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About ODBC Manager

The Leading Edge is pleased to release version 1.1 of ODBC Manager - a comprehensive ODBC tool for both application developers and database users. ODBC Manager's strong UI, context sensitive help, high performance engine and feature-rich set of integrated ODBC tools make it a leader in the domain of ODBC tool suites.

Here's a small list enumerating some of the features provided by ODBC Manager:

Complete ODBC Level 2 support

Spy/Trace Functionality

- Per task or multiple tasks
- Time per ODBC API
- Per ODBC API or multiple ODBC API's
- ODBC API arguments
- Core, Level 1 and Level 2 ODBC API's
- Able to display up to 999,999,999 rows of trace information and output an unlimited rows of trace information to disk
- 16 bit Windows support only (32 bit support for NT and Windows95 will be available in Release 2, scheduled to be released in Q3, 1995 simultaneously with the release of Windows95)

Comprehensive Spy/Trace Analysis

Fast & Simple Ad-Hoc ODBC query functionality

- Save and open existing queries (*.sql files) capable of containing multiple SQL commands
- Able to display up to rows 999,999,999 by 999,999,999 columns of data for select queries

Complete Driver information for each ODBC data source

Full database table & column information

- All system tables, views, aliases and synonyms including privileges
- Detailed information about all columns in each table in the current data source
- Foreign & Primary keys (ODBC Level 2)
- References from a given column (ODBC Level 2)
- References to a given column (ODBC Level 2)

Full Clipboard support, file-save and file-print

No source code modification is required to use any of the functions provided by the ODBC Manager

Technical Support

Technical support is available to registered owners of ODBC Manager. Support is provided by e-mail, or CompuServe on a 24 hour turnaround basis.

Support Method	Contact
Internet	edge@wchat.on.ca
CompuServe	76311,1426

Ordering ODBC Manager

ODBC Manager costs $359 (Canadian funds) including all taxes. Shipping costs are extra and vary depending on the shipping method used. For further details on ordering ODBC Manager, including shipping options, open the order form from the ODBC Manager program group on you desktop or click on the icon below.

ODBC Manager
Order Form

Query Edit Pane

The Query Edit Pane is located at the bottom of the ODBC Manager window. It is used to display SQL commands which may then be executed using the Execute Query command. Commands in this pane can either be manually typed, selected from the Query Command History List, or loaded from an external file. Compound SQL statements can be entered here and executed with a single execute command.

Results Pane

The Results pane is located above the Query Edit pane in the ODBC Manager window. It is used to display results of SQL commands executed from the Query Edit pane. For example, the results of an attempt to connect to a data source may would indicate whether the connection succeeded of failed.

Select Query Pane

The Select Query pane is located below the Trace pane in the ODBC Manager window. It is used to display the results of a Select command. The status of the Fetch All Rows On Select dictates whether ODBC Manager will fetch all records which satisfy a Select command or only enough records to fill the pane.

Trace Pane

The Trace Pane is located at the top of the ODBC Manager window. It is used to display information generated by a trace. The criteria which trace information must satisfy are specified in the Trace Options dialog.

File menu commands

The File menu offers the following commands:

Command	Action
Save...	Saves ranges or entire sections of data.
Print...	Prints ranges or entire sections of data.
Open Query...	Opens an existing query.
Save Query...	Saves a query to a file.
Exit	Exits ODBC Manager.

Save... command (File menu)

Use this command to save ranges or entire sections of data. Choosing this command displays the Output Options dialog. After selecting the required output options, the name and location of the output file can be specified in the Save dialog.

Shortcuts

Toolbar: 

Keys: CTRL+S

Print... command (File menu)

Use this command to print ranges or entire sections of data. Choosing this command displays the Output Options dialog. After selecting the required output options, printing preferences can be specified in the Print dialog.

Shortcuts

Toolbar: 

Keys: CTRL+P

Open Query... command (File menu)

Use this command to open an existing query. Choosing this command displays the File Open dialog in which a previously saved file can be selected. An opened query can consist of a compound SQL statement.

Shortcuts

Toolbar: 
Keys: ALT+O

Save Query... command (File menu)

Use this command to save the information in the Query Edit pane.. Choosing this command displays the File Save As dialog in which the name and location of the output file can be specified. A saved query can consist of a compound SQL statement.

Shortcuts

Toolbar: 

Keys: ALT+S

Exit command (File menu)

Use this command to end your ODBC Manager session. You can also use the Close command on the application Control menu.

Shortcuts

Mouse: Double-click the application's Control menu button.

Keys: ALT+F4

Edit menu commands

The Edit menu offers the following commands:

Command	Action
Undo	Reverse previous editing operation.
Cut	Deletes data from a window and moves it to the clipboard.
Copy	Copies data from a window to the clipboard.
Paste	Pastes data from the clipboard into a window.
Font...	Allows you to replace the current font with any other installed font.
Find...	Allows you to find a string of text.
Find Next	Finds the next occurrence of a text string.

Undo command (Edit menu)

Use this command to reverse the last editing action, if possible.

Shortcuts

Toolbar: 

Keys: CTRL+Z or
ALT-BACKSPACE

Cut command (Edit menu)

Use this command to remove the currently selected data from a window and put it on the clipboard. This command is only available in the Results pane and the Query Edit pane. It is unavailable if there is no data currently selected.

Cutting data to the clipboard replaces the contents previously stored there.

Shortcuts

Toolbar: 

Keys: CTRL+X

Copy command (Edit menu)

Use this command to copy selected data onto the clipboard. This command is unavailable if there is no data currently selected.

Copying data to the clipboard replaces the contents previously stored there.

Shortcuts

Toolbar:
Keys: CTRL+C

Paste command (Edit menu)

Use this command to insert a copy of the clipboard contents at the insertion point. This command is unavailable if the clipboard is empty.

Shortcuts

Toolbar: 

Keys: CTRL+V

Font... command (Edit menu)

Use this command to replace the current font with any other installed font. Choosing this command displays the Font dialog.

Find... command (Edit menu)

Use this command to find instances of a text string in either the Trace pane and the Select Query pane. Choosing this command displays the Search dialog.

Shortcuts

Keys: ALT+F3

Find Next command (Edit menu)

Use this command to find the next instance of the command specified in the Search dialog. for the specified pane. This command is unavailable if a string has not been entered in the Search dialog.

Shortcuts

Keys: CTRL+F3

View menu commands

The View menu offers the following commands:

Command	Action
Toolbar	Shows or hides the toolbar.
Status Bar	Shows or hides the status bar.
Row Numbers	Shows or hides row numbers.
ODBC Administrator	Launches the Microsoft ODBC Administrator
Next Pane	Moves the focus to the next pane.
Previous Pane	Moves the focus to the previous pane.

Toolbar command (View menu)

Use this command to display and hide the Toolbar, which includes buttons for some of the most common commands in ODBC Manager, such as File Open. A check mark appears next to the menu item when the Toolbar is displayed.

