Configuring Warehouse Builder Data Sources: Microsoft Access or Excel
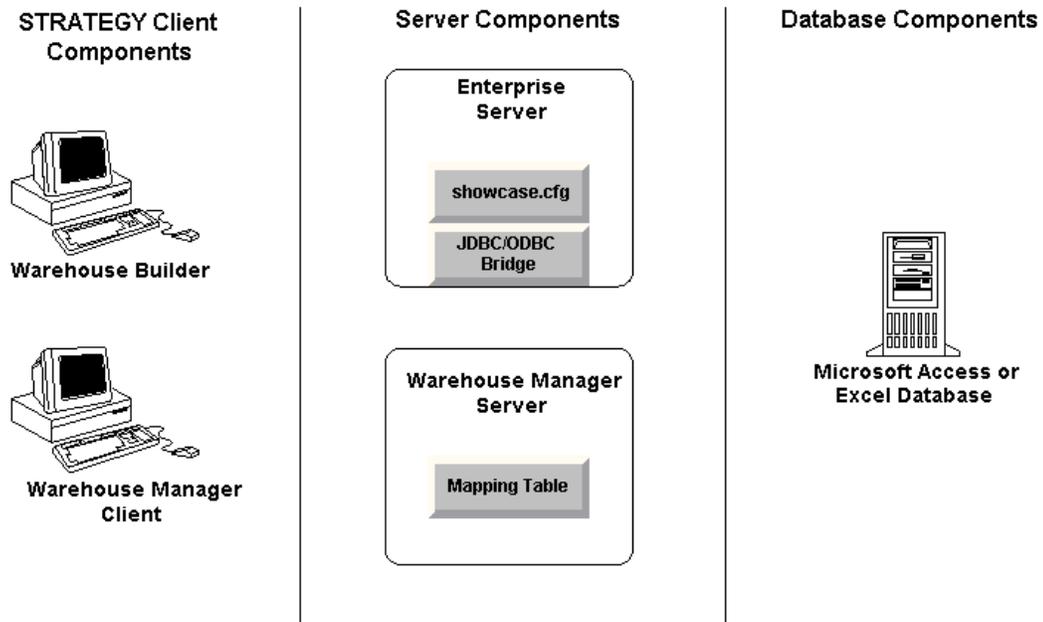
Overview

Warehouse Builder can pull data from Microsoft Access and Microsoft Excel. Here are the general setup steps:

1. **Verify your STRATEGY installation.** See p. 4.

2. **Set up an ODBC data source.** Add or configure a data source and database. See p. 5.

3. **Modify the showcase.cfg file.** Add Access or Excel driver definitions pointing to your data source. See p. 8.

4. **Start the Enterprise Server.** The Enterprise Server links your control server and your database. See p. 9.

5. **Create a data source mapping.** Map an ODBC connection used at definition time to the Enterprise Server connection used at run time. See p. 9.

6. **Connect to your new data source.** Open your Access or Excel data with Warehouse Builder. See p. 11.

Figure 1 shows the components you will use to configure your Access or Excel data source.

Figure 1 *Components used in configuration*

Prerequisites

Before you begin configuration, make sure your environment is ready:

❑ **STRATEGY.** A minimum of version 4.1 with patch 3 or later. Requires these components:

- ■ **Warehouse Manager Server.** Control server on your iSeries (AS/400).

- ■ **Warehouse Builder Client**. Specifies Access or Excel database (source) and target table. Install on Windows 95, 98, NT, or 2000.

- ■ **Warehouse Manager Client**. Configures Data Source Mapping. Install on Windows 95, 98, NT, or 2000.

- ■ **Enterprise Server.** Provides the connection between the Warehouse Builder control server on the iSeries and the database. Install on a PC with Windows 2000 or Windows NT 4.0 or later. Enterprise Server includes the following components:
    - ■ **showcase.cfg file**
    - ■ **Sun ODBC-JDBC Bridge**

❑ **Microsoft Access or Excel database.** Can run on any PC with Microsoft Office 95, 97, or 2000.

