in the definition of the method. The equivalent of a Visual Basic **Null** parameter can be achieved by using the **noParam** method on a Java Variant object:

```
Variant nullPar = new Variant();
nullPar.noParam();
object.Method( firstPar, nullPar, thirdPar, nullPar, nullPar );
```

Java Programming Examples

This section presents code illustrating Java access to the CDO Library and the CDO Rendering Library. Each example accomplishes a task your program might perform when dealing with CDO library objects.

The following table summarizes the programming procedures used in the examples. Note that all tasks require creation of a valid session and a successful logon.

Programming task	Procedure
Logging On and Off	1. Create a session. 2. Log on. 3. Log off.
Creating and Sending a Message	1. Create a session. 2. Log on. 3. Get the Outbox Messages collection. 4. Add a new message. 5. Populate the new message. 6. Send the new message. 7. Log off.

It is important to understand the object hierarchies of the CDO libraries, because they determine the correct syntax of Java statements. The relative positioning of the objects within the hierarchies determines the order in which the objects should be accessed. For more information on the hierarchies, see Object Model and Rendering Object Model.

To access the CDO Library, a Java program should import OLEMSG32.DLL on 32-bit platforms and OLEMSG.DLL on 16-bit platforms. To access the CDO Rendering Library, import AMHTML.DLL on 32-bit platforms. The CDO Rendering Library is not available on 16-bit platforms.

Logging On and Off (Java)

This example is a standalone application, not an applet. It is a complete program, including the importation declarations and the **main()** function. It demonstrates the basic framework of a Java program that accesses CDO Library objects. The **main()** function creates a Session object, logs on to it, and logs off, with minimal error checking.

```
import olemsg32.*;
import com.ms.com.*;

public class Sample0
{
  public static void main(String args[])
  {
    // Create a messaging session (call the class factory).
    Session session = (Session) new _CDODispSession();

    Variant v = new Variant();
    Variant profileName = new Variant();
    profileName.putString( "MyProfile" );
    v.noParam();

    // Log on.
    try
    {
      session.Logon( profileName, v, v, v, v, v, v );
    }
    catch( Exception e )
    {
      System.out.println( "Logon failed!" );
    }

    // The logon was successful; now do desired processing.

    // Now we will log off.
    try
    {
      session.Logoff();
    }
    catch( Exception e )
    {
      System.out.println( "Logoff failed!" );
    }
  }
}
```

Creating and Sending a Message (Java)

This example is a standalone application, not an applet. It is a complete program demonstrating the basic procedures for initiating a CDO Library message. Within the framework of logging on to and off from a session, it creates a Message object, sets its requisite properties, and sends it to its recipients through the MAPI system.

```
import olemsg32.*;
import com.ms.com.*;
import java.io.*;

public class Sample1
{
  public static void main(String args[])
  {
    // Call the class factory.
    Session session = (Session) new _CDODispSession();

    Variant nullParam = new Variant();
    nullParam.noParam();
    Messages messages = null;

    try     // First, log on.
    {
      Variant profileName = new Variant();
      profileName.putString( "MyProfile" );
      session.Logon( profileName, nullParam, nullParam, nullParam,
                                    nullParam, nullParam, nullParam );
    }
    catch( Exception e )
    {
      System.out.println( "Logon failed!" );
      e.printStackTrace();
    }

    try     // Get the messages collection in the outbox.
    {
      Folder outBox = (Folder) session.getOutbox().getDispatch();
      messages = (Messages) outBox.getMessages().getDispatch();
    }
    catch( Exception e )
    {
      System.out.println( "Failed to get the outbox messages collection!" );
      e.printStackTrace();
    }

    try     // Now create, populate, and send the message.
    {
      // Create a new message in the outbox.
      Message newMsg = (Message) messages.Add( nullParam, nullParam,
                                    nullParam, nullParam ).getDispatch();

      // Set the subject of the new message.
      Variant subject = new Variant();
```

```
   subject.putString( "This is a message from Java!" );
   newMsg.putSubject( subject );

   // Set the text (body) of the new message.
   Variant text = new Variant();
   text.putString( "This is the message text." );
   newMsg.putText( text );

   // Get the Recipients collection.
   Recipients recips = (Recipients) newMsg.getRecipients().getDispatch();

   // Create a new recipient in the Recipients collection.
   Recipient recip = (Recipient) recips.Add( nullParam, nullParam,
                                  nullParam, nullParam ).getDispatch();

   // Set the name on the new recipient.
   Variant name = new Variant();
   name.putString( "somebody" );
   recip.putName( name );

   // Set the type on the new recipient.
   Variant type = new Variant();
   type.putInt( 1 ); // "To" recipient
   recip.putType( type );

   // Resolve the new recipient.
   Variant showDialog = new Variant();
   showDialog.putBoolean( true );
   recip.Resolve( showDialog );

   // Make the new message permanent.
   Variant refresh = new Variant();
   Variant makePermanent = new Variant();
   refresh.putBoolean( true );
   makePermanent.putBoolean( true );
   newMsg.Update( makePermanent, refresh );

   // Send the new message.
   Variant saveCopy = new Variant();
   saveCopy.noParam();
   showDialog.noParam(); // already created under Resolve()
   Variant wndHandle = new Variant();
   wndHandle.noParam();
   newMsg.Send( saveCopy, showDialog, wndHandle );
}
catch( Exception e )
{
   System.out.println( "Failed to create/send a new message!" );
}

try      // Finally, log off.
{
   session.Logoff();
}
catch( Exception e )
```

```
    {
      System.out.println( "Logoff failed!" );
    }
    System.out.println( "All done!" );
  }
}
```