See Toolbar for help on using the toolbar.

Toolbar

The toolbar is displayed across the top of the application window, below the menu bar. The toolbar provides quick mouse access to many tools used in ODBC Manager,

To hide or display the Toolbar, choose Toolbar from the View menu (ALT, V, T).

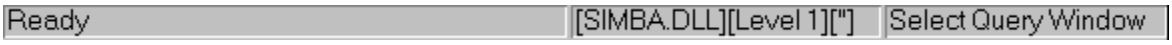
Click	To
	Print trace output
	Save trace or query output
	Start a trace
	Pause a trace
	Stop a trace
	Display and change trace options
	Analyze trace data
	Clear the trace output pane
	Display the time taken by each API
	Display the arguments passed by each API
	Display the codes returned by each API
	Connect to a data source
	Disconnect from the current data source
	Execute the SQL query in the Query Edit pane
	Commit the current transaction
	Rollback the last transaction
	List tables for the current data source
	List the queries previously carried out
	Display driver information about the current ODBC driver

Status Bar command (View menu)

Use this command to display and hide the Status Bar, which describes the action to be executed by the selected menu item or depressed toolbar button, and keyboard latch state. A check mark appears next to the menu item when the Status Bar is displayed.

See Status Bar for help on using the status bar.

Status Bar



The status bar is displayed at the bottom of the ODBC Manager window. To display or hide the status bar, use the Status Bar command in the View menu (ALT, V, S).

The left area of the status bar describes actions of menu items as you use the arrow keys to navigate through menus. This area similarly shows messages that describe the actions of toolbar buttons as you depress them, before releasing them. If after viewing the description of the toolbar button command you wish not to execute the command, then release the mouse button while the pointer is off the toolbar button.

The middle area of the status bar gives information about the current ODBC driver including the name of the driver being used to communicate with the current data source, its ODBC conformance level, and whether it supports single or double quotes in queries.

The right area of the status bar identifies which of ODBC Managers four panes is currently focused.

Row Numbers command (View menu)

Use this command to display and hide row numbers. Row numbers can be displayed in both the Select Query pane and the Trace pane. Displaying the row numbers in the Trace pane shows the total number of trace statements executed. Row numbers in the Select Query pane reveal the total number of rows which satisfy the last ODBC statement executed.

ODBC Administrator command (View menu)

Use this command to launch the Microsoft ODBC Administrator. Initially a list of data sources and their corresponding drivers is displayed allowing you to configure, add and delete data sources. The ODBC Administrator executable (odbcadm.exe) must be on your path to avail of this function.

Next Pane command (View menu)

Use this command to move the focus to the next pane. Repeating this command will move the focus cyclically from the Trace pane to the Select Query pane to the Results pane to the Query Edit pane. and back to the Trace pane.

Shortcuts

Keys: F6

Previous Pane command (View menu)

Use this command to move the focus to the previous pane. Repeating this command will move the focus cyclically from the Query Edit pane. to the Results pane to the Select Query pane to the Trace pane and back to the Query Edit pane.

Shortcuts

Keys: SHIFT+F6

Trace menu commands

The Trace menu offers the following commands, which enable you to control the flow of trace information and analyze its content:

Command	Action
Start	Starts the current trace.
Pause	Pauses the current trace.
Stop	Stops the current trace.
Options...	Allows you to specify the trace options.
Trace Analysis...	Allows you to analyze the results of a trace.
Clear Trace Pane	Clears the Trace pane.
Time Each API	Displays the time spent by each API.
Return Codes from Each API	Displays the codes returned by each API.
Arguments for Each API	Displays the arguments passed by each API.

Start command (Trace menu)

Use this command to start the current trace. This command is unavailable if no task has been selected in the Trace Options dialog.

Shortcuts

Toolbar: ▪
Keys: F2

Stop command (Trace menu)

Use this command to stop the current trace. This command is unavailable if there is no trace currently running.

Shortcuts

Toolbar: ▪
Keys: F3

Pause command (Trace menu)

Use this command to pause the current trace. This command is unavailable if there is no trace currently running.

Shortcuts

Toolbar: ▪
Keys: F4

Options... command (Trace menu)

Use this command to display the Trace Options dialog. The Trace Options dialog allows you to specify the SQL commands which the trace will trap, the format in which the trace will display, the tasks for which the trace will apply and, if required, files to which the trace will be logged.

Shortcuts

Toolbar:
Keys: CTRL+O

Trace Analysis... command (Trace menu)

Use this command to display the Trace Analysis dialog. The Trace Analysis dialog allows you to analyze the time taken by each task for each API and highlight specific types of information.

Shortcuts

Toolbar: ▪
Keys: CTRL+A

Clear Trace Pane command (Trace menu)

Use this command to clear the Trace pane.

Shortcuts

Toolbar: ▪
Keys: CTRL+B

Time Each API command (Trace menu)

Use this command to display or hide the column which shows the time taken by each ODBC statement executed. The information is displayed in the Trace pane..

Shortcuts

Toolbar: ▪

Return Codes from Each API command (Trace menu)

Use this command to display or hide the column which shows the codes returned by each ODBC statement executed. The information is displayed in the Trace pane..

Shortcuts

Toolbar: ▪

Arguments for Each API command (Trace menu)

Use this command to display or hide the column which shows the arguments passed by each ODBC statement executed. The information is displayed in the Trace pane..

Shortcuts

Toolbar: ▪

Query menu commands

The Query menu offers the following commands:

Command	Action
Connect...	Connects to a data source.
Disconnect	Disconnects the current data source.
Execute Query	Executes a SQL query command.
List Tables...	Lists the tables in the current data source.
Command History...	Lists the SQL query commands previously executed.
Display Driver Info...	Displays information about the current ODBC driver.
Driver ODBC Data Types	Displays information about the ODBC data types for the current driver.
Fetch All Rows On Select	Fetches either all rows or only enough rows to fill the Select Query pane on execution of a select query.
Next SQL Command	Executes the next command in the Query Command History List.
Previous SQL Command	Executes the previous command in the Query Command History List.
Autocommit	Enables the autocommit option which automatically commits transactions after execution.
Commit Transactions	Commits the current transaction.
Rollback Transaction	Rolls back the last transaction.

Connect... command (Query menu)

Use this command to display the ODBC Data Source Connect dialog. The ODBC Data Source Connect dialog allows you to connect to one of the data sources on your system. This command is unavailable if there currently is a connection to a data source. New ODBC data sources can be defined through the ODBC Administrator.

After a connection has been attempted, the Results pane shows the results of an attempt to connect to a data source and can be used to identify the cause of a failed connection.

Shortcuts

Toolbar: ▪
Keys: CTRL+F2

Disconnect command (Query menu)

Use this command to disconnect the currently connected data source. This command is unavailable if there currently is no connection to a data source.

