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[Collapse]

☑ Check
☑ Uncheck

What Is Backup?

Microsoft Windows NT Backup is a graphical tool for protecting data from accidental loss or hardware and media failures. It makes it easy for you to use a tape drive to back up and restore your important files on either the NTFS, FAT, or HPFS file system.

The following list provides an overview of some of the things you can do with this graphical tool to protect your data:

- Back up and restore both local and remote files on an NTFS, FAT, or HPFS file system from your own computer using an attached tape drive.
- Back up and restore Microsoft Exchange Server components, including the directory and the information store.
- Select files for backing up or restoring by volume, directory, or individual filename and view detailed file information, such as size or modification date.
- Select an optional verification pass to ensure reliable backups or restorations.
- Perform any of the following common backup operations: Normal, Copy, Incremental, Differential, and Daily Copy.
- Place multiple backup sets on a tape, and either append new backup sets or overwrite the whole tape with the new ones.
- Span multiple tapes with both backup sets and files, because there is no file-size restriction.
- Create a batch file to automate repeated backups of drives.
- Review a full catalog of backup sets and individual file and directory information so you can select files to be restored.
- Control a restore's destination drive and directory and receive appropriate options for what action to take when a restore would overwrite a more recently created file.
- Save log information on tape operations to a file. Also view tape-operation information in the Windows NT Event Viewer.

See Also

Overview of Backing Up Microsoft Exchange Components

Showing or Hiding the Status Bar and Toolbar

The Tree, View, and Window menus provide commands for manipulating your windows the same as in File Manager. A toolbar at the top of the window provides easier access to the most commonly used commands. The status bar at the bottom of the window provides descriptions of each of the commands and program-status information.

To show or hide the status bar and toolbar

▶   From the View menu, choose Status Bar or Toolbar.
       The screen changes to reflect your selection.

When either the Status Bar or Toolbar option is in effect, a check mark appears next to the command on the View Menu.

See Also

Changing the Font Selection

Changing the Font Selection

You can change the font that Backup uses to display the names of your files and directories. You can also change the style and size of the font.

To change the font selection

1. From the View menu, choose Font.

2. In the Font box, select the font that you want to use.

   When you select a font, a style, or a size, the text in the Sample box changes to reflect your choice.

3. In the Font Style box, select a style option.

4. In the Size box, select a point size.

5. Clear the Lowercase check box if you want text to appear in all uppercase letters.

6. Choose the OK button.

The text in all the directory windows is displayed in the new font.

See Also

Showing or Hiding the Status Bar and Toolbar

Changing to a Different Tape Drive

The system automatically checks for the proper hardware when you start Windows NT and initializes it each time you start Backup. Notice, however, that the tape drive must be turned on before you start Windows NT for the drivers to be loaded properly. If you have more than one tape backup device, you can use the Hardware Setup command on the Operations menu to select a different device.

To change to a different tape backup device

1. From the Operations menu, choose Hardware Setup.

2. In the Hardware Setup dialog box, select the new tape backup device.

3. Choose the OK button.

Windows NT currently supports both high-capacity SCSI tape backup devices for 4 mm DAT, 8 mm, and 1/4-inch drives, and the less expensive mini-cartridge drives. You may have more than one tape drive connected to your system. However, only one tape drive may be selected at a time.

Inserting a higher density tape than the tape drive is capable of using can cause the program to display "Tape Drive Error Detected" and not allow the tape to be ejected until you close Backup.

Running Backup without a tape in certain tape drives can cause the Application log in Event Viewer to be updated every 3 to 4 seconds with a "No Tape in Drive" message. This can eventually fill up the log and leave no room for other messages until you delete the log.

See Also

Loading a Tape Driver

Loading a Tape Driver

If this is the first time that you have used Backup or if you have just installed a new or additional tape backup device, you need to load the appropriate tape backup device driver and then restart your computer to activate it.

To load a tape driver

1. In the Main program group, double-click the Windows NT Setup icon.

   After determining your hardware configuration, the Windows NT Setup dialog box appears.

2. From the Options menu, choose Add/Remove Tape Devices.

3. In the Tape Device Setup dialog box, choose the Add button to view a list of the tape devices that are compatible with Windows NT.

4. Select a device from the list, and choose the Install button.

   A message asks you to type a path for the location of the Tape Device files and then choose Continue. The name of the selected tape device appears in the box in the Tape Device Setup dialog box.

5. Choose the Close button.

6. From the Options menu, choose Exit.

   A message advises you that your computer configuration has changed and that you must shut down and then restart your computer to use the new configuration.

7. In the Setup Message box, choose the OK button.

   To avoid restarting your computer, you can also use the Devices option in Control Panel to start the tape device.

See Also
Changing to a Different Tape Drive

Opening and Updating the Drives Window

The Drives window will normally be open when you start the Backup program. However, sometimes you will want to minimize it and then reopen it when needed. There will also be times when you will leave Backup, use File Manager to connect to another network drive, and then return to Backup and need to update the Drives window to view the additional network drive.

To reopen and update the Drives window

1. To reopen the Drives window, double-click the Drives icon in the main Backup window.

   --or--

   From the Window menu, choose Drives.

2. To update the information in the Drives window, choose Refresh from the Window menu.

See Also

Opening the Tapes Window

Backing Up all the Files

Backing Up all the Files

You can select all the files on a disk shown in the Drives window. However, notice that even when a disk drive is selected, the program does not back up those files and directories that the user does not have permission to read. Hidden files with read permission can be backed up and are displayed with an exclamation point in the file's icon. All file attributes are preserved, including permissions.

To back up all the files on a disk

1. In the Drives window, select the disk drive that you want to back up.

2. From the Select menu, choose Check, or choose the Check button on the toolbar.

   --or--

   In the Drives window, select the check box for the appropriate disk drive.

3. From the Operations menu, choose Backup, or click the Backup button on the toolbar.

See Also

Backing Up Individual Files

Setting the Tape Options

Using Batch Files For Backups

Backing Up Individual Files

Disk and Tape File Selection windows are organized the same as in File Manager, with the same options for viewing the directory tree structure and the directory and filenames list. If you only want to select a few files, it is faster to select the check box for each filename.

To back up individual files

1. In the Drives window, double-click the appropriate disk drive icon or letter to open the Disk File Selection window.

2. To select several files, select the first filename and then do one of the following:

■ Press and hold down the SHIFT key and then select the last contiguous filename.
■ Drag the mouse to the last contiguous filename.
■ Press and hold down the CTRL key and then select each non-contiguous filename.
3. From the Select menu, choose the Check command, or click the Check button on the toolbar to select each file's check box.

