# Oracle® Fusion Middleware

Upgrade Guide for Oracle Business Intelligence

11*g* Release 1 (11.1.1)

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# Contents

# Preface

This preface contains the following sections:



## Audience

This manual is intended for Oracle Fusion Middleware system administrators who are responsible for installing and upgrading Oracle Business Intelligence 11g. It is assumed that the readers of this manual have knowledge of the following:

- Oracle Business Intelligence system administration and configuration
- The configuration 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 Upgrade Planning Guide*
- *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*
- *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*

- *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Publisher*
- *Oracle Fusion Middleware Installation Planning Guide*
- *Oracle Fusion Middleware Administrator's Guide*

## 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. |

# Part I

## Before You Upgrade

The chapters included in this part of the guide provide information for preparing to upgrade Oracle Business Intelligence from 10*g* to 11*g*.

Part I contains the following chapters:

# 1

# Planning to Upgrade from Oracle BI 10*g* to BI 11*g*

This chapter describes how to plan a successful upgrade of an Oracle Business Intelligence 10*g* system to an Oracle Business Intelligence 11*g* system, and includes the following sections:



> **Note:** This document is accurate at the time of publication. Oracle will update this document periodically after the software release. You can access the latest information and additions to this document on the Oracle Technology Network at:
>
> `http://www.oracle.com/technetwork/indexes/documentation/index.html`

## 1.1 Developing a BI Upgrade Strategy

Upgrading an Oracle Business Intelligence 10*g* system to Oracle Business Intelligence 11*g* requires careful preparation, planning, and testing. Oracle provides tools and technology to automate much of the upgrade process. However, the precise strategy that you want to adopt depends both on the configuration of the existing 10*g* system, and on the required configuration of the upgraded 11*g* system.

The key point to note is that the existing 10*g* system in the production environment is not affected by the upgrade process. You can continue to use the existing 10*g* system until you are ready to roll-out the 11*g* system.

To help you develop an effective upgrade strategy, Oracle recommends that you complete the following steps:

- "Step 3: Define a Test Plan to Validate the Upgrade"
- "Step 4: Perform a Test Upgrade on a Representative Subset of the Existing 10g System"
- "Step 5: Perform the Actual Upgrade"
- "Step 6: Implement New and Enhanced 11g Functionality"

The upgrade strategy that you ultimately decide on is likely unique to your specific situation. One important point is the optimization of the system. Optimization includes removal of superfluous, redundant, and unused content. Optimization might also include merging and consolidation of like content and can also mean performance optimization. A poorly optimized 10*g* deployment might only be exacerbated in 11*g* and force Upgrade Assistant to work harder than it has to.

As you consider the upgrade strategy that is right for you, the following two examples might prove useful. Bear in mind that these are examples only. There are many other possible strategies, and the strategy that you choose will probably be different, depending on your specific topologies and organizational requirements:

- Example 1, "Upgrading an Oracle BI 10g System to 11g - Optimization Performed Before Upgrade"
- Example 2, "Upgrading an Oracle BI 10g System to 11g - Optimization Performed After Upgrade"

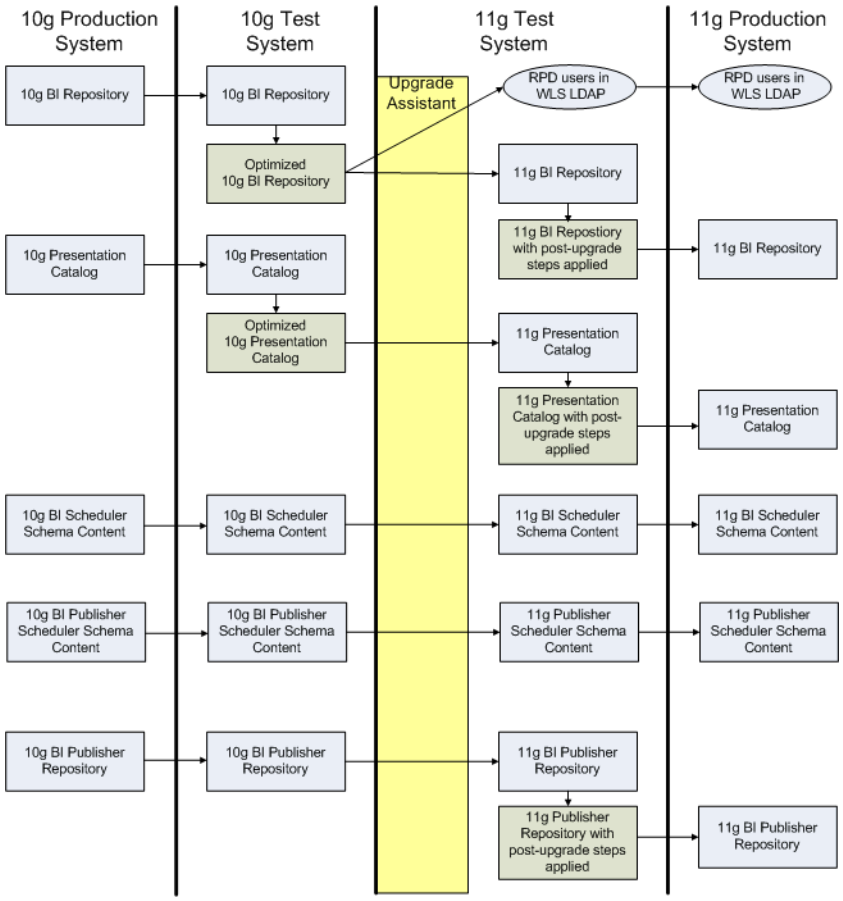
#### Example 1 Upgrading an Oracle BI 10*g* System to 11*g* - Optimization Performed Before Upgrade

In this example, analysis of the existing system shows that there are many unused requests and invalid users. The most effective upgrade strategy is to optimize the existing 10*g* system before upgrading. The steps to implement such a strategy are typically as follows:

1. Copy the production Oracle Business Intelligence 10*g* system to a 10*g* test environment.
2. In the 10*g* test environment, optimize the Oracle Business Intelligence 10*g* system for upgrade.
3. In a new test environment, install Oracle Business Intelligence 11*g*.
4. In the new 11*g* test environment, run the 11*g* Upgrade Assistant and specify the 10*g* system in the 10*g* test environment as the system to import and upgrade.
5. In the 11*g* test environment, perform any post-upgrade steps on the new 11*g* system.
6. In the 11*g* test environment, test the new 11*g* system performs as expected, and perform any additional post-upgrade configuration as required.
7. Move the system from the 11*g* test environment to the 11*g* production environment.

