

Oracle® Fusion Middleware
Upgrade Guide for Oracle Data Integrator
11g Release 1 (11.1.1.9.0)
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Preface

This preface contains the following sections:

- [Audience](#)
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Audience

This guide is intended for Oracle Fusion Middleware system administrators who are responsible for installing, maintaining, and upgrading Oracle Data Integrator. It is assumed that readers of this manual have knowledge of the following:

- Oracle Fusion Middleware system administration and configuration
- Configuration parameters and expected behavior of the system being upgraded

Related Documents

For important information about Oracle Fusion Middleware products, see the following manuals:

- *Oracle Fusion Middleware Installation Planning Guide*
This book contains useful information you should read before installing any Oracle Fusion Middleware product.
- *Oracle Fusion Middleware Concepts*
This book introduces the common terms and concepts in an Oracle Fusion Middleware environment.
- *Oracle Fusion Middleware Administrator's Guide*
This book contains information for managing your Oracle Fusion Middleware environment after installation and configuration is complete.

For important information about updating or upgrading your existing Oracle Data Integrator software to the latest version, see the following manuals:

- *Oracle Fusion Middleware Patching Guide*
This book provides information for updating your existing 11g version of Oracle Data Integrator to the latest available version.
- *Oracle Fusion Middleware Upgrade Guide for Oracle Data Integrator*

This book provides information for upgrading your existing 10g version of Oracle Data Integrator to the latest available version.

For more information about related Oracle Data Integrator products and services, see the following manuals:

- *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*
This book provides guidelines for developers interested in using Oracle Data Integrator for integration projects.
- *Oracle Fusion Middleware Connectivity and Knowledge Modules Guide for Oracle Data Integrator*
This document describes Oracle Data Integrator Knowledge Modules and technologies and how to use them in integration projects.
- *Oracle Fusion Middleware Knowledge Module Developer's Guide for Oracle Data Integrator*
This book describes how to develop your own Knowledge Modules for Oracle Data Integrator.
- *Oracle Fusion Middleware Application Adapters Guide for Oracle Data Integrator*
This book describes Oracle Data Integrator Application Adapters and how to use them in ODI integration projects.
- *Oracle Fusion Middleware Installation Guide for Oracle Data Profiling and Oracle Data Quality for ODI*
This guide provides Oracle Data Profiling and Data Quality for Oracle Data Integrator installation information including pre-installation requirements and troubleshooting.
- *Oracle Fusion Middleware Upgrade Guide for Oracle Data Profiling and Oracle Data Quality for ODI*

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Overview of the Oracle Data Integrator Upgrade Process

This chapter provides a high-level overview of the Oracle Data Integrator upgrade process. The following topics are covered:

- [Section 1.1, "Understanding Upgrading and Patching"](#)
- [Section 1.2, "Oracle Data Integrator Upgrade Roadmap"](#)

1.1 Understanding Upgrading and Patching

This section contains the following:

- [Section 1.1.1, "Defining the Upgrade of Oracle Data Integrator"](#)
- [Section 1.1.2, "Defining the Patching of Oracle Data Integrator"](#)

1.1.1 Defining the Upgrade of Oracle Data Integrator

The term "upgrade" is used to refer to moving from a previous major version to a new major version. For example, an upgrade would be required to move from Oracle Application Server 10g to Oracle Fusion Middleware 11g. Similarly, an upgrade is required to move from Oracle Fusion Middleware 11g Release 1 (11.1.1.3.0) to 11g Release 2 (11.1.2.0.0).

This document provides instructions for upgrading your Oracle Data Integrator 10g software to Oracle Fusion Middleware 11g.

1.1.2 Defining the Patching of Oracle Data Integrator

The term "patching" refers to copying a small collection of files over an existing installation. A patch is normally associated with a particular version of an Oracle product and involves updating from one minor version of the product to a newer minor version of the same product (for example, from version 11.1.1.2.0 to version 11.1.1.3.0).

Patch Set Releases

A patch set is a single patch that contains a collection of patches designed to be applied together. In such cases, the product version number changes in the same manner as a patch. For example, Oracle Data Integrator Patch Set 1 is 11g Release 1 (11.1.1.5.0), and Patch Set 2 is 11g Release 1 (11.1.1.6.0).

To apply a patch set release, you must use the Patch Set Installer as described in "Applying the Latest Oracle Fusion Middleware Patch Set" in *Oracle Fusion Middleware Patching Guide*.

One-Off Patches

Another type of patch available with Oracle Data Integrator is the one-off patch. One-off patches are not cumulative and contain a limited number of bug fixes only. Applying a one-off patch does not change the product release number.

To apply a one-off patch, you must use OPatch as described in "Patching Oracle Fusion Middleware with Oracle OPatch" in *Oracle Fusion Middleware Patching Guide*.

1.2 Oracle Data Integrator Upgrade Roadmap

[Figure 1–1](#) provides an overview of the Oracle Data Integrator upgrade process. Review the process to get familiar with the steps you will be required to take, based on your existing Oracle Data Integrator environment.

Note: Upgrade involves moving from a previous major version to a new major version. For example, an upgrade would be required to move from Oracle Data Integrator 10g to Oracle Data Integrator 11g.

If you are patching, or copying a small collection of files over an existing installation, see the *Oracle Fusion Middleware Patching Guide*.

Figure 1–1 ODI Upgrade Process Flow

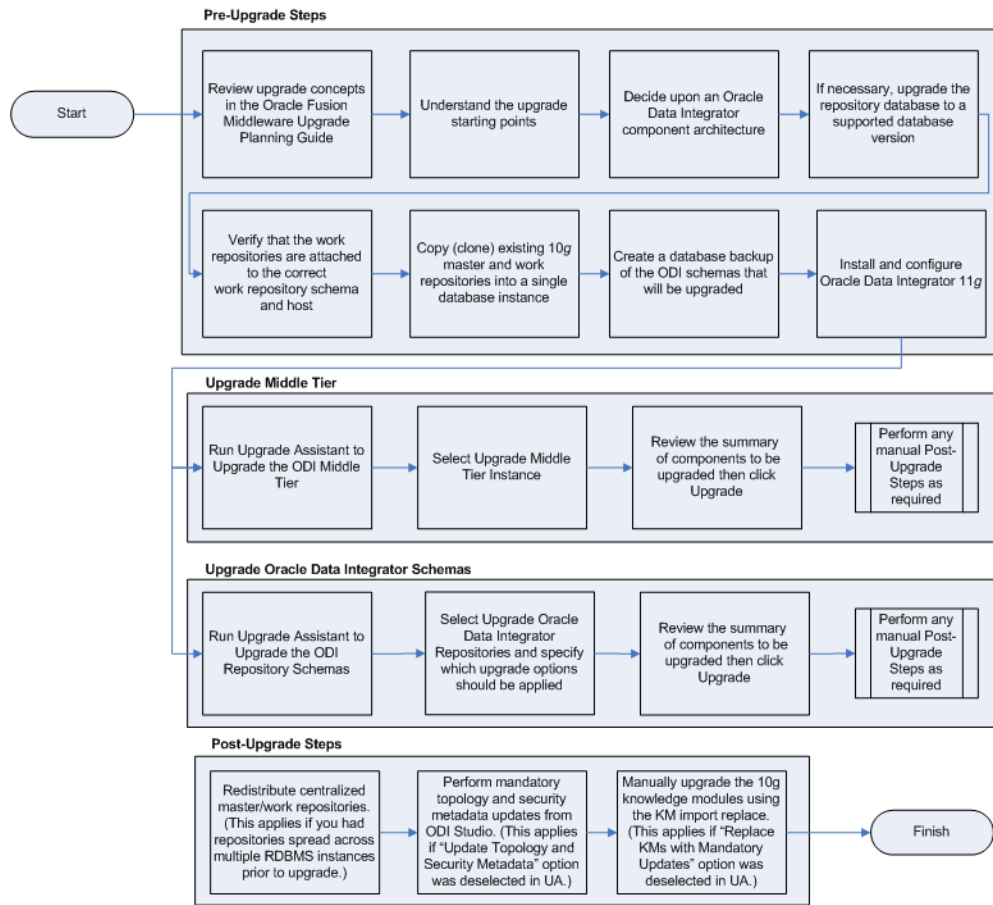


Table 1–1 describes each of the steps in the upgrade process flowchart which is shown in Figure 1–1. The table also provides information on where to go to get more information on each step in the process.

Table 1–1 Oracle Data Integrator Upgrade Procedure

Task	Description	More Information
Review upgrade concepts in the <i>Oracle Fusion Middleware Upgrade Planning Guide</i>	The <i>Oracle Fusion Middleware Upgrade Planning Guide</i> provides a high-level overview of how to upgrade your entire Oracle Data Integrator environment to Oracle Fusion Middleware, including compatibility information and instructions for upgrading any databases that support your Oracle Fusion Middleware components.	"Developing an Upgrade Strategy" in <i>Oracle Fusion Middleware Upgrade Planning Guide</i>
Understand the upgrade starting points	Before planning your upgrade, you should be familiar with the supported starting points for an Oracle Data Integrator upgrade.	Section 3.1, "Understanding the Starting Points for Oracle Data Integrator"
Decide upon an Oracle Data Integrator Component Architecture	With the introduction of Oracle WebLogic Server, the component configuration and architecture for Oracle Data Integrator has changed. Before you begin an upgrade, make sure you are familiar with the basic configurations in Oracle Fusion Middleware 11g.	Section 3.2, "Planning the Oracle Data Integrator Component Architecture"
If necessary, upgrade the repository database to a supported database version	The Oracle Data Integrator Repositories are stored into database schemas. Before you can upgrade these schemas, you must make sure the database is a supported version.	Section 3.3, "Upgrading the Database that Contains the ODI Repository"
Verify that the work repositories are attached to the correct work repository schema and host	The Upgrade Assistant upgrades all work repositories attached to master repository. Each work repository must be attached to the correct work repository schema and host before performing the upgrade. If the host is an Oracle database, you must also include an additional grant before you can successfully upgrade the work repositories.	Section 3.4, "Verifying that Work Repositories are Attached to the Correct Schemas"
Copy (clone) existing Master and Work Repositories before running the Upgrade Assistant	Oracle recommends that you perform repository upgrades on cloned repository schemas.	Section 3.5, "Cloning Existing Master and Work Repositories"
Create a database backup of the ODI schema that will be upgraded.	Creating a backup is mandatory if the repository schemas have not been cloned and you are attempting to upgrade a non-cloned schema. Performing a backup of the ODI schemas is particularly important if the upgrade fails and corrupts the content. With a backup, you can delete the corrupted schemas and re-clone the originals to complete the upgrade.	Section 3.6, "Creating a Backup of the ODI Repositories to be Upgraded"

