



Installing ODBC

Overview

By configuring tools from ProvideX, including the ODBC Driver and Data Dictionary utilities in NOMADS, users can view and analyze FACTS data with any of the 32-bit ODBC-compliant data handling applications, such as MS-Access, MS-Query and Crystal Reports.

Product limitations/exclusions

The ODBC driver must be installed on Windows NT, Windows 2000, Windows 95 or Windows 98 desktop. ODBC installations will also work on UNIX systems mapped to PC drives.

➤ **SOFTWARE SOLUTIONS, INC. DOES NOT SUPPORT THE READ/WRITE VERSION OF THIS PRODUCT.** To protect the integrity of FACTS data, all ProvideX 32-Bit ODBC Drivers purchased from Software Solutions should be installed as Read Only (choose the Typical install option during installation).

The Read Only option will not limit the data that can be viewed via ODBC; however, it does eliminate the ability to modify FACTS data through an ODBC-compliant application.

This policy exists because most ODBC applications do not correctly format and verify data in a manner that can be handled by FACTS. **As a result, processing errors may occur in the FACTS system.**

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Close all applications before installing ODBC.

Updating the Data Dictionary in FACTS

1. Standard versions of **DOFILB** and **DOFILH** are included on the FACTS 7.1 installation media. Compare these to your own versions of the same data files. Make sure you reconcile with the FACTS DO files any custom modifications to FACTS data files or companion files that need to be included in ODBC.
2. The ODBC Data Dictionary will be built from aliases defined for each file within the DO system.
3. Make sure that the files **providex.dde** and **providex.ddf** are in the FACTS root directory. For example, if your FACTS program files are in **ssi7/prog** and data files are in **ssi7/data**, the dde/ddf files need to be located at **ssi7/providex.dde** and **ssi7/providex.ddf**, respectively.
4. **IMPORTANT:** YOUR EXISTING **providex.dde** AND **providex.ddf** FILES WILL BE OVERWRITTEN BY THE UPDATE PROGRAM. If any custom changes have been made to these files, they need to be entered into the FACTS DO system in order for them to be included in the new dictionary. Custom I/O procedures will be preserved, however.
5. Check for the following in the DO Static Control:
OK to Rewrite Data Dictionary: Selected
Path to Dictionary Directory: C:\ssi7\dict (assuming you installed FACTS 7.1 to the C:\ drive).
6. Run program **DOU100**, "Data Dictionary Update." This creates a ProvideX data dictionary for ODBC from DOFILB and DOFILH, and embeds the dictionary definitions in the individual normalized data files. This process allows *all* FACTS dictionary maintenance to take place in the FACTS DO system. This program will also create **FACTSDD.INI**, which allows non-normalized data files to be used with ODBC. Additionally, it will also create an .ini file in the **ssi7/dict** directory for any module with one or more non-normal files.

Installing the ProvideX ODBC driver (version 3.10)

1. Make sure you close any open applications before you run ODBC Setup.
2. Place the FACTS Installation CD in the CD drive.
3. Wait for the InstallShield to start automatically or if autorun is not enabled on your computer, run **_ishield\setup.exe** from the CD.
4. Click **Next** on the Welcome screen.

5. Click **Yes** on the Software License Agreement.
6. Complete the User Information screen and click **Next**.
7. On the Setup Type screen, select **3rd Party Applications**.
8. On the Select Components screen, select **ODBC Driver 3.10** and click **Next**.
9. Verify the information on the Start Copying Files screen, and click **Next**.
10. On the FACTS 7.1 Setup Complete screen, click **Finish** to run the ODBC Installation.
11. Select **Yes** to continue with the ProvideX ODBC installation.
12. Choose **Next** at the ODBC Installation Welcome screen.
13. Choose **Next** at the Read Me Information window.
14. Enter the Customer ID, Company name and the Serial number in the User Information window. The Serial number is provided on the FACTS Authorization Code Sheet. Choose **Next** to continue.
15. Choose the Typical installation option. This installs the read-only version of the ODBC driver, which is the version FACTS endorses.

We recommend using the default destination directory.

Choose **Next** to continue.
16. Review the Current Settings in the Start Copying Files window. Choose **Next** to start copying files.
17. When all files are copied, choose **Finish**.

If you wish to install a demo version of the ODBC driver, enter DEMO in the Serial Number field on the User Information screen during installation.