This example upgrade strategy is shown in Figure 1–1, "Example Upgrade Strategy: Upgrading a BI 10g system to 11g - Optimization Performed Before Upgrade".

***Figure 1–1 Example Upgrade Strategy: Upgrading a BI 10g system to 11g - Optimization Performed Before Upgrade***



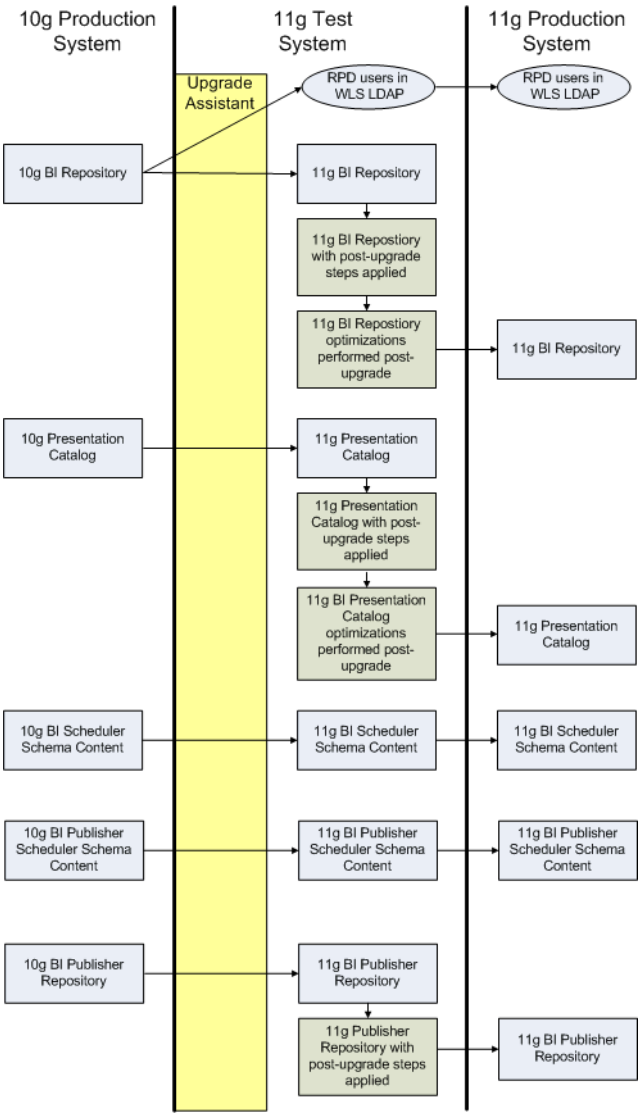

### Example 2 Upgrading an Oracle BI 10*g* System to 11*g* - Optimization Performed After Upgrade

In this example, analysis of the existing system shows that the system is already well-optimized. The most effective upgrade strategy is to upgrade the existing 10*g* system first, then perform optimization of the 11*g* system before moving it to a production environment. The steps to implement such a strategy are typically as follows:

1. In a new test environment, install Oracle Business Intelligence 11*g*.
2. In the new 11*g* test environment, run the 11*g* Upgrade Assistant and specify the 10*g* system in the 10*g* production environment as the system to import and upgrade.
3. In the 11*g* test environment, perform any post-upgrade steps on the new 11*g* system.
4. In the 11*g* test environment, optimize the new 11*g* system.
5. In the 11*g* test environment, test that the new 11*g* system performs as expected, and perform any additional post-upgrade configuration as required.
6. Move the system from the 11*g* test environment to the 11*g* production environment.

This example upgrade strategy is shown in Figure 1–2, "Upgrading a BI 10g system to 11g - Optimization Performed After Upgrade".

***Figure 1–2 Upgrading a BI 10g system to 11g - Optimization Performed After Upgrade***




### 1.1.1 Step 1: Analyze and Optimize the Existing 10*g* System in Readiness for Upgrade

Upgrading an existing Oracle BI 10*g* system requires time and resources. For this reason, it is highly recommended to analyze the existing 10*g* system and to optimize the existing system by removing superfluous, redundant, and unused content before upgrading it.

When you analyze the existing 10*g* system, consider the current hardware and operating system environment on which it runs. Compare the current environment with the system requirements and certification documentation for information about hardware and software requirements, platforms, databases, and other information. In some cases, the requirements have changed for 11*g*. For example, in some cases, Oracle BI 11*g* requires a different version of the operating system. For more information, refer to the following:

- The system requirements document at:

  `http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-requirements-100147.html`

- The certification document at:

  http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html

  **Note:** Do not change from one platform or architecture to a different platform or architecture as part of the upgrade process.

  For example, if the existing 10*g* system is running on a Windows 32-bit platform, do not install Oracle BI 11*g* on a Linux 64-bit platform and then run the Linux 64-bit Upgrade Assistant to upgrade the existing 10*g* system.

  To enable you to meet the requirement to be on the same platform and architecture, you might decide to install Oracle BI 11*g* on the same hardware as the existing 10*g* system. Note that co-locating the 10*g* and 11*g* releases in this way would not be appropriate for production environments. Such co-location depends on the availability of sufficient hardware resources and requires careful port management. For more information, see *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

As part of your analysis of the existing 10*g* system, record all relevant details on the following:

- The name and size of the repository
- The name and size of the Oracle BI Presentation Catalog
- The existing security model details
- The data sources
- The number of scheduled jobs
- Any links to external systems

Optimizing the 10*g* system prior to upgrade ensures the following:

- That the upgrade process completes more quickly and more reliably
- That more time can be spent testing the upgraded system
- that the newly upgraded 11*g* system operates efficiently

To optimize the existing 10*g* system in readiness for upgrade, perform the following tasks:

- Run the Consistency Checker to check the validity of the 10*g* repository and to identify and fix syntax or semantic errors and warnings that might cause queries to fail.
- Remove any initialization blocks that are no longer being used.
- Identify and remove users and groups that are no longer required, and therefore do not have to be upgraded.
- If you have specified custom date formats used by dashboard and analysis prompts, then ensure that your formats comply with the following two Support Tech Note that describe issues with date formats:

  https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=1108451.1

https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=1108594.1

These Notes contain important information on the correct format specification to use in the 10*g* environment. By following the instructions in these Notes, you help to ensure that prompts that use date formats are upgraded correctly.