Common Mistakes

Although the CDO libraries are remarkably free of programming pitfalls, there are some aspects of Microsoft® Visual Basic® syntax that can lead to misunderstanding. This appendix explains some common design and coding errors.

Reinstantiating an Object

You normally instantiate a CDO Library or CDO Rendering Library object by accessing a property on a parent object that causes the desired object to be created. For example, the statement

```
Set objMsg = objSession.Inbox.Messages.Item(1)
```

instantiates a Folder object for the **Inbox** property of the Session object, then a Messages collection object for the **Messages** property of the Inbox folder, and then a Message object for the **Item** property of the Messages collection.

Every time you cross a period from left to right, you instantiate the object on the right of the period. This is true whether or not you have previously instantiated another version of the same object. The following code fragment, for example, is intended to count the members of an AddressEntries collection that can resolve the name "John":

```
Dim objAdrList As AddressList
Dim objAEFilt As AddressEntryFilter
Dim objAE As AddressEntry
...
Set objAEFilt = objAdrList.AddressEntries.Filter
objAEFilt.Name = "John" ' set filter to restrict on this name
i = 0
For Each objAE in objAdrList.AddressEntries
  i = i + 1
  MsgBox objAE.Name
Next
```

As written, however, this code counts every AddressEntry object in the collection. This is because the collection itself is instantiated twice, once when setting the filter and once when initializing the loop, in response to the code `objAdrList.AddressEntries`. The second collection is instantiated with a default AddressEntryFilter object with no restrictions, which is used in the loop. The filter with the **Name** property restriction remains with the first collection and is never used.

This behavior is counterintuitive to programmers accustomed to having the same object returned by repeated references. But no variable is defined for an object that is generated internally by crossing a period, and Visual Basic has no way of correlating its internal objects. It is up to you to take care of the correlation at the source code level.

The proper approach is to define and **Set** a variable for any object you plan to use more than once. In the case of the previous code fragment, it is the AddressEntries collection object that is to be reused:

```
Dim colAddrEntries As AddressEntries
...
Set colAddrEntries = objAdrList.AddressEntries
Set objAEFilt = colAddrEntries.Filter
objAEFilt.Name = "John" ' set filter to restrict on this name
i = 0
For Each objAE in colAddrEntries
  i = i + 1
  MsgBox objAE.Name
Next
```

When you instantiate an object multiple times, you subject your application to several problems:

- Your application wastes execution time and memory creating and retaining more than one version of the object.

- A subsequent instantiation does not **Release** a previous one, and all instantiated objects remain in memory with nonzero reference counts.
- The instantiations are unrelated to one another, and any operations you perform on one have no effect on any of the others.
- A given instantiation is used only by the code that follows its creation and precedes a subsequent instantiation. That is, different sections of your code are using different, unrelated versions of the object.