Table 1–1 (Cont.) Oracle Data Integrator Upgrade Procedure

Task	Description	More Information
Install and Configure Oracle Data Integrator 11g	The Upgrade Assistant is available as part of the ODI 11g installation.	Section 3.7, "Installing and Configuring Oracle Data Integrator 11g"
Begin the upgrade process with the Upgrade Assistant.	The Upgrade Assistant automates most of the Oracle Data Integrator upgrade tasks.	Section 3.8.1, "Running the Upgrade Assistant for Oracle Data Integrator"
Run Upgrade Assistant to Upgrade Oracle Data Integrator Middle Tier. (This step can be performed before or after upgrading the repositories.)	For ODI stand-alone agent installations: this step copies the user's 10g Agent libraries, drivers and scripting engines into the 11g Standalone Agent installation folder. Note that this upgrade step does not apply to Java EE components (as they did not exist in ODI 10g) and does not apply to the 10g Designer or 11g Studio.	Section 3.8.2, "Upgrading the Middle Tier Instance"
Run Upgrade Assistant to Upgrade the Oracle Data Integrator Master Repository and Work Repository schema. (This step can be performed before or after upgrading the Middle Tier.)	The Upgrade Assistant upgrades the Oracle Data Integrator 10g repository schemas to Oracle Data Integrator 11g.	Section 3.8.3, "Upgrading the Oracle Data Integrator Repositories"
Perform any required post-upgrade manual steps.	The Upgrade Assistant automates many of the upgrade tasks, but there are cases where you must manually modify the configuration settings after running the Upgrade Assistant.	Chapter 4, "Reconfiguring ODI After an Upgrade"

Oracle Data Integrator 11g for 10g Users

The following sections introduce some key concepts of the Oracle Data Integrator environment for 10g Release 3 (10.1.3.x) users:

- [Section 2.1, "Components of the Oracle Data Integrator Installation"](#)
- [Section 2.2, "Important Changes for Oracle Data Integrator 10g Users"](#)
- [Section 2.3, "Upgrading From Sunopsis to Oracle Data Integrator 10g"](#)

2.1 Components of the Oracle Data Integrator Installation

Oracle Data Integrator 10g Release 3 (10.1.3) provided the following components:

- Oracle Data Integrator
- Oracle Data Profiling
- Oracle Data Quality for Data Integrator

Oracle Data Integrator 11g provides updates to all of these components, but not in a single installation. In Oracle Data Integrator 11g, Oracle Data Profiling and Oracle Data Quality components are packaged and installed separately, but they still provide the same resources and services.

Specifically, Oracle Data Integrator 11g provides the following installation options:

- Oracle Data Integrator Client Components
 - ODI Studio

This component replaces the Oracle Data Integrator 10g graphical modules (Designer, Operator, Topology and Security Manager), which are all merged into a single Fusion Common Platform (FCP) user interface.
 - ODI Software Development Kit (SDK)

This new component is a Java API for performing run-time and design-time operations.
- Oracle Data Integrator Standalone Agent
 - Standalone Agent

This component corresponds to the ODI 10g run-time agent. It runs on a Java Machine.
- Oracle Data Integrator Java EE Components
 - Java EE Agent

This component is a Java EE version of the run-time agent, for deployment within an application server.

- Oracle Data Integrator Console

This component replaces the ODI 10g Repository Explorer (Metadata Navigator) and Lightweight Designer components. It also installs the Oracle Enterprise Manager Plug-in for ODI.

- Public Web Service

This component is a web service that allows context and scenario listing. Other run-time web service operations (executing scenarios and sessions) are available on the Standalone and Java EE agent components.

For more information, see "Working with Web Services in Oracle Data Integrator" in *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*

2.2 Important Changes for Oracle Data Integrator 10g Users

Although the overall product architecture has not changed, 10g users should be aware the following changes to plan for their updates.

- [Section 2.2.1, "Upgrade Considerations"](#)
- [Section 2.2.2, "Changes in the Run-Time Agent"](#)
- [Section 2.2.3, "Changes in the Logging Files for Command Line Tools and the Standalone Agent"](#)
- [Section 2.2.4, "Other Changes"](#)

2.2.1 Upgrade Considerations

Before you begin the upgrade process, consider the following:

- Upgrading to ODI 11gR1 is performed using the Upgrade Assistant. It is not possible to upgrade repositories from the Oracle Data Integrator user interface.
- The Upgrade Assistant does not support the upgrade of externally authenticated repositories. If your repository was authenticated externally, the authentication has to be switched from external to internal before upgrade. After upgrade the authentication can be switched back to external.

For more information see "Switching the Authentication Mode" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

- The database that contains the Oracle Data Integrator repositories must be supported by Oracle Fusion Middleware 11g. For the latest list of supported databases, see:

http://www.oracle.com/technology/software/products/ias/files/fusion_certification.html

- For instructions on verifying that your database meets the requirements of Oracle Fusion Middleware 11g, see "Upgrading and Preparing Your Databases" in the *Oracle Fusion Middleware Upgrade Planning Guide*. Oracle recommends that you refer to your database-specific upgrade documentation for additional information.
- During the upgrade process Work Repositories must reside on the same database server as their Master Repository. The repositories can be manually redistributed after the upgrade.

For more information on cloning repositories, see [Cloning Existing Master and Work Repositories](#).

- Beginning with ODI 11.1.1.5.0 you can export a single ODI project from 10g and import into an ODI repository using the ODI Smart Export and Import feature.

For more information on upgrading your ODI projects through export/import, see "Exporting/Importing" in *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

2.2.2 Changes in the Run-Time Agent

The run-time agent is available as a standalone agent or a Java EE agent. Both of these agents are now connected to a single Work Repository and act as schedulers. The agents connect systematically to the Master Repository at startup.

For these agents to start properly:

- For the standalone agent the connection configuration (using the `odiparams` file) must be performed. Running the `agent.bat` starts a scheduler agent.
- For the Java EE agent, the connection configuration is made in the agent template, and the agent connects to the repositories using JDBC data sources defined in the application server.

The agent now uses the HTTP protocol rather than its own protocol. In addition, the standalone agent is no longer started as a service using the Wrapper tool. To configure the agent for high availability, Oracle Process Manager and Notification Server (OPMN) is used and can be configured using some built-in scripts.

2.2.3 Changes in the Logging Files for Command Line Tools and the Standalone Agent

The standalone agent and command line tools will create log files with static names. This change affects Oracle Data Integrator 10g users who are using the `-NAME` parameter in command line tools to create dynamic log files.

For example:

- The `startscen.sh` or `startscen.bat` tool will always create the `scartscen.log` file.
- The standalone agent log messages are always written to `odiagent.log`.

2.2.4 Other Changes

Oracle Data Integrator 10g users should also be aware of the following changes in Oracle Data Integrator 11g:

- With ODI version 11.1.1.5.0, the names of the ODI binding variables must be uppercase. If you are using lower or mixed case variables, you can use double quotes as a workaround (`SELECT 'odi 11' AS "txt" FROM dual`). Note, however, that you may have to redevelop your code as a result of this change.
- The `getObjectName` method now automatically truncates object names to the maximum object length allowed for the technology. Prior to ODI 11g, object names were not truncated. To prevent object names from truncating and to reproduce the 10g behavior you must add the server a property `OBJECT_NAME_LENGTH_CHECK_OLD` and set its value to "true". This property can be added in the Properties tab of the data server.

NOTE: If your object names continue to truncate after upgrading to 11g, consider changing the code and only use the method above as a temporary workaround.

- The ODI login files `snps_login_security.xml` and `snps_login_work.xml` are now merged into a single file called `snps_login_work.xml`. The `snps_login_work.xml` file is located in the `%APPDATA%/odi/oracledi` directory for Windows operating systems and `USER_HOME/.odi/oracledi` on Unix operating systems.
- With ODI version 11.1.1.5.0, ODI ships with a bundled HSQL database version 2.0. Previous versions of ODI shipped with a HSQL database version 1.7.3. The HSQL database is used for the memory engine, the demonstration environment, and the memory storage for the XML and LDAP drivers. You may have your own HSQL 1.7.3 database instances connected from ODI. If so, once you upgrade the HSQL database to version 2.0, ODI can no longer connect to HSQL database version 1.7.3 databases. You must upgrade your HSQL database version 1.7.3 to version 2.0 before upgrading to ODI 11.1.1.5.0.

For more information on upgrading databases, see the HSQL database documentation at

http://www.hsqldb.org/doc/2.0/guide/deployment-chapt.html#deployment_upgrade-sect

See also the HSQL database Changelog at

<http://www.hsqldb.org/web/changelog.html>

- Knowledge modules and technologies are available in a directory called `/xml-reference`.
- The demonstration environment is delivered separately from the ODI Installer on the ODI Companion CD.
- Host and Modules are removed from the Security. This entire feature is deprecated.
- The following scripts are deprecated: *Jython*, *agentscheduler*, *agentweb*, *designer*, *topology*, *security*, and *operator*.
- Repository creation for Oracle, DB2 and Microsoft SQL Server can be performed using Repository Creation Utility (RCU). This tool allows creation and management of schemas for multiple Oracle products.
- Repository creation and import is possible from the ODI Studio. The *mimport* and *mupgrade* scripts are deprecated.
- ODI is now shipped with DataDirect JDBC drivers to connect to technologies such as MSSQL and DB2. Note that the other ODI drivers can still be used to connect to the database. The additional drivers for the Standalone Agent are in the `/drivers` directory, but the drivers for the ODI Studio are in the `DOMAIN_HOME`.

For more information, see "Add Additional Drivers and Open Tools" in *Oracle Fusion Middleware Installation Guide for Oracle Data Integrator*.

Note: For a detailed list of the new features in Oracle Data Integrator 11gR1, see "What's New In Oracle Data Integrator?" in *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

2.3 Upgrading From Sunopsis to Oracle Data Integrator 10g

If you are currently using a Sunopsis 3.0.00.00 or later environment and want to upgrade to Oracle Data Integrator 11g, you must first upgrade your environment to

Oracle Data Integrator 10g, the follow the instructions in this guide to upgrade from 10g to 11g.

To upgrade from Sunopsis to Oracle Data Integrator 10g, follow the directions provided in "Upgrading Sunopsis to Oracle Data Integrator" in *Oracle Data Integrator Installation Guide* for 10g Release 1 (10.13.), available at the following URL:

http://docs.oracle.com/cd/E15985_01/doc.10136/install/ODIIG.pdf

Upgrading Your Oracle Data Integrator Environment

This chapter describes how to upgrade your existing Oracle Data Integrator 10g environment to Oracle Data Integrator 11g. If you are upgrading an existing 11g environment to a newer 11g version of ODI, see the *Oracle Fusion Middleware Patching Guide*.