- Identify and remove objects in the repository and the Oracle BI Presentation Catalog that are no longer required, and therefore do not have to be upgraded.

  If you have been using the Oracle BI Server usage tracking functionality, review the usage tracking data to identify unused objects. If you have not been using usage tracking, and you are not planning to upgrade immediately, then consider enabling usage tracking as a way to better understand your data before upgrade. For more information, see "Managing Usage Tracking" in the *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

  Use the Validate feature to clean the catalog, as described in "Validating the Catalog" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.1.2 Step 2: Understand What is Upgraded and How it is Upgraded

Oracle BI 11*g* introduces many enhancements to existing features. In some cases, these improvements replace previous functionality or re-implement it in a different way.

Wherever possible, previous 10*g* functionality is upgraded to the corresponding (and usually improved) 11*g* functionality. Although the appearance and behavior might be different, the end result is expected to be functionally equivalent.

An efficient upgrade strategy does not try to exactly replicate the appearance and behavior of the original 10*g* system in the upgraded system. Such replication is time-consuming and in some cases extremely difficult (if not impossible). For example, existing dashboards and prompts will be rendered differently in 11*g* and would require significant manual intervention to re-create the 10*g* appearance. Attempting to exactly replicate 10*g* appearance and behavior also undermines the rationale for upgrading in the first place; namely, to take advantage of enhancements that have been introduced into 11*g*.

For these reasons, it is very important to understand what is upgraded, and how it is upgraded. For more information, see the following sections:

- Section 1.2, "Understanding the Upgrade of Repository Metadata"
- Section 1.3, "Understanding Oracle BI Presentation Catalog Upgrade"
- Section 1.4, "Understanding BI Publisher Upgrade"
- Section 1.5, "Understanding Oracle Business Intelligence Security Upgrade"

Note that some elements are not automatically upgraded such as skins, customized JavaScript files, and configuration files.

### 1.1.3 Step 3: Define a Test Plan to Validate the Upgrade

Having achieved an understanding of what is upgraded and how it is upgraded, you can define a test plan to verify that the 10*g* system has been upgraded as you expected.

Typically, a test plan identifies the following:

- A representative subset of the existing 10*g* system to use as a test upgrade.

- A number of key indicators to use to verify that a test upgrade has completed satisfactorily.
- Additional key indicators to use to verify that a full upgrade has completed satisfactorily.

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**Important:** When identifying the key indicators to use to confirm a satisfactory upgrade, remember that the appearance and behavior of the upgraded system might well be different to the original 10*g* system. It is therefore important that the verification activity focuses on establishing that the upgraded system is functionally equivalent to the 10*g* system, rather than identifying cosmetic differences between the two.

For an example of the possible cosmetic differences after upgrading to 11*g*, see Section 1.3.2, "Oracle BI Presentation Catalog: Other Upgrade Considerations".

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The test plan that you define is specific to your particular situation. The following example might prove useful, but remember that it is an example only. The test plan that you decide upon is likely to be different.

#### Example 1 Example Test Plan

In this example, Upgrade Assistant is used to upgrade the existing 10*g* system incrementally, in discrete stages. After each run of Upgrade Assistant, the upgraded part of the system is verified and any additional manual steps are performed.

***Table 1–1 Example Upgrade Test Plan***

| Stage | Description | Verification steps | Manual steps |
|---|---|---|---|
| Stage 1 | Run Upgrade Assistant to upgrade the 10*g* Scheduler schema to 11*g* | 1. Verify that iBots (agents) are correctly upgraded to 11*g*.<br>2. Verify that agents run against the new 11*g* schema.<br>3. Verify that agents have been upgraded with the appropriate permissions. | 1. If necessary, manually set the schedule and permissions for any upgraded agents. |
| Stage 2 | Reconfigure data source connections | 1. Verify that the Oracle BI Server can connect to all back-end data sources. | 1. For Oracle Database, ensure that the tnsnames.ora file is in *ORACLE_HOME*/network/admin.<br>2. For Essbase, ensure that you are using the recommended client version (11.1.2.x) that is bundled with Oracle BI EE 11*g* in *ORACLE_HOME*/clients/epm/Essbase/EssbaseRTC.<br>3. For Teradata on Windows, ensure that required Teradata variables are added to opmn.xml. See *Oracle Fusion Middleware Release Notes* for more information.<br>See *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information about setting up connections to data sources in 11*g*. |
| Stage 3 | Run Upgrade Assistant to upgrade the 10*g* Repository | 1. Verify that the repository is consistent.<br>2. Verify the repository has the correct joins, columns, and variables. | 1. Manually fix consistency errors.<br>2. Manually fix any other errors in the repository.<br>3. Manually configure connection pools for the 11*g* repository. |

*Table 1–1 (Cont.) Example Upgrade Test Plan*

| Stage | Description | Verification steps | Manual steps |
|---|---|---|---|
| Stage 4 | Run Upgrade Assistant to upgrade the 10*g* Oracle BI Presentation Catalog | 1. Verify the errors seen in the catalog upgrade log.<br>2. Verify analyses and dashboard pages in the catalog. | 1. Manually fix the analyses, prompts, and dashboards. |
| Stage 5 | Run Upgrade Assistant to upgrade the BI Publisher 10*g* catalog to 11*g* | 1. Verify the upgraded BI Publisher reports. | 1. Ensure that the xmlp-server-config.xml file in the upgraded repository has the correct computer name for the BI Server and Presentation Services in 11*g*. This file after upgrade maintains the BI Server and Presentation Services names from 10*g* if you had specified the security model as "BI Server" in 10*g*.<br>The xmlp-server-config.xml file is in the Admin\Configuration folder of the upgraded repository. Change the computer name for BI_SERVER_SECURITY_URL and SAW_SERVER. |
| Stage 6 | Run Upgrade Assistant to upgrade the BI Publisher 10*g* Scheduler to 11*g* | 1. Verify that scheduled reports work correctly. | None |

### 1.1.4 Step 4: Perform a Test Upgrade on a Representative Subset of the Existing 10*g* System

Performing a test upgrade enables you to do the following:

- Verify more quickly that an upgrade of the existing 10*g* system is likely to be successful
- Explore in detail the likely differences between the existing 10*g* system and the upgraded 11*g* system.

