

Pivotal™ Greenplum Database®

Version 4.3

DataDirect ODBC and JDBC Drivers

Rev: A01

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Chapter 1

DataDirect ODBC Drivers for Pivotal Greenplum

ODBC drivers enable third party applications to connect via a common interface to the Pivotal Greenplum Database system. This document describes how to install DataDirect Connect XE for ODBC drivers for Pivotal Greenplum on either a Linux or Windows system. Unless specified otherwise, references to DataDirect Connect XE for ODBC refer to DataDirect Connect XE for ODBC and DataDirect Connect64 XE for ODBC.

The DataDirect ODBC Drivers for Pivotal Greenplum are available for download from *Pivotal Network*.

Prerequisites

- Install KornShell (`ksh`) on your system if it is not available.
- Note the appropriate serial number and license key (use the same number for both the serial number and license key during the installation):

Driver	Serial Number / License Key
DataDirect Connect XE for ODBC 7.1 drivers (32-bit drivers)	1076681728
DataDirect Connect64 XE for ODBC 7.1 drivers (64-bit drivers)	1076681984

Supported Client Platforms

DataDirect Connect64 XE for ODBC drivers for Greenplum support the following 64-bit client platforms:

- AIX 64: 7.1, 7.0, 6.1, 5.3 Fixpack 5 or higher
- HP-UX IPF: 11i v3 (B.11.3X), 11i v2 (B.11.23)
- Linux Itanium: Red Hat Enterprise Linux (RHEL) 6.x, RHEL 5.x, RHEL 4.x
- Linux x64: RHEL 6.x, RHEL 5.x, RHEL 4.x, SUSE Linux Enterprise Server (SLES) 11, SLES 10
- Solaris on SPARC: 11 and 11 Express (Solaris 5.11), 10 (Solaris 5.10), 9 (Solaris 5.9), 8 (Solaris 5.8)
- Solaris x64: 11 (Solaris 5.11), 10 (Solaris 5.10)
- Windows x64: Windows 7, Vista, Server 2008, Server 2003, XP Professional SP 2

DataDirect Connect XE for ODBC drivers for Greenplum support the following 32-bit client platforms:

- AIX 32: 7.1, 7.0, 6.1, 5.3 Fixpack 5 or higher
- HP-UX IPF: 11i v3 (B.11.3X), 11i v2 (B.11.23)
- HP-UX PA-RISC: 11i v3 (B.11.3X), 11i v2 (B.11.23) 11i v1 (B.11.11), 11
- Linux x86: Red Hat Enterprise Linux (RHEL) 6.x, RHEL 5.x, RHEL 4.x, SUSE Linux Enterprise Server (SLES) 11, SLES 10
- Solaris on SPARC: 11 and 11 Express (Solaris 5.11), 10 (Solaris 5.10), 9 (Solaris 5.9), 8 (Solaris 5.8)
- Windows: Windows 7, Vista, Server 2008, Server 2003, XP SP2

Installing on Linux Systems

To install ODBC drivers on your client:

1. Log into *Pivotal Network* and download the correct ODBC driver for your operating system. The following Linux and UNIX files are available:

- PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_LINUX_64.TAR.Z
- PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_LINUX_32.TAR.Z
- PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_AIX_64.TAR.Z
- PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_AIX_32.TAR.Z

2. Unpack the files. For example:

```
$ tar -zxvf PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_LINUX_64.TAR.Z
```

3. Move to the new driver directory and execute the installer:

```
$ cd PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_LINUX_64
$ ksh unixmi.ksh
Progress DataDirect Connect for ODBC Setup is preparing....

English has been set as the installation language.

Log file : /tmp/logfile.492.1
-----
Progress DataDirect Connect (R) and Connect XE for ODBC 7.1 SP5
for UNIX operating systems
-----

The following operating system has been detected:

LinuxX64
Is this the current operating system on your machine (Y/N) ?
```

4. Press **Y** to confirm your operating system. The installer displays the license agreement.
5. Enter **YES** to accept the End User License Agreement. The installer prompts you for registration information:

```
Enter YES to accept the above agreement : YES
Please enter the following information for proper registration.

In the Key field, enter either EVAL or the Key provided.

Name          :
```

6. Enter the required registration information at each prompt:

Prompt	Enter
Name:	Name to associate with the registration.
Company:	Your company name.
Serial Number:	<ul style="list-style-type: none"> • 1076681984 for 64-bit driver, or • 1076681728 for 32-bit driver.
Key:	<ul style="list-style-type: none"> • 1076681984 for 64-bit driver, or • 1076681728 for 32-bit driver.