   From the Select menu, choose the Uncheck command, or click the Uncheck button on the toolbar to undo all your selections.

4. From the Operations menu, choose the Backup command, or click the Backup button on the toolbar.

When only some files are selected, the corresponding disk-drive and directory check boxes are dimmed.

See Also

Backing Up all the Files

Setting the Tape Options

Setting the Tape Options

After selecting one or more disk drives, files, or Microsoft Exchange components to back up, you can use the Backup command on the Operations menu to open the Backup Information dialog box. The upper section provides information on the tape that you loaded.

To set the tape options

1. In the Operation box, select Append to place the new backup set after the last backup set, or select Replace to overwrite all the information on the tape.

2. In the Tape Name box, type a name for the new tape that is fewer than 32 characters long.

3. Select the Verify After Backup check box if you want to confirm that the tape was backed up accurately .

4. Select the Backup Local Registry check box if you want to add a copy of your Windows NT Registry files to the backup set. This option is available only if the drive containing the Registry is selected.

5. Select the Restrict Access To Owner Or Administrator check box to secure the tape by limiting access to it.

6. Select the Hardware Compression check box if you want to have the tape drive compress the data onto the tape media.

   Keep in mind, however, that moving tapes between different brands of tape drives can cause problems if one brand supports compression and the other does not. Depending on the tape drive, the program can display messages such as "Tape Drive Error Detected," Tape Drive Not Responding," or "Bad Tape." To erase a tape that is causing one of the problems, start NTBackup from the command prompt with the /**nopoll** switch. However, be careful not to use Backup with the /**nopoll** switch to perform anything other than erasing the tape.

For more information on the various options, choose the Help button or press F1 while using the dialog box.

See Also

Setting the Backup Set Options

Setting the Log Options

Backing Up Individual Files

Backing Up all the Files

Setting the Backup Set Options

The second section of the Backup Information dialog box shows how many backup sets have been selected. Each set is a collection of related files on one drive or a Microsoft Exchange component that is backed up during a single backup operation. If you select more than one disk drive or a combination of drives and Microsoft Exchange components, Backup provides a scroll bar for moving between backup sets so you can enter separate descriptions (up to 32 characters) and select different backup types for each set.

To set the backup set options

1. In the Backup Set Information box, type a description for the backup set.

2. In the Backup Type box, select the type of backup operation you want.

For more information on the various options, choose the Help button or press F1 while using the dialog box.

See Also

Setting the Tape Options

Setting the Log Options

Backup Operation Types

Setting the Log Options

In the final section of the Backup Information dialog box, you can choose whether to create a log that contains a summary of major operations or full details of all operations.

To set the log options

1. Select the logging option that you want to use, or select Don't Log.

2. In the Log File box, type the name of the text file to use for logging completed tape operations, or use the Browse button at the end of the Log File box to help you locate the correct filename for the log.

3. Choose the OK button to display the Backup Status dialog box and start the backup process.

For more information on the various options, choose the Help button or press F1 while using the dialog box.

See Also

Logging Options

Setting the Tape Options

Setting the Backup Set Options

Checking the Backup Status

Checking the Backup Status

The Backup Status dialog box contains an active status area; the names of the drive, directory, and file(s) that are being backed up, or the names of the Microsoft Exchange components being backed up; and a Summary section showing a log of major operations, including whether or not the operation completed successfully. You can also choose to stop the backup operation. If a large backup operation reaches the end of a tape before finishing, the Insert New Tape dialog box appears and prompts you to insert a new tape. A collection of related tapes containing several backup sets is called a *family set*.

To display the Backup Status dialog box and start or stop backing up

1. In the Backup Information dialog box, choose the OK button.

   The Backup Status dialog box appears, and the backup operation begins.

2. Choose the Abort button if you need to stop a backup job before it is completed. When the Backup Abort message appears, choose the Yes button.

   A message asks whether to continue or stop now and whether to show it as a corrupted file.

See Also

Opening the Tapes Window

Using Batch Files For Backups

You can create a command-line batch file to back up one or more drives or Microsoft Exchange Server components on a regular basis. The parameters included in this batch command give you most of the same functionality that is provided in the graphical user interface. When backing up drives, you can back up only directories, not individual files, and you cannot use wildcard characters.

Syntax:

ntbackup *operation path* [**/a**][**/v**][**/r**][**/d** "*text*"][**/b**][**/hc:**{**on** | **off**}] [**/t** {*option*}] [**/l** "*filename*"][**/e**][**/tape**:{*n*}]

Parameters:

operation

> Specifies the operation, **backup**.

path

> If you are backing up a drive, specifies one or more paths of the directories to be backed up.

> If you are backing up Microsoft Exchange components, specifies the component and the server using the following format:

>> {**DS** *server* **IS** *server*}

>> *server* is the name of the server you are backing up preceded by two backslashes (for example, \\berkeley). **DS** indicates that you are backing up the directory, and **IS** indicates that you are backing up the information store.

/a

> Causes backup sets to be added after the last backup set on the tape. When **/a** is not specified, the program reuses the tape and replaces previous data. When more than one drive is specified but **/a** is not, the program overwrites the contents of the tape with the information from the first drive selected and then appends the backup sets for the remaining drives.

/v

> Verifies the operation.

/r

> Restricts access.

/d "*text*"

> Specifies a description of the backup contents.

/b

> Specifies that the local registry be backed up.

/hc:on or **/hc:off**

> Specifies that hardware compression is on or off.

/t {*option*}

Specifies the backup type. *Option* can be one of the following:

Normal   All selected files or Microsoft Exchange components are backed up and marked as such on the disk.

Copy   All selected files or Microsoft Exchange components are backed up, but they are not marked as such on the disk.

Incremental   Among the selected files or Microsoft Exchange components, only those that have been modified are backed up and marked as such on the disk.

Differential   The selected files or Microsoft Exchange components that have been modified are backed up, but they are not marked as such on the disk.

Daily   Among the selected files, only those that have been modified that same day are backed up, but they are not marked as such on the disk. (This can be useful if you want to take work home and need a quick way to select the files that you worked on that day.) This option is not available when backing up Microsoft Exchange components.

/l "*filename*"

Specifies the filename for the backup log.

/e

Specifies that the backup log include exceptions only.

/tape:{*n*}

Specifies the tape drive to which the files should be backed up. *N* is a number from 0 to 9 that corresponds to the tape drive number listed in the registry.