To perform a test upgrade as efficiently as possible, do the following:

- Optimize the 10*g* system. (For more information, see Section 1.1.1, "Step 1: Analyze and Optimize the Existing 10g System in Readiness for Upgrade.")
- Initially upgrade only a representative subset of the objects in the existing 10*g* system. You can obtain this subset by making a copy of the catalog and deleting what you do not want to test.

> **Tip:** You might want to test the upgrade process on the Sample Sales application or the Paint application that ships with 10*g*. This upgrade helps you to understand the process on a finite sample.

Follow the instructions in Chapter 5, "Upgrading Oracle Business Intelligence Enterprise Edition" to perform the test upgrade. In summary, the process is as follows:

1. Install the Oracle Business Intelligence 11*g* software.
2. Run Upgrade Assistant on the new 11*g* system.

Upgrade Assistant imports the metadata from the existing 10*g* repository file and Oracle BI Presentation Catalog to the new 11*g* system and upgrades it as necessary to function in the 11*g* environment

3. Upgrade the Scheduler Schema.
4. Complete any post-installation steps.

Note that the 10*g* system is left unchanged after the upgrade process is complete.

Use the test plan that you previously created to verify that the test upgrade process has completed successfully and that the resulting upgraded system meets your expectations.

As stated previously, the appearance and behavior of the upgraded system might well be different to the original 10*g* system. It is therefore important that the verification activity focuses on establishing that the upgraded system is functionally equivalent to the 10*g* system, rather than identifying cosmetic differences between the two.

As well as cosmetic differences, testing might also reveal differences between the original 10*g* system and the upgraded 11*g* system that you consider to be significant. In these cases, it is usually helpful to revisit your understanding of what has been upgraded and why. For more information, see "Step 2: Understand What is Upgraded and How it is Upgraded".

In addition to verifying the upgrade process, the test upgrade also provides you with an ideal environment in which to test some of the functionality that has been added or enhanced in 11*g*. For more information about the new functionality in which you are most likely to be interested, see the following sections:

- Section 1.2.3, "BI Repository Metadata: Highlighted New 11g Functionality to Leverage"
- Section 1.3.3, "Oracle BI Presentation Catalog: Highlighted New 11g Functionality to Leverage"
- Section 1.4.3, "BI Publisher: Highlighted New 11g Functionality to Leverage"
- Section 1.5.3, "Oracle BI Security: Highlighted New 11g Functionality to Leverage"

### 1.1.5 Step 5: Perform the Actual Upgrade

Having performed a test upgrade and becoming satisfied that the upgraded system meets your requirements, you can proceed to performing a full upgrade of the entire Oracle BI 10*g* system.

Follow the instructions in Chapter 5, "Upgrading Oracle Business Intelligence Enterprise Edition" to perform the full upgrade. In summary, the process is as follows:

1. Install the Oracle Business Intelligence 11*g* software.
2. Run Upgrade Assistant on the new 11*g* system.

   Upgrade Assistant imports the metadata from the existing 10*g* repository file and Oracle BI Presentation Catalog to the new 11*g* system and upgrades it as necessary to function in the 11*g* environment
3. Upgrade the Scheduler Schema.
4. Complete any post-installation steps

Note that the 10*g* system is left unchanged after the upgrade process is complete.

Having performed the full upgrade, use the test plan that you previously created to verify that the upgrade process has completed successfully and that the resulting upgraded system meets your expectations.

As stated previously, the appearance and behavior of the upgraded system might well be different to the original 10*g* system. It is therefore important that the verification activity focuses on establishing that the upgraded system is functionally equivalent to the 10*g* system, rather than identifying cosmetic differences between the two.

As well as cosmetic differences, testing might also reveal differences between the original 10*g* system and the upgraded 11*g* system that you consider to be significant. In these cases, it is usually helpful to revisit your understanding of what has been upgraded and why. For more information, see "Step 2: Understand What is Upgraded and How it is Upgraded".

Having verified the full upgrade process, you can now implement the additional and enhanced 11*g* functionality that you have decided to leverage.

### 1.1.6 Step 6: Implement New and Enhanced 11*g* Functionality

The appearance and behavior of an upgraded 11*g* system might well be different to the original 10*g* system, although the two should be functionally equivalent.

During upgrade, existing 10*g* functionality is often re-implemented using equivalent capabilities that were introduced in 11*g*. However, the upgrade process upgrades only what is already present in the original 10*g* system. Specifically, the upgrade process does not suggest how you might further improve the 11*g* system by taking advantage of new functionality that was introduced in 11*g*.

To discover how you can significantly improve the upgraded system using new functionality in 11*g*, see the following sections:

- Section 1.2.3, "BI Repository Metadata: Highlighted New 11g Functionality to Leverage"
- Section 1.3.3, "Oracle BI Presentation Catalog: Highlighted New 11g Functionality to Leverage"
- Section 1.4.3, "BI Publisher: Highlighted New 11g Functionality to Leverage"
- Section 1.5.3, "Oracle BI Security: Highlighted New 11g Functionality to Leverage"

## 1.2 Understanding the Upgrade of Repository Metadata

You must upgrade Oracle BI EE 10*g* repository files before they can work in Oracle BI EE 11*g*. You use Upgrade Assistant to upgrade the repository files during the upgrade process.

However, before you run Upgrade Assistant, there are a number of areas in particular to be aware of. For more information, see Section 1.2.1, "Repository Metadata: Major Upgrade Considerations."

