

# ***IBM SPSS Modeler 15 Scoring Adapter Installation***

For some databases it is possible to enable SQL pushback of the majority of the SPSS Modeler model nuggets. In this way, model scoring can be performed within the database, avoiding the need to extract the data before scoring. This pushback can either use the native SQL within SPSS Modeler or, where available, use additional SQL scoring adapters that are tailored for different databases.

Where scoring adapters are installed into the relevant databases the SQL generation option generates scoring adapter SQL by default, unless you specifically choose to override this. The databases for which scoring adapters are available are:

- Netezza
- Teradata
- DB2 on IBM z/OS

## ***Installing IBM SPSS Modeler Server Scoring Adapter for Netezza***

Depending on the configuration of your database you can install either from the console or by using a graphical user interface (GUI); however, the first step is the same for both methods:

1. Run the *install.bin* install script. Ensure that *install.bin* can be executed by *nz user* and run it as that user.

### ***Console Installation***

2. Introduction details are displayed. Press Enter to continue.
3. Licensing information is displayed. Read the license, type Y to accept it, and press Enter to continue.
4. You are prompted to type the installation location. The default installation location is shown; however, if your installation is different, type the revised location and press Enter. *Note:* The installation must be under the */nz/export/* path.
5. You are prompted to enter the database name, database user name, and database password. *Note:* The database user must have database access permissions to initialize the database and register the udf modules
6. A pre-installation summary is displayed to confirm your entries so far. Press Enter to continue.
7. A message is displayed to say the installation routine is ready to run. Press Enter to continue.
8. A progress bar is displayed whilst the installation routine runs. When the installation is complete, press Enter to exit from the installer.

**GUI Installation**

2. Introduction details are displayed. Click Next to continue.
3. Licensing information is displayed. Read the license, select the option to accept it, and click Next to continue.
4. You are prompted to select the installation location. The default installation location is shown; however, if your installation of is different, click Choose to browse for the revised location. When the correct location is shown, click Next.
5. You are prompted to enter the database name, database user name, and database password. *Note:* The database user must have database access permissions to initialize the database and register the UDF modules.
6. A pre-installation summary is displayed to confirm your entries so far. Click Install to continue.
7. A progress bar is displayed whilst the installation routine runs. When the installation is complete, click Done to exit from the installer.

When you have completed these steps the scoring adapter is ready to receive work; use IBM® SPSS® Modeler to create the models and publish them into Netezza for the scoring adapter. To do this, from the model nugget menu, choose File > Publish to Server Scoring Adapter, complete the details, and click OK.

**Installing IBM SPSS Modeler Server Scoring Adapter for Teradata**

Depending on the configuration of your database you can install either from the console or by using a graphical user interface (GUI); however, the first step is the same for both methods:

1. Log in as either *root* or *DBA user* and run the *install.bin* install script. *Note:* You must have access permissions for the installation folder to do this.

**Console Installation**

2. Introduction details are displayed. Press Enter to continue.
3. Licensing information is displayed. Read the license, type Y to accept it, and press Enter to continue.
4. You are prompted to type the installation location. The default installation location is shown; however, if your installation is different, type the revised location and press Enter.
5. Enter the database TDPID. Press Enter to continue.
6. Enter the database name. Press Enter to continue.
7. Enter the database password. Press Enter to continue.
8. A pre-installation summary is displayed to confirm your entries so far. Press Enter to continue.
9. A message is displayed to say the installation routine is ready to run. Press Enter to continue.

10. A progress bar is displayed whilst the installation routine runs. When the installation is complete, press Enter to exit from the installer.
11. If the *Components* table exists in your database a confirmation message is displayed. Either enter Y to continue creating tables and functions in your database, or enter N to skip this step. *Note:* If you skip this step you must manually create tables and functions later using *initdb.sh*, which is stored in the *<installation path>\setup* folder.

### **GUI Installation**

2. Introduction details are displayed. Click Next to continue.
3. Licensing information is displayed. Read the license, select the option to accept it, and click Next to continue.
4. You are prompted to select the installation location. The default installation location is shown; however, if your installation of is different, click Choose to browse for the revised location. When the correct location is shown, click Next.
5. Enter the database TDPID, name, and password and click Next to continue.
6. A pre-installation summary is displayed to confirm your entries so far. Click Install to continue.
7. A progress bar is displayed whilst the installation routine runs. When the installation is complete, click Done to exit from the installer.
8. If the *Components* table exists in your database a confirmation message is displayed. Either click Yes to continue creating tables and functions in your database, or click No to skip this step. *Note:* If you skip this step you must manually create tables and functions later using *initdb.sh*, which is stored in the *<installation path>\setup* folder.