Shortcuts

Toolbar: ▪
Keys: CTRL+F4

Execute Query command (Query menu)

Use this command to execute the SQL query in the Query Edit pane. This command is unavailable if there is no text in the Query Edit Pane. Compound SQL statements can be executed with a single execute command.

Shortcuts

Toolbar: 
Keys: F9

List Tables... command (Query menu)

Use this command to display the Data Source Tables dialog. The Data Source Tables dialog allows you to view information about the tables in the currently connected data source. The privileges for each type of ODBC operation on a particular table for each type of user are also displayed in this dialog. This information is only accessible if the current data source is ODBC Level 2 compliant.

Shortcuts

Toolbar: 

Keys: CTRL+L

Command History... command (Query menu)

Use this command to display the Query Command History List. The Query Command History List dialog lists all of the ODBC (SQL) statements that have been executed in the current session. If the current session has just started, the last 10 statements (if applicable) from the previous session are listed.

Shortcuts

Toolbar: 

Keys: CTRL+R

Display Driver Info... command (Query menu)

Use this command to display the Current ODBC Driver Information dialog. The Current ODBC Driver Information dialog allows you to view details about the currently installed ODBC driver.

The information displayed is all information available through SQLGetInfo. ODBC Manager supports the complete set of #defines as defined in ODBC 2.1

Shortcuts

Toolbar: 

Keys: CTRL+I

Driver ODBC Data Types... command (Query menu)

Use this command to display the ODBC Data Types dialog. The ODBC Data Types dialog shows details about the ODBC data types for the current ODBC driver.

Shortcuts

Keys: CTRL+D

Fetch All Rows on Select command (Query menu)

Use this command to immediately fetch all the data which satisfies a Select command when it is executed. If this option is not selected, ODBC Manager will only fetch enough records to fill the Select Query pane As the Select Query pane is scrolled, additional records will be fetched to fill the pane

Selecting this option will potentially make the initial fetch quite slow but will result in faster scrolling of the resulting data.

Next SQL Command command (Query menu)

Use this command to execute the next command in the Query Command History List. This command is unavailable if the current command is the last command in the list.

Shortcuts

Keys: CTRL+N

Previous SQL Command command (Query menu)

Use this command to execute the previous command in the Query Command History List. This command is unavailable if no command has been previously executed.

Shortcuts

Keys: CTRL+P

Autocommit command (Query menu)

Use this command to automatically commit transactions after SQL commands are executed. If Autocommit is not enabled, the Commit Transaction command must be used to commit transactions. This command is useful for transaction control.

Commit Transaction command (Query menu)

Use this command to commit the current transaction. This command is unavailable if Autocommitment has been enabled.

Shortcuts

Toolbar: ▪

Rollback Transaction command (Query menu)

Use this command to rollback the last transaction. This command is unavailable if Autocommitment has been enabled.

Shortcuts

Toolbar: ▪
Keys: CTRL+V

Help menu commands

The Help menu offers the following commands, which provide you assistance with this product and further information:

Command	Action
Contents	Use this command to display the opening screen of Help.
Ordering Information...	Use this command to find out how to order ODBC Manager.
Using Help...	Displays instructions for using Help.
Obtaining Technical Support...	Use this command to find out how to contact The Leading Edge for technical support.
About ODBC Manager...	Use this command to display the ODBC Manager copyright and version information.

Contents command... (Help menu)

Use this command to display the opening screen of Help. From the opening screen, you can jump to step-by-step instructions for using ODBC Manager and various types of reference information.

Once you open Help, you can click the Contents button whenever you want to return to the opening screen.

Ordering Information... command (Help menu)

Use this command to find out how to order ODBC Manager.

Using Help... command (Help menu)

Use this command for instructions about using Help.

Obtaining Technical Support... command (Help menu)

Use this command to find out how to contact The Leading Edge for technical support.

About ODBC Manager... command (Help menu)

Use this command to display the ODBC Manager copyright and version information.

Title Bar

The title bar is located along the top of a window. It contains the name of the application and document.

To move the window, drag the title bar. Note: You can also move dialog boxes by dragging their title bars.

A title bar may contain the following elements:

- Application Control-menu button
- Document Control-menu button
- Maximize button
- Minimize button
- Name of the application
- Name of the document
- Restore button

Scroll bars

Displayed at the right and bottom edges of the document window. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the document. You can use the mouse to scroll to other parts of the document.

Size command (System menu)

Use this command to display a four-headed arrow so you can size the active window with the arrow keys.

After the pointer changes to the four-headed arrow:

1. Press one of the DIRECTION keys (left, right, up, or down arrow key) to move the pointer to the border you want to move.
2. Press a DIRECTION key to move the border.
3. Press ENTER when the window is the size you want.

Note: This command is unavailable if you maximize the window.

Shortcut

Mouse: Drag the size bars at the corners or edges of the window.

Move command (Control menu)

Use this command to display a four-headed arrow so you can move the active window or dialog box with the arrow keys.

Note: This command is unavailable if you maximize the window.

Shortcut

Keys: CTRL+F7

Minimize command (application Control menu)

Use this command to reduce the ODBC Manager window to an icon.

Shortcut

Mouse: Click the minimize icon  on the title bar.
Keys: ALT+F9

Maximize command (System menu)

Use this command to enlarge the active window to fill the available space.

Shortcut

Mouse: Click the maximize icon  on the title bar; or double-click the title bar.
Keys: CTRL+F10 enlarges a document window.

Next Window command (document Control menu)

Use this command to switch to the next open document window. ODBC Manager determines which window is next according to the order in which you opened the windows.

Shortcut

Keys: CTRL+F6

Previous Window command (document Control menu)

Use this command to switch to the previous open document window. ODBC Manager determines which window is previous according to the order in which you opened the windows.

Shortcut

Keys: SHIFT+CTRL+F6

Close command (Control menus)

Use this command to close the active window or dialog box.

- Double-clicking a Control-menu box is the same as choosing the Close command.

Note: If you have multiple windows open for a single document, the Close command on the document Control menu closes only one window at a time. You can close all windows at once with the Close command on the File menu.

Shortcuts

Keys: CTRL+F4 closes a document window

ALT+F4 closes the ODBC Manager window or dialog box

Restore command (Control menu)

Use this command to return the active window to its size and position before you chose the Maximize or Minimize command.

Switch to command (application Control menu)

Use this command to display a list of all open applications. Use this "Task List" to switch to or close an application on the list.

Shortcut

Keys: CTRL+ESC

Dialog Box Options

When you choose the Switch To command, you will be presented with a dialog box with the following options:

Task List

Select the application you want to switch to or close.

Switch To

Makes the selected application active.

End Task

Closes the selected application.

Cancel

Closes the Task List box.

Cascade

Arranges open applications so they overlap and you can see each title bar. This option does not affect applications reduced to icons.

Tile

Arranges open applications into windows that do not overlap. This option does not affect applications reduced to icons.

Arrange Icons

Arranges the icons of all minimized applications across the bottom of the screen.