In addition to the major upgrade considerations that are outlined in Section 1.2.1, there are a number of other factors to consider when planning to upgrade the repository metadata. For more information, see Section 1.2.2, "Repository Metadata: Other Upgrade Considerations."

In addition to the differences between the original 10*g* system and the upgraded 11*g* system, there are also a number of new features introduced in Oracle BI 11*g* that you might want to consider implementing in the upgraded system. For more information,

see Section 1.2.3, "BI Repository Metadata: Highlighted New 11g Functionality to Leverage."

## 1.2.1 Repository Metadata: Major Upgrade Considerations

This section describes upgrade considerations related to Oracle BI repository metadata. This section contains the following topics:

- Section 1.2.1.1, "Enhanced Repository Consistency Checking"
- Section 1.2.1.2, "Oracle BI Server Query Changes"

### 1.2.1.1 Enhanced Repository Consistency Checking

In 10*g*, there were several modeling constructs allowed by the consistency checker that resulted in unexpected query behavior at runtime, or inconsistencies at MUD checkout time. In 11*g*, the Consistency Check Manager addresses these issues by enforcing additional validation rules to help ensure that the repository is consistent. In addition, some rules that existed in previous releases might now be displayed during consistency checks. The following table summarizes these rules:

| Validation Rule Example | Type | Description |
|---|---|---|
| [14031] The content filter of a source for logical table: FACT_TABLE_NAME references multiple dimensions. | Error | The given logical table has a logical table source with a WHERE clause filter that references multiple dimensions. A WHERE clause with multiple dimensions is invalid. |
| [38126] 'Logical Table' '"Technology - WFA"."Fact WFA WO "' has name with leading or trailing space(s). | Error | Identifies an object with leading or trailing spaces in the object name.<br>Repository objects can no longer have leading or trailing spaces in their names. Leading and trailing spaces in object names can cause query and reporting issues. |
| [38012] Logical column DIM_Start_Date.YEAR_QUARTER_NBR does not have a physical data type mapping, nor is it a derived column.<br>[38001] Logical column DIM_Start_Date.YEAR_QUARTER_NBR has no physical data source mapping. | Error | Logical columns that are not mapped to any logical table source are reported as consistency errors, because the logical table source mappings are invalid and would cause queries to fail.<br>Both of the given validation rules are related to the same issue. |
| [39028] The features in Database 'MyDB' do not match the defaults. This can cause query problems. | Warning | Some database feature defaults were changed in Oracle BI EE 11*g*. Unless you have specific customizations to your feature set, it is recommended that you reset the database features to the new defaults. |
| [39003] Missing functional dependency association for column: DIM_Offer_End_Date.CREATE_DT. | Warning | This warning indicates that the given column is only mapped to logical table sources that are disabled. The warning brings this issue to the repository developer's attention in case the default behavior is not desired. |
| [39055] Fact table "HR"."FACT - HC Budget" is not joined to tables in logical dimension "HR"."DIM - HR EmployeeDim". This will cause problems when extracting project(s). | Warning | This warning indicates that there is a physical join between the given fact and dimension sources, but there is not a corresponding logical join between the fact table and the dimension table. |

| Validation Rule Example | Type | Description |
|---|---|---|
| [39059] Logical dimension table MY_DIM has a source MY_DIM_DAILY at level Daily that joins to a higher level fact source MY_FACT_SUM.MTHLY_SUM | Warning | Even though this fact logical table source has an aggregate grain set in this dimension, no join was found that connects to any logical table source in this dimension (or a potentially invalid join was found).<br>This means that either no join exists at all, or it does exist but is potentially invalid because it connects a higher-level fact source to a lower-level dimensional source. Such joins are potentially invalid because if followed, they might lead to double counting in query answers.<br>For example, consider Select year, yearlySales. Even if a join exists between monthTable and yearlySales table on yearId, it should not be used because such a join would overstate the results by a factor of 12 (the number of months in each year).<br>If you get a 39059 warning after upgrade, verify that the join is as intended and does not result in incorrect double counting. If the join is as intended, then ignore the 39059 warning. |
| [39054] Fact table "Sales - STAR"."Fact - STAR Statistics" is not joined to logical dimension table "Sales - STAR"."Dim - Plan". This will cause problems when extracting project(s). | Warning | This warning indicates that the aggregation content filter "Group by Level" in the logical table source of a fact table references logical dimension tables that are not joined to that fact table. If that fact table is extracted in the extract/MUD process, the dimensions that are not joined will not be extracted. In this case, the aggregation content of the extracted logical table source would not be the same as in the original logical table source. |
| [39057] There are physical tables mapped in Logical Table Source ""HR"."Dim - Schedule"."SCH_DEFN"" that are not used in any column mappings or expressions. | Warning | This warning indicates that the given logical table source has irrelevant tables added that are not used in any mapping. This situation will not cause any errors. |

In addition to the validation rules described in the previous table, bear the following in mind:

- The Consistency Check Manager now provides a warning when the same connection pool is being used for both queries and initialization blocks. This configuration is not recommended. Instead, create a dedicated connection pool for initialization blocks. Otherwise, query performance might suffer, or user logins might hang if authorization initialization blocks cannot run. These warnings are displayed similar to the following:

  ```
  [39062] Initialization Block 'Authorization' uses Connection Pool '"My_DB".
  "My_CP"' which is used for report queries. This may impact query performance.
  ```

- Invalid objects are now deleted during consistency checks. This behavior might result in deleted expressions and filters on logical table sources and logical columns. Invalid references can occur when objects were deleted in the Physical layer without properly accounting for the references in the Business Model and Mapping layer objects.

#### 1.2.1.2 Oracle BI Server Query Changes

This section describes changes to queries in the Oracle BI Server.

**1.2.1.2.1 Integer Division** Note the following for integer division:

- In 10*g*, the behavior for division between two integers was inconsistent depending on whether the expression was evaluated internally, or whether the expression

was shipped to a data source that followed the ANSI standard for division between integers.

