Oracle® Fusion Middleware

Upgrade Guide for Oracle Data Integrator

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Oracle Fusion Middleware Upgrade Guide for Oracle Data Integrator 11*g* Release 1 (11.1.1)

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Preface

This preface contains the following sections:

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

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

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Related Documents

For more information, see the following related documentation available in the Oracle Fusion Middleware 11*g* documentation library:

- *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*
- *Oracle Fusion Middleware Installation Guide for Oracle Data Integrator*
- *Oracle Fusion Middleware Upgrade Planning Guide*
- *Oracle Fusion Middleware Application Adapters Guide for Oracle Data Integrator*
- *Oracle Fusion Middleware Connectivity and Knowledge Modules Guide for Oracle Data Integrator*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Oracle Data Integrator Upgrade Overview

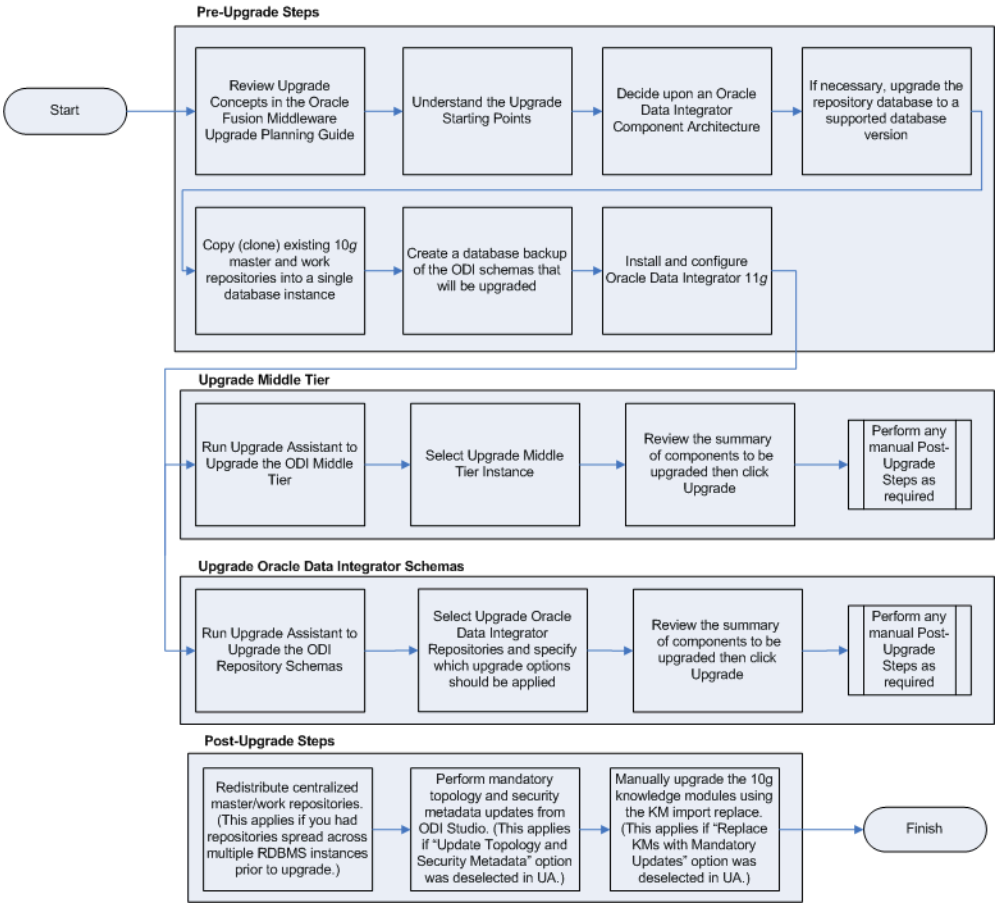
This chapter provides a high-level overview of the Oracle Data Integrator upgrade process. Refer to the following sections for more information:

- Section 1.1, "Flowchart of the Oracle Data Integrator Upgrade Process"
- Section 1.2, "Steps in the Oracle Data Integrator Upgrade Process"

1.1 Flowchart of the Oracle Data Integrator Upgrade Process

Figure 1–1 provides a flowchart of the Oracle Data Integrator upgrade process. Review this chart to get familiar with the steps you will be required to take, based on your existing Oracle Data Integrator environment.

Figure 1–1 ODI Upgrade Process Flow



1.2 Steps in the Oracle Data Integrator Upgrade Process

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 Table Describing the Steps in the Oracle Data Integrator Upgrade Process

Step	Description	More Information
Review upgrade concepts in the *Oracle Fusion Middleware Upgrade Planning Guide*	The *Oracle Fusion Middleware Upgrade Planning Guide* 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 *Oracle Fusion Middleware Upgrade Planning Guide*
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, "Task 1: Understand 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 11*g*.	Section 3.2, "Task 2: Plan 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, "Task 3: If Necessary, Upgrade the Database that Contains the ODI Repository"
Copy (clone) existing Master and Work Repositories into a single database instance before running the Upgrade Assistant	Oracle recommends that you perform repository upgrades on cloned repository schemas. Upgrading repositories distributed on different database instances is not supported. Clone schemas into a single database instance and then redistribute them after the upgrade to their original instances.	Section 3.4, "Task 4: Copy (Clone) 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 3.5, "Task 5: Create a Backup of the ODI Repositories to be Upgraded"
Install and Configure Oracle Data Integrator 11*g*	The Upgrade Assistant is available as part of the ODI 11*g* installation.	Section 3.6, "Task 6: Install and Configure 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 3.7.1, "Task 7a: Run the Upgrade Assistant for Oracle Data Integrator"