See Also

Backup Information Types

Logging Options

Backing Up all the Files

Overview of Backing Up Microsoft Exchange Components

You can use Backup to make backup copies of the Microsoft Exchange server directory and the information store. You use the Backup program to connect to a Microsoft Exchange server, then back up from or restore to any servers in the organization that share network connectivity. During backup, users can continue to access the server being backed up as they normally would. However, when restoring information, Microsoft Exchange services are brought down, and users cannot access the servers being restored. When backing up and restoring Microsoft Exchange components, keep in mind the following points.

The computer that you are logged onto must share network connectivity with all servers you are attempting to back up or restore remotely.

When performing a backup, the Windows NT account with which you are logged on must be a member of the Backup Operators group on the computer you are running the Backup application from as well as all computers you are backing up.

When performing a restore, the Windows NT account with which you are logged on must be a member of the Administrators group on the computer you are running the Backup application from as well as all computers to which you are restoring information.

When performing a backup, you must back up a server's private and public information stores as a single entity. However, when restoring, you have the option of restoring the private and public information stores separately.

Backup attempts to back up all selected components on all selected servers. If any conditions exist that prevent the backup of a selected component from occurring, you will be prompted with a message, and then the backup will continue for the rest of the components. Look in the Application event log for more details on the problem.

See Also

Connecting to a Microsoft Exchange Server

Opening the Microsoft Exchange Organization Window

Selecting the Servers to Back Up

Selecting the Microsoft Exchange Components to Back Up

Microsoft Exchange Backup Strategies

Connecting to a Microsoft Exchange Server

If the computer on which you are running Backup is not a Microsoft Exchange server, you need to connect to a Microsoft Exchange server before you can back up Microsoft Exchange components. Once you do, you can back up components on any or all of the servers in your organization.

Note You can remotely back up only servers that share network connectivity.

To connect to a Microsoft Exchange server

1. From the Operations menu, choose Microsoft Exchange.

   The Microsoft Exchange dialog box appears.

2. Type the name of any Microsoft Exchange server in the organization.

   If you do not know the exact name of a Microsoft Exchange server, choose the button to the right of the text entry box, and select the server you want from the list.

3. Choose the OK button.

   A Microsoft Exchange Organization icon is added to the main Backup window.

See Also

Opening the Microsoft Exchange Organization Window

Select Computer

Choose any Microsoft Exchange Server computer in your organization. The Backup program reads in the organization hierarchy from the Microsoft Exchange Server computer you specify.

Computer

Type the name of a Microsoft Exchange Server computer. If you selected Start Service in the Microsoft Exchange dialog box, be sure to type the name of the specific computer on which you want to start the service.

Select Computer

Displays all computers on your network. Select a Microsoft Exchange Server computer from the list.

Microsoft Exchange

Type the name of the Microsoft Exchange server to which you want to connect. (This can be the name of any server in the organization.) If you do not know the exact name of the Microsoft Exchange server, choose the button to the right of the text entry box, and select the server you want from the list. Once you connect to a server, you can back up Microsoft Exchange components throughout your organization, or you can start services on the server.

Choose one of the following buttons for information about the dialog box:

▢ Connect to Organization
▢ Start Service

Connect to Organization

Select this option to connect to the server you specified for the purpose of backing up Microsoft Exchange components.

Start Service

Select this option and choose either Directory or Information Store to start the corresponding service on the server you specified in the Server box. Use this option if you restored Microsoft Exchange components from tape and did not check Start Service After Restore in the Restore Information dialog box.

Opening the Microsoft Exchange Organization Window

When you connect to a Microsoft Exchange server, a Microsoft Exchange Organization icon appears in the main Backup window. You can open the Microsoft Exchange Organization window, which lists all sites in your organization and all servers contained within those sites. You can then back up components on any or all of the displayed servers.

Note You can remotely back up only servers that share network connectivity.

To open the Microsoft Exchange Organization window

◻   Double-click the Microsoft Exchange Organization icon in the main Backup window.

See Also

Connecting to a Microsoft Exchange Server

Selecting the Servers to Back Up

Selecting the Microsoft Exchange Components to Back Up

Microsoft Exchange Backup Strategies

Selecting the Servers to Back Up

You can back up all servers in your organization, all servers in one or more sites, or individual servers only. You can remotely back up only servers that share network connectivity. You can use any of the following methods to select one or more servers.

To select the servers you want to back up

☐   To back up all servers in the organization, select the organization check box.

☐   To back up all servers in a particular site, expand the tree until you see the site you want to back up, and select the site check box.

☐   To back up a specific server, expand the tree until you see the server you want to back up, and select the server check box.

Note   You can back up a Microsoft Exchange server only if your account is a member of the Backup Operators group on that server. You can use Windows NT User Manager to add an account to the Backup Operators group on a particular server.

See Also

Selecting the Microsoft Exchange Components to Back Up

Microsoft Exchange Backup Strategies

Connecting to a Microsoft Exchange Server

Opening the Microsoft Exchange Organization Window

Selecting the Microsoft Exchange Components to Back Up

Microsoft Exchange components include the directory and the information store. You can back up one or both of these components on each of the Microsoft Exchange servers in your organization.

To select the Microsoft Exchange components to back up

1. In the Organization window, select the server that you want to back up.

   The Directory and Information Store check boxes appear on the right side of the window.

2. Select one or both of the components you want to back up.

Note You can select individual components only for a specific server. If you select a site on the left side of the window (to back up all servers in the site) or the organization object (to back up all servers in the organization), both the directory and the information store are backed up for each server by default.

See Also

Microsoft Exchange Backup Strategies

Connecting to a Microsoft Exchange Server

Opening the Microsoft Exchange Organization Window

Selecting the Servers to Back Up

Microsoft Exchange Backup and Restore Strategies

Backing Up the Directory

It is essential that you maintain a backup copy of the directory on every server since there is server-specific information in the directory on each server. If a situation arises where you need to restore the directory on a server, simply restore the backed up directory to that server. Any changes to the directory that occurred since the last backup will be made automatically during replication.

How often you back up the directory on each server depends on how often changes are made to the directory in a site. If numerous changes are made (new servers are added, new mailboxes are created, and so on), backups should be performed fairly frequently (weekly, for example). If fewer changes are made to the directory, backups can be made less frequently (monthly, for example).

A good strategy would be to perform one incremental or differential directory backup per site each week, rotating the directory that is backed up. For example, in a site with three servers, you would back up server 1 in week 1, server 2 in week 2, and server 3 in week 3. This system ensures that each directory backup is reasonably up-to-date.

Note It is important that the directory backup on at least one server per site is kept reasonably up to date to protect against data loss if all servers in a site fail.