Print dialog

The following options allow you to specify how the document should be printed:

Printer

This is the active printer and printer connection. Choose the Setup option to change the printer and printer connection.

Setup

Displays the Print Setup dialog box, so you can select a printer and printer connection.

Print Range

Specify the pages you want to print:

All	Prints the entire document.
Selection	Prints the currently selected text.
Pages	Prints the range of pages you specify in the From and To boxes.

Copies

Specify the number of copies you want to print for the above page range.

Collate Copies

Prints copies in page number order, instead of separated multiple copies of each page.

Print Quality

Select the quality of the printing. Generally, lower quality printing takes less time to produce.

Print Progress Dialog

The Printing dialog box is shown during the time that ODBC Manager is sending output to the printer. The page number indicates the progress of the printing.

To abort printing, choose Cancel.

Print Preview command (File menu)

Use this command to display the active document as it would appear when printed. When you choose this command, the main window will be replaced with a print preview window in which one or two pages will be displayed in their printed format. The print preview toolbar offers you options to view either one or two pages at a time; move back and forth through the document; zoom in and out of pages; and initiate a print job.

Print Preview toolbar

The print preview toolbar offers you the following options:

Print

Bring up the print dialog box, to start a print job.

Next Page

Preview the next printed page.

Prev Page

Preview the previous printed page.

One Page / Two Page

Preview one or two printed pages at a time.

Zoom In

Take a closer look at the printed page.

Zoom Out

Take a larger look at the printed page.

Close

Return from print preview to the editing window.

Print Setup command (File menu)

Use this command to select a printer and a printer connection. This command presents a Print Setup dialog box, where you specify the printer and its connection.

Print Setup dialog

The following options allow you to select the destination printer and its connection.

Printer

Select the printer you want to use. Choose the Default Printer; or choose the Specific Printer option and select one of the current installed printers shown in the box. You install printers and configure ports using the Windows Control Panel.

Orientation

Choose Portrait or Landscape.

Paper Size

Select the size of paper that the document is to be printed on.

Paper Source

Some printers offer multiple trays for different paper sources. Specify the tray here.

Options

Displays a dialog box where you can make additional choices about printing, specific to the type of printer you have selected.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

Columns In Table dialog

This dialog, displayed by clicking the Columns... button in the Data Source Tables dialog shows the attributes of the columns in the selected data source table.

Column Name

Lists the columns in the selected data source table. Choosing different columns affects the data displayed in the other fields of this dialog.

Column No.

Identifies the position that the selected column occupies within the selected table.

Table Owner

Identifies the owner of the selected table; NULL if not applicable to the data source.

Data Type

Displays the ODBC SQL data type of data fields in the selected column.

Type Name

Data source-dependent data type name; for example, *VARCHAR*, *MONEY*, or *CHAR*.

Precision

Identifies the precision of the data type used in the selected column.

Length

Identifies the transfer size data in the selected column. If the data is numeric, the length may be different than the size of the data stored on the data source. For binary or character data, the length is the same as the precision.

Scale

Displays the scale of data fields in the selected column.

Radix

Displays the radix of data fields in the selected column.

Nullable

Identifies whether or not a column is nullable.

Remarks

Displays a description of the selected column.

ODBC Data Source Connect dialog

The ODBC Data Source Connect dialog, displayed by selecting the Connect... command from the Query menu, allows you to connect to any databases currently on your system. If the data source requires you to specify a name and password, entering incorrect information will cause the connection to fail.

Data Source

Select one of the data sources defined on your system.

Name

Enter your user name. A user name can contain up to eight characters.

Password

Enter your password. A password can contain up to eight characters and will be displayed in hidden format (*).

Data Source Tables dialog

This dialog, displayed by selecting the List Tables... command from the Query menu, allows you to view information about the tables in the currently connected data source.

Table Name

Displays a list of all of the tables stored in the current data source. Select one of the data sources defined on your system. The tables listed can be restricted to one or any combination of the following:

- Table
- Views
- System Tables
- Alias (correlation names)
- Synonyms

Table Privileges

Summarizes the privileges associated with each table. Privileges are categorized by user (e.g., PUBLIC, SYSTEM etc.) and operation (e.g., SELECT, UPDATE, DELETE, INSERT, or REFERENCES)

Columns...

Displays the Columns in Table dialog which allows you view information about the columns in the selected table.

Primary Keys...

Displays the Primary Keys dialog which summarizes the columns comprising the primary keys associated with the selected table. This information is only accessible if the current data source is ODBC Level 2 compliant.

Referenced By...

Displays the Foreign Keys dialog which, if foreign keys exist, shows a detailed summary of column names comprising the foreign keys that refer to the primary key of the selected table. The properties of these columns are also displayed. This information is only accessible if the current data source is ODBC Level 2 compliant.

Refer to your database manual to see how constraints on foreign keys can by applied to database tables.

References...

Displays the Foreign Keys dialog which shows a detailed summary of all of the primary keys that are related to foreign keys in the selected table. These are the table and column names that comprise the primary key associated with each foreign key in the foreign keys table. This information is only accessible if the current data source is ODBC Level 2 compliant.

Primary Key dialog

This dialog, displayed by choosing a table and selecting the Primary Keys... button in the Data Source Tables dialog, displays the column names that comprise the primary key for the selected table. This information is only accessible if the current data source is ODBC Level 2 compliant.

Column Name

Lists the columns in the primary key for the selected data source table. Choosing different columns affects the data displayed in the other fields of this dialog.

Name

Primary key table identifier.

Owner

Primary key table owner identifier; NULL if not applicable to the data source.

Qualifier

Primary key table qualifier identifier; NULL if not applicable to the data source.

Key Seq.

Column sequence number in key. The first number in the sequence is 1.

Foreign Keys To Table dialog

This dialog, displayed by choosing a table and selecting one of the following buttons:

- Referenced By... button in the Data Source Tables dialog. A detailed summary of column names and their properties comprising the foreign keys that refer to the primary key of the selected table, if foreign keys exist.
- References... button in the Data Source Tables dialog. A detailed summary of column names which makes up the foreign keys in the selected table. These columns refer to the primary keys in other tables.

Primary Key Table/Foreign Key Table

When activated by the Referenced By... button, the *Primary Key Table* is the table selected in the Data Source Tables dialog. The list on the left summarizes tables which have foreign keys to the primary key table. In this context, the *Foreign Key Table* provides details about the columns in the foreign key table which references the *Primary Key Table*.

When activated by the References... button, the list on the left summarizes the tables that are referenced by the selected table. The *Primary Key Table* details the columns in those tables that represent the primary keys. The *Foreign Key Table* provides details about the columns in the selected table which makes up the foreign keys.

Key Sequence

Defines the columns sequence number in key (starting with 1).