Table 1–1 (Cont.) Table Describing the Steps in the Oracle Data Integrator Upgrade Process

Step	Description	More Information
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 10*g* Agent libraries, drivers and scripting engines into the 11*g* Standalone Agent installation folder. Note that this upgrade step does not apply to Java EE components (as they did not exist in ODI 10*g*) and does not apply to the 10g Designer or 11g Studio.	Section 3.7.2, "Task 7b: Upgrade 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 10*g* repository schemas to Oracle Data Integrator 11*g*.	Section 3.7.3, "Task 7c: Upgrade 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, "Oracle Data Integrator Post-Upgrade Tasks"

2

Oracle Data Integrator 11*g* for 10*g* 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"

2.1 Components of the Oracle Data Integrator Installation

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

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

Oracle Data Integrator 11*g* provides updates to all of these components, but not in a single installation. In Oracle Data Integrator 11*g*, 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 11*g* provides the following installation options:

- **Oracle Data Integrator Client Components**
  - **ODI Studio**

    This component replaces the Oracle Data Integrator 10*g* 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 10*g* 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.

- Upgrade Considerations
- Changes in the Run-Time Agent
- Other Changes

2.2.1 Upgrade Considerations

Before you begin the upgrade process, consider the following:

- Upgrading to ODI 11*g*R1 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 internal.

  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 11*g*. 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 11*g*, 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 Task 4: Copy (Clone) Existing Master and Work Repositories.

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 Other Changes

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

- 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 11*g*R1, see "What's New In Oracle Data Integrator?", in *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

3

Upgrading Your Oracle Data Integrator Environment

This chapter describes how to upgrade your existing Oracle Data Integrator 10g environment to Oracle Data Integrator 11*g*. 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:

- Task 1: Understand the Starting Points for Oracle Data Integrator
- Task 2: Plan the Oracle Data Integrator Component Architecture
- Task 3: If Necessary, Upgrade the Database that Contains the ODI Repository
- Task 4: Copy (Clone) Existing Master and Work Repositories
- Task 5: Create a Backup of the ODI Repositories to be Upgraded
- Task 6: Install and Configure Oracle Data Integrator 11g
- Task 7: Run Upgrade Assistant to Upgrade ODI Middle Tier and Repositories
  - Task 7a: Run the Upgrade Assistant for Oracle Data Integrator
  - Task 7b: Upgrade the Middle Tier Instance
  - Task 7c: Upgrade the Oracle Data Integrator Repositories
- Task 8: Perform Any Required Post-Upgrade Manual Steps

3.1 Task 1: Understand 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 11.1.1.5.0, you will use the Upgrade Assistant for ODI as described in the following sections. If you are upgrading ODI 11.1.1.3.0 to 11.1.1.5.0, 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 11*g* installation. These components must be installed as a separate installation and upgraded in a separate upgrade process.

For information on upgrading these components, see Part II, "Upgrading Oracle Data Profiling and Oracle Data Quality".

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 11*g*. The Upgrade Assistant supports Master and Work repository upgrades for databases listed below.

If your current database is not listed below or to validate that your database version is compatible with ODI 11g, see Task 3: If Necessary, Upgrade 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 11*g* 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 Task 2: Plan the Oracle Data Integrator Component Architecture

The Oracle Data Integrator 10*g* component architecture changed with ODI 11*g*. Although you can keep the same component organization as ODI 10*g*, 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 Task 3: If Necessary, Upgrade the Database that Contains the ODI Repository

The database that contains the Oracle Data Integrator repositories must be supported by Oracle Fusion Middleware 11*g*. 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 11*g*, 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 10*g*, but is no longer supported in Oracle Data Integrator 11*g*, use the ODI 10*g* 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 Task 4: Copy (Clone) Existing Master and Work Repositories

Oracle recommends that you clone 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.

Caution: The Upgrade Assistant does not support the upgrade of repositories distributed on different instances or technologies.

Both ODI 10*g* and ODI 11*g* support a repository configuration where the Master Repository can be on different database instances than the Work Repository. During the upgrade process, however, the Master Repository and all Work Repositories must reside on the same database instance. After the upgrade process they can be redistributed.

Once both the Master and Work repositories are upgraded and optionally redistributed, you must update the Work Repositories connections defined in the Topology to match their post-upgrade location. See Section 4.2, "Updating the Work Repository Connection Parameters" for more information on updating the connection parameters to the Work Repository as defined in the Topology.

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 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 10*g* or 11*g* repositories before you begin the upgrade process. The cloning procedures documented in this section are sample procedures for each of the ODI 11*g* supported databases. You are not restricted to using these procedures. Always use the cloning procedures that suit your specific needs.

WARNING: Once you have completed the cloning process, DO NOT use your Oracle Data Integrator 10.1.3.5 client to validate that the cloning process worked properly. The Upgrade Assistant will perform validation checks on the cloned repositories before the upgrade.