Backing Up the Information Store

Although you can restore the public information store and the private information store individually, you can back them up only as one object. A good strategy is to back up the information store incrementally or differentially at least once each day and then perform a normal backup weekly.

To do a catastrophic restore

Follow these steps if a server must be replaced by a new computer or the hard drive must be reformatted.

1. Install Windows NT on the new computer and be sure to give it the same computer name as the old computer.   You may have to remove the old computer account from the domain before establishing an account for the new computer.

2. Install Microsoft Exchange Server on the new computer using **setup /r** when installing. In Setup, if you choose to create a new site be sure to specify the same organization and site names as the old computer.   It is better to choose to join an existing site if there is another online server in your site that you can specify.

   Note: You must use the **/r** switch when running Setup.   In this mode, Setup will not start the Microsoft Exchange services or initiate replication, and these operations must not be done so that you can restore.

3. Restore the Microsoft Exchange directory service (DS) from the last backup of the old server.

4. Restore the private and public information stores from the last backup of the old server.

5. Run the DS/IS consistency adjustment.

Restoring the Information Store to an Alternate Server

If you need to restore specific items from a particular mailbox or public folder and you do not want to restore over the existing information store, you can restore the information store to an alternate server. This alternate server cannot be replicating its directory with the existing organization.

To recover specific user mailbox data

1. Find an alternate server that is not replicating with the existing organization.

2. Install Microsoft Exchange Server on the alternate server and create an organization and site with the same names as those of the backed up server.

3. Run Backup and restore the information store. In the Restore Information dialog box, specify the alternate server name for the Destination Server and check Erase All Existing Data.

4. In Microsoft Exchange Administrator, select the server and open its property pages.

5. Choose the Advanced property page. Under the DS/IS consistency adjustment, select All Inconsistencies, and press Adjust.

   This runs the DS/IS consistency adjustment to synchronize the directory and information store.

6. Give yourself permissions on the mailbox from which you want to restore data. If restoring data from a public folder, choose any mailbox.

7. With the User Profile Editor, create a user profile.

8. Log on to the client and move the data to a PST. This PST can then be given to the user.

Opening the Tapes Window

The Tapes window is not normally open when you start the Backup program. After opening it, you can choose to restore either the current tape, one or more backup sets, or individual files. All catalog information is maintained on the corresponding tape for that backup set. Family sets have the information on the last tape.

To open the Tapes window

▶   In the main Backup window, double-click the Tapes icon. Or, from the Window menu, choose the Tapes window.

The tape name appears in the left panel of the Tapes window to the right of each tape icon. The following information is shown in the right panel of the Tapes window:

- Drive backed up
- Backup set number
- Tape number and what number it is in a set of tapes
- Backup type
- Date and time of backup
- Backup description

See Also

Opening and Updating the Drives Window

Backup Operation Types

Loading Catalogs

When you insert a tape to be restored, only information on the first backup set appears in the right panel. If you want to restore the entire tape, you need to load the tape's catalog to display a list of any other backup sets. If you want to know what files are in each backup set, you need to load the individual catalogs for each backup set.

To load catalogs for tapes and backup sets

1. In the Tapes window, select the tape or backup set for which you want a catalog loaded.

2. To load a tape's catalog of backup sets, double-click that tape's icon, or choose Catalog from the Operations Menu or the Catalog button on the toolbar.

   The Catalog Status dialog box appears and provides the option of stopping the cataloging process.

   After searching the tape, a complete list of backup sets appears in the Tapes window, with question marks displayed in each of the icons to show that their individual catalogs have not been loaded.

3. To load a backup set's catalog of directories and files, double-click that backup set's icon.

   The Catalog Status dialog box appears and provides the option of stopping the cataloging process.

   After searching the tape, a complete list of the directories and files in the backup set appears in a Tape File Selection window. The list in the Tapes window now appears with a plus sign in the backup set's icon to show that it has been cataloged. Corrupt files (that is, files that contain errors) and their corresponding directories are marked by a symbol with a red X.

See Also

Checking the Backup Status

Restoring Tapes or Backup Sets

Building Partial Tape and Backup Set Catalogs

Restoring Tapes or Backup Sets

The procedures for selecting files to restore are similar to those for selecting files to back up. Notice, however, that when you load a tape, only the first backup set on the tape is displayed until you load the tape's catalog. Therefore, when you select an entire tape, you are really only selecting those sets that are already displayed. Therefore, you must load the tape's catalog first to get the complete list of backup sets.

To restore a tape or individual backup sets

1. Load the tape's catalog of backup sets.

2. To restore all the files on a tape, in the Tapes window, select the check box for the appropriate tape, or select the tape and choose the Check button on the toolbar.

3. To restore a few backup sets, in the right panel of the Tapes window, select the check box for each backup set.

   To restore several backup sets, select the first backup set and then do one of the following:

   ◻ Press and hold down the SHIFT key and then select the last contiguous backup set.
   ◻ Drag the mouse to the last contiguous backup set.
   ◻ Press and hold down the CTRL key and then select each non-contiguous backup set.
4. To select each backup set's check box, choose Check from the Select menu, or click the Check button on the toolbar.
      To undo all your selections, choose Uncheck from the Select menu, or click the Uncheck button on the toolbar.

5. From the Operations menu, choose the Restore command, or click the Restore button on the toolbar.

Notice that when only some backup sets are selected, the corresponding tape check box is dimmed.

See Also

Restoring Individual Files

Setting the Restore Options

Setting the Microsoft Exchange Restore Options

Loading Catalogs

Restoring Individual Files

The procedures for selecting files to restore are similar to those for selecting files to back up. Notice, however, that when you load a tape, only the first backup set on the tape is displayed until you load the tape's catalog. Therefore, when you select an entire tape, you are really selecting only those sets that are already displayed. Therefore, you must load the tape's catalog first to get the complete list of backup sets. If you want to know what files are in each backup set, you need to load the individual catalogs for each backup set.

To restore individual files in a backup set on a tape

1. In the Tapes window, load the catalog of the backup set from which you want to restore certain files.

   The results appear in a Tape File Selection window.

2. To restore a few files, select the check box for each filename.

   To restore several files, select the first filename and then do one of the following:

   ▪ Press and hold down the SHIFT key and then select the last contiguous filename.
   ▪ Drag the mouse to the last contiguous filename.
   ▪ Press and hold down the CTRL key and then select each non-contiguous filename.

3. To select each file's check box, choose Check from the Select menu, or click the Check button on the toolbar.

   To undo all your selections, choose Uncheck from the Select menu, or click the Uncheck button on the toolbar.

