Perceptive Content Database Driver

Installation and Configuration Guide

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Hyland

Documentation Notice

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Overview

This document provides instructions for installing and configuring Perceptive Content Database drivers. Beginning with Perceptive Content 7.3.0, you must manually install and configure these drivers prior to the installation or upgrade of Perceptive Content. We recommend you review the supported database drivers in the Perceptive Content Technical Specifications Guide.

Each machine that directly accesses the database needs to have a manually configured database driver and ODBC datasource. You can obtain the appropriate native database driver directly from the database manufacturer. If you are running a 32-bit agent on Windows, you must install the 32-bit version of the native driver and configure a 32-bit ODBC datasource.

For more information about installing and configuring your specific version of the database driver, see the manufacturer's installation and configuration guides.

Secure environment recommendations

The following recommendations are intended to help secure the installation environment and apply to all product installations. These recommendations should be followed as a minimum requirement for all Hyland products. The policies of your organization may have additional or more robust requirements that should also be followed.

Hyland products may have additional recommendations described in the specific documentation for that product. In some cases, the recommendations may change or may only apply when using certain Hyland products together in a solution.

- Use TLS for all HTTP traffic, including private network segments. TLS ciphers have to be maintained to stay current over time.
- Use Secure FTP instead of standard FTP for all FTP traffic.
- End-to-end encryption is recommended for all data in transport, independent of a network segment. Note that some regulatory compliance requirements may require end-to-end encryption.
- Change all default passwords before activation of the production system. This applies to Hyland products as well as third-party products used by Hyland products (such as a database server).
- Authorization rules should be configured and tested before activation of the production system. This applies to Hyland products as well as to file system folders and database user accounts.
- Use database encryption for all sensitive data persisted in the database.
- Use file system encryption for all sensitive data and content persisted on the file system.
- Enable encryption when available as part of a subsystem configuration. For example, since ODBC provides the capability to use strong encryption for data, it is recommended to have that option enabled.

Side-channel risks

Consider the following to mitigate side-channel risks:

- Ensure the latest application and operating system patches are applied.
- Ensure the latest firmware patches are applied for any hardware on-premises.

Windows ODBC driver configuration

To configure your Windows ODBC datasource for Perceptive Content, complete the following steps.

1. Install the appropriate database driver for your Perceptive Content database. For a list of supported database drivers, see the *Perceptive Content Technical Specifications Guide*.
2. Configure the ODBC datasources and verify connectivity to your Perceptive Content database.

   Note If you are running 32-bit and 64-bit agents on the same machine, you must configure the 32-bit and 64-bit ODBC datasources with the same name.
3. If you are performing an upgrade, run the installation package for Perceptive Content agents. You will need to supply the ODBC datasource name configured in the previous step. For more information, see the appropriate Perceptive Content agent's installation and setup guide.
4. To update the ODBC datasource used by Perceptive Content update the inow.ini section with the appropriate datasource name. For more information, see the the **[ODBC] inow.ini** configuration document.

Linux ODBC driver configuration

Configure Linux ODBC Driver Manager

This section only pertains to Linux configurations that consume a native ODBC driver. You must download and install a supported version of **unixODBC** and use it to manage your installed drivers and configured datasources. For list of supported ODBC driver managers, see the Perceptive Content Technical Specifications Guide.

After you install the **unixODBC** Driver Manager you must set the **IMAGENOW_LD_LIBRARY_PATH** in the **environment.ini** file in the root of Perceptive Content installation with the path to the directory containing the **libodbc.so** library.

Add the following to **environment.ini**:

```
; If present, this variable is consumed by the setenv.sh script in the Perceptive
Content bin directory.

IMAGENOW_LD_LIBRARY_PATH=/lib64
```

Example: Register the database driver with unixODBC Driver Manager

You must register your native driver with unixODBC. The following set of steps is an example of registering an installed ODBC database driver with unixODBC. For more information, see the installation guides provided by the provider of the database driver you are installing.