The installation program displays the registered driver information. For example:

```
You have chosen the Greenplum Wire Protocol driver.

Server Unlimited
Unlimited Connections

To change this information, enter C. Otherwise, press Enter to continue. :
```

7. Press Enter to continue with the installation. The installer prompts you for a temporary directory:

```
DataDirect Connect for ODBC Setup is preparing the installation.
Choose a temporary directory.

Enter the full path to the temporary install directory.[/tmp]:
```

8. Press Enter to accept the default /tmp directory or enter a custom directory to store temporary files. The installer extracts temporary files and prompts you for an installation directory:

```
Checking for available space...

There is enough space.
Extracting files...

Choose a destination directory.
Enter the full path to the install directory.[/opt/Progress/DataDirect/
Connect64_for_ODBC_71]:
```

9. Press Enter to accept the default directory or enter a custom destination directory. The installer checks for available space and installs the software:

```
Checking for available space...

There is enough space.
Extracting files...

Creating license file.....

DataDirect Connect for ODBC Setup successfully removed all of the
temporary files.

Thank you for using Progress DataDirect products under OEM license to
Greenplum Inc.

Would you like to install another product (Y/N) ? [Y]
```

10. Enter N to exit the installer.

Configuring the Driver on Linux

After you install the driver software, perform these steps to configure the driver.

1. Change to the installation directory for your driver. For example:

```
$ cd /opt/Progress/DataDirect/Connect64_for_ODBC_71/
```

2. Set the LD_LIBRARY_PATH, ODBCINI and ODBCINST environment variables with the command:

```
$ source odbc.sh
```


- Open the `odbc.ini` file and create a new DSN entry. You can use the existing "Greenplum Wire Protocol" entry as a template.

```
$ vi $ODBCINI
```

You must edit the following entries to add values that match your system:

Entry	Description
Database	Pivotal Greenplum database name.
HostName	Master host name.
PortNumber	Master host port number.
LogonID	Greenplum Database user.
Password	Password.

- Verify the driver version:

```
$ cd /opt/Progress/DataDirect/Connect64_for_ODBC_71/bin
$ ./ddtestlib ddgplm27.so
Load of /usr/local/Progress/DataDirect/Connect64_for_ODBC_71/lib/ddg
plm27.so successful, qehandle is 0xEE5060
File version: 07.10.0015 (B0020, U0014)
```

Testing the Driver Connection on Linux

To test the DSN connection:

- Execute the example utility to test the DSN connection, entering the Greenplum Wire Protocol data source name and the credentials of a Pivotal Greenplum user. For example:

```
$ cd /opt/Progress/DataDirect/Connect64_for_ODBC_71/samples/example
$ ./example
./example DataDirect Technologies, Inc. ODBC Example Application.
Enter the data source name : Greenplum Wire Protocol
Enter the user name       : gpadmin
Enter the password       : gpadmin

Enter SQL statements (Press ENTER to QUIT)
SQL>
```

- Enter the following select statement to confirm database connectivity:

```
Enter SQL statements (Press ENTER to QUIT)
SQL> select version();

version
PostgreSQL 8.3.23 (Greenplum Database 5.0.0 build
commit:8c709516061cff5476c03d6e2da99aae42722ae1) on x86_64-pc-linux-gnu,
compiled by GCC gcc (GCC) 6.2.0 compiled on Sep  1 2017 22:39:53

Enter SQL statements (Press ENTER to QUIT)
SQL>
```

- Press the ENTER key to exit the example application.