4. From the Operations menu, choose the Restore command, or click the Restore button on the toolbar.

Notice that when only some files are selected, the corresponding disk-drive and directory check boxes are dimmed.

See Also

Restoring Tapes or Backup Sets

Setting the Restore Options

Loading Catalogs

Building Partial Tape and Backup Set Catalogs

If a backup operation spans several tapes and you choose to restore a single backup set, you are prompted to insert the last tape to load the tape catalog information and get a complete list of all the backup sets and their locations. However, if the last tape in such a family set is missing or damaged, you can force Backup to deal with the data on each remaining tape as if it were a single unit rather than a member of a family set. This can be done by starting Backup from the command prompt with the /**missingtape** switch. However, this process takes additional time.

Sometimes, you will want to restore files that were not backed up with the Windows NT Backup program. If the tape has the Microsoft tape format (MTF), Windows NT Backup can read it. However, the tape may or may not have the full on-tape catalog (OTC) information that Windows NT Backup produces. Also, some older tape backup devices may not support creating full on-tape catalogs with the Windows NT Backup program.

To build a catalog from a tape without a full on-tape catalog

1. Insert the MTF-compatible tape in the tape backup device.

2. Load whatever on-tape catalog information is available.

   The Catalog Status dialog box appears and provides the option of stopping the cataloging process.

If there is no catalog information, the entire tape is scanned to determine all the backup sets, and then you must double-click each backup set's icon to determine its contents.

If there is partial information on the backup sets, that information is accessed quickly, and then you must double-click each backup set's icon to determine its contents.

See Also

Loading Catalogs

Setting the Restore Options

After selecting one or more tapes, backup sets, or files to restore, choose the Restore command on the Operations menu to open the Restore Information dialog box. The first section provides information about the backup sets on the loaded tape and tells you how many other tapes are in that family set.

To set the restore options

1. In the Restore Information dialog box, specify the drive to which you want each backup set's information restored.

2. If you want to place a backup set's files into a different directory instead of into the original one on the default drive, you can specify an alternate directory path or use the Browse button at the end of the Alternate Path box to help you find the correct path.

3. Select the Verify After Restore check box if you want to verify the contents of the files restored to disk against the files on tape and log any exceptions.

4. Select the Restore Local Registry check box if you want to restore the Registry files.

5. Select the Restore File Permissions check box if you want to restore the permissions information along with the file.

   Otherwise, the files inherit the permissions information of the directory to which they are restored.

For more information on the various options, choose the Help button or press F1 while using the dialog box.

See Also

Setting the Log Options

Restoring Tapes or Backup Sets

Restoring Individual Files

Setting the Microsoft Exchange Restore Options

After selecting one or more tapes, backup sets, or Microsoft Exchange components to restore, choose the Restore command on the Operations menu to open the Restore Information dialog box. The first section provides information about the backup set(s) on the loaded tape and tells you how many other tapes are in that family set.

Note You must have Administrator rights on every server to which you are attempting to restore Microsoft Exchange components.

To set the restore options for each backup set

1. If you want Backup to attempt to restore any data that was created or changed since the last backup was made, do not select Erase All Existing Data.

2. If you want to erase data in the target directories and restore only the data that was backed up to tape, select Erase All Existing Data.

3. If restoring an information store, in the Destination Server box, type the name of the server where you want to restore the information store from the tape. Select the Private check box to restore the private information store to the specified server. Select the Public check box to restore the public information store on the specified server.

4. Select the Verify After Restore check box to verify the contents of the files restored onto disk against the files on tape and log any exceptions.

5. Select the Start Service After Restore check box to restart the Directory and/or Information Store service once the restore is complete.

For more information on the various options, choose the Help button or press F1 while using the dialog box.

See Also

Setting the Log Options

Restoring Tapes or Backup Sets

Setting the Log Options

In the bottom section of the Restore Information dialog box, you can choose whether or not to create a log that contains a summary of major operations or full details of all operations.

To set the log options

1. Select the logging option that you want to use or select Don't Log.

2. In the Log File box, type the name of the text file to use for logging completed tape operations, or use the Browse button at the end of the Log File box to help you locate the correct filename for the log.

3. Choose the OK button to display the Restore Status dialog box and start the restore process.

For more information on the various options, choose the Help button or press F1 while using the dialog box.

See Also

Setting the Restore Options

Checking the Restore Status

Logging Options

Transaction Log Files and Circular Logging

The Microsoft Exchange database is transaction-based, and NT Backup uses this feature to provide an unobtrusive backup while users are active on the server.

Transaction Log Files

Microsoft Exchange Server uses a write-ahead transaction log file for both the information store and the directory databases. Modifications to the database can be synchronously secured to a sequentially accessed transaction log file on the disk at the same time they are written to the in-memory database cache. Transaction log file names have the form EDBXXXXX.LOG, where X is the hexadecimal number from 0 to F, and are stored in the MDBDATA and DSADATA subdirectories by default.

The size of each log file is 5 MB. All write transactions that are performed on the Microsoft Exchange database are stored in the in the transaction log files.

Data in the in-memory cache is then later asynchronously written to the database file as necessary. When the log file reaches its 5-MB limit, a new logging file is generated and the log number of the current logging file is incremented in hexadecimal.

Circular Logging

Depending on the amount of data that is logged to the databases, the number of log files can grow quickly. If you don't plan to do incremental or differential backups, you can use the circular logging feature, which prevents the continuous build up of transaction log files. Circular logging overwrites the oldest transaction log files after the information it contains has been committed to the database.

Circular logging is turned on in the Advanced property page for the Server object in Microsoft Exchange Administrator. This feature is turned off by default.

Circular logging reduces disk storage space requirements; the log files will typically be less than 100 MB. However, keep in mind that if circular logging is enabled, you cannot perform differential or incremental backups. During full backup, the Backup program backs up all Microsoft Exchange Server components and all log files with data that has not yet been committed to the database.

Note   You should either be doing regular backups, or have circular logging turned on, so that transaction log files do not continue to accumulate. Do not manually delete log files.

Backup Type	Transaction & Circular Logging
Normal	All transaction log files with data that has already been committed to the database are deleted.
Copy	No transaction log files are deleted.
Incremental	The transaction logs generated since the last backup, including those containing data not yet committed to the database, are backed up. All log files with data that has already been committed to the database are deleted. Enabling circular logging disables incremental backup.

| Differential | The transaction logs generated since the last backup, including those containing data not yet committed to the database, are backed up. No transaction log files are deleted. Enabling circular logging disables differential backup. |

See Also

Backup Operation Types

Checking the Restore Status

The Restore Status dialog box contains an active status area; the names of the drive, directory, and files that are being restored, or the names of the Microsoft Exchange components being restored; and a Summary section showing a log of major operations, including whether or not the operation completed successfully. You can also choose to stop the restore operation. If the restore operation reaches the end of a tape before finishing, the Insert New Tape dialog box prompts you to insert a new tape.

