

ODBC Installation and configuration process on AIX

Introduction

The SPSS Data Access Pack (SDAP) consists of a set of SPSS OEM ODBC drivers, and should be installed on the computer where you will create data sources, in this case the AIX server. The location depends on what type of, SPSS an IBM company Inc., product you are installing and how it will be used.

In General:

- If you are running PASW Modeler in local (standalone) mode, the drivers must be installed on the local computer.
- If you are running PASW Modeler in distributed mode against a remote PASW Modeler Server, the ODBC drivers need to be installed on the computer where PASW Modeler Server is installed, AIX in this case.
- If you need to access the same data sources from both PASW Modeler and PASW Modeler Server, the ODBC drivers must be installed on both computers i.e. Windows and the Modeler Server machine.
- If you are running PASW Modeler over Terminal Services, the ODBC drivers need to be installed on the Terminal Services server on which you have PASW Modeler installed.
- If you are using the PASW Modeler Solution Publisher Runtime to execute published streams on a separate computer, you also need to install and configure ODBC drivers on that computer.

Note: In order to install the SDAP ODBC drivers on AIX, you must be running as root.

SPSS Data Access Protocol (SDAP) ODBC driver Compatibility

To read or write to a database, you must have an ODBC driver installed and configured for the relevant database, with read or write permissions as needed. The SPSS Inc. Data Access Pack (SDAP) includes a set of SPSS OEM ODBC drivers that can be used for this purpose and are supported. These drivers are available on the IBM software download site via your customer portal. Only the ODBC drivers/databases listed as supported by Modeler should be used for Modeler. For example, Statistics and Modeler do not necessarily support all the same ODBC drivers within SDAP. If you have questions about creating or setting permissions for ODBC data sources, contact your database administrator.

For the latest information on which databases and ODBC drivers are supported and tested for use with PASW Modeler, please refer to the product version specific documentation.

Database support in PASW Modeler is classified into three tiers, each representing a different level of support for SQL pushback and optimization, depending on the database vendor. The different levels of support are implemented by means of a number of system settings, which can be customized as part of an engagement with IBM Services. The three tiers of database support are:

Support tier	Description
Tier 1	All possible SQL pushback is available, with database-specific SQL optimization
Tier 2	Most SQL pushback is available, with non-database-specific SQL optimization.
Tier 3	No SQL pushback or optimization – only reading data from, and writing data to, the database.

Installing the SDAP drivers for AIX

You will need to acquire the file <filename>.tar.z for AIX (ex. odbc64v53_aix_sp2.tar.z). Do NOT install the SPSS Inc Data Access Pack (SDAP) in the same directory as other SPSS Inc products. There are two approaches you can take:

- 1) Copy to Windows OS.
 - a. Copy <filename>.tar.z to Windows.
 - b. Use Winzip to “extract to here” from <filename>.tar.z the file <Filename>.tar (Do not decompress when prompted)
 - c. Then copy the <Filename>.tar to AIX and run `tar -vxf <Filename>.tar` Uncompress and untar the archive.
- 2) Copy to AIX, uncompress then tar.
 - a. Copy <filename>.tar.z into the directory where you want to install the ODBC drivers (eg. /usr/spssinc/sdap53/odbc). This will be the machine where you will be creating data sources.
 - b. Uncompress <Filename.tar.z> to <Filename>.tar for example `uncompress <Filename>.tar.z`
 - c. Extract the TAR file for example: `tar -xvf <Filename>.tar`. This will extract all files to run ODBC.

Configuring the ODBC environment

From the directory where you extracted the files, run `./setodbcpath.sh`. This will set the ODBC home directory to the current directory. You may need to run `sudo ./setodbcpath.sh` if you are not root user.

DataDirect Product Documentation

The SDAP set of drivers are DataDirect's. DataDirect's product documentation for Connect ODBC can be found under the directory on the DVD where you extracted the SDAP files. Online help is located in the odbchelp directory and PDF documentation is located in the books directory. DataDirect's documentation can also be accessed from where the SDAP drivers can be downloaded on the SPSS website <http://www.spss.com/drivers/merant.htm> or <http://www.datadirect.com/index.ssp>

Updating Your Installation

Installing a newer version of a driver or client from the SPSS Inc. Data Access Pack does not uninstall earlier drivers. Instead, it makes the newly-installed software available to you. The latest installed software must be manually configured; the configuration of your earlier driver is not transferred. If your earlier driver is working properly and meets your needs, it is best not to upgrade to a new version. Only update when you require support for a database that was previously unsupported, or when you require compatibility with an upgraded product.