3.4.1 Schema Cloning Process for Oracle Database

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

1. Export ODI 10*g* 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 10*g* 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.

3.4.2 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 10*g* 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
```

3.4.3 Schema Cloning Process for PostgreSQL Database

Use the following steps to clone PostgreSQL database schemas:

1. Export ODI 10*g* 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;
   ```

3.4.4 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.

3.4.4.1 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
   ```

3.4.4.2 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
   ```

3.4.5 Schema Cloning Process for IBM DB2 AS/400 Database

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

1. Save ODI 10*g* Master and Work schemas.

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

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

   Example:

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

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

Using Telnet, restore ODI 10*g* 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).

3.4.6 Schema Cloning Process for Sybase AS Enterprise 15+

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

1. Export ODI 10*g* 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
```

3.4.7 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:hsql://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:hsql://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
```

3.5 Task 5: Create 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.

3.6 Task 6: Install and Configure Oracle Data Integrator 11*g*

Before running the Upgrade Assistant, use the Oracle Universal Installer to install and configure ODI 11*g*. 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*.

3.7 Task 7: Run Upgrade Assistant to Upgrade ODI Middle Tier and Repositories

---

Note: You can complete Task 7b: Upgrade the Middle Tier Instance and Task 7c: Upgrade 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 10*g* 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 10*g* 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`*).

3.7.1 Task 7a: Run 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.

3.7.2 Task 7b: Upgrade 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 3.7.3.

To upgrade the Middle Tier Instance, start the Upgrade Assistant as described in Task 7a: Run the Upgrade Assistant for Oracle Data Integrator and provide the required information in the following screens:

No.	Screen Name	When does this screen appear?	Description and Action Required
1	Welcome	Always	No action required.
2	Specify Operation	Always	Select the **Upgrade Middle Tier Instance** option.
3	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.
4	Examine	Always	The Upgrade Assistant performs a series of validations before upgrading the selected components. Ensure that all validations have succeeded.
5	Upgrade Summary	Always	If the summary information looks correct, click **Upgrade**.
6	Upgrade Progress	Always	The **Upgrading Components** screen shows the progress of the upgrade process. Once complete, click **Next**.
7	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.

3.7.3 Task 7c: Upgrade the Oracle Data Integrator Repositories

The Oracle Data Integrator Repository upgrade option upgrades the Oracle Data Integrator 10*g* repositories to ODI 11*g* versions. The ODI 10*g* repositories should always be cloned (copied) before launching the Upgrade Assistant. See Task 4: Copy (Clone) 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 Task 7a: Run 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 3.7.1.

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.

No.	Screen Name	When does this screen appear?	Description and Action Required
1	Welcome	Always	No action required.

No.	Screen Name	When does this screen appear?	Description and Action Required
2	Specify Operation	Always	Select **Upgrade Oracle Data Integrator Repositories** and choose which additional repository upgrade options you want to perform: ▪ Update Topology and Security Metadata ▪ Replace KMs with Mandatory Updates ▪ Check that Upgrade Occurs Only on Cloned Repositories For more information on these options, see the Specify Operation screen description in Appendix A.
3	Prerequisites	Only if you selected **Upgrade Oracle Data Integrator Repositories** on the Specify Operation screen.	The Upgrade Assistant requires that you indicate the following prerequisites have been met in order to continue the upgrade: ▪ **Database schema backup completed** 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 Task 5: Create a Backup of the ODI Repositories to be Upgraded for more information. ▪ **Database version is certified by Oracle for Fusion Middleware upgrade** The Upgrade Assistant requires that the Oracle Data Integrator repositories reside on a supported database. See Task 3: If Necessary, Upgrade the Database that Contains the ODI Repository for a link to the latest list of Oracle Data Integrator supported databases.

No.	Screen Name	When does this screen appear?	Description and Action Required
4	Target Database	Only if you selected **Upgrade Oracle Data Integrator Repositories** on the Specify Operation screen.	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. **NOTE**: The DBA user must have SYSDBA privileges.
5	Specify Work Repositories	Only if you selected **Upgrade Oracle Data Integrator Repositories** on the Specify Operation screen.	The Specify Work Repositories User Name screen prompts you to enter the database user names and passwords used to connect to each of the ODI 11*g* Work Repositories.
6	Examine	Always	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.)
7	Upgrade Summary	Always	If the summary information looks correct, click **Upgrade**.
8	Upgrade Progress	Always	The Upgrading Components screen shows the progress of the upgrade process. Once complete, click **Next**.
9	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 Task 8: Perform Any Required Post-Upgrade Manual 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, "Oracle Data Integrator Post-Upgrade Tasks" for a description of the post-upgrade tasks you might need to perform for each of the Oracle Data Integrator components.