Server Mapping

The FACTS NT/2000 server and all clients that use the ProvideX ODBC driver to access FACTS data must have identically mapped drives to the ssi7 directory. For example, O:\ is mapped to \\<server name>\ssi7. This mapped drive should be entered as the Data Dictionary Path (e.g., O:\dict\) in DO Static Control F/M.

Configuring your data source

1. Choose *Start* → *Settings* → *Control Panel*.
2. Double-click the ODBC Data Sources (32-bit) icon in the Control Panels window.
 - For Windows 2000, click the Administrative Tools icon followed by the Data Sources icon.
 - You may want to create a shortcut icon and place it on the desktop for quicker access in the future.

3. Make sure the User DSN tab is selected in the ODBC Data Source Administration window and choose **Add**.
4. Select **ProvideX 32-bit ODBC Driver** in the Create New Data Source window and then choose **Finish**.
5. In the ProvideX 32-bit ODBC Setup window, enter the following information.

Data Source: FACTS 7.1

Description: This is optional and it can be left blank.

Database Directory: Enter the location of the ProvideX dde and ddf files using the mapped driver letter mentioned above.

Example: O:\

Definition File: Enter the location of the FACTS data dictionary, including the FACTSDD.INI file name. This is the .ini file that lists normalized and non-normalized data files. Be sure to use the driver letter mapped to the server.

Example: O:\dict\FACTSDD.INI

6. Leave the rest of the information on that screen as is and choose **OK**.
7. Choose **OK** at the ODBC Data Source Administration window to complete the configuration. You can now begin configuring the data source.

Aliases for FACTS data files

The aliases for the FACTS data files, which are the table names that are displayed in ODBC applications, are in the form "MM_ALIAS_NAME_30," where MM is the file module code.

The FACTS 7.1 DO system must contain an alias for each file and variable that will be used in ODBC. For variables, aliases are displayed as the column name in ODBC applications. The aliases present in FACTS ODBC contain abbreviations because of a 30-character limit imposed by the ODBC Driver. The standard DOFILH/DOFILB that ships with FACTS 7.1 contains more than 500 files already aliased for ODBC.

Standards for creating aliases

1. Aliases must start with a letter
2. Use "_" instead of spaces
3. Use letters and numbers only — no special characters
4. Use uppercase letters
5. Do not use reserved ProvideX words
6. Maximum length is 30 characters
7. Alias must be unique

8. No two variables in the same file may share the same alias
9. Not two *files* can have the same aliases.

Importing vs. linking

The ProvideX ODBC Driver supports Importing and Linking of data files to most ODBC-compliant application.

For a static table, where data is captured once in the ODBC application, choose Import. This option copies data from FACTS to the ODBC application, with no remaining tie to the original FACTS data file. The captured data will be unaffected by future changes made to data in FACTS. This method provides the fastest operation for repeated file use, since the ODBC Driver is not continually engaged.

For “live” files where data is updated whenever a table is reopened, choose Link in the ODBC application. This method creates a dynamic link between the application and FACTS via the ODBC Driver. As changes are made in FACTS, the data changes are updated each time the table is reopened. This method is not as fast as Importing since the ODBC Driver must be used each time the Link is reestablished.

Connecting to FACTS data from ODBC-compliant applications

These instructions assume that the ODBC-compliant application has been correctly installed. As a result of the ever-increasing number of applications that support ODBC, we can only provide typical instructions.

The following steps outline the procedure used to add a FACTS table to a database in MS-Access:

1. Once a database (new or otherwise) has been opened, go to the Table page and click **New** to add a table. Then click **Import Table** or **Link Table**.
2. Select ODBC Databases from the Files of Type drop box at the bottom of the Import/Link window.
3. When the Machine Data Source window appears, click on “FACTS 7.1” from the ODBC Data Sources listing.
4. Data files from the list of available FACTS tables should appear in the Import/Link Objects window. Select tables to bring into the ODBC application, then click **OK**.
5. If you select “Import File,” Access imports the FACTS data files selected.
6. If you select “Link File,” Access requests the unique identifier of the file. This is the same as the primary key in a FACTS data file. Once you specify

this, Access creates a dynamic link between the FACTS data file and its own database.

For imported tables, Access allows you to use SQL and other data analysis tools to manipulate the data.

Editing NOMADS Data Dictionary Utility for Normalized Files

NOTE: Editing the NOMADS Data Dictionary is an advanced action and is not intended for the average user.