Update Rule

Actions which can be applied to the foreign key when the SQL operation is UPDATE. Possible values are:

- SQL_CASCADE=0
- SQL_RESTRICT=1
- SQL_SET_NULL=2
- NULL if not applicable to the data source

Delete Rule

Actions which can be applied to the foreign key when the SQL operation is DELETE. Possible values are:

- SQL_CASCADE=0
- SQL_RESTRICT=1
- SQL_SET_NULL=2
- NULL if not applicable to the data source

Describe Column dialog

This dialog, displayed by right mouse clicking on a column heading in the Select Query pane, allows you to view information about the selected column.

Column Number

Identifies the number of the selected column.

Column Name

Identifies the name of the selected column.

ODBC SQL Data Type

Displays the ODBC SQL data type of data fields in the selected column.

Precision

Identifies the precision of the data type used in the selected column.

Scale

Displays the scale of data fields in the selected column.

Nullable

Identifies whether or not a column is nullable.

Query Command History dialog

This dialog, displayed by selecting the Command History... command from the Query menu, allows you to view and select all of the ODBC (SQL) statements that have been executed in the current session. When the current ODBC Manager session is ended, the last 10 statements are saved and restored the next time ODBC Manager is executed

Insert String

Enabled if an SQL command is selected, this button inserts the selected SQL command into the Query Edit pane and dismisses the dialog. Double-clicking on a statement has the same effect. Any text which is selected in the Query Edit Pane will be replaced by the statement. If no text is selected, the statement will be inserted at the current cursor position. The SQL command can then be executed by selecting the Execute Query command from the Query menu.

ODBC Data Types dialog

This dialog, displayed by clicking the Driver ODBC Data Types... command shows details about the ODBC data types supported by the current data source.

ODBC Data Type

Displays the ODBC SQL data type which are valid for the current ODBC driver.

API Number

Identifies the ODBC constant associated with the selected Data Type (These values are defined in the sql.h or sqlext.h that comes with the ODBCSDK).

Data Type

Identifies the ODBC SQL data type associated with the ODBC Data Type.

Precision

Identifies the precision of the selected ODBC SQL data type. This is the maximum precision of the data type on the data source. NULL is displayed for data types where precision is not applicable.

Literal Prefix

Identifies the character or characters used to prefix a literal. For example, a single quote () is used for character data types and 0x is used for binary data types. NULL is displayed for data types where a literal prefix is not applicable.

Literal Suffix

Identifies the character or characters used to terminate a literal. For example, a single quote () is used for character data types. NULL is displayed for data types where a literal suffix is not applicable.

Create Param

CREATE_PARAMS for DECIMAL would be "precision,scale", CREATE_PARAMS for VARCHAR would equal "max length"; NULL is displayed if there are no parameters for the data type definition (for example, INTEGER).

The driver supplies the CREATE_PARAMS text in the language of the country where it is used.

Nullable

Specifies whether or not the selected ODBC SQL accepts a NULL value.

Case Sensitive

Specifies whether or not the selected ODBC SQL data type is case sensitive with respect to collation. Displays TRUE if the data type can be treated as case sensitive.

Searchable

Specifies how the selected ODBC SQL data type is used in a where clause. The following summarizes the possible values:

- SQL_UNSEARCHABLE = 0: The data type cannot be used in a WHERE clause.
- SQL_LIKE_ONLY = 1: The data type can be used in a WHERE clause only with the LIKE predicate.
- SQL_ALL_EXCEPT_LIKE = 2: The data type can be used in a WHERE clause with all comparison operators except LIKE.
- SQL_SEARCHABLE = 3: The data type can be used in a WHERE clause with any comparison operator.

Money

Specifies whether or not the selected ODBC SQL is a money data type. Displays 1=TRUE if it is a money data type.

Unsigned Attrib.

Specifies whether or not the selected ODBC SQL is UNSIGNED.

Auto Increment

Specifies whether or not the selected ODBC SQL is autoincrementing. Displays 1=TRUE if the data type is autoincrementing, NULL if the attribute is not applicable.

Local Type Name

This is the localized version of the data source-dependent name of the data type. NULL is returned if a localized name is not supported by the data source.

Minimum Scale

Identifies the minimum scale associated with the selected ODBC SQL data type. This information is only applicable to ODBC 2.0 drivers.

Minimum Scale

Identifies the minimum scale associated with the selected ODBC SQL data type. This information is only applicable to ODBC 2.0 drivers.

Current ODBC Driver Information dialog

This dialog, displayed by clicking the Display Driver Info... command shows details about the currently installed ODBC driver.

Information Type

Lists the categories of information associated with the current ODBC driver.

Get Info No.

The number of the selected Information Type. Numbers from 1 to 999 are reserved by ODBC. Numbers between 1000 and 64000 can be reserved for use by specific drivers.

Return Code

Displays a return code resulting from the request for information from the driver. The possible values are:

SQL_SUCCESS, SQL_SUCCESS_WITH_INFO, SQL_ERROR, or SQL_INVALID_HANDLE.

Results

The driver information for the selected information type.

Interpretation

Data associated with the result. For example, the information type SQL_ODBC_API_CONFORMANCE for a driver might return a SQL_SUCCESS code with a result of 0x00000001. This result would be interpreted as SQL_OAC_LEVEL1, that is the driver is ODBC Level 1 compliant. For specific details on each information type, refer to your Microsoft ODBC 2.0 Programmers Reference and SDK Guide.

Trace Options dialog

This dialog, displayed by selecting the Options... command from the Trace menu, allows you to specify the shows details about the currently installed ODBC driver.

Trace API Filter

Allows you to select the SQL function call or calls which will be traced by ODBC Manager. This includes whether you want the filter set to the Core, level 1, or level 2 ODBC commands.

Trace Options

Specify the trace display options. Minimizing ODBC Manager or tracing to the top of the Trace pane will allow faster execution of SQL commands since less time is used to update the information displayed in the trace pane.

Trace Output To

Select where you want the trace output to begin scrolling from. This can be either the Top, Center, or Bottom of the Trace pane. To allow faster execution, the center of the Trace pane works most efficiently.

Trace Log Against Task

Select the currently executing tasks against which to trace. Using the **Show Tasks as EXE Names Only** check box, the list of tasks can be displayed as full program names or simply as the name of the executing .EXE file. You can also check the **Trace Against All Tasks** check box which enables tracing against tasks that are currently running, and any tasks that are started while the trace is running.

Trace File Options

Check the **Log To File** check box to log trace information to a file and, if so, specify the filename. Note that Trace Analysis cannot be performed if the trace output is logged to a file. Check the **Log Against EXE** check box to trace against a specific executable. If the executable is not already running, ODBC Manager will start it for you.

Output Options dialog

This dialog, displayed by clicking the Save... command or the Print... command on the File menu allows you to specify which information you want to print or save.

Output Contents of Trace Pane

The contents of the Trace pane will be saved or printed. If there is no information in this pane, this option cannot be selected.

Output Contents of Query Pane

The contents of the Select Query pane will be saved or printed. If there is no information in this pane, this option cannot be selected.