The safest procedure is to use explicit variables for all the objects and collections in your application. The consequence of not doing so can vary from inefficient execution to wrong results. For more information, see Improving Application Performance.

Looping Through a Collection

A CDO or CDO Rendering collection is always refreshed immediately following an **Add** or **Delete** operation on any of its members. This means that the collection's **Count** property is incremented or decremented, and all the members following the point of insertion or deletion are reindexed. To access one of these members, you must use its new index value. This is easy to forget if you are looping through the collection.

Consider the following code fragment to delete every member of a Messages collection:

```
Dim colMsgs As Messages
...
size = colMsgs.Count
For i = 1 to size
  colMsgs.Item(i).Delete
Next i
```

When *i* = 1, the first Message object's **Delete** method is called and that message is deleted. The Messages collection's **Count** property is immediately decremented by one, and the Message object that had been the second message in the collection now becomes the first. Therefore, when *i* = 2, the second message in the reindexed collection, that is, the message that was originally third in the collection, is deleted, and the message that was originally fourth now becomes second.

The effect of this loop is to delete all the odd-numbered members of the original collection. Once *i* has been incremented past half the value of *size*, it becomes too large for the reindexed items, and a value of **Nothing** is returned for the remaining accesses.

The Microsoft® Visual Basic® **For Each** statement cannot be used as a workaround, because it is internally implemented as

```
For i = 1 to .Count
  .Item(i).
Next i
```

which still exhibits the skipping behavior, although it does at least reread the **Count** property with each passage of the loop, so that it avoids going past the end of the collection. The following loop always deletes the first message and has the effect intended by the erroneous code fragment:

```
size = colMsgs.Count
For i = 1 to size
  colMsgs.Item(1).Delete
Next i
```

Of course, the simplest alternative in this case is to use the **Delete** method of the Messages collection itself.

Some collections, such as Columns, allow a new member to be inserted following a specified existing member instead of being added at the end. If you insert a Column object into the middle of the collection using its **Add** method, you must take into account the new index values of the columns that come after the new column.

AddressEntry of a Recipient Object

The principal hierarchical position of an AddressEntry object is as a member of an AddressEntries collection. The CDO Library also provides an **AddressEntry** property on the Recipient object in order to make the address book properties of a recipient available to the programmer. It is important to understand the differences between the AddressEntry objects accessed in these two ways.

The AddressEntries collection is in turn a child of an AddressList object, which is backed up by a MAPI **IABContainer** object implemented by an address book provider and held in persistent storage. An AddressEntry object obtained through this hierarchy is backed up by a MAPI **IMailUser** object and ultimately resides in persistent storage. When you make changes to this AddressEntry object and call its **Update** method with the *makePermanent* parameter set to **True**, the address book provider saves your changes in persistent storage.

By contrast, a Recipients collection is implemented with a MAPI **IMAPITable** object populated from an **IMessage** object. MAPI tables are never persistent and only exist in memory. A Recipient object corresponds to a row in the MAPI recipient table, and an AddressEntry object obtained through its **AddressEntry** property, although originally copied out of persistent storage, is only backed up in memory. Any changes you commit with its **Update** method are only saved in memory.

Example

This code fragment illustrates the nature of the problem:

```
Set objAddrEnt = objRecip.AddressEntry
objAddrEnt.Fields(CdoPR_SEND_RICH_INFO) = True
objAddrEnt.Update

objRecip.AddressEntry.Details ' property is NOT set
objRecip.AddressEntry = objAddrEnt '
objRecip.AddressEntry.Details ' now property is set
```

Glossary

A

Active Platform
A PC platform for developing Internet applications, including an extensive set of development tools. The platform is independent of the operating system and presents a consistent interface to both the client and the server. The Active Platform is based on three core technologies: Active Desktop, Active Server, and ActiveX.

Active Server
The Active Platform component of Microsoft Internet Information Server (IIS) 3.0 or later, which extends the Windows NT system services to the World Wide Web. It decodes and runs server-side script and provides database access and transaction support.

Active Server Pages
See ASP.