This chapter contains the following sections:

- [Understanding the Starting Points for Oracle Data Integrator](#)
- [Planning the Oracle Data Integrator Component Architecture](#)
- [Upgrading the Database that Contains the ODI Repository](#)
- [Verifying that Work Repositories are Attached to the Correct Schemas](#)
- [Cloning Existing Master and Work Repositories](#)
- [Creating a Backup of the ODI Repositories to be Upgraded](#)
- [Installing and Configuring Oracle Data Integrator 11g](#)
- [Running Upgrade Assistant to Upgrade ODI Middle Tier and Repositories](#)
 - [Running the Upgrade Assistant for Oracle Data Integrator](#)
 - [Upgrading the Middle Tier Instance](#)
 - [Upgrading the Oracle Data Integrator Repositories](#)
- [Performing Post-Upgrade Steps](#)

3.1 Understanding the Starting Points for Oracle Data Integrator

The supported starting points for an upgrade depend on the components you will be upgrading and the components you have installed.

It is also important to note that if you are upgrading ODI 10g to 11.1.1.6.0, you will use the Upgrade Assistant for ODI as described in the following sections. If you are upgrading ODI 11.1.1.5.0 to 11.1.1.6.0, you will use the Oracle Patch Set Assistant for ODI. For more information on using the Patch Set Assistant, see *Oracle Fusion Middleware Patching Guide*.

This section describes the starting points for the following upgrade operations:

- [Starting Points When Upgrading the Middle Tier Instance](#)
- [Starting Points When Upgrading the Oracle Data Integrator Repositories](#)

Note: The Oracle Data Integrator 10g Release 3 (10.1.3) Data Quality products are not part of the standard Oracle Data Integrator 11g installation. These components must be installed as a separate installation and upgraded in a separate upgrade process. For more information, see *Oracle Fusion Middleware Upgrade Guide for Oracle Data Profiling and Oracle Data Quality for Oracle Data Integrator*.

3.1.1 Starting Points When Upgrading the Middle Tier Instance

The ODI Middle Tier Upgrade copies the 10g Agent libraries, drivers and scripting engines into the 11g Standalone Agent installation folder.

To run the Middle Tier Upgrade for Oracle Data Integrator, you must have both the ODI 10g (10.1.3) Run-Time Agent and ODI 11g Standalone Agent installed on the same system.

3.1.2 Starting Points When Upgrading the Oracle Data Integrator Repositories

The database that contains the Oracle Data Integrator repository must be supported by Oracle Fusion Middleware 11g. The Upgrade Assistant supports Master and Work repository upgrades for databases listed below.

Note: You can export objects from 10g and import into 11.1.1.5.0 or higher using the ODI Smart Export and Import feature.

For more information on upgrading your ODI projects through export/import, see "Exporting/Importing" in *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

If your current database is not listed below or to validate that your database version is compatible with ODI 11g, see [Upgrading the Database that Contains the ODI Repository](#).

- Oracle RDBMS

NOTE: The Oracle Database DBA must have SYSDBA privileges to perform the upgrade.

- Microsoft SQL Server
- Sybase Adaptive Server

NOTE: In order to upgrade repositories stored in Sybase, it is required that the repository is stored in a database with a page size of 4k or greater. If the repository is stored in a database with a smaller page size, the database should be migrated to a database of an appropriate page size before upgrading the repository.

For details on increasing the page size, refer to

http://www.sybase.com/content/1021203/sybmigrate_wp.pdf

- Hypersonic SQL
- IBM DB2
- IBM DB2/400
- PostgreSQL

NOTE: The ODI 11g Upgrade Assistant includes the drivers for all the supported databases except PostgreSQL. To use the Upgrade Assistant with PostgreSQL, you must have `postgresql-8.4-701.jdbc4.jar` installed in the following directory before using the Upgrade Assistant:

`ODI_HOME/upgrade/jlib`

Where `ODI_HOME` is the installation directory of Oracle Data Integrator 11g.

3.2 Planning the Oracle Data Integrator Component Architecture

The Oracle Data Integrator 10g component architecture changed with ODI 11g. Although you can keep the same component organization as ODI 10g, Oracle recommends that you review the new components organization in "Introduction to Oracle Data Integrator" in *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator* to identify any architecture changes.

3.3 Upgrading the Database that Contains the ODI Repository

The database that contains the Oracle Data Integrator repositories must be supported by Oracle Fusion Middleware 11g. For the latest list of supported databases, see:

http://www.oracle.com/technology/software/products/ias/files/fusion_certification.html

For instructions on verifying that your database meets the requirements of Oracle Fusion Middleware 11g, see "Upgrading and Preparing Your Databases" in the *Oracle Fusion Middleware Upgrade Planning Guide*. Oracle recommends that you refer to your database-specific upgrade documentation for additional information.

Note: If your RDBMS was supported in Oracle Data Integrator 10g, but is no longer supported in Oracle Data Integrator 11g, use the ODI 10g version to do the following before you upgrade:

1. Export the ODI 10g repositories from the unsupported database systems/versions.
2. Import Master and Work Repositories into new repositories created with the 10g version into supported database systems/versions.

For additional information, see "Repository-Level Export/Import" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

3.4 Verifying that Work Repositories are Attached to the Correct Schemas

As of version 11.1.1.6.0, the Upgrade Assistant upgrades all work repositories attached to master repository. In order to have a successful upgrade of the work repositories, you must ensure that the repositories are attached to the correct schema and host before you upgrade:

1. Connect to the ODI master repository using your existing ODI client (pre-upgraded version).

For information on connecting to the ODI master repository, see "Connecting to the Master Repository" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

2. Validate that the work repositories are attached to the correct work repository schema and host.

For more information, see: "Connecting to a Work Repository" and "Attaching and Deleting a Work Repository" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

Note: If your schema is hosted on an Oracle database, you must also issue the following grant to all work repository schemas before upgrading:

```
GRANT EXECUTE on dbms_lock to WORKSCHEMA
```

where *WORKSCHEMA* is the name of your work repository schema.

3.5 Cloning Existing Master and Work Repositories

Oracle recommends that you clone (copy) each original ODI Master and Work repository before beginning the upgrade process. During the Master Repository upgrade process, the Upgrade Assistant will prompt you for the location and credentials of the cloned Master Repository and Work Repositories.

The following sections provide basic schema cloning procedures for databases that are supported to host ODI repositories. For detailed information, refer to your database-specific documentation.

- [Schema Cloning Process for Oracle Database](#)
- [Schema Cloning Process for MySQL Database](#)
- [Schema Cloning Process for Microsoft SQL Server Database](#)
- [Schema Cloning Process for PostgreSQL Database](#)
- [Schema Cloning Process for IBM DB2 Universal Database](#)
- [Schema Cloning Process for IBM DB2 AS/400 Database](#)
- [Schema Cloning Process for Sybase AS Enterprise 15+](#)
- [Schema Cloning Process for Hypersonic SQL 1.7.3.3](#)

Note: The goal of this section is to stress the importance of creating a clone (or copy) of each of the ODI 10g or 11g repositories before you begin the upgrade process. The cloning procedures documented in this section are sample procedures for each of the ODI 11g supported databases. You are not restricted to using these procedures. Always use the cloning procedures that suit your specific needs.

3.5.1 Schema Cloning Process for Oracle Database

The following steps can be used to clone Oracle Database schemas for ODI:

1. Export ODI 10g Master and Work schemas using Oracle Export Utility

Example:

```
exp userid=odi_master_10g/odi_master_10g file=/tmp/odi_master_10g.dmp
exp userid=odi_work_10g/odi_work_10g file=/tmp/odi_work_10g.dmp
exp userid=odi_work1_10g/odi_work1_10g file=/tmp/odi_work1_10g.dmp
```

Export ODI 11g Master and Work schemas using Datapump Utilities

Example:

```
expdp odi_tmp/odi_tmppwd schemas=odiw10135 dumpfile=odiw10135.dmp
```

2. Create Master and Work clone schemas

Using SQL*Plus, create Master and Work clone schemas and grant connect/resource privileges.

Example:

```
create user odi_master_10g_cp identified by odi_master_10g_cp;
create user odi_work_10g_cp identified by odi_work_10g_cp;
create user odi_work1_10g_cp identified by odi_work1_10g_cp;
grant connect,resource to odi_master_10g_cp, odi_work_10g_cp,odi_work1_10g_cp;
```

3. Import ODI 10g Master and Work schemas into cloned schemas using Oracle Import Utility.

Using Oracle Import, import the ODI 10g Master and Work schema dump into the cloned Master and Work schemas.

Example:

```
imp userid='system/manager' touser=odi_master_10g_cp fromuser=odi_master_10g
file=/tmp/odi_master_10g.dmp
imp userid='system/manager' touser=odi_work_10g_cp fromuser=odi_work_10g
file=/tmp/odi_work_10g.dmp
imp userid='system/manager' touser=odi_work1_10g_cp fromuser=odi_work1_10g
file=/tmp/odi_work1_10g.dmp
```

Import ODI 11g Master and Work schemas using the Datapump Utilities

Example:

```
impdp ODI_TMP/ODI_TMPPWD dumpfile=odim10135 remap_tablespace=repo10135:odi11g
remap_schema=odim10135:odim1113
```

Note that with impdp it is also possible to modify the schema name and tablespace for data storage. The remap_xx parameters are optional.

3.5.2 Schema Cloning Process for MySQL Database

The following steps can be used to clone MySQL database schemas:

1. Export the ODI 10g Master and Work schemas using mysqldump.

Example:

```
mysqldump -h localhost -u root -p DEV_ODI_REPO > /scratch/dump.sql
```

2. Restore the ODI schema into a new schema using mysql.

Example: First, create a cloned schema:

```
mysql -h localhost -u root -p
create schema NEW_ODI_REPO default character set=utf8 default collate=utf8_bin;
```

Then, import the ODI schema into the cloned schema.

Example:

```
mysql -h localhost -u root -p NEW_ODI_REPO < /scratch/dump.sql
```

3. Create a login for the cloned schema using `mysql`.

Example:

```
mysql -h localhost -u root -p
grant all on NEW_ODI_REPO.* to NEW_ODI_REPO1@'localhost' identified by
'password';
grant process on *.* to NEW_ODI_REPO1@'localhost'
```

3.5.3 Schema Cloning Process for Microsoft SQL Server Database

The following steps can be used to clone Microsoft SQL 2005/2008 database schemas:

1. Export the ODI 10g Master and Work schemas using SQL Management Studio.

Example:

```
BACKUP DATABASE [odi_10g] TO DISK = N'C:\Program Files\Microsoft SQL
Server\MSSQL.1\MSSQL\Backup\odi_10g.bak' WITH INIT, NOSKIP;
```

2. Restore Master and Work schemas into the new database using SQL Management Studio.

Using SQL Management Studio Express perform the following:

1. Restore the Master and Work schemas.
2. Print logical names of files used to store the database.
3. Move the files used to store database.