- ■ **Microsoft ODBC Driver.** Shipped with all versions of Access and Excel. Your ODBC driver version must be compatible with the Access or Excel file you are using.

❑ If you are using more than one PC to host Enterprise Server, Warehouse Builder, and Warehouse Manager Client, make sure you have the Microsoft ODBC driver on each system.

❑ When you are configuring data sources from non-DB2 systems, the user profile CCSID for the Warehouse Builder running distributions *cannot* be 65535 (*HEX). On Japanese systems, the CCSID *cannot* be 290, or 5026.

Access and Excel Data Type Mappings

Table 1 shows data type mappings that occur when you move Microsoft Access data to the iSeries. Those not shown are not supported.

Table 1 *Microsoft Access data type mappings*

Microsoft Access Data Type	iSeries DB2 Data Type
Text	VARCHAR(size)
Number	INT
Date/Time	TIMESTAMP
Currency	NUMERIC(precision, scale)
AutoNumber	INT
Yes/No	DECIMAL
Lookup	Supported according to table specification for the data type

Table 2 shows how the iSeries maps Microsoft Excel data types. The supported types are listed.

Table 2 *Microsoft Excel data type mappings*

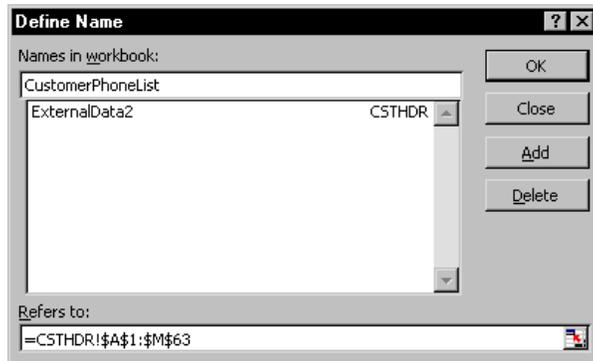| Microsoft Excel Data Type	iSeries DB2 Data Type
Currency(precision, scale)	NUMERIC(precision,scale)
Number(length)	DOUBLE PRECISION(precision, scale)
DateTime(length)	TIMESTAMP
Varchar(length)	VARCHAR(precision)

Preparing Excel Tables

If you are using Excel 97 or later, you must define each Excel sheet as a table so it will appear as a table choice in Warehouse Builder. If you have information in your Excel sheets that won't easily transfer to SQL statements (for example, graphics or charts), you must define your table perimeters on each sheet.

To define tables within a single worksheet:

▶ Select the sheet or highlight a range of cells for the table.

▶ On the *Insert* menu, choose:
   Name
      Define

This opens the *Define Name* dialog box. See Figure 2.

Figure 2 *Naming the SQL accessible table*

▶ Under *Names in workbook*, type a table name, and click *OK*.

▶ Repeat these steps for each sheet in your file.

▶ Save the file.

▶ Before you create your Warehouse Builder definition, close the file.

Configuring Your Environment

The next sections lead you through the steps to configure your STRATEGY environment to pull data from your Excel or Access databases with Warehouse Builder.