ActiveX
A software technology built on the COM foundation and used particularly for applications dealing with the Internet and the World Wide Web. ActiveX components include ActiveX objects, which expose their properties and methods, and ActiveX clients, which access them. *See also* OLE.

ActiveX client
An application or programming tool accessing the ActiveX objects exposed by programs supporting Automation.

ActiveX control
A reusable, stand-alone software component often exposing a discrete subset of the total functionality of a product or application. An arbitrary number of ActiveX controls can be used as prefabricated components to aid in building a new application. Formerly referred to as OLE control or OCX. For more information, see the ActiveX SDK section of the Platform SDK.

ActiveX object
An object exposed by an application or programming tool supporting Automation for use by ActiveX clients.

address book
A container object that manages a collection of one or more address book containers furnished by one or more service providers. CDO applications can access an address book using the AddressLists collection object.

address book container
An object that contains one or more recipients and makes them available to applications using the CDO libraries. Common address book containers include the global address list and the personal address book. CDO applications can access an address book container using the AddressList object.

address entry
An object containing addressing information such as a display name, an e-mail type, and an e-mail address. An address usually represents a person or process that can receive a message. CDO applications can access an address entry using the AddressEntry object. *See also* recipient.

anonymous user
See unauthenticated user.

ASP
(Active Server Pages) An open application environment in which HTML pages, scripts, and ActiveX components can be combined to create Web-based applications. ASP is an ISAPI application.

attachment
An object that is associated with a message and contains additional data, such as a file or an OLE object. CDO applications can access an attachment using the Attachment object.

authenticated user
A messaging user that has a valid account on a Microsoft Exchange server and can therefore access a mailbox. Also referred to as a validated user.

Automation
A Microsoft technology that allows objects to expose their internal services to each other as well as to human users. Automation follows the Component Object Model (COM), and most Automation applications derive their objects from the **IDispatch** interface. Objects exposed through Automation include ActiveX objects, and applications that access them include ActiveX clients. Formerly referred to as OLE Automation.

Automation controller
A programming tool, such as Microsoft Visual Basic, that supports Microsoft Automation. An application written in or using an Automation controller can reference an arbitrary number of object libraries and access their objects from a single program.

B

browser
A client application connected to the World Wide Web that requests resources from a Web server, usually for the purpose of displaying them. Also referred to as a Web browser.

C

calendar view
A view specifying a calendar rendering of a container object containing a collection of appointments. CDO applications can access a calendar view using the CalendarView object.

categorized view
See grouped view.

CDO
(Collaboration Data Objects) A technology for building messaging or collaboration applications. In versions previous to 1.1, CDO was called OLE Messaging; in version 1.1 it was called Active Messaging. It is designed to simplify the creation of applications with messaging functionality, or to add messaging functionality to existing applications.

CDO libraries
The set of programmable object libraries that expose messaging-related objects for use by an Automation controller. An application written in a tool supporting Automation can reference several object libraries and access all their objects in a single program. The CDO libraries are the CDO Library and the CDO Rendering Library.

CDO Library
An Automation programming interface that exposes programmable MAPI objects to a messaging user application. For more information, see the CDO Library Introduction and Overview.

CDO Rendering Library
An Automation programming interface that exposes programmable HTML rendering objects to a server-side script running on a Web server. For more information, see Overview of CDO Rendering.

child folder
A folder that is a child object of another folder, which is the child folder's parent folder. Also referred to as a subfolder.

child object
An object derived from another object, which is referred to as the parent object.

client-side script
Script that is decoded and run at a browser.

Collaboration Data Objects
See CDO.

collection
An object that contains zero or more objects of the same class. The CDO Library supports large collections and small collections. The CDO Rendering Library uses only small collections. Also referred to as a collection object or an object collection. *See also* container object.

collection object
See collection.

column
A vertical section of a table view that specifies rendering for one property on the contents of the container object being rendered. CDO applications can access a column using the Column object.