Example:

```
RESTORE DATABASE [odi_10g_cp] FROM DISK = N'C:\Program Files\Microsoft SQL
Server\MSSQL.1\MSSQL\Backup\odi_10g.bak'
WITH FILE = 1, MOVE N'odi_10g' TO N'C:\Program Files\Microsoft SQL
Server\MSSQL.1\MSSQL\DATA\odi_10g_cp.mdf',
MOVE N'odi_10g_log' TO N'C:\Program Files\Microsoft SQL
Server\MSSQL.1\MSSQL\DATA\odi_10g_cp_log.ldf', NOUNLOAD;
go
```

3. Create login and user for cloned Master and Work schemas using SQL Management Studio.

Using SQL Management Studio Express, create logins and users to access cloned Master and Work schemas. Be sure to select the correct database instance in SQL Management Studio Express, as these commands are applied to the selected database instance.

Example:

```
create login odi_10g_cp with password=N'odi_10g_cp',
default_database=odi_10g_cp, check_expiration = off, check_policy = off;
go
USE odi_10g_cp
go
create user odi_10g_cp for login odi_10g_cp;
go
USE odi_10g_cp
go
```

4. To move the old schema to the new schema location, run the following SQL script:

NOTE: In the example below, the old schema name is `odi_10g` and the new schema name is `odi_10g_cp`.


```

CREATE SCHEMA [odi_10g_cp] AUTHORIZATION odi_10g_cp
go
.
DECLARE @OldSchema AS varchar(255)
DECLARE @NewSchema AS varchar(255)
.
SET @OldSchema = 'odi_10g'
SET @NewSchema = 'odi_10g_cp'
.
DECLARE @sql AS varchar(MAX)
SET @sql = CHAR(13) + CHAR(10)
.
SELECT @sql = @sql + 'ALTER SCHEMA [' + @NewSchema + '] TRANSFER [' +
TABLE_SCHEMA + '].[' + TABLE_NAME + ']' + CHAR(13) + CHAR(10)
FROM INFORMATION_SCHEMA.TABLES
WHERE TABLE_SCHEMA = @OldSchema
.
EXEC (@sql)
go

```

5. To finalize the schema move, run the following SQL query:

```

DROP SCHEMA [odi_10g]
go
drop user odi_10g;
go
alter user odi_10g_cp with default_schema = odi_10g_cp;
go
grant create table, create view, create procedure,create function to
odi_10g_cp;
go

```

3.5.4 Schema Cloning Process for PostgreSQL Database

Use the following steps to clone PostgreSQL database schemas:

1. Export ODI 10g Master and Work schemas using PostgreSQL Backup Utility.

Example:

```

pg_dump -U odi_master_10g --schema=odi_master_10g -Ft -f "c:/odi_master_
10g.dmp.tar" odi_10g
pg_dump -U odi_work_10g --schema=odi_work_10g -Ft -f "c:/odi_work_10g.dmp.tar"
odi_10g
pg_dump -U odi_work1_10g --schema=odi_work1_10g -Ft -f "c:/odi_work1_
10g.dmp.tar" odi_10g

```

2. Create a clone of the database and the Master and Work users.

Using PostgreSQL Interactive Terminal, create a clone database and users for Master and Work clone schemas with SUPERUSER option.

Example:

```

psql -U postres
CREATE ROLE odi_master_10g_cp WITH SUPERUSER LOGIN PASSWORD 'odi_master_10g_
cp';
CREATE ROLE odi_work_10g_cp WITH SUPERUSER LOGIN PASSWORD 'odi_work_10g_cp';
CREATE ROLE odi_work1_10g_cp WITH SUPERUSER LOGIN PASSWORD 'odi_work1_10g_cp';
CREATE DATABASE odi_10g_cp with owner=odi_master_10g_cp;

```

3. Restore Master and Work schemas into clone database using PostgreSQL.

Using PostgreSQL Restore Utility, restore Master and Work schemas into cloned database.

Example:

```
pg_restore -O -U odi_master_10g_cp -d odi_10g_cp -C "c:/odi_master_10g.dmp.tar"
pg_restore -O -U odi_work_10g_cp -d odi_10g_cp "c:/odi_work_10g.dmp.tar"
pg_restore -O -U odi_work1_10g_cp -d odi_10g_cp "c:/odi_work1_10g.dmp.tar"
```

4. Configure Master and Work clone schemas.

Using PostgreSQL Interactive Terminal, set NOSUPERUSER for Master and Work clone schema users.

Example:

```
psql -U postres -d odi_10g_cp

ALTER USER odi_master_10g_cp WITH NOSUPERUSER;
ALTER USER odi_work_10g_cp WITH NOSUPERUSER;
ALTER USER odi_work1_10g_cp WITH NOSUPERUSER;
```

Using PostgreSQL Interactive Terminal, rename Master and Work clone schemas.

Example:

```
ALTER SCHEMA odi_master_10g RENAME TO odi_master_10g_cp;
ALTER SCHEMA odi_work_10g RENAME TO odi_work_10g_cp;
ALTER SCHEMA odi_work1_10g RENAME TO odi_work1_10g_cp;
```

3.5.5 Schema Cloning Process for IBM DB2 Universal Database

Chose one of the following procedures to clone IBM's DB2 Universal Database schemas:

- [Same Host Cloning Process for ODI 10g Master and Work Schemas](#)
- [Different Host Cloning Process for ODI 10g Master and Work Schemas](#)

Note: The Page size for database has to be 32768 (32k) and operating system users ODI_MASTER_10G_CP and ODI_WORK_10G_CP have to be created manually.

3.5.5.1 Same Host Cloning Process for ODI 10g Master and Work Schemas

Use the following steps to clone IBM DB2 schemas on the same host or platform:

1. Create DB2 Database using Command Line Processor.

Example:

```
db2 CREATE DATABASE ODI11 AUTOMATIC STORAGE YES ON 'C:\' DBPATH ON 'C:\' USING
CODESET IBM-1252 TERRITORY US COLLATE USING SYSTEM PAGESIZE 32768
```

2. Copy ODI 10g Master and Work schemas using DB2 Database Movement Tool to new schema.

Master Schema Example:

```
db2move ODI10G COPY -sn odi_master_10g -co TARGET_DB ODI10GCP USER db2admin
USING welcome SCHEMA_MAP ((odi_master_10g,odi_master_10g_cp)) TABLESPACE_MAP
((USERSPACE1,USERSPACE1),SYS_ANY) owner odi_master_10g_cp
```

Work Schema Example:

```
db2move ODI10G COPY -sn odi_work_10g -co TARGET_DB ODI10GCP USER db2admin USING
welcome SCHEMA_MAP ((odi_work_10g,odi_work_10g_cp)) TABLESPACE_MAP
((USERSPACE1,USERSPACE1),SYS_ANY) owner odi_work_10g_cp
```

3.5.5.2 Different Host Cloning Process for ODI 10g Master and Work Schemas

Use the following steps to clone IBM DB2 schemas on different hosts or platforms:

1. Export DDL and Data from Master and Work schemas using DB2 Database Movement Tool and DDL Extracting Tool.

DB2 Database Movement Tool produces PC/IXF files with data and `db2move.lst` file with list of tables, Files are produced in the folder where the tool was called. The DDL Extracting Tool produces `db2master.sql` and `db2work.sql` with SQL queries to recreate database structure.

Example:

```
db2move ODI10G export -sn odi_master_10g,odi_work_10g
db2look -d ODI10G -z odi_master_10g -e -o c:/db2master.sql
db2look -d ODI10G -z odi_work_10g -e -o c:/db2work.sql
```

2. Transfer exported files to new location.
 1. Ensure that the PC/IXF files were transferred in binary mode, and that the `db2move.lst` file and the `db2master.sql` and `db2work.sql` files were transferred in ASCII mode.
 2. Place the PC/IXF files where the DB2 Database Movement Tools is located.
3. Create DB2 database using Command Line Processor.

Example:

```
db2 CREATE DATABASE ODI10G AUTOMATIC STORAGE YES ON 'C:\' DBPATH ON 'C:\'
USING CODESET IBM-1252 TERRITORY US COLLATE USING SYSTEM PAGESIZE 32768
```

4. Import the exported DDL to the new database using the Command Line Processor.

Example:

```
db2 -tvf c:/db2backup/db2master.sql
db2 -tvf c:/db2backup/db2work.sql
```

5. Import exported data to new database using DB2 Database Movement Tool.

Example:

```
db2move ODI10G load
```

6. Verify that cloned schemas are intact; some tables may be in "check pending" state (because of check constraint).

Use command set `integrity` to move to the normal state.

Example:

```
db2 set integrity for <table name> immediate checked
```

3.5.6 Schema Cloning Process for IBM DB2 AS/400 Database

Use the following steps to clone IBM DB2 AS/400 database schemas:

1. Save ODI 10g Master and Work schemas.

Using Telnet Client, save the ODI 10g Master and Work schemas.

Example:

```
CRTLIB LIB(ODI10GDMP) TYPE(*TEST)
CRTSAVF FILE(ODI10GDMP/ODIM10GDMP)
CRTSAVF FILE(ODI10GDMP/ODIW10GDMP)
SAVLIB ODIM10G DEV(*SAVF) SAVF(ODI10GDMP/ODIM10GDMP) ACCPTH(*YES) CLEAR(*ALL)
SAVLIB ODIW10G DEV(*SAVF) SAVF(ODI10GDMP/ODIW10GDMP) ACCPTH(*YES) CLEAR(*ALL)
```

2. Create Master and Work clone schemas.

Using Telnet, create user profiles for the cloned schemas.

Example:

```
CRTUSRPRF USRPRF(ODIMCP) PASSWORD(ODIMCP) PWDEXP(*NO)
CRTUSRPRF USRPRF(ODIWCP) PASSWORD(ODIWCP) PWDEXP(*NO)
```

3. Create ODI 10g Master and Work clone schemas.

Using iSeries Navigator or Interactive SQL (STRSQL), create ODI 10g Master and Work clone schemas.

Example:

```
CREATE SCHEMA AUTHORIZATION ODIMCP
CREATE SCHEMA AUTHORIZATION ODIWCP
```

4. Restore ODI 10g Master and Work schemas into clone schemas.

Using Telnet, restore ODI 10g Master and Work schema into clone schemas.

Example:

```
RSTLIB SAVLIB(ODIM10G) DEV(*SAVF) SAVF(ODI10GDMP/ODIM10GDMP) OPTION(*NEW)
RSTLIB(ODIMCP)
RSTLIB SAVLIB(ODIW10G) DEV(*SAVF) SAVF(ODI10GDMP/ODIW10GDMP) OPTION(*NEW)
RSTLIB(ODIWCP)
CHGOWN OBJ('QSYS.LIB/ODIMCP.LIB/*.*') NEWOWN(ODIMCP)
CHGOWN OBJ('QSYS.LIB/ODIWCP.LIB/*.*') NEWOWN(ODIWCP)
```

5. Using iSeries Navigator, select tables in schemas ODIM10G and ODIW10G to stop journalizing.

- a. Select **Journal** from schema ODIM10G:
Databases>Denmlas3>Schemas>ODIM10G>Journals
- b. Select file QSQJRN.
- c. Select **Start or End Table Journaling** from journal's context menu.
- d. Select tables for schema ODIM10G in 'Tables already journalized' view.
- e. Click **Remove** to remove them.
- f. Repeat steps a-e for Schema ODIW10G (Use ODIW10G instead of ODIM10G).