Step 1: Verify Your STRATEGY Installation

▶ Verify that you have installed a minimum of version 4.1 with patch 3 or later, including Warehouse Manager Server, Warehouse Builder client, Warehouse Manager Client, and Enterprise Server.
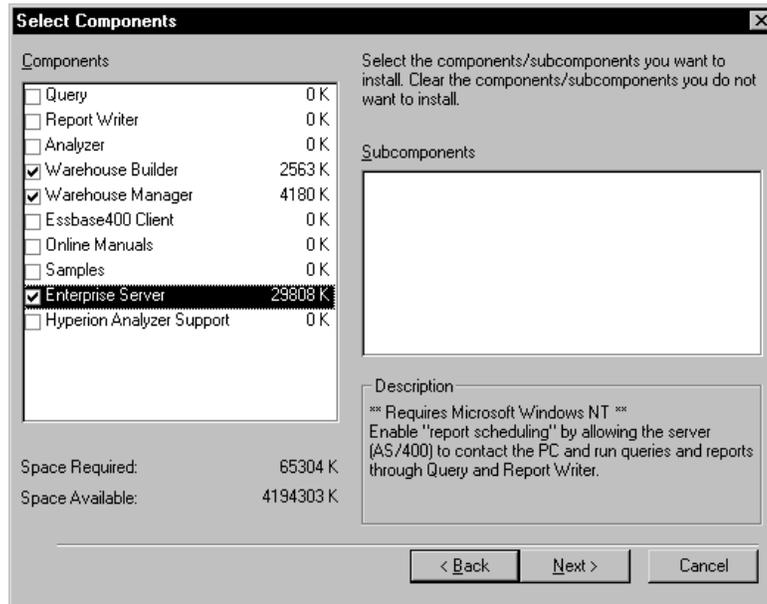
To verify the correct version, open any STRATEGY component, and on the *Help* menu, click *About*. If the version number is *4.10.030* or greater, continue to "Step 2: Set Up ODBC Data Sources" on p. 5.

If you must update your STRATEGY setup, continue with Step 1.

▶ When you install STRATEGY PC components, choose Warehouse Builder, Warehouse Manager, and Enterprise Server, as shown in Figure 3. You may install these components on separate PCs if your situation warrants it.

The ODBC-JDBC bridge and showcase.cfg file are installed with Enterprise Server.

Figure 3 *Selecting STRATEGY installation components*

▶ Download and install STRATEGY 4.1 patch 3 or later from the ShowCase division Support Web site.

Step 2: Set Up ODBC Data Sources

Set up ODBC data sources on each PC hosting Warehouse Builder, Warehouse Manager Client, and Enterprise Server.

▶ On the Windows *Start* menu, choose:

Programs

  ShowCase STRATEGY

   Microsoft ODBC Administrator

▶ To add an Access or Excel data source, click *Add*.

This opens the *Create New Data Source* dialog box.

▶ Choose *Microsoft Access Driver* or *Microsoft Excel Driver*, and click *Finish*.

▶ In the setup dialog box, type a name for your data source.

▶ Write the name of your data source here. You will use this name in "Step 3: Modify showcase.cfg File" on p. 8 and "Step 5: Create a Data Source Mapping" on p. 9.

Access data source:_____

Excel data source:_____

► If you are configuring Excel, in the *ODBC Microsoft Excel Setup* dialog box, make sure the data source version and database version are consistent. For example, if you are using an Excel 97 database, choose Excel 97-2000 in the version drop-down box, as shown in Figure 5.

► To select the source Access or Excel database, click *Select* (Access) or *Select Workbook* (Excel). See Figure 4 and Figure 5.
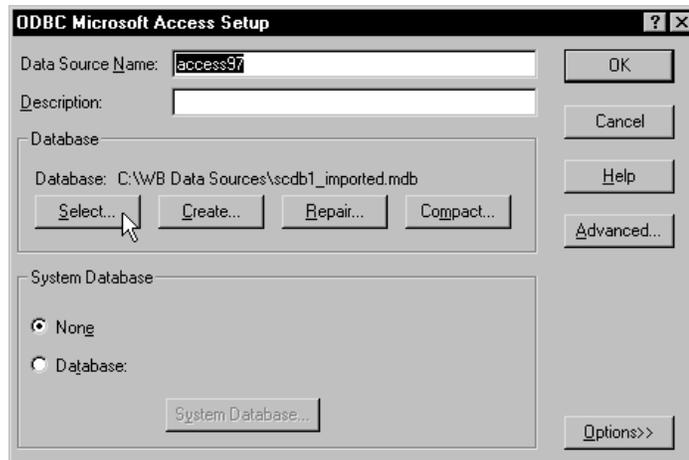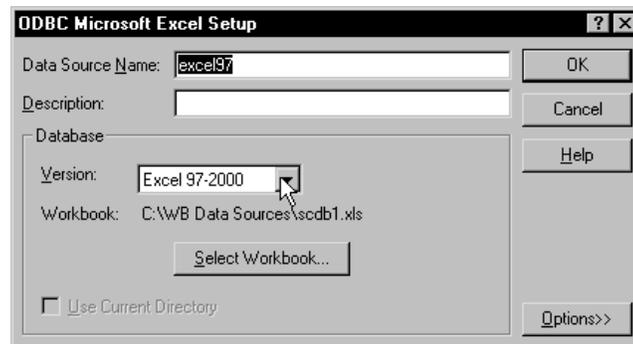
Figure 4 *Choosing an Access data source*