Should problems importing or viewing FACTS data occur, or should additional normal data files need to be added, this can be accomplished permanently in the FACTS DO system, and temporarily in the ProvideX Data Dictionary Maintenance Utility.

Access the ProvideX Data Dictionary Maintenance Utility by entering the following at the command line:

```
→RUN ``*NOMADS``
```

The NOMADS initialization screen should appear. Select "Dictionary," then "Maintenance" from the menu bar for Data Dictionary Maintenance. Detailed instructions about working with the Data Dictionary Maintenance Utility can be found in the NOMADS II instruction manual from ProvideX or in the Data Dictionary chapter of the NOMADS II section of the ProvideX On-line Manual.

IMPORTANT: If a file definition is changed, you will need to press the "Update Physical" button on the Data Dictionary Maintenance window to imbed those changes in the actual data file. If a prompt appears to ask which kind of file update to perform, select "Rewrite data dictionary only."

Editing MMDD.ini for Non-Normalized Files

NOTE: Editing this INI file is an advanced action, and is not intended for the average user.

Should problems occur with non-normalized FACTS data files, or if you need to add more non-normalized FACTS data files, you can add them permanently by adding the appropriate alias information to FACTS DO system or temporarily by directly editing MMDD.INI where MM is the module for the .ini file in the /dict directory.

The MMDD.INI file that is generated by running DOU100, "Data Dictionary Update" (see "Updating the Data Dictionary in FACTS, step 4" at the beginning of this chapter), can be edited with any standard text editor such as Word Pad. For complete rules on defining data file structures with an INI file, refer to *ProvideX ODBC Enhancements*, available on the ProvideX Web site at <http://www.pvx.com/articles/articles.htm>.

Some common errors and troubleshooting tips

Following is a list of errors that may occur when creating the new Data Dictionary for use with the ProvideX ODBC Driver. While Software Solutions, Inc. makes every effort to provide an error-free and fully functional Data Dictionary, users may encounter some of these errors, particularly when they are accessing auxiliary data files or file customizations particular to a specific FACTS installation.

1. **Error #9:** Indicates an ODBC Date Error where non-Date data has been encountered by the ODBC Driver when attempting to process a variable defined as a date. This can be remedied by checking the data residing in fields that have aliases that end in “_DATE”. This can also be diagnosed by using the NOMADS Data Dictionary Maintenance Utility to turn off date recognition in individual date columns by changing the “Class” entry to blank.
2. **Error #1011:** Indicates that the definition for the records of a data file is larger than the actual records data file. This error occurs because ODBC columns have been defined for data that does not exist in the file structure.
3. **Error #1012:** Indicates a numeric data error. This is typically caused by alphabetic data occurring in a field defined as numeric only. Since these fields are intended for math processing in the ODBC application, alphabetic characters generate an error in these fields.
4. **FACTS incorporates Periods in a packed PPYY format.** The ProvideX ODBC Driver does not currently interpret these periods. In data displays, this information will show as “/709”, for example. The first character, “/”, represents the decade, in this case 1990’s, the second represents the year, and the last two represent the period. So, “/709” would be read as “1997, period 9”. Starting in the year 2000, this field will be more readable, as the decade will match the tens digit of the actual year (e.g. “0009” for “2000, period 9”).
5. If you have unexplained difficulty getting the ODBC-compliant applications to link with the ODBC Administrator, check the version date of any associated 32-Bit “dll” files. If the .dll files do not match the version of the application, errors may occur.
6. To enable tracking and identification of errors that may occur when using ODBC, a log file can be created for each Data Dictionary. To create the log file, simply open the ODBC Administrator, and click on the “Tracing” tab, and enter the log file location and a file name. The log file will be used to track all ODBC calls. This file can later be examined in any text editor to view in depth details on the interactions of the ODBC Driver with the Data Dictionary and data files.

External sort files (future use)

The FACTS Data Dictionary includes several external sort files. These files are typically named “____BY____”, such as “AP_VEND_BY_ALPHA.” The current release of the ProvideX ODBC driver does not support sort files. These definitions have been included in the Data Dictionary for future use.

Additional resources

The ProvideX On-line Manual

The manual is available at <http://www.pvx.com/support/support.htm>.

Visions '98 Presentations

While these presentations are not documentation per se, they provide accurate and concise information on many ProvideX subjects, including ODBC. The presentations are available at <http://www.pvx.com>.