6. Using iSeries Navigator, select tables in schemas ODIMCP and ODIWCP to start journalizing.

Example:

- a. Select **Journal** from schema ODIMCP:
Databases->Denmlas3->Schemas->ODIMCP->Journals.
- b. Select file QSQJRN.

- c. Select **Start or End Table Journaling** from journal's context menu.
- d. Select schema ODIMCP in tables' view.
- e. Add all tables from schema ODIMCP to 'Table to journal' view.
- f. Check 'Journal both images' and 'Omit open/close entries' for them. Click **OK**.
- g. Repeat steps a-f for Schema ODIWCP (Use ODIWCP instead of ODIMCP).

3.5.7 Schema Cloning Process for Sybase AS Enterprise 15+

Use the following steps to clone Sybase AS Enterprise database schemas:

1. Export ODI 10g Master and Work schema using ISQL Utility.

Example:

```
isql -D odi -S STANE08 -U sa -P welcome

dump database odi10g to "c:/odi10g.dmp" with init
go
```

2. Restore Master and Work schemas into new database using ISQL Utility.

Using ISQL Utility, restore Master and Work schemas.

Example:

```
isql -S STANE08 -U sa -P welcome

create database odi10gcp on master = 860
go
load database odi10gcp from "c:/odi10g.dmp" with override
go
ONLINE DATABASE odi10gcp
go
```

3. Create logins for cloned Master and Work schemas using ISQL Utility.

Using ISQL Utility, create logins to access the cloned Master and Work schemas.

Example:

```
sp_addlogin ODIMCP, ODIMCP, odi10gcp
go
sp_addlogin ODIWCP, ODIWCP, odi10gcp
go
```

4. Rename original Master and Work schemas using ISQL Utility. Note that you cannot change the owner of a table or rename user. You must rename users directly.

Example:

```
sql -D odi10gcp -S STANE08 -U sa -P welcome

sp_configure 'allow updates', 1
go
update dbo.sysusers set name='ODIMCP' where name='ODI_MASTER_10G'
go
update dbo.sysusers set name='ODIWCP' where name='ODI_WORK_10G'
go
sp_configure 'allow updates', 0
go
```

5. Assign created logins to renamed users using ISQL Utility. Note that you cannot assign a login to a user. You must assign logins to users directly.

Example:

```
select suid from master.dbo.syslogins where name='ODIMCP'
go
NOTE: Use the returned suid 'ODIMCP' in the first update query below.
select suid from master.dbo.syslogins where name='ODIWCP'
go
NOTE: Use returned suid 'ODIWCP' in the second update query below.
sp_configure 'allow updates', 1
go
update dbo.sysusers set suid=5 where name='ODIMCP'
go
update dbo.sysusers set suid=6 where name='ODIWCP'
go
sp_configure 'allow updates', 0
go
```

3.5.8 Schema Cloning Process for Hypersonic SQL 1.7.3.3

You must upgrade your HSQL database version 1.7.3 to version 2.0 before upgrading to ODI 11.1.1.5.0. The upgrade process is performed in two steps: from version 1.7.3.3 to 1.8.x and from 1.8.x to 2.0.0.

For more information on upgrading to HSQL database version 2.0, see http://www.hsqldb.org/doc/2.0/guide/deployment-chapt.html#deployment_upgrade-sect.

Use the following steps to clone Hypersonic SQL 1.7.3.3 database schemas while upgrading to Hypersonic SQL 2.0.0:

1. Update server.properties

```
server.database.0=file:ODI/odi_10g
server.dbname.0=odi_10g
```

2. Update sqltool.rc with new connection information:

```
urlid odi_sa
url jdbc:hsqldb:hsqldb://localhost:9001/odi_10g
username SA
password
```

3. Start Server

```
/etc/init.d/hsqldb start
```

4. Using SQL Tool, stop the server.

```
java -jar ./lib/hsqldb.jar odi_sa
checkpoint;
shutdown;
```

5. Clone ODI 10g Database copying *.properties, *.script and *.backup to location of new database.

1. Copy declaration for your database from HSQL 1.7.3.3 to HSQL 1.8.x server.properties file.
2. Copy your database files from HSQL 1.7.3.3 to HSQL 1.8.x

3. Open script file for your database from HSQL 1.8.x and replace the following words to include quotation marks:

POSITION in DDL statements to "POSITION"

SCHEMA_VERSION_REGISTRY\$ to "SCHEMA_VERSION_REGISTRY\$"

4. Start HSQL 1.8.x and database instance automatically upgrade your database.
5. Using SQL TOOL, stop HSQL 1.8.x

```
java -jar ./lib/hsqldb.jar odi_sa
checkpoint;
shutdown;
```

6. Copy declaration for your database from HSQL 1.8.x to HSQL 2.0.0 server.properties file.
7. Copy your database files from HSQL 1.8.x to HSQL 2.0.0
8. Update server.properties for HSQL 2.0.0 to add declaration for clone database.

```
server.database.1=file:ODI/odi_10g_cp
server.dbname.1=odi_10g_cp
```

9. Update sqltool.rc with new connection information for clone database

```
urlid odicp_sa
url jdbc:hsqldb:hsq://localhost/odi_10g_cp
username SA
password
```

10. Copy database's file to the location of new database. ODI Uses MEMORY table therefore copy only properties and script files.

```
copy odi_10g.properties <HSQL1.8>/ODI/odi_10g.properties
copy odi_10g.script <HSQL1.8>/ODI/odi_10g.script
start HSQL 2.0.0
```

6. Create new logins for cloned 10g Database Using SQL Tool

Example of SQL Queries:

```
create user odim10g_cp password odim10g_cp ADMIN
create user odiw10g_cp password odiw10g_cp ADMIN
drop user odim10g
drop user odiw10g
```

3.6 Creating a Backup of the ODI Repositories to be Upgraded

Oracle recommends that you create a backup for each ODI Master and Work repository. The backup enables you to restore to a pre-upgrade state if necessary. For more information, see "Backup Strategies for Upgrade," in *Oracle Fusion Middleware Upgrade Planning Guide*.

The Upgrade Assistant Prerequisite screen prompts you to indicate whether the backup of the ODI repositories has been completed. It is important to note, however, that the Upgrade Assistant will not validate that a backup has been created.

Caution: This is a critical step of the upgrade process; especially if the repositories were not cloned. In the event that upgrade results are unsatisfactory, having a backup copy of the ODI repositories ensures that you will not lose important data. For more information on creating a backup, refer to your database backup and recovery documentation.

3.7 Installing and Configuring Oracle Data Integrator 11g

Before running the Upgrade Assistant, use the Oracle Universal Installer to install and configure ODI 11g. Note that it is not necessary to run the Repository Configuration Utility (RCU), finalize the agent configuration, or configure Java EE components during the installation process.

The ODI installation and configuration procedures are documented in the *Oracle Fusion Middleware Installation Guide for Oracle Data Integrator*.

3.8 Running Upgrade Assistant to Upgrade ODI Middle Tier and Repositories

Note: You can complete [Upgrading the Middle Tier Instance](#) and [Upgrading the Oracle Data Integrator Repositories](#) in any order.

The Oracle Fusion Middleware Upgrade Assistant automates the upgrade of many aspects of your Oracle Data Integrator 10g environment. Some post-upgrade configuration procedures may be required, however.

The Upgrade Assistant performs the following tasks and provides the progress on each task:

- Prompts you to specify the existing 10g ODI home location (path).
- Examines the components to be upgraded.
- Provides a summary of the components to be upgraded so you can verify that the Upgrade Assistant is upgrading the components you expect.
- Provides a progress screen so you can see the status of the upgrade as it proceeds.
- Alerts you of any errors or problems that occur during the upgrade.

See Also: Section B.1, "Troubleshooting Upgrade Assistant Problems and Issues" in the *Oracle Fusion Middleware Upgrade Planning Guide* for specific instructions for troubleshooting problems that occur while running the Upgrade Assistant

- Displays the **End of Upgrade** screen, which confirms that the upgrade was complete.

The Upgrade Assistant is installed automatically into the `/bin` directory of your Oracle Data Integrator home (`ODI_HOME`).

3.8.1 Running the Upgrade Assistant for Oracle Data Integrator

To start the Upgrade Assistant using the graphical user interface:

1. Change directory to the ODI_HOME/bin where ODI_HOME is the installation folder of Oracle Data Integrator directory of the Oracle Fusion Middleware installation.
2. Enter the following command to start the Upgrade Assistant.

On UNIX system:

```
./ua
```

On Windows systems:

```
ua.bat
```

3. Provide the required information in each of the Upgrade Assistant screens.

3.8.2 Upgrading the Middle Tier Instance

The Middle Tier upgrade copies the ODI 10g Agent libraries, drivers and scripting engines into the 11g Standalone Agent installation folder.

Note: You can perform the ODI upgrade operations in any order. If you want to upgrade the ODI repositories first, see [Section 3.8.3](#).

To upgrade the Middle Tier Instance, start the Upgrade Assistant as described in [Running the Upgrade Assistant for Oracle Data Integrator](#) and provide the required information in the following screens:

Table 3–1 Installation Screens for Upgrading the Middle Tier Instance

Screen	When Screen Appears	Description
Welcome	Always	No action required.
Specify Operation	Always	Select the Upgrade Middle Tier Instance option.
Specify Source Home	Only if you selected Upgrade Middle Tier Instance on the Specify Operation screen.	Specify the location of the 10g Oracle home you want to upgrade.
Examine	Always	The Upgrade Assistant performs a series of validations before upgrading the selected components. Ensure that all validations have succeeded.
Upgrade Summary	Always	If the summary information looks correct, click Upgrade .
Upgrade Progress	Always	The Upgrading Components screen shows the progress of the upgrade process. Once complete, click Next .
End of Upgrade	Always	The Upgrade Complete screen provides a link to the upgrade log file. Review the log file and test the upgraded applications to ensure that they are working as expected. Click Close to dismiss the Upgrade Assistant.

3.8.3 Upgrading the Oracle Data Integrator Repositories

The Oracle Data Integrator Repository upgrade option upgrades the Oracle Data Integrator 10g repositories to ODI 11g versions. The ODI 10g repositories should always be cloned (copied) before launching the Upgrade Assistant. See [Cloning Existing Master and Work Repositories](#).