4

Oracle Data Integrator Post-Upgrade Tasks

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...
Centralized master and Work Repositories onto a single instance before the upgrade	Redistribute the repositories accordingly See Section 4.1, "Redistributing Centralized Repositories After 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 4.2, "Updating the Work Repository Connection Parameters"
Chose not to Update Topology and Security Metadata during the upgrade	Manually upgrade the ODI 10*g* metadata so that it can be used with ODI 11*g*. See Section 4.3, "Updating Topology and Security Metadata"
Updated the Topology and Security Metadata using Upgrade Assistant	Manually re-apply modifications made in Oracle Data Integrator 10*g* to the new ODI 11*g* built-in metadata objects. (The automated upgrade process erases any changes that were made to the ODI 10*g* objects.) See Section 4.4, "Re-applying ODI 10g Modifications to the ODI 11g Topology and Security Metadata"
Chose not to Replace KMs with Mandatory Updates during the upgrade	Manually upgrade the ODI 10*g* KMs so that they can be used with ODI 11*g*. See Section 4.6, "Replacing KMs with Mandatory Updates"

4.1 Redistributing Centralized Repositories After Upgrade

Both ODI 10*g* and ODI 11*g* support the distribution of schemas on multiple database instances. The Upgrade Assistant, however, supports only one set of database credentials at the time of the upgrade. To use the Upgrade Assistant, you must first clone (copy) all ODI 10*g* repositories to a single database/server instance. Once the upgrade is completed, you can redistribute the upgraded repositories.

Note: The redistribution process is similar to the cloning processes documented in Section 3.4, "Task 4: Copy (Clone) Existing Master and Work Repositories".

4.2 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` script to reflect the new connection parameters to your Master Repository. This file is in the `ODI_HOME/oracledi/agent/bin` directory, where `ODI_HOME` is the Oracle Data Integrator installation directory.

   - On UNIX system:

     `odiparams.sh`

   - On Windows system:

     `odiparams.bat`

   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 (.sh) script as indicated in step 5.

4.3 Updating Topology and Security Metadata

By default, the Upgrade Assistant enables you to import the same ODI 10*g* technologies, data types, data type conversions, and languages when upgrading to ODI 11*g*. 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 11*g* features. The following ODI 10*g* 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 11*g* 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*.

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

The ODI 11*g* upgrade process will automatically upgrade your ODI 10*g* 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 metatdata, see "Introduction to the Oracle Data Integrator Topology" in the *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

4.5 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*

4.6 Replacing KMs with Mandatory Updates

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

Specifically the following KMs must be manually updated using KM Import/Replace before using ODI 11*g* (refer to the note below for more information):

- 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)

Note: The 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 10*g*, 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 10*g* KMs were implemented to work around this issue.

The 11*g* `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:

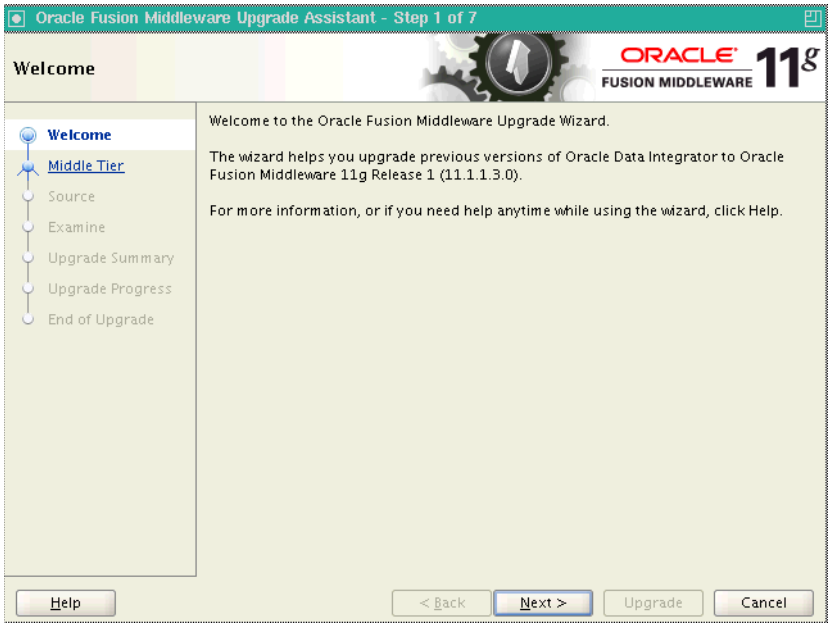
- LKM File to SAS
- LKM SAS to SQL
- LKM File to MSSQL (BCP)

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.