1. Install the database driver package.
2. Complete the following sub-steps to create a template for your database driver.
   1. Using a text editor, open a new file.
   2. Copy and paste the following code into the file.

      ```
      [msodbcsql_17]
      Description=Microsoft ODBC Driver 17 for SQL Server
      Driver=/opt/microsoft/msodbcsql17/lib64/libmsodbcsql-17.3.so.1.1
      ```
   3. **Save** and close the text editor.

3. Run the following code to install the database driver using odbcinst, where *new_driver_template.txt* is the name of your new file.

```
odbcinst -i -d -f new_driver_template.txt
```

Example: Create a datasource with unixODBC Driver Manager

The following set of steps is an example of configuring an ODBC datasource with unixODBC Driver Manager. For more information, see the installation and configuration guides provided by unixODBC.

1. Using a text editor, open a new file.
2. Copy and paste the following code into the file.

```
[inow_mssql]
Description=
Driver=msodbcsql_17
Server=<IP/hostname>
Database=INOW
```

3. **Save** and close the text editor**.**
4. Run the following code to install the ODBC datasource, where *new_datasource_template.txt* is the name of your new file.

```
odbcinst -i -s -l -f new_datasource_template.txt
```

Appendix A: ODBC database driver configuration examples

Configure Oracle Native Driver for Windows

1. Download the 32-bit and 64-bit instantclient basic packages.
2. Download the 32-bit and 64-bit instantclient-odbc packages.
3. Extract the instantclient and instantclient-odbc packages into the same directory, keeping the 32-bit and 64-bit packages separate.
4. Once the system extracts the odbc drivers, run the following command to install the odbc drivers.

```
odbc_install.exe
```

5. After the system installs the drivers, you must configure the **TNSNAMES** file. The default location for this file is in the **`ORACLE_HOME/network/admin`** directory. If this directory does not exist, you can create it. This file should contain the service description for each datasource. The following is an example **tnsnames.ora** file; however, we strongly recommend you consult with your system DBA to ensure the correct configuration for your environment.

```
INOWTNS =
  (DESCRIPTION =
    (ADDRESS =
      (PROTOCOL = TCP)
      (HOST = <HostName/IP>)
      (PORT = 1521)
    )
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = INOW)
    )
)
```

Add the 32-bit and 64-bit Oracle native driver datasources via odbcad32. This should use the same address name specified in the **tnsnames.ora** file.

Configure Oracle Native Driver for Linux

To configure the Oracle native driver for Linux, complete the following steps.

1. Download the 64-bit instantclient-basic package.
2. Download the 64-bit instantclient-odbc package.
3. Extract the packages into the same directory. Set the extracted directory as the current **$ORACLE_HOME** environment variable.
4. Once the system extracts the files, execute the **odbc_update_init.sh** from the **Instant Client** directory. For more information, see the table in the **odbc_update_ini.sh arguments** section below.

   odbc_update_ini.sh usage:

   ```
   ./odbc_update_ini.sh <ODBCDM_Home> [<Install_Location> <Driver_Name> <DSN>
   <ODBCINI>]
   ```

   odbc_udpate_ini.sh example:

   ```
   ./odbc_update_ini.sh / `pwd` instant_client_21_1 inow_ora /etc/odbc.ini
   ```

5. After the system installs the drivers, you must configure the **TNSNAMES** file. The default location for the file is in the `$ORACLE_HOME/network/admin` directory. If the directory does not exist, you can create it. This file should contain the service description for each datasource. The following is an example **tnsnames.ora** file; however, we strongly recommend to consult with your system DBA to ensure the correct configuration for your environment.

   ```
   INOWTNS =
   (DESCRIPTION =
     (ADDRESS =
       (PROTOCOL = TCP)
       (HOST = <HostName/IP>)
       (PORT = 1521)
     )
     (CONNECT_DATA =
       (SERVER = DEDICATED)
       (SERVICE_NAME = INOW)
     )
   )
   ```

6. Update the **inow_ora** datasource configuration in the **/etc/odbc.ini** file. For example, /etc/odbc.ini file contents for **odbc_update_ini.sh** and **TNSNAMES** examples above.