COM
(Component Object Model) An architecture for defining interfaces and interaction among objects implemented by widely varying software applications. A COM object instantiates one or more interfaces, each of which exposes zero or more properties and zero or more methods. All COM interfaces are derived from the base class **IUnknown**. Technologies built on the COM foundation include ActiveX, MAPI, and OLE.

common view
A predefined, persistent table view defined globally for all messaging users and all folders.

container object
An object that contains a collection of objects of one or more related classes. For example, a folder can contain both messages and child folders. *See also* object renderer.

container renderer
A rendering object used to render the contents of a CDO container object in tabular format. CDO applications can access a container renderer using the ContainerRenderer object.

conversation
A series of messages that pertain to the same topic. All the messages in a conversation typically have the same subject. Also referred to as a thread.

custom view
A nonpersistent table view created individually by a particular application, which applies only to one folder and one messaging user.

D

display name
A name associated with an object and used as a display token for that object. Many CDO objects have display names, exposed in each object's **Name** property. The display name of an AddressEntry object commonly contains a human user's friendly name or e-mail alias.

distribution list
(DL) An address entry representing a group of one or more address entries. A distribution list can contain individual messaging users and other distribution lists.

DL
See distribution list.

F

field
An object providing access to a MAPI property on a CDO Library object. CDO applications can access a field using the Field object.

File Transfer Protocol
See FTP.

folder
A container object that holds messages and other folders. CDO applications can access a folder using the Folder object. *See also* child folder, parent folder, personal folder, public folder.

folder view
A predefined, persistent table view defined individually for a particular folder.

format
An object specifying rendering information for exactly one property on an object being rendered. CDO applications can access a format using the Format object.

frame
A partition of a computer screen used by a browser to display images from HTML. Unless the HTML sent to the browser includes <FRAMESET> and <FRAME> tags, the display uses a single frame occupying the entire screen.

FTP
(File Transfer Protocol) A client/server protocol used on the World Wide Web to transfer a file from a server to a client. FTP is based on the TCP/IP protocol.

G

GAL
See global address list.

global address list
(GAL) An address book container that holds recipient entries for an entire organization and is available to all messaging users in that organization. A global address list is typically not modifiable by the users. *See also* personal address book.

group header
A nonpersistent object representing the display header for a grouping of messages in a grouped view on a folder. CDO applications can access a group header using the GroupHeader object.

grouped view
A table view specifying that the contents of the container object are to be sorted into groups for rendering. The sort is based on a specified property on the container object's contents. Each group is rendered along with its group header. Also referred to as a categorized view.

H

heading row
A row of an HTML rendering of a table view that contains the name of each column in the view. It can optionally be included in any desired frame of the rendering.

HTML
(Hypertext Markup Language) A tag language for representing documents with hypertext links. An HTML tag consists of a directive, possibly extended with one or more attributes, within angle brackets, for example <FONT SIZE=3>. HTML is based on Standard Generalized Markup Language (SGML).

HTML rendering
The process or result of generating displayable HTML output from objects and properties of the CDO Library. HTML rendering is accomplished using the CDO Rendering Library. *See also* rendering.

HTTP
(Hypertext Transfer Protocol) A client/server protocol used on the World Wide Web for sending and receiving HTML documents. HTTP is based on the TCP/IP protocol.

HTTP output
A stream containing text and HTML tags for the current displayable page, to be sent by HTTP to a browser either when the **End** method on the response object is called or when the current script finishes executing.

hypertext
A collection of documents containing cross-reference links that can be used interactively by a user to move immediately from one topic to another.

Hypertext Markup Language
See HTML.

Hypertext Transfer Protocol
See HTTP.

I

IIS
(Internet Information Server) A Web server integrated into Windows NT server. Microsoft IIS is required to access applications based on Microsoft ASP.

impersonation
Associating a set of Windows NT security credentials with an execution thread. This enables the thread to log on to a session.

interface
The definition of a class of objects of similar behavior. An object is an instance of one or more interfaces. The COM architecture is the foundation for Microsoft interfaces.

Internet
A worldwide hierarchy of computer networks using a variety of protocols. At its highest level the Internet is connected by backbone networks such as ARPAnet, NSFNet, and MILNET. The backbones connect transit networks, which in turn connect stub networks. Logically, Internet participants are represented by a domain such as .com, .org, and .edu, by a logical network within the domain, and by a server within the logical network. An example of a logical address is "www.microsoft.com".