Installing on Windows Systems

To install ODBC drivers on your client:

1. Log into *Pivotal Network* and download the correct ODBC driver for your operating system (32-bit or 64-bit). The following Windows files are available:
 - PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_WIN_64.zip
 - PROGRESS_DATADIRECT_CONNECT64_ODBC_7.1.6.HOTFIX_WIN_32.zip
2. Uncompress the installer.
3. Double-click `setup.exe` to launch the install wizard.
4. If necessary, permit the InstallAnywhere installer to run.
5. Click **Next** at the Introduction screen to begin the installation.
6. Accept the End User License Agreement and click **Next**.
7. Select **OEM or Licensed Installation** as the installation type and click **Next**.
8. Enter your licensing information: Division name, Company Name, and serial number/license key found in *Prerequisites*.
9. Select **Add**. You should see this driver in the License dialog box: ODBC Greenplum Wire Protocol Third Party All Platform Server Unlimited Cores
10. Select **Next**.
11. Choose options appropriate for your installation. For example, select to replace the existing drivers and/or to create the default data sources. Click **Next**.
12. Accept the default installation directory or choose a custom directory. Click **Next**.
13. Verify the selected installation options, and click **Install** to begin installation. The installation process may take several minutes.
14. Select **Done** to complete installing the driver package.

Verifying the Version on Windows

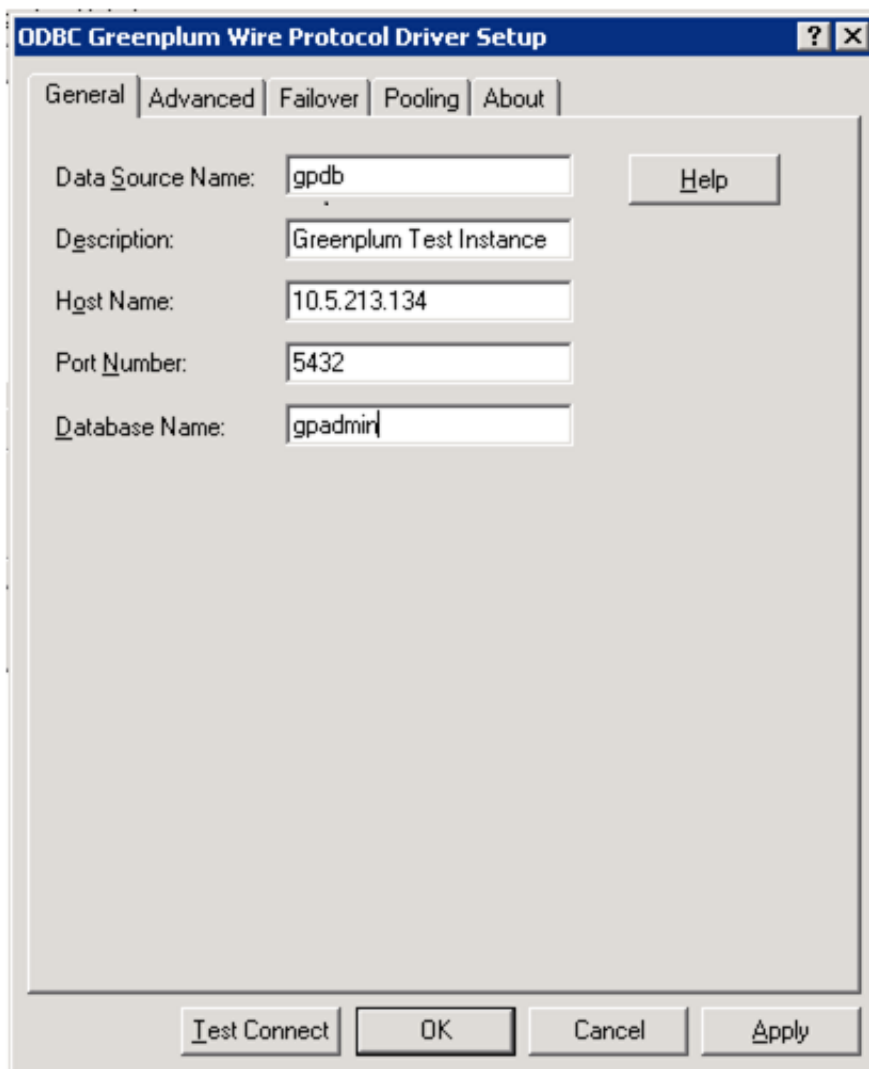
To verify your driver version:

1. Select **Start > All Programs > DataDirect > ODBC Administrator** to open the Windows ODBC Administrator.
2. Click the **Drivers** tab, and scroll down to DataDirect <version> Greenplum Wire Protocol. Ensure that you see the expected version number.