   ```
   [inow_ora]
   Description=
   Driver=instantclient_21_1
   ServerName=INOWTNS
   ```

7. Update the Perceptive Content **environment.ini** file's **IMAGENOW_LD_LIBRARY_PATH** value to include the location of the Oracle Instant Client shared libraries.

   ```
   IMAGENOW_LD_LIBRARY_PATH=/lib64:/opt/instantClientInstallDir
   ```

odbc_update_ini.sh arguments

The following table lists the odbc_update_ini.sh arguments.

Parameter	Description
ODBCDM_Home	Specifies the unixODBC driver manager home directory path.
Install_Location	Optional. Specifies the Oracle Instant Client directory path. The default path is the current directory.
Driver_Name	Optional. Specifies the driver name to identify the Oracle ODBC driver residing in current Oracle Instant Client home. The default name is similar to **Oracle<Version>c ODBC** driver.
DSN	Optional. Sets the ODBC DSN name. The default name is **OracleODBC-<Version>c**.
ODBCINI	Optional. Specifies the directory path of the **odbc.ini** configuration file. The default path is the user's home directory, for example **~/.odbc.ini**.

Appendix B: ODBC database connection string properties

Perceptive Content uses connection strings with default properties set. The following is a detailed list of properties that is set for each database configuration.

Default connection properties

DataDirect Oracle connection properties

For more information about these settings, see the *Progress DataDirect for ODBC Oracle Wire Protocol Driver* manual. The provided defaults should be sufficient for most installations.

Property Name	Default Value	Configurable inow.ini ODBC Setting
DSN		odbc.dsn
UID	inuser	odbc.user.id
Password		odbc.user.password
StaticCursorLongColBuffLen	131072	odbc.max.long.varchar.column.size
IANAAppCodePage	2252	

Native Oracle connection properties

For more information about these settings, see the "Format of the Connection String for the SQLDriverConnect Function" section in Oracle's *Using Oracle ODBC Driver* reference document.

Property Name	Default Value	Configurable inow.ini ODBC Setting

DSN		odbc.dsn
UID	inuser	odbc.user.id
PWD		odbc.user.password
FWC	F	
QTO	T	
DBA	W	
APA	T	
ODA	T	

Native Microsoft SQL Server connection properties

For information, see the Microsoft ConnectionString documentation.

Property Name	Default Value	Configurable inow.ini ODBC Setting
DSN		odbc.dsn
UID	inuser	odbc.user.id
PWD		odbc.user.password
APP	Current App Name	
Trusted_Connection	no	
AutoTranslate	no	
Regional	no	

Native PostgreSQL connection properties

For more information see the PostgreSQL libpq-connect documentation.

Property Name	Default Value	Configurable inow.ini ODBC Setting
DSN		odbc.dsn
UID	inuser	odbc.user.id
PWD		odbc.user.password
Protocol	7.4-2	

UserServerSidePrepare	1	
UniqueIndex	1	
MaxVarcharSize	2048	odbc.max.char.column.size
UnknownSizes	0	
UnknownAsLongVarchar	0	
ByteaAsLongVarBinary	1	
ReadOnly	0	
BI	-5	
AB	0x0	
UserDeclareFetch	0	
LFConversion	0	

Override connection properties

By default the aforementioned settings override any conflicting properties set on the ODBC datasource. If you need to override any of the default properties then you can remove them from the connection string by adding them to the **inow.ini ODBC** section's `odbc.connection.string.blacklist` property. This takes a comma separated list of properties to exclude from the connection string when creating an ODBC connection. We recommend you consult your system DBA before overriding any default connection string properties. Hyland Software is not responsible for consequences arising from changes to the connection string properties.

Example:

```
[ODBC]
odbc.connection.string.blacklist=UID,Password
```