Configuring ODBC environment

ODBC.sh

- 1) Open the script file "odbc.sh" within the installed odbc directory. You can use the Windows applications Filezilla or Winscp that will allow you to edit the file. You can use AIX editor VI for example: `sudo VI odbc.ini`. Just Type :qw to exit VI and save your changes.
- 2) The ODBCINI environment variable needs to point to the full pathname of the odbc.ini file that you want Modeler Server to read. There is a default odbc.ini file in the installed Modeler directory it is empty. Use the installed odbc.ini file within the odbc (SDAP) installation directory. This contains default data sources that can be altered for connections. Add the definition of ODBCINI to the bottom of this script and export the environment variable, for example,

```
ODBCINI=/usr/spssinc/sdap53/odbc/odbc.ini
Export ODBCINI
```

- 3) If you are not using the DataDirect Wire Protocol ODBC drivers, add any configuration appropriate for your database (please consult the ODBC driver documentation from the driver vendor to determine if there are any requirements by the driver; eg. an environment variable defining the database home directory). Additionally these drivers may have dependencies on other database client libraries (consult the ODBC driver documentation from the driver vendor for information on this). If this is the case specify the path(s) to the database libraries by appending them to the load library path in the Modeler Server startup script.

For example, if you are using Teradata on Solaris, you may add the following lines:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/opt/databases/TTU13/lib64
export LD_LIBRARY_PATH
NLSPATH=/opt/databases/TTU13/odbc_64/msg/%N.cat; export NLSPATH
```

Where /opt/databases/TTU13/lib64 is the path to your Teradata ICU and GSS libraries (a Teradata driver dependency), and LD_LIBRARY_PATH is the library path variable for your operating system. The Teradata environment variable NLS_PATH has also been set above as an example of how to configure other possible ODBC driver requirements from the Modeler startup script.

Note that if you are running PASW Modeler 64-bit on Linux or Solaris, the library path variable contains the suffix _64. Therefore, the first two lines in the previous example would become:

```
LD_LIBRARY_PATH_64=$LD_LIBRARY_PATH_64:/opt/databases/TTU13/lib64
export LD_LIBRARY_PATH_64
```

Note the above is an example illustrating the need, and how to set any driver dependencies in the Modeler startup script. The actual configuration depends on your database installation.

Note: Data Direct Wire Protocol drivers do not require the installation of database client libraries. However, other Data Direct drivers require these libraries.

The name of the library path variable varies depending on your operating system. The following table is included as a guide to help you make appropriate substitutions when you are configuring or troubleshooting on your system.

LIBRARY PATHS

Operating system	Library path variable name

AIX	LIBPATH
HP-UX	SHLIB_PATH
Solaris or Linux 32-bit	LD_LIBRARY_PATH
Solaris or Linux 64-bit	LD_LIBRARY_PATH_64

ODBC.ini

- Edit the odbc.ini file located in the installed SDAP path for example: /usr/spssinc/sdap53/odbc/odbc.ini. Use the data source names that exist within the odbc.ini file. These are the current supported ODBC drivers that are shipped. You can alter the data source names. Be sure to alter in both places within the file.
- See the appendix "The UNIX Environment" in DataDirect's *DataDirect Connect ODBC Reference* (available if you installed the additional DataDirect documentation when you installed Connect ODBC) and the chapters for specific drivers in *odbchelp.pdf* in the *doc* subdirectory of your Connect ODBC installation directory.

Configure Modeler Server to use ODBC drivers:

- Edit modelersrv.sh. Add the path <full path to odbc.sh> immediately below the line that defines SCLEMDNAME then save modelersrv.sh

TOP OF FILE