Search dialog

This dialog, displayed by selecting the Find... command on the Edit menu allows you to specify the search text and criteria for the information you want find.

Text

The text string which you want to find.

Match Case

Finds only those occurrences with the exact combination of uppercase and lowercase letters specified in the Text box.

Search Trace Pane

Specifies the Trace pane as the pane which will be searched for occurrences of the text specified in the Text box.

Search Query Pane

Specifies the Select Query pane as the pane which will be searched for occurrences of the text specified in the Text box.

Trace Analysis Options dialog

The Trace Analysis dialog, displayed by selecting the Trace Analysis... command from the Trace menu, allows you to analyze the time taken by each task for each API and highlight specific types of information. This dialog can only be displayed if tracing has been stopped.

The total time taken by each API, the number of times each API is called and the average time for each API is summarized and sorted as desired. Information for each task being traced is displayed separately in the Trace pane.

Task

Select one of the data sources defined on your system.

Sort By

Specifies the criterion by which the tasks are displayed. For the selected criterion, the list can be displayed in either ascending or descending order.

- *ODBC API* - The list is grouped by the APIs called.
- *Call Count* - Enter your user name. A user name can contain up to eight characters.
- *Time* - The list is sorted according to the duration of the tasks.

Print...

Displays the Print dialog which allows you to print the analysis list.

Highlight ODBC Specifics

Allows you to highlight specific traced API calls, calls which take a certain amount of time (e.g., <10 ms, >1000 ms etc.) and calls which have certain **return codes**. Highlighting colors can be defined by the Color dialog. which is displayed by clicking on the **Set Color...** button. Once highlighting colors are defined, they are applied to the data in the Trace pane.

File Open dialog box

The following options allow you to specify which file to open:

File Name

Type or select the filename you want to open. This box lists files with the extension you select in the List Files of Type box.

List Files of Type

Select the type of file you want to open:

Drives

Select the drive in which ODBC Manager stores the file that you want to open.

Directories

Select the directory in which ODBC Manager stores the file that you want to open.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

File Save As dialog

The following options allow you to specify the name and location of the file you're about to save:

File Name

Type a new filename to save a document with a different name. A filename can contain up to eight characters and an extension of up to three characters. ODBC Manager adds the extension you specify in the Save File As Type.

Drives

Select the drive in which you want to store the document.

Directories

Select the directory in which you want to store the document.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

Font dialog

This dialog, displayed by selecting the Font... command from the Edit menu allows you to replace the current font with any other installed font.

Font

Type or select a font name. The lists contains the fonts available with the current printer driver and additional fonts installed in your system.

Font Style

Select a style. The styles available depend on the font selected. To use the default type style for a given font, select Regular.

Size

Type or select a size. The sizes available depend on the printer and the selected font. If the size you type is not available on the current printer, the closest available size will be chosen.

Sample

Shows a sample of the font you specify before you apply it.

Color dialog

This dialog, displayed by clicking the Set Color... button in the Trace Analysis Options dialog allows you to select specific highlight colors for trace conditions which you have identified.

Basic Colors

A palette of preset colors for your screen. Choose one as your highlight color.

Custom Colors

A palette of available custom designed colors. Choose one as your highlight color.

ALTER TABLE

Syntax

```
ALTER  TABLE  [creator.]table-name
                | ADD  column-definition  [column-constraint ...] |
                | ADD  table-constraint  |
                | MODIFY  column-definition  |
                | MODIFY  column-name  DEFAULT  default-value  |
                | MODIFY  column-name  [ NOT ] NULL  |
      . . .     | DELETE  column-name  | , . . .
                | DELETE  CHECK  |
                | DELETE  UNIQUE  ( column-name, ... )  |
                | DELETE  PRIMARY KEY  |
                | DELETE  FOREIGN KEY role-name  |
                | RENAME  new-table-name  |
                | RENAME  column-name  TO  new-column-name  |

column-definition:
        column-name data-type [ NOT NULL ] [ DEFAULT default-value ]

column-constraint:
                | UNIQUE  |
                | PRIMARY  KEY  |
                | REFERENCES table-name [( column-name )]  |
                | CHECK  ( condition )  |

default-value:
                | string  |
                | number  |
                | NULL  |
                | CURRENT DATE  |
                | CURRENT TIME  |
                | CURRENT TIMESTAMP  |
                | USER |

table-constraint:

                | UNIQUE  ( column-name, ... ) |
                | PRIMARY  KEY  ( column-name, ... ) |
                | CHECK  ( condition )  |
                | foreign-key-constraint  |
```

foreign-key-constraint:

[NOT NULL] FOREIGN KEY [role-name] [(column-name, ...)]

. . . REFERENCES table-name [(column-name, ...)]

. . . [CHECK ON COMMIT]

Description

Modifies a tables column definitions and table constraints.

Usage

All.

Authorization

Must be the creator of the table or have DBA authority.

BEGIN SUBTRANSACTION

Syntax

BEGIN SUBTRANSACTION [subtransaction-name]

Description

Begins a subtransaction within the current transaction.

Usage

All.

Authorization

None.

COMMIT

Syntax

COMMIT WORK

Description

Ends a transaction and makes permanent any changes to a database.

Usage

All.

Authorization

Must be connected to the database.

CREATE DBSPACE

Syntax

CREATE DBSPACE [creator.]dbspace-name AS filename

Description

Create a new database file. The file can be located or another machine thus allowing the database to be spread between more than one machine.

Usage

All.

Authorization

DBA.

CREATE INDEX

Syntax

CREATE [UNIQUE] INDEX [creator.]index-name
. . . ON [creator.]table-name
. . . (column-name [ASC | DESC], ...)

Description

Creates an index on the specified table in order to optimize query speed.

Usage

All.

Authorization

DBA or table creator.

CREATE TABLE

Syntax

```
CREATE   TABLE   [creator.]table-name

. . .   (         | column-definition [ column-constraint ... ]          |, ... )
                  | table-constraint          |

        . . .     [IN   [creator.]dbspace-name]

column-definition:
                  column-name data-type [ NOT NULL ] [ DEFAULT default-value ]

column-constraint:
                  | UNIQUE         |
                  | PRIMARY   KEY         |
                  | REFERENCES table-name [( column-name )]   |
                  | CHECK   ( condition )  |

default-value:
                  | string  |
                  | number          |
                  | NULL  |
                  | CURRENT DATE        |
                  | CURRENT TIME        |
                  | CURRENT TIMESTAMP         |
                  | USER |

table-constraint:
                  | UNIQUE   ( column-name, ... ) |
                  | PRIMARY   KEY   ( column-name, ... )  |
                  | CHECK   ( condition )  |
                  | foreign-key-constraint  |

foreign-key-constraint:
                  [NOT NULL]   FOREIGN KEY   [role-name]   [(column-name, ... )]

                  . . . REFERENCES table-name [(column-name, ... )]

                  . . . [ CHECK ON COMMIT ]
```

Description

Creates a new table in the database.