Note: ODI UA uses actual data and structure of the ODI master repository to determine if a repository has already been upgraded. The Upgrade Assistant will return a message stating that the repository has already been upgraded if the following conditions exist:

- a version registry has valid state and version for the repository
- the repository is 11g
- version of the repository is equal or greater than version of ODI SDK used by UA

To debug or view the repository catalog information, use the following query on Table `schema_version_registry` which is stored in the Admin user (not in the ODI schema/repository):

```
SELECT COMP_ID,COMP_NAME,MRC_NAME,OWNER,VERSION,STATUS,UPGRADED
FROM schema_version_registry;
```

(On DB2/400 operating systems, the Admin user is QSECOFR, and the `schema_version_registry` table is located in the schema 'NULLID'.)

Rows with the component "ODI" are used to track ODI repositories.

To upgrade ODI Repositories, start the Upgrade Assistant as described in [Running the Upgrade Assistant for Oracle Data Integrator](#) and provide the required information in the following screens:

Caution: If the upgrade process fails, you must close the Upgrade Assistant, correct the issue, and then restart the Upgrade Assistant as described in [Section 3.8.1](#).

If the upgrade process fails *after* the upgrade process has started, you must drop the cloned repository and start from a freshly cloned repository in addition to correcting the underlying issue. There is no way to restart the failed upgrade process.

Table 3–2 Installation Screens for Upgrading the ODI Repositories

Screen Name	When Screen Appears	Description
Welcome	Always	No action required.
Specify Operation	Always	<p>Select Upgrade Oracle Data Integrator Repositories and choose which additional repository upgrade options you want to perform:</p> <ul style="list-style-type: none"> ■ Update Topology and Security Metadata ■ Replace KMs with Mandatory Updates <p>For more information on these options, see the Specify Operation screen description in Appendix A.</p>
Prerequisites	Only if you selected Upgrade Oracle Data Integrator Repositories on the Specify Operation screen.	<p>The Upgrade Assistant requires that you indicate the following prerequisites have been met in order to continue the upgrade:</p> <ul style="list-style-type: none"> ■ Database schema backup completed <p>Oracle recommends that you backup your ODI repositories on the database before upgrading. The Upgrade Assistant does not verify that the repositories have been backed up, so this option serves as a reminder. See Creating a Backup of the ODI Repositories to be Upgraded for more information.</p> ■ Database version is certified by Oracle for Fusion Middleware upgrade <p>The Upgrade Assistant requires that the Oracle Data Integrator repositories reside on a supported database. See Upgrading the Database that Contains the ODI Repository for a link to the latest list of Oracle Data Integrator supported databases.</p>
Target Database	Only if you selected Upgrade Oracle Data Integrator Repositories on the Specify Operation screen.	<p>The Specify Target Database screen prompts you for the database type and DBA login credentials of the target database that hosts the Master and Work Repositories. You must also provide the database user name and password used to connect to the Master Repository and the ODI Supervisor name and password.</p> <p>NOTE: The DBA user must have SYSDBA privileges.</p>
Examine	Always	<p>If status is succeeded for all components, click Next. If the examination fails for one or more of the components, click Back to review the information you entered. The log file will also provide important information. (The log file location is listed at the bottom of the screen.)</p>

Table 3–2 (Cont.) Installation Screens for Upgrading the ODI Repositories

Screen Name	When Screen Appears	Description
Upgrade Summary	Always	If the summary information looks correct, click Upgrade .
Upgrade Progress	Always	The Upgrading Components screen shows the progress of the upgrade process. Once complete, click Next .
End of Upgrade	Always	The Upgrade Complete screen provides a link to the upgrade log file. Review the log file and test the upgraded applications to ensure that they are working as expected. Click Close to dismiss the Upgrade Assistant.

3.9 Performing Post-Upgrade Steps

Depending on the options you selected during the upgrade process, you may have to perform manual procedures to finalize the upgrade process.

Refer to [Chapter 4, "Reconfiguring ODI After an Upgrade"](#) for a description of the post-upgrade tasks you might need to perform for each of the Oracle Data Integrator components.

Reconfiguring ODI After an Upgrade

The Upgrade Assistant automates many of the upgrade tasks, but there are cases where you must manually modify the configuration settings after running the Upgrade Assistant. Review [Table 4–1](#) to determine if you need to perform any additional upgrade procedures:

Table 4–1 Post-Upgrade Procedures for ODI

If you...	Then do this to finalize the upgrade...
Selected the Upgrade Oracle Data Integration Schemas option to upgrade the master and Work Repository schemas	Update the connection parameters to the Work Repositories as defined in the ODI topology. See Section 4.1, "Updating the Work Repository Connection Parameters"
Chose not to Update Topology and Security Metadata during the upgrade	Manually upgrade the ODI 10g metadata so that it can be used with ODI 11g. See Section 4.2, "Updating Topology and Security Metadata"
Updated the Topology and Security Metadata using Upgrade Assistant	Manually re-apply modifications made in Oracle Data Integrator 10g to the new ODI 11g built-in metadata objects. (The automated upgrade process erases any changes that were made to the ODI 10g objects.) See Section 4.3, "Re-applying ODI 10g Modifications to the ODI 11g Topology and Security Metadata"
Created Open Tools in ODI 10g, and you want to continue to use them in ODI 11g	Add Open Tools to the classpath and then add as an Open Tool in ODI Studio. See Section 4.4, "Re-applying Open Tools"
Chose not to Replace KMs with Mandatory Updates during the upgrade	Manually upgrade the ODI 10g KMs so that they can be used with ODI 11g. See Section 4.5, "Replacing KMs with Mandatory Updates"

4.1 Updating the Work Repository Connection Parameters

You must update the connection parameters to the upgraded Work Repositories as defined in the ODI topology.

To update the Work Repository Connection Parameters:

1. Launch the Oracle Data Integrator Console and connect to the Master Repository using Oracle Data Integrator Studio.
Expand the Work Repositories node in the Repositories accordion of the Topology Navigator.

2. Edit each Work Repository that is now hosted on a new server and edit its connection parameters by clicking the **Connection** button in the Work Repository editor toolbar.
3. Modify the connection parameters, User and Password, on the Definition tab. Modify the JDBC Driver and URL on the JDBC tab. Save the changes.
4. Validate your changes by creating and testing Repository Connections for these Work Repositories in Studio.
5. Modify your `odiparams.sh` (on UNIX operating systems) or `odiparams.bat` (on Windows operating systems) script to reflect the new connection parameters to your Master Repository. This script is located in the `ODI_HOME/oracledi/agent/bin` directory, where `ODI_HOME` is the Oracle Data Integrator installation directory.

Edit the `odiparams` script with a text editor to set the configuration parameters as shown in the following example. (Note that the values are provided for example only; be sure to enter your own parameters):

```
ODI_MASTER_DRIVER=oracle.jdbc.driver.OracleDriver
ODI_MASTER_URL=jdbc:oracle:thin:@ours:1521:ORA9
ODI_MASTER_USER=ODI_11G
ODI_MASTER_ENCODED_PASS=gxfpqkz074jeaCpL4XSEFzxoJ8E0p
ODI_SECU_WORK_REP=WORKREP
ODI_SUPERVISOR=SUPERVISOR
ODI_SUPERVISOR_ENCODED_PASS=fJya.vR5kvNcu9TtV,jVZEt
```

6. For each ODI Agent configuration update the `odiparams.bat` or `odiparams.sh` script as indicated in step 5.

4.2 Updating Topology and Security Metadata

By default, the Upgrade Assistant enables you to import the same ODI 10g technologies, data types, data type conversions, and languages when upgrading to ODI 11g. If, however, you have selected not to have them upgraded automatically by the Upgrade Assistant, you should upgrade them manually to take advantage of the ODI 11g features. The following ODI 10g metadata should be manually updated using Oracle Data Integrator import features:

- Technologies
- Data types and data type conversions
- Default Actions
- Action Groups
- Languages
- Security profiles
- Objects
- Methods

Note: Oracle Data Integrator 11g Topology and Repository Metadata exports are located in the `ODI_HOME/oracledi/xml-reference` directory. These objects must be imported in 'Synonym Insert-Update' mode.

For more information on importing and exporting ODI metadata, see "Exporting/Importing" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

4.3 Re-applying ODI 10g Modifications to the ODI 11g Topology and Security Metadata

The ODI 11g upgrade process will automatically upgrade your ODI 10g topology and security metadata objects. However, if you modified the topology and security objects that were provided by default with ODI 10g, such as user defined profiles or technologies, you must reapply your changes manually by editing the objects.

For information on modifying topology and security metadata, see "Introduction to the Oracle Data Integrator Topology" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

4.4 Re-applying Open Tools

If you created Open Tools in ODI 10g, and you want to continue to use them in ODI 11g, you must add Open Tools to the classpath and then add as an Open Tool in ODI Studio.

For more information on using ODI tools, see "Oracle Data Integrator Tools Reference" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

4.5 Replacing KMs with Mandatory Updates

By default, the Upgrade Assistant enables you to update ODI 10g Knowledge Modules (KMs) when upgrading to ODI 11g. Most ODI 10g KMs can be used with ODI 11g, so the update is not mandatory for all KMs.

Note: Only the KMs shipped with ODI 11g or upgraded to their 11g version using Upgrade Assistant are supported in this release.

Specifically the following KMs must be manually updated using KM Import/Replace before using ODI 11g:

- LKM File to Oracle (EXTERNAL TABLE)
- LKM File to Netezza (EXTERNAL TABLE)
- LKM File to Oracle (SQLLDR)
- LKM File to DB2 UDB (LOAD)
- LKM SQL to Teradata (TTU)
- IKM SQL to Teradata (TTU)
- LKM File to Teradata (TTU)
- IKM File to Teradata (TTU)
- IKM Teradata to File (TTU)
- LKM File to Sybase IQ (LOAD TABLE)

These Knowledge Modules listed above must be updated because they use calls to the `odiRef.getTargetTable` or `odiRef.getTableList` APIs to request field or row

separators for a file datastore. In ODI 10g, the returned values were inverted when requesting hexadecimal (XFILE_SEP_FIELD, XFILE_SEP_ROW) and ASCII (FILE_SEP_FIELD, FILE_SEP_ROW) separators. To address this issue, the ODI 10g KMs were implemented to work around this issue.

The 11g odiRef APIs return the correct values; therefore, the KMs have been modified to request the correct hexadecimal or ASCII separators.

For example:

- `odiRef.getTargetTable("FILE_SEP_FIELD")` was replaced with `odiRef.getTargetTable("XFILE_SEP_FIELD")`
- `odiRef.getTargetTable("XFILE_SEP_FIELD")` was replaced with `odiRef.getTargetTable("FILE_SEP_FIELD")`
- `odiRef.getTargetTable("XFILE_SEP_ROW")` was replaced with `odiRef.getTargetTable("FILE_SEP_ROW")`
- `odiRef.getTargetTable("FILE_SEP_ROW")` was replaced with `odiRef.getTargetTable("XFILE_SEP_ROW")`

If you customized KMs using these methods, you must make the appropriate changes to the API calls.