```
#!/bin/sh
INSTALLEDPATH=/usr/spssinc/PASWModelerServer13
DLLIBPATH=/usr/spssinc/PASWModelerServer13/bin
SCLEMDNAME=modelersrv_13_0
# the following line was added as part of setup and configuration for modeler server and ODBC.
./usr/spssinc/sdap53/odbc.sh
```

NOTE: The syntax is important here, it is a period, followed by a space, followed by the path to odbc.sh

- Now Restart Modeler Server, connect to Modeler Server from a client, put an ODBC source node on the workpane and check that you can see the Data Source Name(s) that you defined in your odbc.ini. If you do not see what you expect here, or you get errors when you try to connect to a DSN that you have defined please see the Troubleshooting ODBC article. Once you can successfully connect to the database(s) from Modeler Server you can configure a Modeler Batch and Solutions Publisher (see section "Batch and Solution Publisher Runtime" section below)

Automated considerations

- **modelersrv.sh.** The manual startup script for PASW Modeler Server is located in the PASW Modeler Server installation directory. It configures the environment for the server when the server daemon process is *manually* started. Run it when you want to manually start and stop the server. Edit it when you need to change the configuration for manual startup.
- **auto.sh.** This is a script that configures your system to start the server daemon process automatically at boot time. Run it once to configure your system for automatic startup. You do not need to edit it. The script is located in the PASW Modeler Server installation directory.
- **rc.modeler.** When you run *auto.sh*, this script is created in a location that depends on your server's operating system. It configures the environment for the server when it is *automatically* started. Edit it when you need to change the configuration for automatic startup.

Location of rc.modeler by operating system

Operating System	Location
AIX	/etc/rc.modeler
HP-US	/sbin/init.d/rc.modeler
Solaris	/etc/init.d/rc.modeler

- If you use both manual and automatic startup, make parallel changes in both modelersrv.sh and rc.modeler. If you use only manual startup, make changes in modelersrv.sh. If you use only automatic startup, make changes in rc.modeler.

Batch and Solution Publisher Runtime

- Once you can successfully connect to the database(s) from Modeler Client through Modeler Server you can configure a Modeler Batch and/or Solution Publisher Runtime installation on the same server machine. Do this by simply sourcing the same odbc.sh script from the startup script of Modeler Batch or Solution Publisher Runtime.
 - o Modeler Batch edit the climb script as follows:
 - For this documents example, add the following line immediately above the last line of the script
 - `./usr/spssinc/sdap53/odbc.sh`
 - Note, again the space between the period and the first slash ie. `./`
 - o Modeler Solution Publisher Runtime: edit the modelerrun (was **clemlrun**) script as follows:
 - For this documents example, add the following line immediately above the last line of the script
 - `./usr/spssinc/sdap53/odbc.sh`
 - Note, again the space between the period and the first slash ie. `./`
 - Save modelerrun (**clemlrun**)
- If you want to add a new Data Source Name, or edit an existing one, at a later date all you need to do is edit the odbc.ini, and Modeler Server, Modeler Batch and Solution Publisher Runtime will all pick up the new definition. I would advise checking connectivity every time you do this with Modeler Server and troubleshooting that. See [Troubleshooting ODBC article](#) for troubleshooting tips. Once Modeler Server is happy with the datasources then Batch and Solution Publisher Runtime should be.

Troubleshooting Connect ODBC Configuration

No ODBC data sources listed.

If the user opens the ODBC node and selects Connect and the list of available data sources is empty or contains unexpected entries, it may be due to a problem with the startup script. Correct the problem by verifying that the startup script value for the environment variable, ODBCINI, points to the *odbc.ini* file that contains the data sources intended for use with PASW Modeler. Then restart PASW Modeler Server.

Connect ODBC data sources cannot load drivers.

If the user connects to a data source in the ODBC node and gets a message that the driver cannot be loaded, it may be due to a problem with the driver's library. Use the *ivtestlib* tool provided with Connect ODBC to confirm that the driver can't be loaded. For Connect64, use the *ddtestlib* tool. Correct the problem by setting the library path variable in the startup script.

For example, if the Oracle driver cannot be loaded for a 32-bit installation, follow these steps:

- ➔ Use *ivtestlib* command to confirm that the driver cannot be loaded. For example, at the UNIX prompt, type:

```
sh
cd ODBC DIR (where ODBC DIR is your installed SDAP odbc directory)
. odbc.sh
./bin/ivtestlib MFor815
```

- ➔ Read the message to see if there is an error. For example, the message:

```
Load of MFor815.so failed: ld.so.1: bin/ivtestlib: fatal: libcintsh.so: open failed: No such file or directory. This indicates that the Oracle client library, libcintsh.so, is missing or that it is not on the library path (for example, not on LD_LIBRARY_PATH on Solaris).
```

- ➔ Confirm that the library exists. If it doesn't, reinstall the Oracle client. If the library is there, type the following sequence of commands from the UNIX command prompt:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/bigdisk/oracle/product/8.1.6/lib
export LD_LIBRARY_PATH
./bin/ivtestlib Mfor815
```

where */bigdisk/oracle/product/8.1.6/lib* is replaced by the path to *libcintsh.so* and *LD_LIBRARY_PATH* is the library path variable for your operating system.

Note: If you are running PASW Modeler 64-bit on Linux or Solaris, the library path variable

contains the suffix `_64`. Therefore, the first two lines in the previous example would become:

```
LD_LIBRARY_PATH_64=$LD_LIBRARY_PATH_64:/bigdisk/oracle/product/8.1.6/lib
export LD_LIBRARY_PATH_64
```

- ➔ Read the message to confirm that the driver can now be loaded. For example, the message:
Load of MFor815.so successful, qehandle is 0xFF3A1BE4 indicates that the Oracle client library can be loaded.
- ➔ Correct the library path in the PASW Modeler startup script.
- ➔ Restart the PASW Modeler Server with the startup script that you edited (*modelersrv.sh* or *rc.modeler*).

Library Paths

Verify you are using the correct library paths listed in the “Library Paths” table above.