Usage

All.

Authorization

To create your own new table you must have RESOURCE authority. To create tables for other users, you must have DBA authority.

CREATE VARIABLE

Syntax

CREATE VARIABLE identifier data-type

Description

Creates a SQL variable of a specified name and data type. The variable initially has a NULL value and may be changed using SET VARIABLE.

Usage

All.

Authorization

None.

CREATE VIEW

Syntax

CREATE VIEW [creator.]view-name [(column-name, ...)]

. . . AS select-without-order-by

Description

Creates a new view of the database providing a different way of looking at the data.

Usage

All.

Authorization

To create your own new view you must have RESOURCE authority and SELECT permission on the relevant tables. To create views for other users, you must have DBA authority.

DELETE

Syntax

DELETE FROM [creator.]table-name [WHERE search-condition]

Description

Deletes rows satisfying the specified criteria from the database.

Usage

All.

Authorization

Must have DELETE permission on the table which contains the rows.

DESCRIBE

Syntax

DESCRIBE

```
                | SELECT LIST FOR     |
. . . [         | OUTPUT        |     ]
                | BIND VARIABLES FOR        |
                | INPUT|

. . .           statement-name   INTO   sqlda-name
```

statement-name: identifier, or host-variable
sqlda-name: identifier

Description

Returns information about variables used by the host to pass or accept database data.

Usage

Embedded SQL.

Authorization

None.

DROP

Syntax

```
                | DBSPACE   [creator.]dbspace-name    |
DROP            | INDEX   [creator.]index-name   |
                | TABLE   [creator.]table-name   |
                | VIEW   [creator.]view-name     |
```

Description

Removes indexes, tables, dbspaces and views from the database. DROP TABLE implicitly drops the specified tables indexes and keys and deletes the tables data. DROP DBSPACE requires that the tables in the specified dbspace are first dropped.

Usage

All.

Authorization

Must be creator of the index, table or view. However DBA authority is required to execute DROP DBSPACE.

DROP VARIABLE

Syntax

DROP VARIABLE identifier

Description

Eliminates an SQL variable prior to disconnection of the database. This can be useful in freeing up system resources occupied by large variables.

Usage

All.

Authorization

None.

END SUBTRANSACTION

Syntax

END SUBTRANSACTION [subtransaction-name]

Description

End a subtransaction (previously initiated by a BEGIN SUBTRANSACTION command) within the current transaction. If the name of the subtransaction is not specified, the last initiated subtransaction is ended.

Usage

All.

Authorization

The current transaction must have contained a corresponding BEGIN SUBTRANSACTION command.

EXECUTE

Syntax

Format 1:

```
EXECUTE   statement-name

      . . . [     | USING DESCRIPTOR sqlda-name       |       ]
                  | USING host-variable-list          |
```

statement-name: identifier, or host-variable
sqlda-name: identifier

Format 2:

```
EXECUTE   IMMEDIATE   statement
```

statement: string, or host-variable

Description

Executes a SQL statement.

Usage

Embedded SQL.

Authorization

Depends on the statement to be executed.

FROM

Syntax

. . . FROM table-expr, ...

table-expr:

| table-spec |
| table-expr join-type table-spec [ON condition] |
| (table-expr, ...) |

table-spec:

[userid .] table-name [[AS] correlation-name]

join-type:

| CROSS JOIN |
[NATURAL	KEY] JOIN
[NATURAL	KEY] INNER JOIN
[NATURAL	KEY] LEFT OUTER JOIN
[NATURAL	KEY] RIGHT OUTER JOIN

Description

Specifies the database tables or views involved in a SELECT or UPDATE statement.

Usage

All.

Authorization

Must have a database connection.

GRANT

Syntax

Format 1:

```
GRANT   CONNECT TO   userid,...   IDENTIFIED   BY   password,...
```

Format 2:

```
                | DBA   |
GRANT           |
RESOURCE        |
                | GROUP         |
                | MEMBERSHIP IN GROUP userid,...    |

      . . .    TO   userid,...
```

Format 3:

```
                | ALTER         |
                | DELETE        |
                | INSERT        |
GRANT           |
REFERENCES      |   ,...
                | SELECT        |
                | UPDATE   [(column-name,...)]  |
                | ALL   [PRIVILEGES]    |

      . . .    ON   [creator.]table-name   TO   userid, ...   [WITH GRANT OPTION]
```

Description

Assigns permissions and creates Ids for new users.

Usage

All.

Authorization

For Format 1 or 2, must:

- be changing your own password using GRANT CONNECT,
- be adding members to your own userid, or,

- have DBA authority.

For Format 3, must have:

- created the table, or
- been granted permissions on the table with GRANT OPTION, or,
- DBA authority.

INCLUDE

Syntax

INCLUDE filename

filename: identifier

Description

Includes a file as part of the information to be read by the SQL source language preprocessor.

Usage

Embedded SQL.

Authorization

None.

INSERT

Syntax

Format 1:

```
INSERT   INTO   [creator.]table-name   [( column-name, ... )]

    . . .   VALUES   ( expression, ... )
```

Format 2:

```
INSERT   INTO   [creator.]table-name   [( column-name, ... )]

    . . .   select-statement
```

Description

To insert a single row (format 1) or a selection of rows from elsewhere in the database (format 2) into a table.

Usage

All.

Authorization

INSERT permission on the specified table.

OPEN

Syntax

OPEN cursor-name

```
. . . [  |USING DESCRIPTOR  sqlda-name    |     ]
        | USING host-variable, ...        |

. . . [ WITH HOLD ]  [ ISOLATION LEVEL n ]  [ BLOCK n ]
```

cursor-name: identifier, or host-variable
sqlda-name: identifier

Description

To open a previously declared cursor to access information from the database.

Usage

Embedded SQL.

Authorization

SELECT permission on all tables in the specified cursor.

ROLLBACK

Syntax

ROLLBACK WORK

Description

Undoes any changes made since the last COMMIT or ROLLBACK. It removes any changes made during this transaction.

Usage

All.

Authorization

Must have a database connection.

ROLLBACK SUBTRANSACTION

Syntax

ROLLBACK SUBTRANSACTION [subtransaction-name]

Description

To cancel any changes made since a BEGIN SUBTRANSACTION. It removes any changes made during this subtransaction.

Usage

All.

Authorization

The current transaction must not have ended and there must have been a corresponding BEGIN SUBTRANSACTION within it.

SELECT

Syntax

```
SELECT   [ ALL | DISTINCT ]   select-list

    . . .     [ INTO   host-variable, ... ]

    . . .     FROM   table-list

    . . .     [ WHERE   search-condition ]

    . . .     [ GROUP   BY   column-name, ... ]

    . . .     [ HAVING   search-condition ]

    . . .     | [ ORDER   BY   expression   [ ASC | DESC ], ...   ]       |
    . . .     | [ ORDER   BY   integer   [ ASC | DESC ], ...   ]  |


select-list:
              |   table-name.*  |, ...
              |   expression [ AS alias-name ]  |
              |   *       |
```

Note: INTO clause used in Embedded SQL only

Description

To retrieve information from the database. Also, used in ISQL to export data from the database to an external file.