Also note that the following KMs are no longer available:

- LKM File to SAS
- LKM SAS to SQL
- LKM File to MSSQL (BCP)

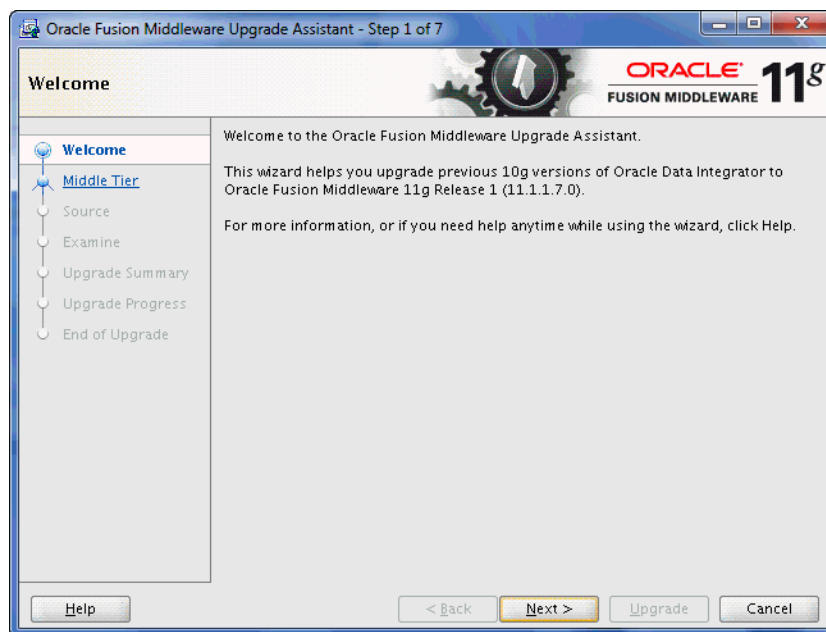
A

Oracle Data Integrator Upgrade Screens

This appendix contains images and descriptions for all of the Oracle Fusion Middleware Upgrade Assistant for Oracle Data Integrator screens:

- [Welcome](#)
- [Specify Operation](#)
- [Specify Source Home](#)
- [Prerequisites](#)
- [Target Database](#)
- [Examine](#)
- [Upgrade Summary](#)
- [Upgrade Progress](#)
- [End of Upgrade](#)

A.1 Welcome

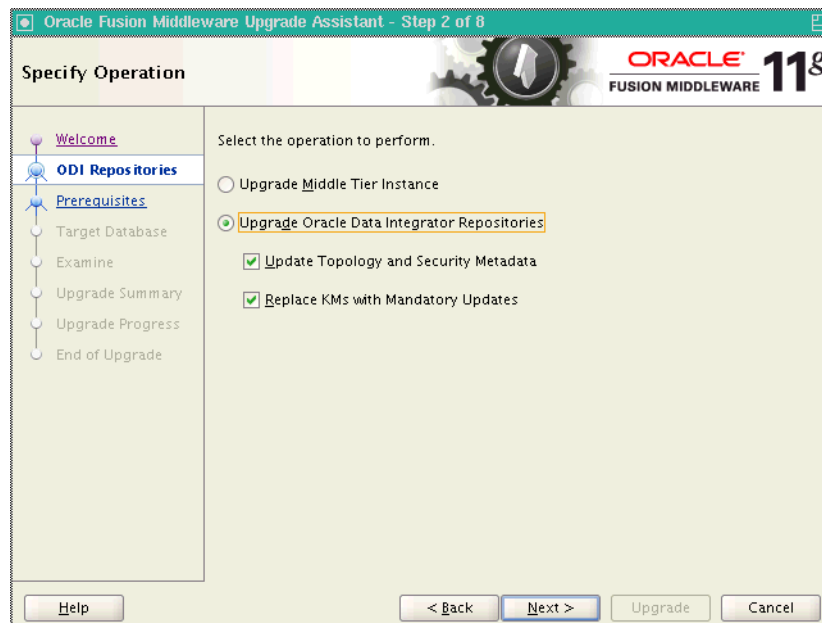


A.2 Specify Operation

The Specify Operation screen provides two upgrade options:



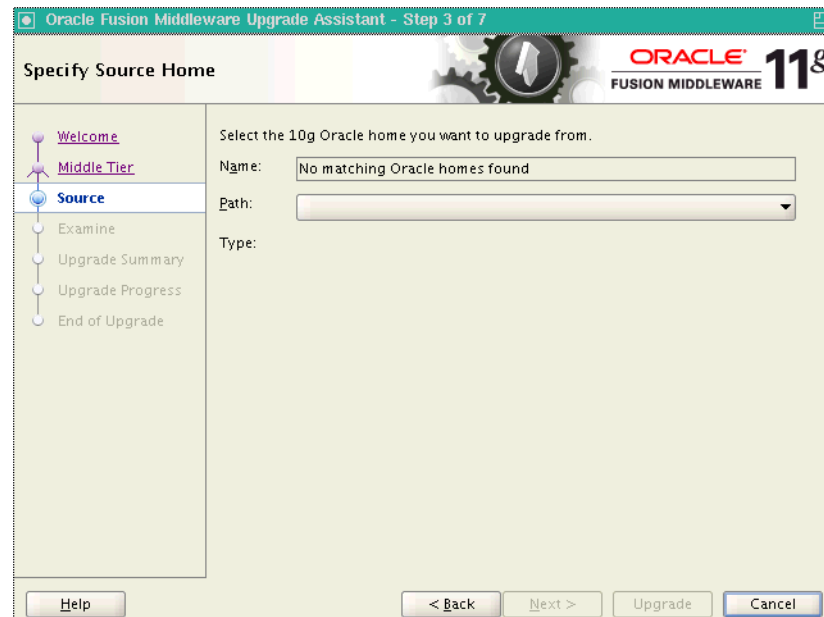
Option	Description
Upgrade Middle Tier Instance	Select Upgrade Middle Tier Instance to upgrade the ODI 10g Agent configuration information into the ODI 11g Standalone Agent. Java EE components are not affected by the Middle Tier Instance upgrade.



Option	Description
Upgrade Oracle Data Integrator Repositories	Select Upgrade Oracle Data Integrator Repositories to upgrade the Oracle Data Integrator 10g repositories to ODI 11g versions. The repositories should be cloned (copied) before launching the Upgrade Assistant. See Cloning Existing Master and Work Repositories .
Update Topology and Security Metadata	<p>The Update Topology and Security Metadata option updates only the Oracle Data Integrator 10g built-in topology and security objects. Customized objects, such as user defined profiles or technologies, for example, are not updated. If you modified any ODI 10g objects, you must re-apply your changes after the upgrade process.</p> <p>NOTE: If this option is deselected, the topology and security metadata objects will have to be manually upgraded in order to use the ODI 11g features. For more information, see Section 4.2, "Updating Topology and Security Metadata".</p> <ul style="list-style-type: none">■ Updating the Topology Metadata upgrades the built-in technologies to support new 11g features. If you do not upgrade your topology, you will not be able to use the 11g features defined in the technologies.■ Updating the Security Metadata upgrades the profiles, objects and methods to support new 11g features and menus. If you do not upgrade the security metadata, some of the 11g features will not be available. <p>For more information, see Section 4.3, "Re-applying ODI 10g Modifications to the ODI 11g Topology and Security Metadata"</p>

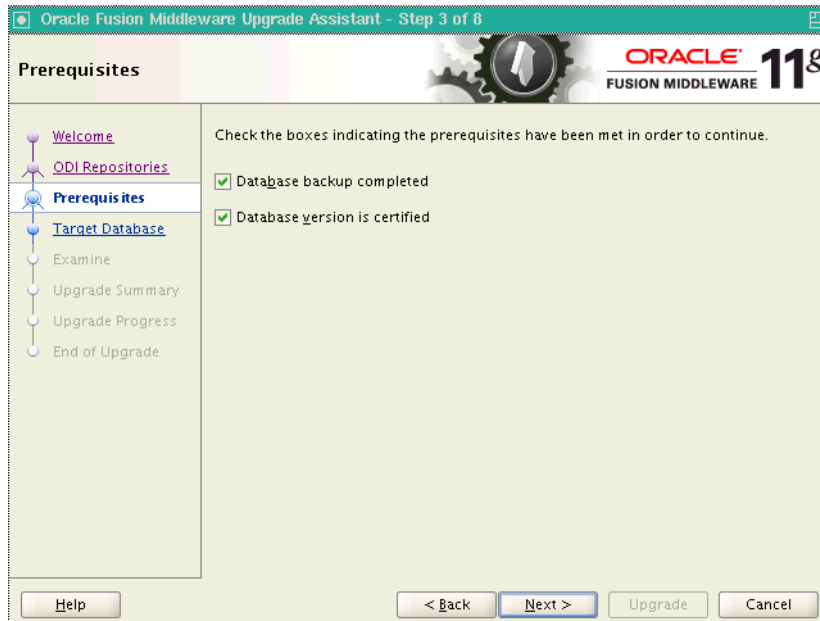
Option	Description
Replace KMs with Mandatory Updates	<p data-bbox="808 226 1370 363">Most ODI 10g Knowledge Modules (KMs) can be used with ODI 11g, so the update is not mandatory for all KMs. This option updates only the 10g Knowledge Modules (KMs) that will no longer work with ODI 11g.</p> <p data-bbox="808 373 1370 531">If this option is deselected, the 10g Knowledge Modules that no longer work with ODI 11g will have to be manually upgraded to take advantage of the ODI 11g features. For more information, see Section 4.5, "Replacing KMs with Mandatory Updates".</p> <p data-bbox="808 541 1370 657">NOTE: KM updates are performed based on the name of the knowledge module. For example, a KM called "LKM File to DB2 UDB (LOAD)" will automatically be replaced.</p> <p data-bbox="808 667 1370 741">The following 10g KMs are automatically updated to work with ODI 11g when the Replace KMs with Mandatory Updates option is selected:</p> <ul data-bbox="808 751 1370 1140" style="list-style-type: none"> ■ LKM File to Oracle (EXTERNAL TABLE) ■ LKM File to Netezza (EXTERNAL TABLE) ■ LKM File to Oracle (SQLLDR) ■ LKM File to DB2 UDB (LOAD) ■ LKM SQL to Teradata (TTU) ■ IKM SQL to Teradata (TTU) ■ LKM File to Teradata (TTU) ■ IKM File to Teradata (TTU) ■ IKM Teradata to File (TTU) ■ LKM File to Sybase IQ (LOAD TABLE) <p data-bbox="808 1150 1370 1203">Replaced KMs are exported, before their replacement, into a directory named:</p> <p data-bbox="808 1224 1370 1308">UA_Oracle_ Home/upgrade/odi/KM10g/expdir.<time_stamp>/work_repository_name/project_name</p> <p data-bbox="808 1318 1370 1350">NOTE: The following KMs are no longer available:</p> <ul data-bbox="808 1360 1370 1459" style="list-style-type: none"> ■ LKM File to SAS ■ LKM SAS to SQL ■ LKM File to MSSQL (BCP)