To display the Restore Status dialog box and start or stop restoring

1. In the Restore Information dialog box, choose the OK button.

   The Restore Status dialog box appears, and the restore operation begins.

2. Choose the Abort button if you need to stop a restore job before it is completed. When the Restore Abort message appears, choose the Yes button.

   A message asks whether to continue or stop now.

Erasing Tapes

The Erase Tape command causes the whole tape to be erased. You can do either a Quick Erase, during which the tape header is rewritten, or a Secure Erase, during which the entire tape is overwritten. The secure-erase method can take several hours to complete, depending on the drive technology and tape length. You should categorize the information on the backup tapes by which method of erasing to use and then create and maintain a list for easy reference.

To erase a tape

1. From the Operations menu, choose Erase Tape, or click the Erase Tape button on the toolbar.

2. In the Erase Tape dialog box, choose either Quick Erase or Secure Erase.

   A warning message advises you that all the information on the tape will be destroyed. It also gives you the name of the tape and when it was created.

3. Choose the Continue button.

Retensioning Tapes

The Retension Tape command removes loose spots on the tape by fast forwarding to the end of the tape and then rewinding. This procedure winds the tape evenly so it will run more smoothly past the tape drive heads.

To retension a tape

▶ From the Operations menu, choose Retension Tape, or click the Retension Tape button on the toolbar.

To reduce tape slippage, manufacturers of tape backup drives recommend that you retension .25-inch tape once every 20 uses. The Retension Tape command is not available for 4 mm and 8 mm tapes because they do not require retensioning. How much time is spent forwarding and rewinding the media depends on the device technology. For specific retensioning requirements see the manufacturer's documentation.

Formatting Tapes

The Format Tape command formats an unformatted mini-cartridge tape. This type of tape is treated like a floppy disk and must be formatted before it can be used. If you do not have a mini-cartridge drive installed and activated, this command is unavailable.

To format a tape

From the Operations menu, choose Format Tape.

Eject Tape

Rewinds the tape and then ejects the tape from the tape drive. You can eject a tape only from a drive that supports electronic tape ejection. If it does not, the tape is rewound in preparation for manual ejection.

Notice, however, that clicking the Eject Tape button when using certain tape drives can cause the tape not to eject and the program to display "No Tape in the Drive." If this occurs, eject the tape manually from the drive.

Exit

Quits Backup.

Catalog

Adds a tape's catalog information to the disk.

See Also

Loading Catalogs

Building Partial Tape and Backup Set Catalogs

Expand One Level

Expands one level of a collapsed directory in the directory tree and displays the directory one level below the currently selected directory.

Expand Branch

Expands a collapsed directory, including all of its subdirectories, in the directory tree and displays the entire directory tree below the currently selected directory.

Expand All

Expands all the branches in the directory tree and displays the entire directory tree of the drive displayed in the active window.

Collapse Branch

Collapses directory levels below a selected directory in the directory tree and removes the directory tree of the currently selected directory from the File Selection window.

Tree and Directory

Changes the File Selection window to display the directory tree in the left panel and the file list in the right panel.

Tree Only

Displays only the directory tree in the File Selection window.

Directory Only

Displays only the contents of the current directory in the File Selection window.

All File Details

Displays all available information about files and directories in the File Selection window. This information includes the filename, size, last modification date and time, and file attributes for each file. This command does not affect the directory tree.

Status Bar

Displays or hides the status bar at the bottom of the Backup window. The status bar shows the status of current program activity and also provides basic information on each selected command. A check mark next to the Status Bar command means that it is in effect.

See Also

Showing or Hiding the Status Bar and Toolbar

Toolbar

Displays or hides the toolbar in the Backup window. A check mark next to the Toolbar command means that it is in effect.

See Also

Showing or Hiding the Status Bar and Toolbar

Check

Places a check mark in the check box of highlighted selections.

See Also

Backing Up all the Files

Backing Up Individual Files

Restoring Tapes or Backup Sets

Restoring Individual Files

Uncheck

Removes a check mark from the check box of highlighted selections.

Cascade

Arranges windows so that they overlap. The <u>title bar</u> of each window remains visible, making it easy for you to select any window.

Tile

Arranges the windows side by side, so that each window is visible and none overlap.

Arrange Icons

Arranges all of the minimized windows into rows at the bottom of the display.

Refresh

Updates the contents of the active window.

Close All

Closes all but the application window. The Drives and Tapes windows will be minimized.

Names of Open Windows

To make an open window active, choose its name from this list. All open windows are listed, including those that have been reduced to icons.

See Also

Opening and Updating the Drives Window

Opening the Tapes Window

Control Menu

The Control menu contains the following commands:

Restore

Restores the window to its former size after it has been maximized or minimized.

Move

Enables you to use the keyboard to move the window to another position.

Size

Enables you to use the keyboard to change the size of the window.

Minimize

Reduces the window to an icon.

Maximize

Enlarges the window to its maximum size.

Close

Quits an application, or closes a window or dialog box.

Switch To

Starts Task List, which you can use to switch between running applications and to rearrange their windows and icons.

Contents

Starts Help and displays the topics in Backup Help.

Search for Help on

Opens the Search dialog box for Help. You can look up Help information by using keywords in the dialog box.

How to Use Help

Describes how to use Help.

About Backup

Displays version and copyright information about Backup.

Backup Information

After selecting one or more disk drives, files, or Microsoft Exchange components to back up, you can use the Backup command to back up your information to tape. The upper section of the Backup Information dialog box provides information on the tape that you loaded. The second section shows how many backup sets have been selected, each set being a collection of related files on one drive, or a Microsoft Exchange component. In the final section, you can choose whether to create a log that contains a summary of major operations or full details of all operations.

Choose one of the following buttons for information about the dialog box:

☐ Current Tape
☐ Creation Date
☐ Owner
☐ Tape Name
☐ Verify After Backup
☐ Backup Local Registry
☐ Restrict Access to Owner or Administrator
☐ Hardware Compression
☐ Operation
☐ Backup Set Information
☐ Log Information

See Also

Overview of Backing Up Microsoft Exchange Components

Backup Operation Types

Logging Options

Setting the Tape Options

Setting the Backup Set Options

Setting the Log Options

Restore Information

Windows NT provides a Restore command to give access to tapes, backup sets, or files for restoring as they are needed. The first section in the Restore Information dialog box provides information about the backup sets on the loaded tape and tells you how many other tapes are in that family set. In the bottom section, you can choose whether or not to create a log that contains a summary of major operations or full details of all operations.