Internet Information Server
See IIS.

Internet Server Application Programming Interface
See ISAPI.

IPM subtree
The hierarchy of folders for all interpersonal messages. An interpersonal message is sent or received by human users rather than applications or processes. It has a message class that starts with IPM, such as IPM.Note.

ISAPI
(Internet Server Application Programming Interface) A Microsoft interface for writing in-process extensions to IIS. ASP is an ISAPI application.

L

large collection

A collection for which the service provider cannot always maintain an accurate count of member objects. Large collections support **Get** methods that enable you to access individual members of the collection. Currently, the large collections are the AddressEntries, Folders, and Messages collections.

M

mailbox
The set of folders held in the IPM subtree of a messaging user. The mailbox is intended for interpersonal messages. Its folders typically include the Inbox, Outbox, Sent Items, and Deleted Items.

MAPI
(Messaging Application Programming Interface) A messaging architecture enabling multiple applications to interact with multiple messaging systems across a variety of hardware platforms. MAPI is built on the COM foundation.

message
An object containing information that is sent from a sender to one or more recipients or that is posted in a public folder. CDO applications can access a message using the Message object.

message store
A container object that holds folders organized hierarchically. CDO applications can access a message store using the InfoStore object.

messaging user
An object that is capable of sending or receiving messages. A messaging user can be a human user or an application or process. *See also* authenticated user, unauthenticated user.

method
A procedure that is exposed by an object and performs a specific action.

O

object
A programmable software component representing an instance of one or more defined interfaces. The objects exposed by the CDO libraries conform to the COM architecture and expose zero or more properties and zero or more methods.

object collection
See collection.

object renderer
A rendering object used to render one or more selected properties on a CDO object, rather than the entire object. CDO applications can access an object renderer using the ObjectRenderer object. *See also* container renderer.

OCX
(OLE Custom Controls) *See* ActiveX control.

OLE
A software technology built on the COM foundation and used for creating and working with compound documents. OLE objects commonly use the **IStream** and **IStorage** interfaces. *See also* ActiveX.

OLE Automation
See Automation.

P

PAB
See personal address book.

parent folder
A folder that is the parent object of another folder, which is the parent folder's child folder.

parent object
An object from which another object is derived. The derived object is a child object.

pattern
An object specifying rendering information for a particular set of values of a property on an object being rendered. CDO applications can access a pattern using the Pattern object.

PDL
See private distribution list.

personal address book
(PAB) A modifiable address book container that holds recipient entries either created by the messaging user or copied from other address book containers such as a global address list. *See also* global address list.

personal folder
A folder held outside of the mailbox of a messaging user, in which the user can store selected messages. A messaging user's personal folders are normally held in the user's personal message store.

personal view
A predefined table view defined individually for a particular messaging user.

personal Web server
A Web server that does not use IIS. Because it does not require a Windows server, a personal Web server can run on a Windows workstation.

private distribution list
(PDL) A distribution list that exists only in a personal address book belonging to one messaging user. A private distribution list can contain individual messaging users, distribution lists, and other private distribution lists. However, a PDL does not have an e-mail address. For more information, see the **DisplayType** property of the AddressEntry object.

profile
Configuration information about the set of message services for a session. Profiles are created from information stored in the MAPI configuration file, MAPISVC.INF. A profile indicates which address books and message stores are accessible to the messaging user that is logging on, as well as the messaging user's own display name and addressing information.

property
A data attribute exposed by an object. A property represents data that is held inside the object and is inaccessible from outside except through the object's defined interface. An object may permit read/write access to some of its properties and read-only access to others.

public folder

A folder held outside of the mailboxes of all the messaging users on a message store, in which any connected user can post selected messages. A public folder can be used as a bulletin board or online forum.