  - If shipped to Microsoft SQL Server or evaluated internally, such as when queries were returned from the Oracle BI Server results cache, then 7 / 2 = 3
  - If shipped to Oracle Database, then 7 / 2 = 3.5

- In 11*g*, division between integers always results in an integer even if the division is shipped to Oracle Database (the result is truncated). If decimal division is required, then follow the instructions in Appendix B, "Possible Changes in Oracle BI Enterprise Edition Appearance and Behavior After Upgrade" to cast the values.

**1.2.1.2.2 10*g* Allowed Invalid Joins That Resulted in Double Counting** Note the following for joins:

- In 10*g*, the Oracle BI Server allowed joins between fact logical table sources (such as Month level) and lower-level dimension logical table sources (such as Day level). Typically, these joins result in double counting.
- In 11*g*, a new consistency check warning (39059) highlights when a fact logical table source joins to a lower-level dimension logical table source, resulting in a potentially invalid join. If you get a 39059 warning after upgrade, verify that the join is as intended and does not result in incorrect double counting. If the join is as intended, then ignore the 39059 warning.

## 1.2.2 Repository Metadata: Other Upgrade Considerations

Keep the following considerations in mind when upgrading a repository:

### 1.2.2.1 Changes Related to the Use of Fusion Middleware Control in Oracle BI 11*g*

Note the following changes in Oracle BI 11*g* that are related to use of Fusion Middleware Control:

- Many configuration settings that affect repository development, including the default published repository, are now centrally managed in Fusion Middleware Control. You can no longer manually change these configuration settings in NQSConfig.INI. See *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for more information.
- You can no longer restart the Oracle BI Server using the Administration Tool in online mode. Instead, you can restart the Oracle BI Server and other system components using Fusion Middleware Control.

  You can also use the BI Systems Management API to programmatically start and stop Oracle BI EE.

  For more information, see "Starting and Stopping Oracle Business Intelligence" and "Starting and Stopping Oracle Business Intelligence Using the BI Systems Management API" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.2.2.2 Changes Related to Security

Note the following changes in Oracle BI 11*g* related to security:

- Be aware of the following security-related changes:
  - Repositories now have repository-specific passwords that are used to encrypt the repository contents. The repository password is stored in an external credential store when you publish a repository in Fusion Middleware Control,

so that the Oracle BI Server can retrieve the password to load the repository. See "Changing the Repository Password" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information.

Note that a blank repository password is not allowed in 11*g*.

– Groups no longer exist in the repository as objects. Instead, you implement data access security based on the application roles to which a user belongs.

  Application roles are managed in an external policy store. Application role objects exist in the repository, but these objects are pointers (references) to the externally managed roles.

– Users are managed in an external authentication provider and are no longer managed in the repository. User objects exist in the repository, but these objects are pointers (references) to the externally managed users.

See *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition* for information about these and other security changes. See "Applying Data Access Security to Repository Objects" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information.

#### 1.2.2.3 Changes Related to ODBC DSN

The connection parameters in the default ODBC DSN for the Oracle BI Server are now centrally managed by Fusion Middleware Control and cannot be manually changed.

In addition, Oracle BI EE is now deployed in a clustered configuration by default. Because of this, the default ODBC DSN for the Oracle BI Server points to the Cluster Controller by default, rather than to the Oracle BI Server.

See "Integrating Other Clients with Oracle Business Intelligence" in *Oracle Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition* for more information about ODBC DSNs for the Oracle BI Server.

#### 1.2.2.4 Changes Related to the Dependencies for a Running System

Oracle BI EE 11*g* has additional dependencies for a running system, including:

- The relational database that was specified upon installation must be running. This database must contain required Oracle BI EE schemas loaded using the Repository Creation Utility (RCU).
- If you selected the Simple Installation option for the 11*g* installation, then the Administration Server in Oracle WebLogic Server must be running before you start Upgrade Assistant. If you selected the Enterprise Installation option, then the Administration Server and any Managed Servers must be running before you start Upgrade Assistant.

#### 1.2.2.5 Changes Related to Running Command-Line Utilities

Before you can run any of the Oracle BI Server command-line utilities, you must run bi-init.cmd (or bi-init.sh on UNIX) to launch a command prompt or shell window that is initialized to the Oracle instance.

You can find this utility in:

`ORACLE_INSTANCE/bifoundation/OracleBIApplication/coreapplication/setup`

For more information, see "Running bi-init to Launch a Shell Window Initialized to Your Oracle Instance" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

#### 1.2.2.6 Changes Related to Data Source Connectivity

This section describes changes to data source connectivity in 11*g*.

**Setting Up Oracle Database Data Sources** If you want to use a net service name in a connection pool for an Oracle Database data source, you must set up a tnsnames.ora file in the following location within the Oracle BI EE environment, so that the Oracle BI Server can locate the entry:

*ORACLE_HOME*/network/admin

**Setting Up Essbase Data Sources** The recommended client version for Essbase connectivity in 11*g* is the 11.1.2.x client bundled with Oracle BI EE in the following directory:

*ORACLE_HOME*/clients/epm/Essbase/EssbaseRTC

See *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for additional configuration steps, such as adding Essbase variables to bi-init.cmd for Administration Tool connectivity.

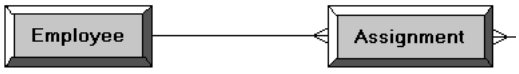
**Setting Up Teradata Data Sources** For connectivity to Teradata on Windows, you must manually edit opmn.xml to include required Teradata variables. See *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information.

#### 1.2.2.7 Administration Tool Changes

Note the following changes in Oracle BI 11*g* related to the Administration Tool:

- You can no longer open the Administration Tool by double-clicking a repository file. The resulting Administration Tool window is not initialized to the Oracle instance, and errors result later in your session. Instead, always use the Start menu to open the Administration Tool, or launch the Administration Tool from the command line using bi-init.cmd. For information, see "Opening the Administration Tool" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.
- Joins in the Physical and Business Model Diagrams are represented by a line with an arrow at the "one" end of the join, rather than the line with crow's feet at the "many" end of the join that was used in previous releases.

  For example, the following image shows a join in the diagram as it was represented in previous releases:




  This join is represented as follows in 11*g* Release 1:

- When creating joins in the Physical and Business Model Diagrams, you now select the "many" end of the join first, and then select the "one" end of the join. In previous releases, joins in the diagrams were created by selecting the "one" end of the join first.