Figure 5 *Choosing an Excel data source and database version*

► In the *Select Database* (Access) or *Select Workbook* (Excel) dialog box, find the name of your Access (.mdb) or Excel (.xls) file. See Figure 6 and Figure 7.

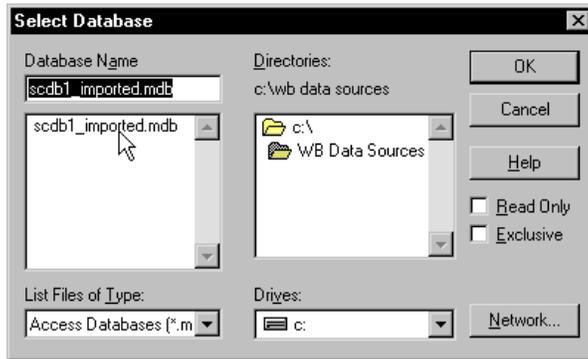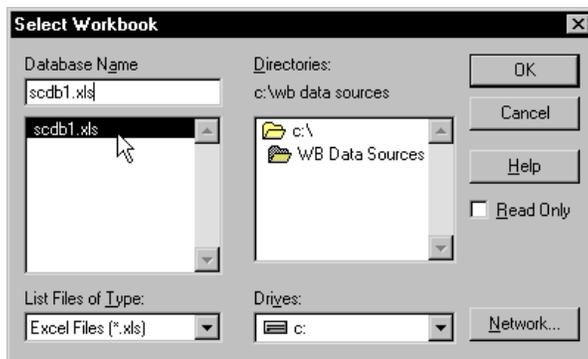Figure 6 *Select Access database*

Figure 7 *Select Excel database*

▶ Write the name of your database here. You will use this name in "Step 5: Create a Data Source Mapping" on p. 9.

     Access database:_____

     Excel database:_____

▶ Click *OK.*

▶ In the *Microsoft ODBC Data Source Administrator* dialog box, click *OK.* You have set up your ODBC data source.

Important: Setting Up Data Sources on Multiple PCs

If you are running Warehouse Builder, Warehouse Manager Client, and Enterprise Server on separate PCs, the ODBC data source paths to the Access or Excel database must be identical on all PCs. For example, in mapped drives, use the same drive letter in the path (*M:\dir\file.mdb*). Or, instead of using mapped drives, use the complete network path including the computer name (*\\myserver\dir\file.mdb*). This name will be displayed as the database name when you use Data Source Mapping in Warehouse Manager Client on p. 9.

Step 3: Modify showcase.cfg File

The showcase.cfg file was installed with the Enterprise Server PC component. If you cannot find the file on your system, make sure you installed the Enterprise Server.

▶ Use a text editor to open your showcase.cfg file. It is located in the folder where you installed STRATEGY.