R

recipient
A messaging user or distribution list designated to receive a particular message. Recipients are usually held in address book containers. CDO applications can access a recipient using the Recipient object.

renderable object
A CDO object being used as a data source for a rendering object.

renderable property
A property on a CDO object being used as a data source for a rendering object.

rendering
The process or result of preparing an image for display. The image can include text, graphics, and form elements such as frames and borders. Rendering converts coded representations of the components of the image into a single output suitable for displaying. *See also* HTML rendering.

rendering object
A CDO Rendering object used for rendering a CDO object, or one or more of its properties, into HTML output. Currently, the rendering objects are the container renderer and object renderer objects.

rendering source
A string providing information that a rendering object uses to render a particular property or value into hypertext. A rendering source contains HTML tags and substitution tokens.

resolution
The process of associating a valid address with a display name or addressing information. The names of all recipients for a message must be resolved before the message can be sent.

response object
An Active Server object used to send HTML output to a browser. A response object implements the **IResponse** interface, which controls page buffering, cookie values, Web server logging, and browser page caching.

S

script
Code that is run in an application for a special purpose. Script can be in any scripting language.

scripting language
Any language, such as Visual Basic Scripting Edition (VBScript) or JavaScript (JScript) that can compile or interpret special script.

server-side script
Script that is decoded and run at a Web server.

session
An active connection between a client application and the MAPI subsystem. A session is begun when a messaging user logs on to the system and references a profile. The profile determines the available messaging operations and the service providers available to handle the operations. CDO applications can access a session using the Session object.

small collection
A collection for which the service provider maintains an accurate count of member objects. You can directly access individual members of the collection using an index. Currently, the large collections are the AddressLists, Attachments, Columns, Fields, Formats, InfoStores, Patterns, Recipients, and Views collections.

subfolder
A child folder contained in a parent folder.

T

table view
A view specifying a tabular rendering of a container object. CDO applications can access a table view using the TableView object. *See also* common view, custom view, folder view, and personal view.

TCP/IP
(Transmission Control Protocol over Internet Protocol) One of the most commonly used protocol suites on the Internet. IP is a network layer protocol that handles packet switching, fragmentation, and routing. TCP is a transport layer protocol built on top of IP and handles flow control, multiplexing, and error control.

top-level object
A CDO libraries object that can be defined directly from a program and does not have to be derived from another already-defined object. Currently, the top-level objects are the CDO Session object and the CDO Rendering ContainerRenderer, ObjectRenderer, and RenderingApplication objects. For more information, see Top-Level Objects and CDO Rendering Objects.

transport
A service provider responsible for transferring messages between a message store and an underlying messaging system that delivers the messages.

U

unauthenticated user
A messaging user that does not have a recognized account on any Microsoft Exchange server. An unauthenticated user can log on to a server anonymously, but is restricted to accessing only the published public folders and address books. Also referred to as an anonymous user.

uniform resource locator
See URL.

URL
(Uniform Resource Locator) A standardized string used to specify a resource on the Internet, such as an HTML document. The format of a URL is "protocol://server.network.domain/path/resource".

V

validated user
See authenticated user.

VBX
(Visual Basic Extensions) *See* ActiveX control.

view
An object specifying a particular type of rendering of a container object. Currently, the CDO Rendering Library supports calendar views and table views.

virtual root
A disk directory on IIS designated as a share point, which can be used as a root directory for paths to its subdirectories.

Visual InterDev
A component of Microsoft® Developer Studio™ that serves as the development platform for applications dealing with the World Wide Web. Microsoft® Visual InterDev™ supports creation and editing of .HTM and .ASP files, and development of scripts in scripting languages such as VBScript and JScript.

W

W3C
(World Wide Web Consortium) The international standards group for the World Wide Web (WWW or W3), funded by its industrial members but operated principally by the Massachusetts Institute of Technology (MIT), the Institut National de Recherche en Informatique et Automatique (INRIA), and the Center for European Particle Research (CERN).

Web
See World Wide Web.

Web browser
See browser.

Web server
A program connected to the World Wide Web that furnishes resources upon request from a browser. The requested resource is usually identified by a URL.

World Wide Web
(WWW, W3) A distributed client/server information retrieval system using multiple protocols on the Internet. The client is a browser and the server is a Web server. Typical protocols include HTTP, FTP, and Gopher. Also referred to as the Web or the WWW.

WWW
See World Wide Web.

X

X.400
An international message-handling standard for connecting e-mail networks to each other and to messaging users, published by the International Telecommunications Union (ITU).

X.500
An international message-handling standard for directory services (DS), published by the International Telecommunications Union (ITU).