  This new gesture direction (from many to one) matches the direction of the new join arrow, described in the previous bullet.

- Presentation catalogs in the Presentation layer are now called subject areas.

#### 1.2.2.8 Repository Modeling Changes

Note the following changes in Oracle BI 11*g* related to repository modeling:

- Bridge tables are now identified using repository modeling techniques. They are no longer identified using the **Bridge table** option in the Logical Table dialog that existed in previous releases. Check the repository to ensure that the bridge tables are modeled appropriately. See "Modeling Bridge Tables" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information.
- You might notice that some queries that used to return one result now return a different result. This behavior occurs because the determination of which logical table source to use for a query is now very ordered, whereas in previous releases, the determination was random. Examine and adjust the modeling to correct the behavior.
- In 10*g*, if two logical table sources for the same logical table map to the same physical table, and both logical table sources are used in a query, and both logical table sources have a WHERE clause filter, then the filter from only one of the logical table sources was applied. The other WHERE clause filter was ignored.

  In 11*g*, in this situation, the WHERE clause filters from both logical table sources are applied to the query. Typically, this behavior produces the desired results. If you encounter errors related to this issue, then you can correct them by using physical table aliases to ensure that the same physical table is not mapped to the same logical table at different levels.

#### 1.2.2.9 Changes to Write Back

If you configured write-back capability in a previous release of Oracle Business Intelligence, you must now explicitly select the **Writeable** option for each logical column for which you want to enable write back. See "Enabling Write Back on Columns" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for information.

#### 1.2.2.10 Changes to Static Variables

Static repository variables must have default initializers that are constant values. See "About Repository Variables" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for information.

#### 1.2.2.11 MUD History Must Be Manually Upgraded in Oracle Business Intelligence 11*g*

The Oracle BI Administration Tool multiuser development (MUD) environment enables users to obtain historical information about repository changes, as follows:

- Subset changes prior to merge are stored as modified subset repositories.
- Each version in the MUD location is stored as repository_name.version_number.

In Oracle BI 11*g*, repository files are encrypted with a user-specified repository password. As a result, the Administration Tool can open only repository files that have been fully upgraded and encrypted.

To enable the Administration Tool to open versioned MUD repository files and access MUD history, upgrade all repositories in the MUD directory. Upgrade all repository files in the MUD directory with the following naming patterns, where *ddd* is the version number:

- modified subset of *repository_name.ddd*
- *repository_name.ddd*

> **Note:** You upgrade versioned MUD repository files using the obieerpdmigrateutil command-line tool. Do not use Upgrade Assistant to upgrade versioned MUD repository files.
>
> Similarly, do not use the obieerpdmigrateutil tool to upgrade production repository files. You must use Upgrade Assistant to upgrade the production repository.

**To upgrade MUD repositories so that you can access MUD history:**

1. Run bi-init.cmd (or bi-init.sh on UNIX) to launch a command prompt or shell window that is initialized to the Oracle instance. You can find this utility in:

   ```
   ORACLE_INSTANCE/bifoundation/OracleBIApplication/coreapplication/setup
   ```

2. Run obieerpdmigrateutil from the resulting shell window with the desired options, as follows:

   ```
   obieerpdmigrateutil -I input_repository_path -O output_repository_path
   -L ldif_output_path -U 10g_administrator_username
   ```

   where:

   *input_repository_path* is the name and location of the repository that you want to upgrade and encrypt.

   *output_repository_path* is the name and location of the upgraded and encrypted repository. This value can be the same as the input repository path.

   *ldif_output_path* is the path of the LDIF output file that is generated by the utility. It contains the users and groups from the old repository for importing into the LDAP Identity Store.

   *10g_administrator_username* is the Administrator user name for the repository in the previous release.

   For example:

   ```
   obieerpdmigrateutil -I C:\mud_dir\my_repos.001 -O C:\upgr\my_repos.001
   -L C:\upgr\ldif\my_ldif.ldif -U Administrator
   ```

3. When prompted, enter the 10*g* administrator password and a new repository encryption password. Do not forget the repository password, because you cannot open the repository without it. To avoid errors, use the same repository password for all repository files in the MUD environment.

**Tip:** If you have a large number of MUD repositories, then you might want to create a script to automate the MUD repository migration tasks.

#### 1.2.2.12 Changes Related to Environment Variables

Note the following changes in Oracle BI 11*g* related to environment variables:

- The environment variable OBIS_Essbase_CustomGroup_Generation, used in previous releases to customize the use of custom group syntax with Essbase, has been replaced by a new database feature called PERF_CUSTOM_GROUP_GENERATION_MODE. This database feature impacts how custom group syntax is generated on Essbase and other multidimensional sources. The set of valid values is the same as for the environment variable (0-2).
- The environment variable OBIS_Essbase_NonEmptyTuples_Generation.*Database*.*Catalog*.*CubeTable*, used in previous releases to resolve issues with large query sets, has been replaced by a new database feature called PERF_PREFER_SUPPRESS_EMPTY_TUPLES. This database feature controls whether empty tuples with empty cell values are eliminated. Note that this database feature does not change the null suppression behavior on the final result set.

### 1.2.3 BI Repository Metadata: Highlighted New 11*g* Functionality to Leverage

You can use the following features that relate to Oracle BI repository metadata in Oracle BI EE 11*g*:

- Integrate the Administration Tool with a third-party source control management system — As an alternative to using a MUD environment, you can choose to save your repository in MDS XML format and integrate the Administration Tool with a third-party source control management system.
- Identify query candidates with Oracle BI Summary Advisor — If you are running Oracle Business Intelligence on the Oracle Exalytics Machine, you can use the Oracle BI Summary Advisor feature to identify which aggregates will increase query performance. Summary Advisor intelligently recommends an optimal list of aggregate tables based on query patterns that will achieve maximum query performance gain while meeting specific resource constraints.
- Ability to limit and offset rows returned — You can use the FETCH and OFFSET clauses to constrain the number of rows returned by the SELECT statement and to offset the returned rows by a given number. Both clauses are optional and can be used together, or independently.
- Streamlined MUD merge process — Repository developers using a multiuser development (MUD) environment can now merge and publish changes in a single step, rather than merging local changes and then publishing changes as two separate steps. They can also perform subset refreshes to perform incremental local merges with the master repository.
- Automated repository patching process — You can now use an option in the patchrpd command-line utility to enable automated patching without prompting for user input. In addition, new patching-specific rules are applied during patch merges.
- Support for aggregate persistence in a cluster — You can now use the aggregate persistence feature in a clustered environment.