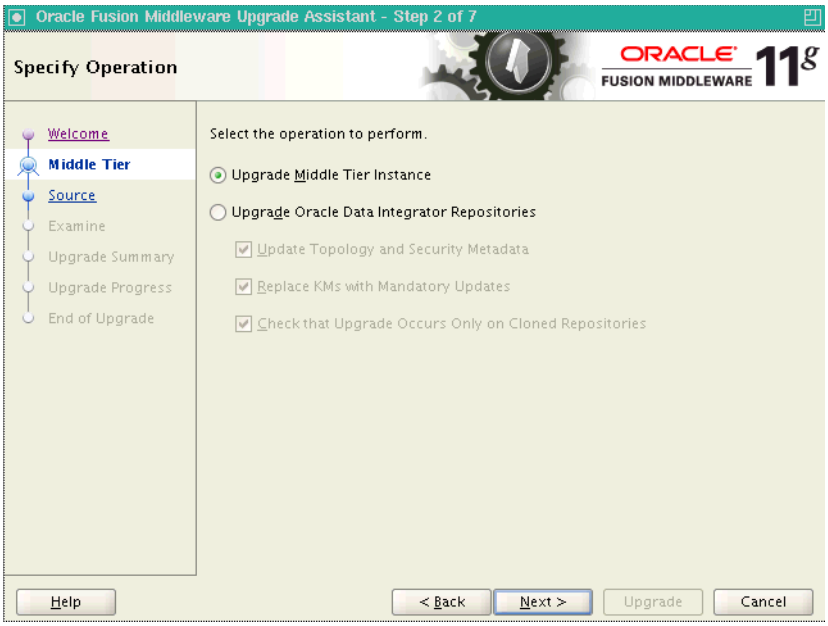
A.1 Welcome



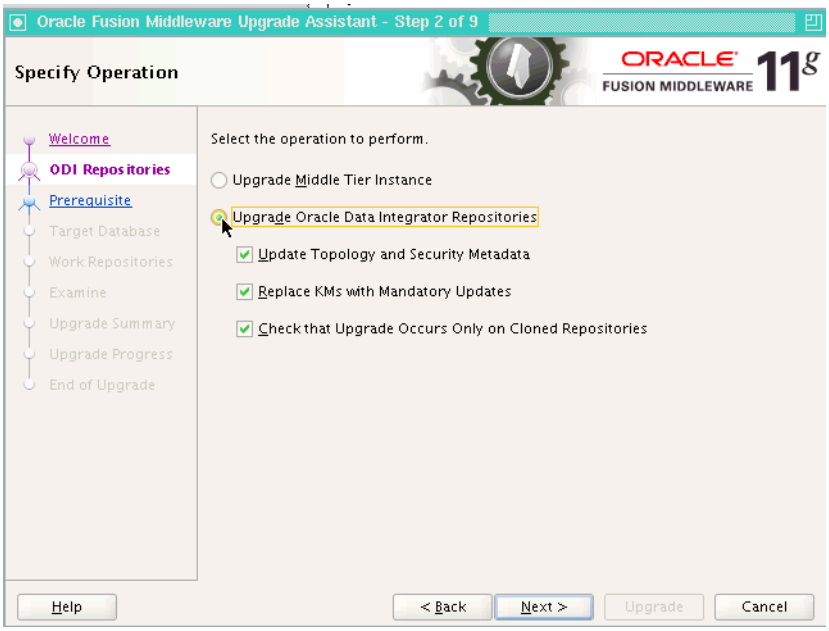
Click **Next**.

A.2 Specify Operation

The Specify Operation screen provides two upgrade options:



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

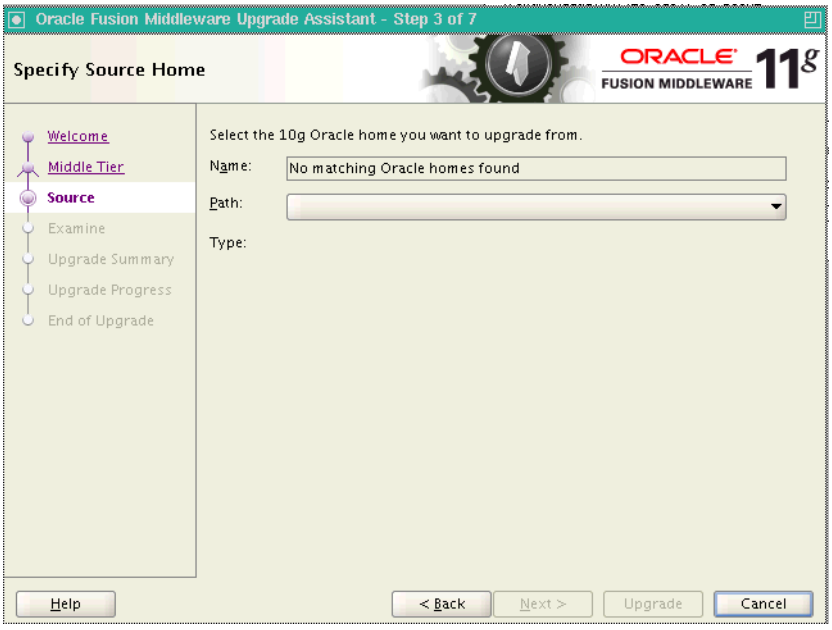


- Select **Upgrade Oracle Data Integrator Repositories** to upgrade the Oracle Data Integrator 10*g* repositories to ODI 11*g* versions. The repositories should be cloned (copied) before launching the Upgrade Assistant. See Task 4: Copy (Clone) Existing Master and Work Repositories. By default, the following options are selected with this option:

Option	Description
Update Topology and Security Metadata	The Update Topology and Security Metadata option updates only the Oracle Data Integrator 10*g* 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 10*g* objects, you must re-apply your changes after the upgrade process. **NOTE**: If this option is deselected, the topology and security metadata objects will have to be manually upgraded in order to use the ODI 11*g* features. For more information, see Section 4.3, "Updating Topology and Security Metadata". ■ Updating the Topology Metadata upgrades the built-in technologies to support new 11*g* features. If you do not upgrade your topology, you will not be able to use the 11*g* features defined in the technologies. ■ Updating the Security Metadata upgrades the profiles, objects and methods to support new 11*g* features and menus. If you do not upgrade the security metadata, some of the 11*g* features will not be available. For more information, see Section 4.4, "Re-applying ODI 10g Modifications to the ODI 11g Topology and Security Metadata"