Example: *C:\Program Files\ShowCase STRATEGY\proddata\config\showcase.cfg*

Note: You can copy the configuration file to the *userdata* directory. For example:
C:\Program Files\ShowCase STRATEGY\userdata\config\showcase.cfg

When the Enterprise Server starts, it reads the configuration files from the *proddata* and *userdata* directory. Configuration file properties in the *userdata* directory will override those in the *proddata* directory.

STRATEGY installations will never overwrite the *userdata* directory. Therefore, you won't lose *userdata* directory settings when you install new software.

▶ Locate the `AccessDatasource1` or `ExcelDatasource1` section of your .cfg file.If your .cfg file does not have an Access or Excel section, copy the following Access or Excel information, and paste it into the *Driver Definition Properties* section in the showcase.cfg file.

```
[AccessDatasource1]


showcasecorp.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
showcasecorp.driverURL=jdbc:odbc:YOURaccessDATASOURCEname


# Trace properties used only by this driver definition.
# Note: Turning these properties on can dramatically reduce
# performance.


# showcasecorp.traceService=ALL
# showcasecorp.traceLevel=ALL
# showcasecorp.traceUser=ALL
# showcasecorp.traceLog=scserver.log

[ExcelDatasource1]

showcasecorp.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
showcasecorp.driverURL=jdbc:odbc:YOURexcelDATASOURCEname

# Trace properties used only by this driver definition.
# Note: Turning these properties on can dramatically reduce
# performance.

# showcasecorp.traceService=ALL
# showcasecorp.traceLevel=ALL
```

```
# showcasecorp.traceUser=ALL
# showcasecorp.traceLog=scserver.log
```

▶ Replace `YOURaccessDATASOURCEname` or `YOURexcelDATASOURCEname` with the data source you named on p. 5.

▶ Save and close the showcase.cfg file. You are finished modifying it.

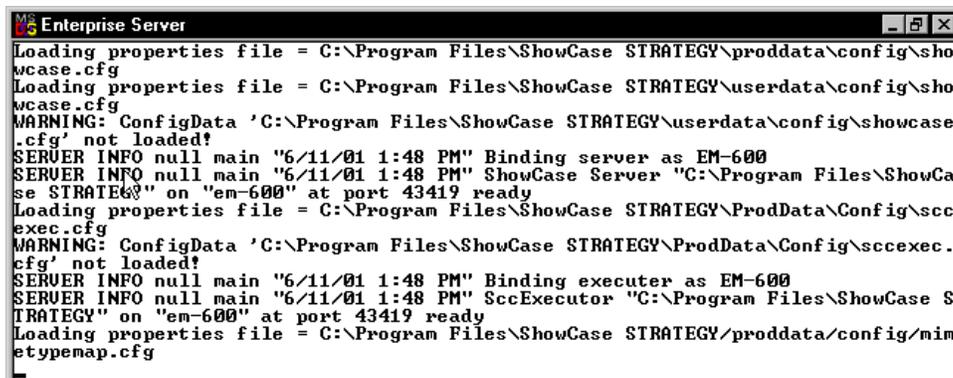## Step 4: Start the Enterprise Server

▶ On the Windows *Start* menu, choose:

Programs

  ShowCase STRATEGY

   Enterprise Server

When the Enterprise Server starts, you will see a window similar to Figure 8.

Figure 8 *Enterprise Server*

▶ You can minimize this window, but do not close it.

Step 5: Create a Data Source Mapping

Here you will save your data source and database information in your control table on the Warehouse Manager Server and specify the Enterprise Server information to use at run time.

▶ Open Warehouse Manager Client, and connect to your iSeries data source.