Usage

All (INTO clause used in Embedded SQL only).

Authorization

Must have SELECT permission on the named tables and views.

SET CONNECTION

Syntax

SET CONNECTION [connection-name]

connection-name: identifier, string or host-variable

Description

To change the active database connection.

Usage

Embedded SQL

Authorization

None.

SET OPTION

Syntax

1. SET [TEMPORARY] OPTION

    . . . [userid. | PUBLIC.]option-name = [option-value]

2. SET PERMANENT

3. SET

userid: identifier, string or host-variable
option-name: identifier, string or host-variable
option-value: host-variable (indicator allowed), string, identifier, or number

Note: Formats 2 and 3 are ISQL only.

Description

To change database options.

Usage

All (format 1), ISQL (all formats).

Authorization

None required to set your own options. Must have DBA authority to set options for another user or PUBLIC.

SET

Syntax

SET identifier = expression

Description

To assign a value to a SQL variable.

Usage

All.

Authorization

None.

SYSTEM

Syntax

SYSTEM [operating-system-command]

Description

To execute an operating system command from within ISQL.

Usage

ISQL (DOS and QNX only).

Authorization

None.

UNION

Syntax

select-without-order-by UNION [ALL] select-without-order-by

. . . [UNION [ALL] select-without-order-by] ...

. . . [ORDER BY integer [ASC | DESC], ...]

Description

To combine the results of two or more select commands.

Usage

All.

Authorization

Must have SELECT permission for each of the component SELECT commands.

UPDATE

Syntax

UPDATE table-list SET

. . . column-name = expression, ...

. . . [WHERE search-condition]

. . . [ORDER BY expression [ASC | DESC] ,...]

Description

Modifies data in the database.

Usage

All.

Authorization

UPDATE permission for the columns being modified.

VALIDATE TABLE

Syntax

VALIDATE TABLE [creator.]table-name

Description

Traverses a tables rows and looks up each row in each index on the table. VALIDATE TABLE will return an error if the database file is corrupt. In the case of corruption, recreate the tables indexes and keys or reload the database.

Usage

All.

Authorization

DBA or table creator

Getting Help on SQL Keywords

If there is an SQL statement present in the Query Edit pane then help can be accessed on any of the keywords contained in that statement.

To get help on an SQL Keyword:

1. Select the keyword from the Query Edit pane using the keyboard or by double clicking on it with the left mouse button. Note that more than one word can be selected. For example, BEGIN SUBTRANSACTION is a valid keyword.
2. Press F1.

If the selected text is a valid keyword, information on the keyword and its usage will display in a help window. If the selected text is not a valid keyword then general help on the Query Edit window will be displayed.

Tracing Against one, Multiple, or all Tasks

Tracing against a task allows you to monitor the SQL calls that a particular task makes to the data source to which you are connected. ODBC Manager allows you to trace against a selected task or tasks or against all tasks being executed at any given time. The trace information can the be analyzed, saved or printed.

To trace against a task:

1. Connect to the required data source.
2. Ensuring that the desired Trace API filter has been constructed, select the task or tasks against which you want to trace in the Trace Options dialog. To select a task which is currently running, click on its name. To deselect a task, click on its name while holding down the CTRL key. To trace against all tasks (including tasks which are not currently running), check the Trace Against All Tasks check box. Press OK.
3. To initiate the trace, select the Start command from the Trace menu.

Any interactions between the selected task or tasks and the connected data source will be reflected in the Trace pane.

To temporarily suspend a trace, choose the Pause command from the Trace menu.

To terminate a trace, choose the Stop command from the Trace menu.

Saving Data

Ranges or entire sections of data from the Trace pane, the Select Query pane, or both of these panes can be saved.

To save data:

1. If you want to save only a selection of data, select the data you want to save.
2. Select the Save... command from the File menu. The Output Options dialog will be displayed.
3. Choose the window or windows from which you want information to be saved and click OK.

The name and location of the output file can be specified in the Save dialog.

Printing Data

Ranges or entire sections of data from the Trace pane, the Select Query pane, or both of these panes can be printed.

To save data:

1. If you want to print only a selection of data, select the data you want to print.
2. Select the Save... command from the File menu. The Output Options dialog will be displayed.
3. Choose the window or windows from which you want information to be printed and click OK.

The Print dialog will display allowing you to specify print options.

Connecting to a Data Source

Connecting to a data source allows you to execute a range of queries against it. In addition, information about the database can be viewed.

To connect to a data source:

1. Choose the Connect... command from the Query menu. This displays the ODBC Data Source Connect dialog.
2. Select the required data source name and enter the user name and password if required by the database.

If an invalid name or password is specified, the connection to the database will fail.

Precision

Identifies the maximum number of digits used by the data type of a numeric column or parameter. For a nonnumeric column or parameter, the value is usually either the maximum length or the defined length.

ODBC SQL data type

Valid data types are *Minimum* where a basic level of ODBC conformance is provided, *Core* which are compliant to the X/Open and SQL Access Group SQL CAE specification (1992) or *Extended* which are provided by some SQL data sources.

Scale

The scale of a numeric column or parameter refers to the maximum number of digits to the right of the decimal point. Note that, for approximate floating point number columns or parameters, the scale is undefined, since the number of digits to the right of the decimal place is not fixed.

Radix

Can be 10 (decimal) or 2 (binary). If it is 10, the values in PRECISION and SCALE give the number of decimal digits allowed for the column. For example, a DECIMAL(12,5) column would return a RADIX of 10, a PRECISION of 12, and a SCALE of 5.

If it is 2, the values in PRECISION and SCALE give the number of bits allowed in the column. For example, a FLOAT column could return a RADIX of 2, a PRECISION of 53, and a SCALE of NULL.

Note that, for numeric data types, the data source and driver can return a RADIX of either 2 or 10. For example, a FLOAT column could return a RADIX of 10, a PRECISION of 15 and a SCALE of NULL.

NULL is returned for data types where radix is not applicable.

Nullable

With respect to nullability, a column can have one of three attributes:

SQL_NO_NULLS if the column does not accept NULL values.

SQL_NULLABLE if the column accepts NULL values.

SQL_NULLABLE_UNKNOWN if it is not known if the column accepts NULL values.

Compound SQL Statement

An SQL statement comprising more that one SQL command separated by semi-colons. For example:

```
UPDATE student SET Studname='BOB' where Studnum=86005;
UPDATE student SET Studname='EDDIE' where Studnum=86006;
UPDATE student SET Studname='MAT where Studnum=86007;
                                        . . . . . .
                                        . . . . . .
SELECT * from student
```

ODBC Administrator

Allows you to add, modify, or delete ODBC drivers and data sources.