Option	Description
Replace KMs with Mandatory Updates	Most ODI 10*g* Knowledge Modules (KMs) can be used with ODI 11*g*, so the update is not mandatory for all KMs. This option updates only the 10*g* Knowledge Modules (KMs) that will no longer work with ODI 11*g*. If this option is deselected, the 10g Knowledge Modules that no longer work with ODI 11*g* will have to be manually upgraded to take advantage of the ODI 11*g* features. For more information, see Section 4.6, "Replacing KMs with Mandatory Updates". **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. The following 10*g* KMs are automatically updated to work with ODI 11*g* when the **Replace KMs with Mandatory Updates** option is selected: ■ 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) Replaced KMs are exported, before their replacement, into a directory named: `UA_Oracle_ Home/upgrade/odi/KM10g/expdir.<time_ stamp>/work_ repository_name/project_name` **NOTE**: The following KMs are no longer available: ■ LKM File to SAS ■ LKM SAS to SQL ■ LKM File to MSSQL (BCP)
Check that Upgrade Occurs Only on Cloned Repositories	When selected, this option will prevent an upgrade if validations find that the repositories are not cloned copies. Specifically, the Upgrade Assistant performs the following validations: ■ Original ODI 10*g* Master Repository schema and cloned ODI 10*g* Master Repository schema names are not the same. ■ Each cloned ODI 10*g* Work Repository schema name is different from the original ODI 10*g* Work Repository schema name. **NOTE**: If the Upgrade Assistant detects that one of the repositories is not a clone, you will be prevented from proceeding with the upgrade. Oracle recommends that you clone the repositories before running the Upgrade Assistant.

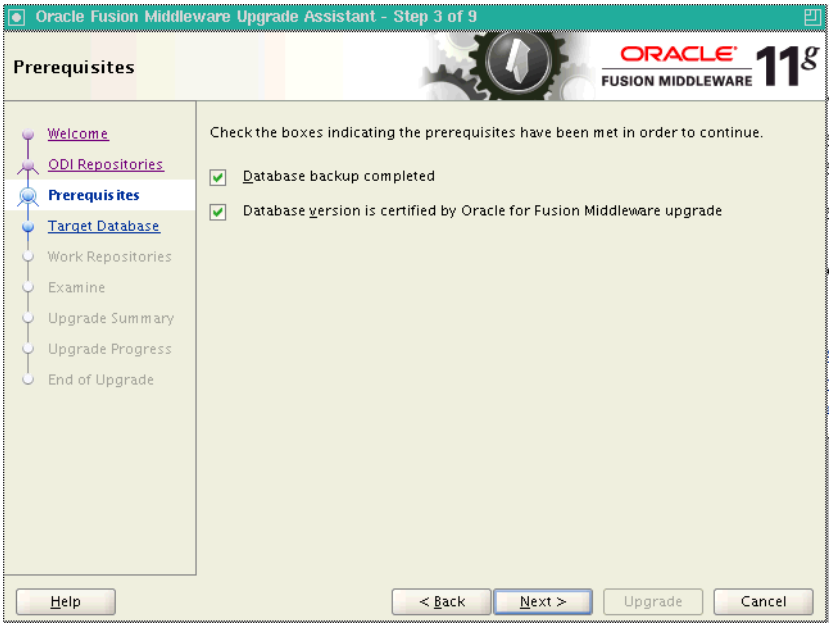
A.3 Specify Source Home



This screen only appears when you select **Upgrade Middle Tier Instance**.

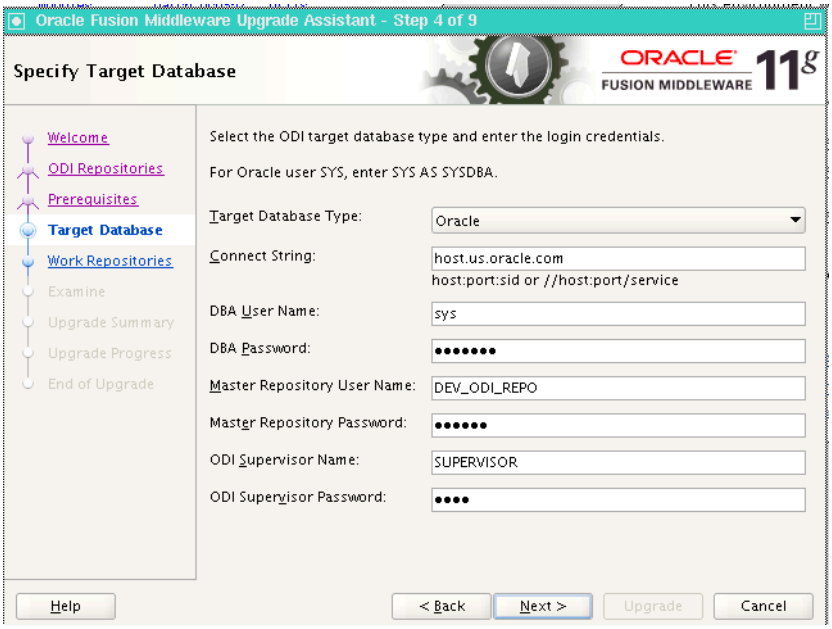
Select the 10*g* Oracle home you want to upgrade. Click **Next** to continue.