A.3 Specify Source Home



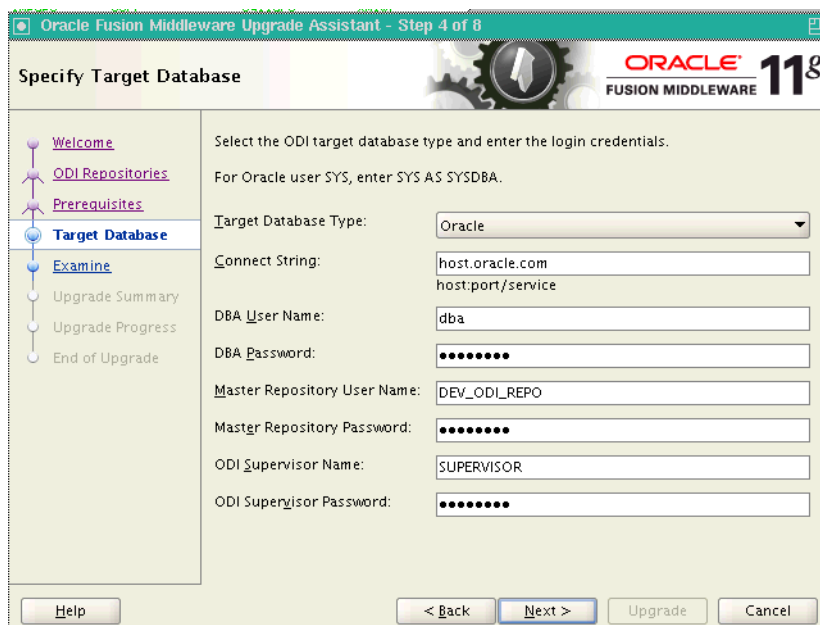
Field	Description
Name	Displays the name of the Oracle 10g home to be upgraded. This screen only appears when you select Upgrade Middle Tier Instance .
Path	Specify the 10g home you want to upgrade by specifying the directory path.
Type	Specify the type of database you are upgrading

A.4 Prerequisites



Check the boxes indicating that you have determined that the prerequisites have been met.

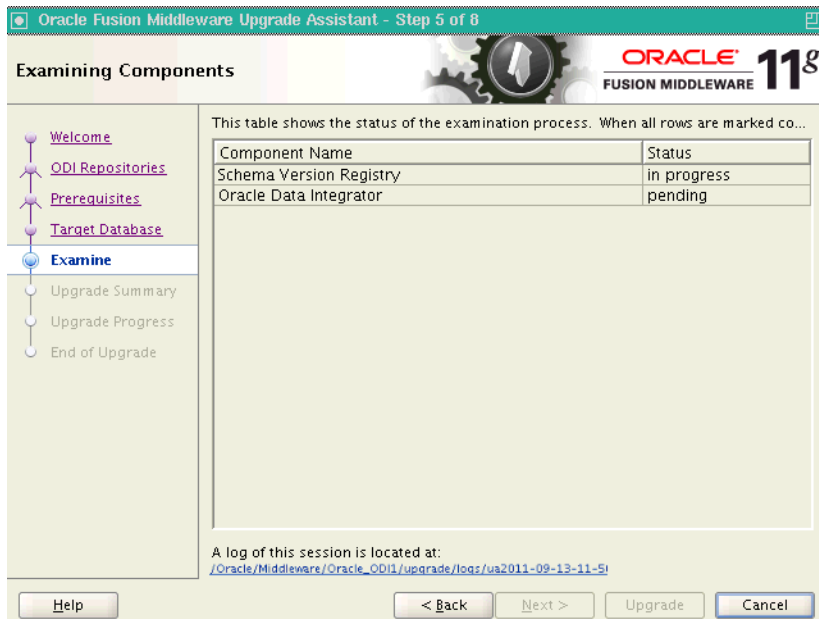
A.5 Target Database



Field	Description
Target Database Type	Select the database type from the drop-down list. The target database is the database where you installed the Oracle Fusion Middleware 11g ODI schema.
Connect String	<p>Enter the connect string for the database that contains the 11g ODI schemas.</p> <p>Oracle Database</p> <p>Use a JDBC connect string: <i>host:port:SID</i></p> <p>For example: odiHost:1521:odiDB</p> <p>Or: <i>//host:port/service</i></p> <p>For example: <i>//odiHost:1521/odiDB2</i></p> <p>Microsoft SQL Server</p> <p>Use the following connect string: <i>//host:port;DatabaseName=dbname</i></p> <p>For example: <i>//odiHost:1443;DatabaseName=odiDB</i></p> <p>IBM DB2</p> <p>Use the following connect string: <i>//host:port;DatabaseName=dbname</i></p> <p>For example: <i>//odiHost:446;DatabaseName=odiDB</i></p> <p>PostgreSQL</p> <p>Use the following connect string: <i>//host:port/database</i></p> <p>For example: <i>//odiHost:5432/odiDB</i></p> <p>HSQL Database Engine</p> <p>Use the following connect string: <i>//host:port/database</i></p> <p>For example: <i>//odiHost:9001/odiDB</i></p> <p>Sybase SQL Server</p> <p>Use the following connect string: <i>//host:port;DatabaseName=dbname</i></p> <p>For example: <i>//odiHost:4100;DatabaseName=odiDB</i></p>

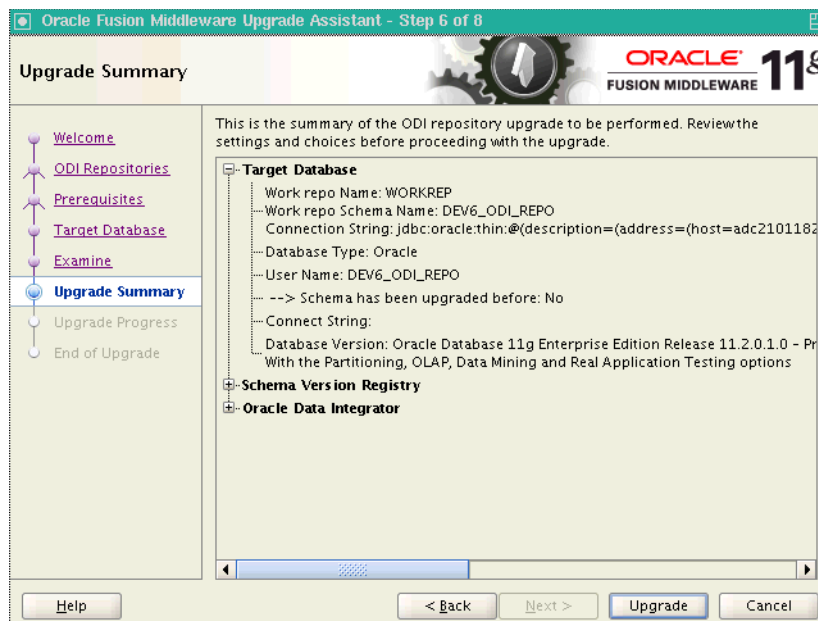
Field	Description
DBA User Name	<p>Enter the user name that will be used by the Upgrade Assistant to connect to the target database. You can also include the privileges required for the user.</p> <p>Oracle Database</p> <p>For example, to connect as the SYS user, enter the following in the DBA User Name field:</p> <pre>sys as sysdba</pre> <p>NOTE: For Oracle Database DBA, you must have SYSDBA privilege otherwise you will be prevented from performing the upgrade.</p>
DBA Password	Enter the password for the user you entered in the DBA User Name field.
Master Repository User Name	<p>Enter the user name of the Oracle Data Integrator Master Repository owner.</p> <p>For example:</p> <pre>DEV_ODI_REPO</pre>
Master Repository Password	Enter the password for the user you entered in the Master Repository User Name field.
ODI Supervisor Name	<p>Enter the user name of the Oracle Data Integrator User with Supervisor privileges. The ODI Supervisor name is case-sensitive.</p> <p>For example:</p> <pre>SUPERVISOR</pre>
ODI Supervisor Password	Enter the password for the user you entered in the ODI Supervisor Name field. The ODI Supervisor password is case-sensitive.

A.6 Examine



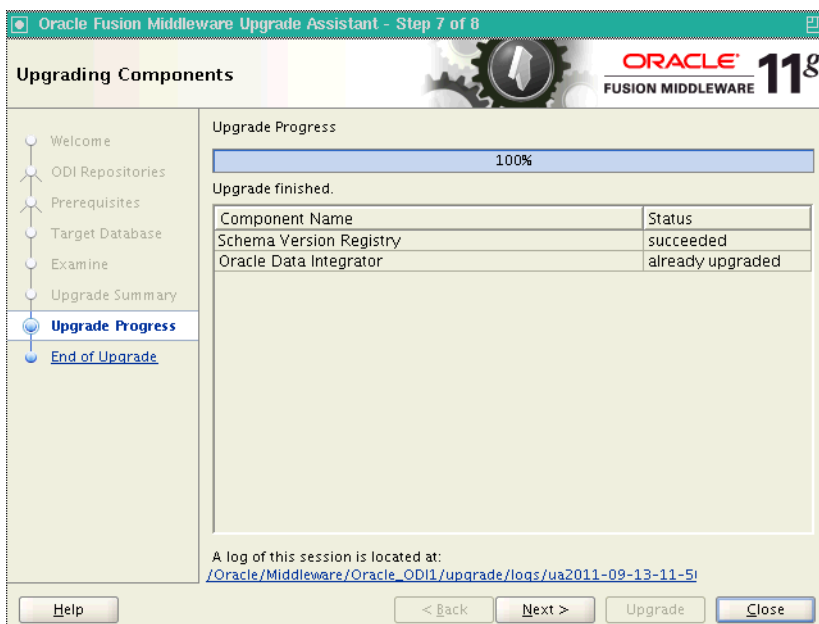
Click **Next** if all component examinations have succeeded. If there are any issues, refer to the generated log file located in the directory shown on this screen.

A.7 Upgrade Summary



Review the summary of the Oracle Data Integrator upgrade operations. If the operations and configuration settings are correct, click **Upgrade** to begin.

A.8 Upgrade Progress



The Upgrading Components screen shows the progress of the upgrade process. Once complete, click **Next**.

A.9 End of Upgrade



The Upgrade Complete screen provides a link to the upgrade log file. Review the log file and test the upgraded applications to ensure that they are working as expected. Click **Close** to exit the Upgrade Assistant.