Choose one of the following buttons for information about the dialog box:
▢ Backup Set Information
▢ Log Information

See Also

Logging Options

Setting the Restore Options

Setting the Log Options

Microsoft Exchange Restore Information

Windows NT provides a Restore command to give access to tapes, backup sets, or Microsoft Exchange components for restoring as they are needed. The first section in the Restore Information dialog box provides information about the backup sets on the loaded tape and tells you how many other tapes are in that family set. In the bottom section, you can choose whether or not to create a log that contains a summary of major operations or full details of all operations.

Note   When restoring Microsoft Exchange components, you must have Administrator rights on every server to which you are attempting to restore components.

Choose one of the following buttons for information about the dialog box:
☐ Backup Set Information
☐ Log Information

See Also

Logging Options

Setting the Microsoft Exchange Restore Options

Setting the Log Options

Microsoft Exchange

The Microsoft Exchange command lets you connect to a Microsoft Exchange server for the purpose of backing up Microsoft Exchange components, or starting services on the server. Once you connect to a Microsoft Exchange server, a Microsoft Exchange Organization icon is added to the main Backup window.

See Also

Connecting to a Microsoft Exchange Server

Opening the Microsoft Exchange Organization Window

Erase Tape

Removes data and sensitive information from a tape. You can do either a Quick Erase, during which the tape header is simply rewritten, or a Secure Erase, during which the entire tape is overwritten. The Erase Tape dialog box also shows the name of the tape and when the tape was created.

Choose one of the following buttons for information about the dialog box:
☐ Quick Erase
☐ Secure Erase

See Also

Erasing Tapes

Retension Tape

This dialog box enables you to run the tape its entire length and rewind, at a fast speed, to tension the tape evenly. This operation is not necessary on 4 mm and 8 mm tape drives, and so the option is unavailable when using them.

See Also

Retensioning Tapes

Format Tape

The Format Tape command formats an unformatted mini-cartridge tape. This type of tape is treated like a floppy disk and must be formatted before it can be used. If you do not have a mini-cartridge drive installed and activated, this command is unavailable.

See Also

Formatting Tapes

Status

The same dialog box appears for backup, restore, and cataloging operations. All give you the option of stopping the current operation.

Additional information provided for the backup and restore operations includes the selected tape, disk drive, directory path, and filename, or the selected Microsoft Exchange components.

The cataloging operation normally has only a Summary section. However, if there is no on-tape catalog, a larger box appears with more extensive status information, such as that provided for backup and restore.

Choose one of the following buttons for information about the dialog box:

▢ Status area
▢ Summary section

See Also

Checking the Backup Status

Checking the Restore Status

Loading Catalogs

Building Partial Tape and Backup Set Catalogs

Insert New Tape

This dialog box appears when you need to insert a new tape. This can happen when individual files or backup sets span two or more tapes.

Abort

If you need to stop a restore or backup job before it is completed, choose the Abort button. A message asks whether to continue or stop now.

Hardware Setup

The system automatically checks for the proper hardware when you start Windows NT and initializes it each time you start backup. However, if you have more than one tape backup device, you can use this dialog box to select a different device.

Open the Tape Drive box and select the new backup device, or type a device name in the box. Then choose OK.

Windows NT currently supports both high-capacity SCSI tape backup devices for 4 mm DAT, 8 mm, and .25-inch drives, and the less expensive mini-cartridge drives. You can have more than one tape drive connected to your system. However, only one tape drive can be selected at a time.

Inserting a higher density tape than the tape drive can use can cause the program to display "Tape Drive Error Detected" and not allow the tape to be ejected until you close Backup.

Running Backup without a tape in certain tape drives can cause the Application log in Event Viewer to be updated every 3 to 4 seconds with a "No Tape in Drive" message. This can eventually fill up the log and leave no room for other messages until you delete the log.

See Also

Loading a Tape Driver

Changing to a Different Tape Drive

Font

This dialog box lets you change your font selection, the same as you can do in File Manager. The Font command affects all directory windows.

Choose one of the following buttons for more information about the dialog box:
⬜ Font
⬜ Font Style
⬜ Size
⬜ Lowercase
⬜ Sample

See Also

Changing the Font Selection

Current Tape

This option shows the current tape's name, which you can modify with the Tape Name command, unless there is no tape loaded, it is blank, or it has an unrecognized format.

Creation Date

This option automatically shows the creation date of the original backup set or the date when it was last replaced.

Owner

This option automatically shows whoever put the first backup set on the tape.

Tape Name

Type a name for the tape that is up to 32 characters long.

Verify After Backup

This operation performs a verification comparison of the files that are written to tape with the files on the disks.

Choose this option to confirm that the tapes were backed up correctly.

Backup Local Registry

Choose this option to add a copy of your local Windows NT Registry files to the backup set. This option is available only if the drive containing the Registry is selected.

Restrict Access to Owner or Administrator

Only the tape owner or a member of the Administrators or Backup Operators group, can read, write, or erase the tape using the Windows NT Backup program. To restore it on another computer in the same domain, you must be logged on with the same user account name for that domain. Members of the Administrators or Backup Operators group can read, write, or erase a tape on any computer and in any domain.

⬜   Choose this option to secure the tape by limiting access to only the tape owner or a member of the Administrators or Backup Operators group.

Hardware Compression

Select Hardware Compression to request that the tape drive compress the data onto the tape media. However, do not select this option if you later want to move this tape to another tape drive that does not support hardware compression.

This option is available only if the tape drive supports selectable hardware compression.

Operation

⬜ Select Append to add the backup sets to the end of the last backup set on the active tape. Tape Name and Restrict Access to Owner or Administrator are unavailable with this operation.

⬜ Select Replace to overwrite all the information on the tape. However, if you do not confirm the choice, another message gives you the option of appending instead.

Backup Set Information

If you select more than one disk drive or a combination of disk drives and Microsoft Exchange components, Backup provides a scroll bar for moving between backup sets so you can enter separate descriptions, up to 32 characters, and select different backup types for each set selected. If you are backing up drives, the Drive Name box automatically shows the name of the drive, if any. If you are backing up Microsoft Exchange components, the Microsoft Exchange Component field shows the name of the components.