A.4 Prerequisites



Check the boxes indicating that the prerequisites have been met and click **Next** to continue.

A.5 Target Database



The following table provides sample field entries for the ODI databases that the Upgrade Assistant supports:

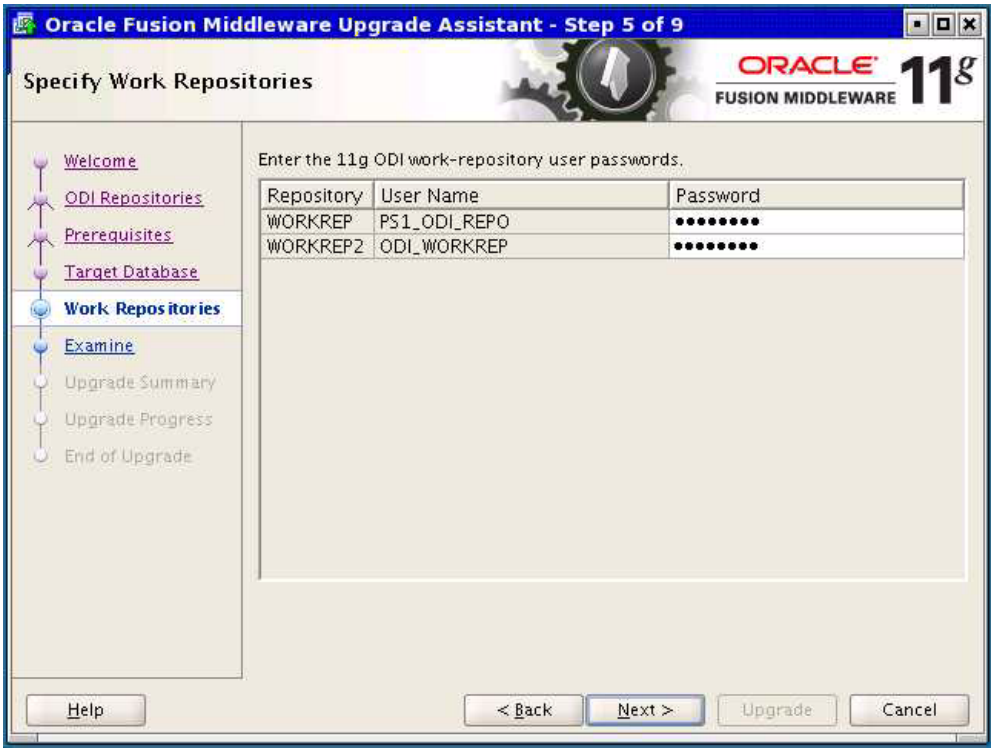
Element	Description
Target Database Type	Select the database type from the drop-down list. The target database is the database where you installed the Oracle Fusion Middleware 11*g* ODI schema.

Element	Description

Connect String	Enter the connect string for the database that contains the 11*g* ODI schemas.
	Oracle Database
	Use a JDBC connect string:
	host:*port*:*SID*
	For example:
	`odiHost:1521:odiDB`
	Or:
	//host:*port*/*service*
	For example:
	`//odiHost:1521/odiDB2`
	Microsoft SQL Server
	Use the following connect string:
	//host:*port*;*DatabaseName=dbname*
	For example:
	`//odiHost:1443;DatabaseName=odiDB`
	IBM DB2
	Use the following connect string:
	//host:*port*;*DatabaseName=dbname*
	For example:
	`//odiHost:446;DatabaseName=odiDB`
	PostgreSQL
	Use the following connect string:
	//host:*port*/*database*
	For example:
	`//odiHost:5432/odiDB`
	HSQL Database Engine
	Use the following connect string:
	//host:*port*/*database*
	For example:
	`//odiHost:9001/odiDB`
	SYBASE
	Use the following connect string:
	//host:*port*;*DatabaseName=dbname*
	For example:
	`//odiHost:4100;DatabaseName=odiDB`

Element	Description
DBA User Name	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. **Oracle Database** For example, to connect as the SYS user, enter the following in the **DBA User Name** field: `sys as sydba` **NOTE**: For Oracle Database DBA, you must have SYSDBA privilege otherwise you will be prevented from performing the upgrade.
DBA Password	Enter the password for the user you entered in the **DBA User Name** field.
Master Repository User Name	Enter the user name of the Oracle Data Integrator Master Repository owner. For example: `DEV_ODI_REPO`
Master Repository Password	Enter the password for the user you entered in the **Master Repository User Name** field.
ODI Supervisor Name	Enter the user name of the Oracle Data Integrator User with Supervisor privileges. The ODI Supervisor name is case-sensitive. For example: `SUPERVISOR`
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 Specify Work Repositories