▶ On the *Manage* menu, choose *Data Source Mapping.*
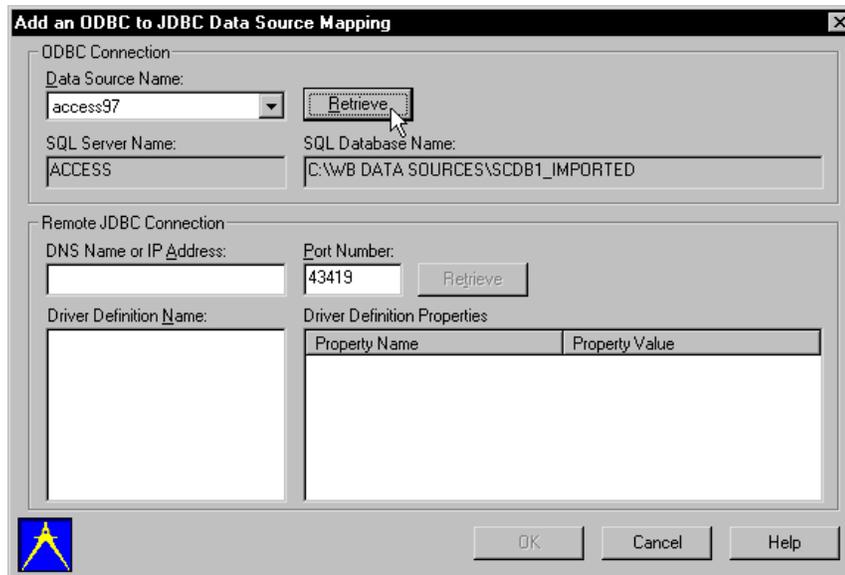
This opens the *Data Source Mapping* dialog box.

▶ Click *Add.*

This opens the *Add an ODBC to JDBC Data Source Mapping* dialog box.

▶ In the *Data Source Name* drop-down box, choose the data source you named on p. 5.

▶ Click *Retrieve.*

In the *ODBC Connection* section, your SQL server name and SQL database name (the .xls or .mdb file you chose on p. 7) appear, as shown in Figure 9.

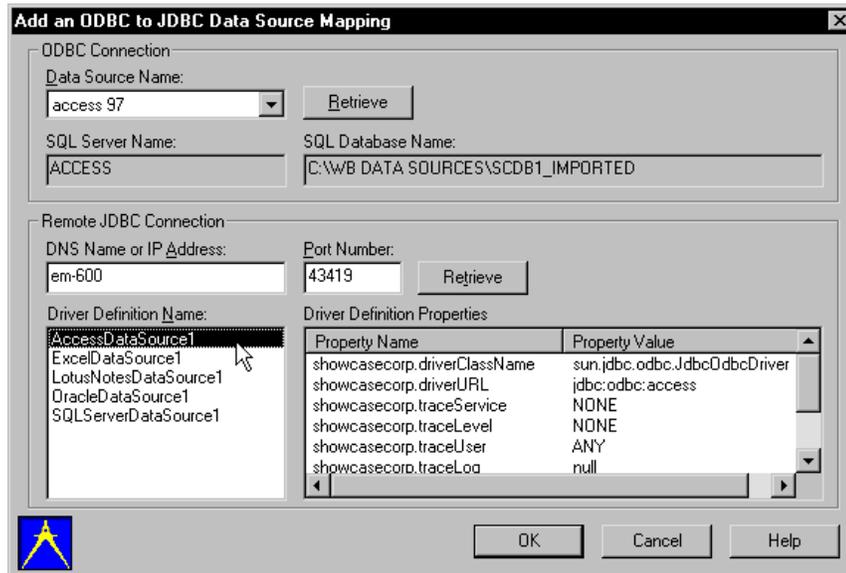Figure 9 *Choosing your ODBC data source*

▶ In the *DNS Name or IP Address* section, type the name or IP address of the PC running Enterprise Server.

▶ Type your Enterprise Server port number. Typically, the port number is *43419.*

Note: This port number is the default port on the Enterprise Server PC. It is not the same port as your iSeries server port.

▶ Click *Retrieve.* If you receive and error message, make sure your Enterprise Server is running.