When you have completed these steps the scoring adapter is ready to receive work; use IBM® SPSS® Modeler to create the models and publish them into Teradata for the scoring adapter. To do this, from the model nugget menu, choose File > Publish to Server Scoring Adapter, complete the details, and click OK.

## **Installing IBM SPSS Modeler Server Scoring Adapter for DB2 on z/OS**

IBM® SPSS® Modeler Server 15, together with SPSS Modeler Server Scoring Adapter 15 for DB2 on z/OS, provides the ability to add predictive analytics to On Line Transaction Processing (OLTP) applications running on z/OS. SPSS Modeler Server is used to create and train the models that are to be used and publishes those models into DB2 z/OS.

The scoring adapter for DB2 on z/OS provides a scoring engine that runs in the DB2 for z/OS User Defined Function (UDF) runtime. The adapter defines a UDF that applications can invoke using SQL to run the scoring models synchronously, in-line within their transactions, using live transaction data as the input for scoring to maximize the effectiveness of scoring results. Because the adapter runs embedded in DB2 z/OS, it provides the same scalability and performance as DB2 for z/OS itself enabling you to handle large loads and meet stringent response time Service Level Agreements (SLAs).

SPSS Modeler Server Scoring Adapter 15 for DB2 z/OS (Function Modification Identifier (FMID) HHUMF00) is delivered as a non-priced feature of the IBM DB2 Accessories Suite for DB2 z/OS Version 2 Release 2 (for example, Product ID (PID) 5697-Q02), which itself is a non-priced product. It is an SMP/E installable feature that runs as a USS application within the Workload Manager (WLM) application environment in the DB2 z/OS UDF runtime. In addition to installing the feature, you will need to configure USS and a WLM application environment for it.

To install the scoring adapter, the z/OS system administrator must:

1. Order FMID HHUMF00 for the relevant PID (for example, 5697-Q02).
2. Follow the installation instructions in the program directory to install the feature using SMP/E.

The following table lists the resulting SMP/E installed datasets and their contents:

Table 1-1  
Dataset contents

Dataset name	Contents
SHUMSAMP	The following configuration samples:  HUMBIND - DB2 Bind the scoring adapter packages and plan  HUMFREE - DB2 Free the scoring adapter packages and plan  HUMSCFDB - Create the scoring adapter metadata database and tables  HUMUDFS - Define scoring adapter UDFs  HUMWLMP - PROC for Work Load Manager (WLM) Analytics application environment  HUMWLMA - Define Work Load Manager (WLM) Analytics application environment
SHUMLOAD	Shared libraries (DLLs) and UDF executable.
SHUMHFS	Default Mount at path: <code>/usr/lpp/spss/cfscoring_&lt;n.n&gt;..</code> Where <code>&lt;n.n&gt;</code> is the version number of SPSS Modeler Server.  All dynamically loaded and long named DLLs are externally linked from HFS to the HUMLOAD short name member during SMP/E installation.
SHUMDBRM	DB2 package.

To configure the scoring adapter, you must modify the configuration jobs provided in SHUMSAMP. To tailor it for your particular installation of the scoring adapter you need to make the changes specified in the job itself; to do this, follow these steps:

1. Use HUMSCFDB to create the database and tables needed by the scoring adapter and to grant their use.
2. Use HUMWLMP to setup the WLM PROC that the scoring adapter will use.

*Note:* Ensure that the scoring adapter SHUMLOAD dataset is APF authorized.

3. Use HUMWLMA to define and activate the WLM application environment for the scoring adapter.

*Note:* Do not share this WLM application environment with any other application.

*Note:* Do not use a general WLMA application environment.

4. Use HUMUDFS to create the scoring adapter UDFs.
5. Use HUMBIND to bind the scoring adapter packages and plan and to grant its use.

*Note:* The scoring adapter depends on PACK/UNPACK SQL provided by DB2 z/OS v10 in Authorized Program Analysis Reports (APARs) PM55928 and PM56631. Ensure you have them applied to your DB2 subsystem before attempting to use the scoring adapter.

When you have completed these steps the scoring adapter is ready to receive work; use IBM® SPSS® Modeler to create the models and publish them into DB2 z/OS for the scoring adapter. To do this, from the model nugget menu, choose File > Publish to Server Scoring Adapter, complete the details, and click OK.