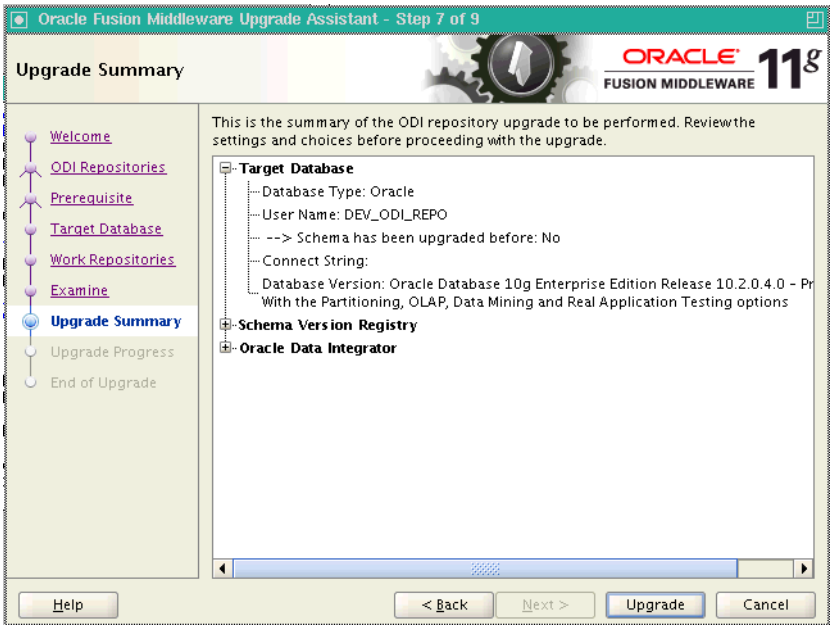


Enter the Oracle Data Integrator 11*g* Work Repositories password for each repository user. Click **Next**.

A.7 Examine

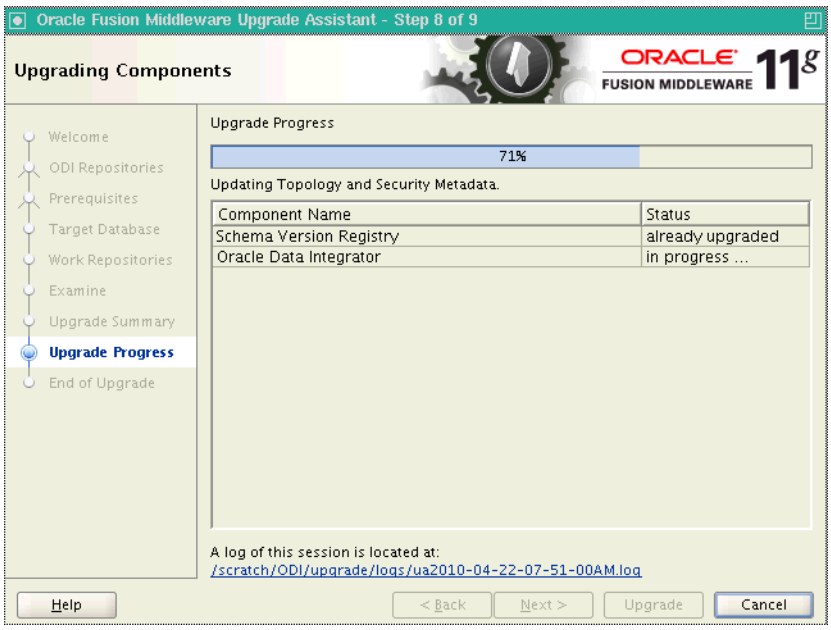
Click **Next** if all component examinations have succeeded. If there are any issues, refer to the generated log file located in the directory shown on this screen.

A.8 Upgrade Summary



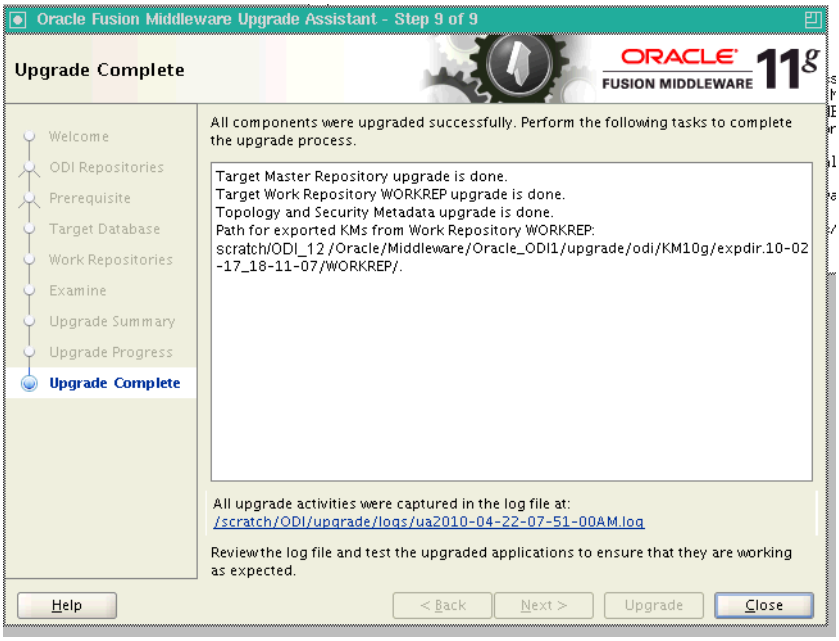
Review the summary of the Oracle Data Integrator upgrade operations. If the operations and configuration settings are correct, click **Upgrade** to begin.

A.9 Upgrade Progress



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

A.10 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.

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