▶ In the *Driver Definition Name* section, select your data source driver definition. The name matches the bracketed heading for the section in the showcase.cfg file. The sample (on p. 8) is [AccessDatasource1]or[ExcelDatasource1]. See Figure 10.
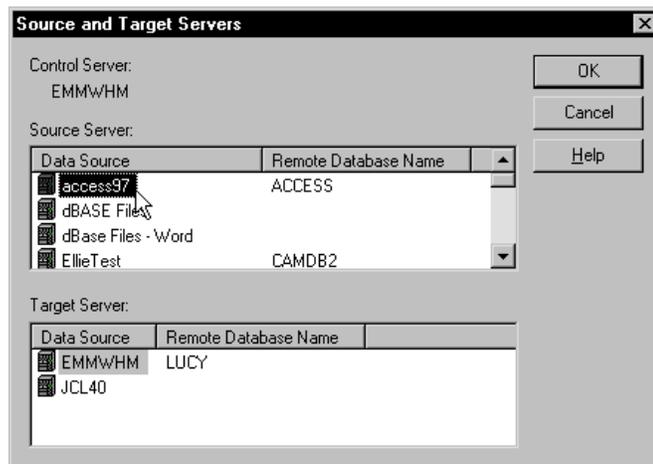
Figure 10 *Choosing your driver definition*

► In the *Driver Definition Properties* section, verify that you've chosen the correct driver definition.

   Notes: The combination of the SQL Server Name and SQL Database Name must be unique. The combination of the DNS Name/IP Address, Port Number, and Driver Definition Name must be unique. That is, no two mappings can have the same combination of these values.

► Click *OK* to update the iSeries control table with your mapping.

Step 6: Connect to Your New Data Source

► Open Warehouse Builder and sign on to your control server.

► In the *Warehouse Builder Assistant* dialog box, click *OK* to create a new definition. (If the *Warehouse Builder Assistant* dialog box is not already displayed, select *File | New | New.*)

► In the *Source and Target Servers* dialog box, choose your new source server data source (Access or Excel), as shown in Figure 11.

Figure 11 *Choosing your new data source*

▶ Select the target server, and click *OK*.

▶ Continue to create your definition.

▶ When you run your definition, make sure the Enterprise Server is running. To start it, see "Step 4: Start the Enterprise Server" on p. 9.

Hints and Troubleshooting

General Hints

■ When possible, use the same PC to host Enterprise Server, Warehouse Manager Client, and Warehouse Builder. This will allow you to use a single ODBC data source and avoid path inconsistencies when configuring data sources on multiple PCs.

■ Each time you modify the showcase.cfg file, end the Enterprise Server (Ctrl+C), and then restart it to allow the updates to take effect.

■ If you cannot find the showcase.cfg file on your system, make sure you installed the Enterprise Server. The .cfg file is installed with the Enterprise Server.
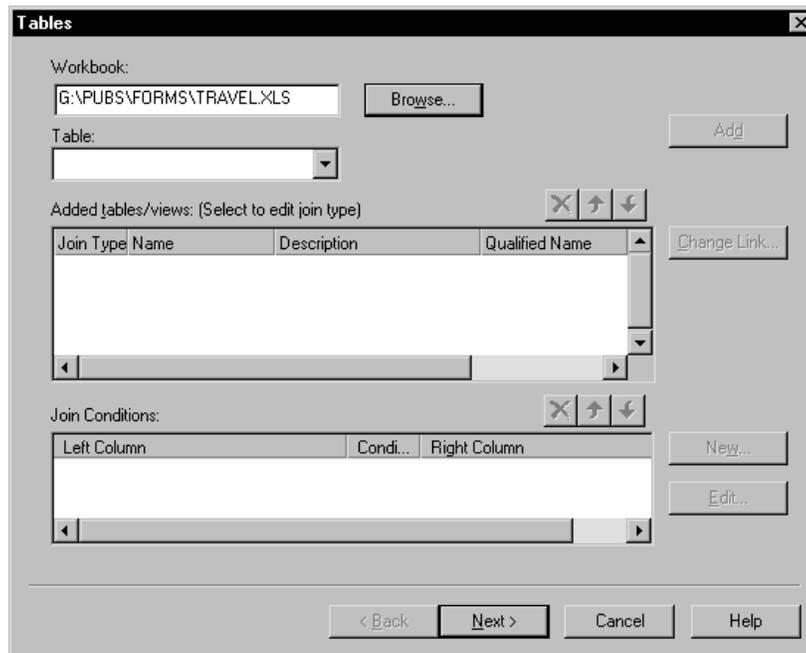