In the Description box, you can type a description for the backup set.
In the Backup Type box, open the list and then select the type you want to use.

Backup Operation Types

Normal (Full) Backup

All the selected files are backed up and marked as such on the disk.

For Microsoft Exchange, all Microsoft Exchange Server components are backed up. All transaction log files with data that has already been committed to the database are deleted. A normal backup is the same as a full backup.

Copy

All the selected files are backed up, but they are not marked as such on the disk.

For Microsoft Exchange, all Microsoft Exchange Server components are backed up. No transaction log files are deleted. Use this type if you want to copy the database files without interrupting a series of differential or incremental backups.

Incremental

Among the selected files, only those that have been modified are backed up and marked as such on the disk.

For Microsoft Exchange, only those Microsoft Exchange Server components that have been modified since the last normal or incremental backup are backed up. The transaction logs generated since the last backup, including those containing data not yet committed to the database, are backed up. All log files with data that has already been committed to the database are deleted. This type is not available if circular logging is enabled. In other words, incremental backup backs up the log files from the last backup (full or incremental) up to the current log file checkpoint and, if successful, removes the transaction log files from disk.

Differential

The selected files that have been modified are backed up, but they are not marked as such on the disk.

For Microsoft Exchange, the Microsoft Exchange Server components that have been modified since the last normal backup are backed up. The transaction log files generated since the last backup, including those containing data not yet committed to the database, are backed up. No transaction log files are deleted. This type is not available if circular logging is enabled. Differential backup is the same as incremental backup, except that the log files are not removed from the disk.

Daily

Among the selected files, only those that have been modified that same day are backed up, but they are not marked as such on the disk. (This can be useful if you want to take work home and need a quick way to select the files that you worked on that day.)

Note   The daily backup option is not available when backing up Microsoft Exchange components.

See Also

Transaction Log Files and Circular Logging

Log Information

        In the Log File box, specify a text file for logging completed tape operations or use the Browse button to help locate the correct filename for the log.

        Choose one of the Logging Options.

Logging Options

To return to the Backup Information dialog box, choose the Back button.

The following are descriptions of the three logging options.

Logging option	Description
Full Detail	Logs all operations information including the names of all the files and directories that are backed up.
Summary Only	Logs only the major operations such as loading a tape, starting the backup, and failing to open a file.
Don't Log	No information is logged.

Logging Options

To return to the Restore Information dialog box, choose the Back button.

The following are descriptions of the three logging options.

Logging option	Description
Full Detail	Logs all operations information including the names of all the files and directories that are restored.
Summary Only	Logs only the major operations such as loading a tape, starting the restore process, and failing to create a file.
Don't Log	No information is logged.

Microsoft Exchange Backup Set Information

If you are restoring Microsoft Exchange components, the Backup Set Information dialog box automatically provides you with information about the current tape's name, the name of the backup set, the creation date or the date when the backup set was last replaced, and the name of whoever put the first backup set on the tape. The following are various options you can choose in the dialog box.

▢ Select Erase All Existing Data to erase data in the target directories and restore only the data that was backed up to tape. Do not select this if you want Backup to attempt to restore any data that was created or changed since the last backup was made.

▢ In the Destination Server box, type the name of the server where you want to restore from the tape. This is available only for the information store.

▢ Select the Private check box to restore the private information store to the specified server.

▢ Select the Public check box to restore the public information store to the specified server.

▢ Select the Verify After Restore check box to verify the contents of the files restored to disk against the files on tape and then log any exceptions.

▢ Select the Start Service After Restore check box to restart the Directory or Information Store services on the server once the restore is complete.

Backup Set Information

If you are restoring drives and files, the Backup Set Information dialog box automatically provides you with information about the current tape's name, the name of the backup set, the creation date or the date when the backup set was last replaced, and the name of whoever put the first backup set on the tape. The following are various options you can choose in the dialog box.

Open the Restore to Drive list box and choose the drive to which you want the information restored. Or type a drive letter in the box.

To specify an alternate directory path, type a path in the Alternate Path box, or use the Browse button at the end of the Alternate Path box to help you find the correct path.

Select the Verify After Restore check box to verify the contents of the files restored onto disk against the files on tape and then log any exceptions.

Select the Restore File Permissions check box to restore the permissions information along with the file. Otherwise, the files inherit the permissions information of the directory into which they are restored.

Select the Restore Local Registry check box to restore the Registry files. You will need to restart the computer for the restored information to take effect.

Quick Erase

Choose this option to rewrite the tape header.

Secure Erase

Choose this option to overwrite the entire tape.

This method can take several hours to complete, depending on the drive technology and tape length.

Status area

The status area at the top of the box shows the following information:

- Directories, files, and bytes processed.
- Elapsed time in hours, minutes, and seconds.
- Number of corrupt or skipped files (that is, files that are unable to be copied because of both read errors and open/locked files).

Summary section

The summary section shows the tape label and an event log of major operations.

Font

Select a font from the list.

The Sample box displays the font. You can also use the dialog box to change the size and style of the font.

Font Style

Select a style for the font.

The Sample box displays the font style. You can also use this dialog box to change the type of font and its size.

Size

Select a point size from the list; the larger the point size, the larger the character displayed on your screen.

The Sample box displays the font size. You can also use this dialog box to change the font and the font style.

Lowercase

Select this option to display all filenames in lowercase characters.

Sample

This box shows what the currently selected font, style, and size would look like in your directory windows.

Split

Splits a directory window. If the window is already split, this command moves the split bar to the left or right.

Choose this command and a vertical bar appears in the window. Use the mouse or the arrow keys to move the bar, and then either click the bar or press ENTER. You can press ESC to cancel the command.

Transaction Log File

Files used for backup and recovery that store all write transactions performed on the Microsoft Exchange database. Transaction log files are stored in the MDBDATA and DSDATA subdirectories, and their names have the form EDBXXXXX.LOG, where X is a hexadecimal number from 0 to F. The default size of each complete log file is 5 MB.

Log File Checkpoint

Indicates the earliest point where a database operation is logged (whether committed or not), but its corresponding changes on database pages are not flushed to disk yet. Jet will replay the log to recreate the unflushed database pages during recovery.

Database Page

The Microsoft Exchange database is a sequence of pages, each of which is a 4K block of data.

Circular Logging

Automatically deletes transaction log files after the information they contain has been committed to the database, reducing disk storage space requirements. This feature is turned off by default when Microsoft Exchange Server is installed.

Backup Read Pointer

A logical pointer into the database file that indicates what part of the database file has been processed.