Configuring and Testing the Driver on Windows

To configure and test a DSN connection to a Greenplum Database:

1. Open the ODBC Administrator.
2. Select the **System DSN** tab.
3. Select **Add**.
4. Select **DataDirect 7.1 Greenplum Wire Protocol** and click **Finish**.
5. Enter the details for your chosen Greenplum Database instance. For example:



Recommended: Set the Max Long Varchar size.

Select the **Advanced** tab.

In **Max Long Varchar Size**, enter 8192 then select **Apply**.

6. Select **Test Connect**.

7. Enter your user name and password, then select **OK**.

8. You should see the confirmation message **Connection Established!**

If your connection fails, check the following for accuracy:

- Host Name
- Port Number
- Database Name
- User Name
- Password
- Greenplum instance is active

DataDirect Driver Documentation

For more information on working with Data Direct, see documentation that is installed with the driver. By default, you can access the installed documentation by using a Web browser to open the file `/opt/Progress/DataDirect/Connect64_for_ODBC_71/help/index.html`.

Documentation is also available online at <https://www.progress.com/documentation/datadirect-connectors>. Titles include:

- *User's Guide*
- *Reference*
- *Troubleshooting Guide*
- *Installation Help*
- *Windows Readme*
- *UNIX/Linux Readme*

Chapter 2

DataDirect JDBC Driver for Pivotal Greenplum

DataDirect JDBC drivers are compliant with the Type 4 architecture, but provide advanced features that define them as Type 5 drivers. Additionally, the drivers consistently support the latest database features and are fully compliant with Java™ SE 8 and JDBC 4.0 functionality.

The DataDirect JDBC Driver for Pivotal Greenplum is available for download from *Pivotal Network*.

Prerequisites

- The DataDirect JDBC Driver requires Java SE 5 or higher. See *System and Product Requirements* in the DataDirect documentation for information and requirements associated with specific features of the JDBC driver.
- The license key is embedded in the `greenplum.jar` file itself. You do not need to apply a specific license key to the driver to activate it.

Downloading the DataDirect JDBC Driver

To install the JDBC driver on your client:

1. Log into *Pivotal Network* and download the DataDirect JDBC driver file: `greenplum.jar`
2. Add the full path to the `greenplum.jar` to your Java `CLASSPATH` environment variable, or add it to your classpath with the `-classpath` option when executing a Java application.

Obtaining Version Details for the Driver

To view the JDBC driver version information:

1. Change to the directory that contains the downloaded `greenplum.jar` driver file. For example:

```
$ cd /opt/Progress/DataDirect/Connect_for_JDBC_51/lib
```

2. Execute the data source class to display the version information.

For Linux/Unix systems:

```
$ java -classpath greenplum.jar com.pivotal.jdbc.GreenplumDriver  
[Pivotal][Greenplum JDBC Driver]Driver Version: 5.1.4.000143  
(F000337.U000158)
```

For Windows systems:

```
java -classpath .;\greenplum.jar com.pivotal.jdbc.GreenplumDriver  
[Pivotal][Greenplum JDBC Driver]Driver Version: 5.1.4.000143  
(F000337.U000158)
```


Usage Information

The JDBC driver is provided in the `greenplum.jar` file. Use the following data source class and connection URL information with the driver.

Property	Description
Driver File Name	<code>greenplum.jar</code>
Data Source Class	<code>com.pivotal.jdbc.GreenplumDriver</code>
Connection URL	<code>jdbc:pivotal:greenplum://host:port;DatabaseName=<name></code>
Driver Defaults	<code>ResultSetMetadataOptions=1</code> <code>FetchTWFSasTime=true</code> <code>SupportsCatalogs=true</code> <code>MaxLongVarcharSize=8190</code> <code>MaxNumericPrecision=28</code> <code>MaxNumericScale=6</code>

DataDirect Driver Documentation

For more information on working with the Data Direct JDBC driver, see documentation available online at <https://www.progress.com/documentation/datadirect-connectors>. Titles include:

- *User's Guide*
- *Reference*
- *Installation Help*
- *Readme*
- *Quick Start*