ODBC Data Source Hints

■ When configuring your Enterprise Server ODBC data source, make sure you specify a database name (.mdb or .xls file). Do not leave this name blank. For instructions, see "Step 2: Set Up ODBC Data Sources" on p. 5.

■ If you are running Warehouse Builder, Warehouse Manager Client, and Enterprise Server on separate PCs, make sure the ODBC data source paths to the Access or Excel database are identical. See "In the *Select Database* (Access) or *Select Workbook* (Excel) dialog box, find the name of your Access (.mdb) or Excel (.xls) file. See Figure 6 and Figure 7." on p. 6.

Warehouse Builder Definition Hints

- When creating a definition, if you receive an error that your mapped database cannot be found, check the path to the database in your ODBC Data Source Administrator. The path must match the SQL Database Name path in the Data Source Mapping you specified in "Step 5: Create a Data Source Mapping" on p. 9.

- When you create a definition, Warehouse Builder allows you to select a database different from the one you chose in "Step 2: Set Up ODBC Data Sources" on p. 5. This way, you can avoid creating multiple mappings for the same database type. If you do so, the path you specify in Warehouse Builder must resolve to the same .xls or .mdb file on the Enterprise Server PC when you run the definition.

  For example, in Figure 12, the database (Excel workbook) is located on a file server mapped to the *G:\ * drive. Therefore, the PC hosting Enterprise Server must also have your new .xls or .mdb file on a file server mapped to the *G:\ * drive.

Figure 12 *Choosing an alternative database in Warehouse Builder*

Warehouse Builder Run-Time Hints

- If you receive errors running your SELECT statement in Warehouse Builder, test the SELECT statement in Query or another query application.

- If you cannot run your definition after you create it, make sure your Enterprise Server is running.

- If you receive a connection error during run time or in Data Source Mapping, make sure your Enterprise Server and Warehouse Manager Server library are at the same STRATEGY release and patch levels.

- If you receive a "*No data found*" error when attempting to run your definition, check your Enterprise Server ODBC setup. You may have left the database name blank when you created the data sources.

- If you are using the Microsoft Access (Jet) ODBC driver (Odbcjt32.dll version 4.0.5303.1) and you experience a "*job terminated abnormally*" error on a distribution with the timestamp option selected for the target table, you may need to apply the latest service pack for Microsoft Data Access Components. For details, see *www.microsoft.com*.

- If you are using Enterprise Reporting and have the *QUTCOFFSET* set on your system, your start and end time statistics for scheduled queries will be off by that amount unless you also set a time zone. To set the correct time:

  1. Change the *QUTCOFFSET* system value to *-0.00.*
  OR
  Create an IFS file called */Qibm/UserData/Java400/SystemDefault.properties*
  In this file, enter one line specifying the user time zone. **Example:** *user.timezone=CST*

  2. Restart the Warehouse Manager Server. Then restart any Java applications by stopping and restarting the HTTP server using the commands *ENDTCPSVR *HTTP* and *STRTCPSVR *HTTP*. You may also need to adjust the *QUTCOFFSET* system value for Daylight Savings time.

  For more information, see your IBM documentation.

Restrictions

- When using Warehouse Builder to pull data from an Access database, *SELECT* statements using the *AVG* function fail against decimal columns because the Microsoft Access ODBC driver incorrectly reports the precision and scale of this calculated column.