Note also the following features relating to Oracle BI repository metadata in Oracle BI EE 11*g* (11.1.1.5):

- Access to Oracle OLAP data sources — Oracle BI EE now supports Oracle OLAP as a data source.
- Access to TimesTen data sources — Oracle BI EE now supports Oracle TimesTen In-Memory Database as a data source.
- Native connection to SAP/BW data sources — You can now use the SAP BW Native connection option to connect to SAP/BW data sources over BAPI.
- Oracle Business Intelligence Metadata Web Service — The Oracle BI Metadata Web Service provides a Web services interface to call the Oracle BI Server stored procedures. You use these procedures to obtain information about the metadata and to modify the metadata.

Note also the following features relating to Oracle BI repository metadata available in Oracle BI EE 11*g* (11.1.1.3):

- Hierarchy objects in the Presentation layer — You can now define presentation hierarchies and presentation levels in the Presentation layer. These objects provide an explicit way to expose the multidimensional model in Oracle BI Answers and enables users to create hierarchy-based queries. Presentation hierarchies expose analytic functionality such as member selection, custom member groups, and asymmetric queries.
- Support for unbalanced (ragged) and skip-level hierarchies — Oracle BI EE now supports unbalanced and skip-level hierarchies. An unbalanced (or ragged) hierarchy is a hierarchy where the leaves (members with no children) do not necessarily have the same depth. A skip-level hierarchy is a hierarchy where there are members that do not have a value for a particular ancestor level.
- Support for parent-child hierarchies — Oracle BI EE now supports parent-child hierarchies. Parent-child hierarchies (also called value hierarchies) contain members that all have the same type. For example, an organizational chart has a distinct parent-child hierarchy, but all members are employees.
- Generating and applying XML patch files — You can now generate an XML patch file that contains only the changes made to a repository. This patch can be then applied to the old (original) version of the repository to create the new version. This is very useful for development-to-production scenarios, and can also be used for Oracle BI Applications customers to upgrade their repository.

  You can also use the Oracle BI Server XML utilities to create a generic, XML-based representation of the Oracle BI repository metadata, on any supported Oracle BI Server operating system.
- Multicurrency support — You can configure logical columns so that Oracle BI EE users can select the currency in which they prefer to view currency columns in analyses and dashboards.
- Access to Essbase data sources — Oracle BI EE now supports Essbase as a data source.
- Access to Hyperion Financial Management data sources — Oracle BI EE now supports Hyperion Financial Management as a data source.
- Access to ADF Business Component data sources — Oracle BI EE now supports using ADF Business Components as data sources. With this feature, users can integrate operational reporting with any application that is built on top of the ADF Framework.

For more information about other new features available with the 11*g* repository metadata, refer to "New Features" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

## 1.3 Understanding Oracle BI Presentation Catalog Upgrade

You must upgrade files from a 10*g* Oracle BI Presentation Catalog before they will work in 11*g*. You use Upgrade Assistant to upgrade the catalog files during the upgrade process.

However, before you run Upgrade Assistant, there are a number of areas in particular to be aware of. For more information see Section 1.3.1, "Oracle BI Presentation Catalog: Major Upgrade Considerations."

In addition to the considerations in Section 1.3.1, there are a number of other factors to consider when planning to upgrade a BI Presentation Catalog. For more information, see Section 1.3.2, "Oracle BI Presentation Catalog: Other Upgrade Considerations."

In addition to differences in appearance and behavior between the original 10*g* system and the upgraded 11*g* system, there are also a number of new features introduced in Oracle BI 11*g* that you might probably want to consider implementing in the upgraded system. For more information, see Section 1.3.3, "Oracle BI Presentation Catalog: Highlighted New 11g Functionality to Leverage."

### 1.3.1 Oracle BI Presentation Catalog: Major Upgrade Considerations

Oracle BI EE 11*g* introduces many enhancements to existing features. In some cases, these improvements render previous functionality obsolete. During upgrade, reports and dashboards that contain obsolete functionality are intentionally upgraded and improved to take advantage of the new features.

Instead of trying to perfectly replicate the appearance and behavior of 10*g* reports and dashboards in 11*g* (which is likely not desirable, and might not even be possible), you should consider how best to take advantage of the new functionality.

In addition, keep the following considerations in mind:

- Many configuration settings that affect the catalog in a clustered environment have changed. For example, the previous CatalogCacheTimeoutSecs element is the MaxAgeMinutes element within the Cache and CatalogAttributes elements. If Presentation Services is clustered, then you must replace all the previous cluster's configuration settings with the new settings.

  See *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for information on these settings.

- Many catalog objects might not behave as expected until all warnings that were issued as part of the upgrade process have been addressed and the catalog validation report is error-free.

  For example, the upgrade process assumes that all input catalogs are correct, and undefined behavior produces incorrect results. These assumptions allow the upgrade process to incorporate all objects and you can decide if something has been upgraded incorrectly, using the initial upgrade log for assistance. These assumptions prevent you from having to fix broken objects in 10*g* before upgrading them to 11*g*.

  Fixing the catalog might require several cycles to generate a validate report, correct objects, run the upgrade, then repeat the three steps again. A small number of objects might require manual edits.

See *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for information on validation.

- Localized text for each user's own catalog content (such as dashboard names and graph titles) might not be displayed, because previous 10*g* versions use the Text element while more recent 10*g* versions and 11*g* versions use the TEXT element in all capital letters. Use the following command to resolve this issue on a Windows system:

  ```
  runcat.cmd -localize -cleanup
  ```

  Use `runcat.sh` on UNIX systems. The command is located in the following directory:

  ```
  ORACLE_INSTANCE\bifoundation
       \OracleBIPresentationServicesComponent
       \coreapplication_obipsn
       \catalogmanager
  ```

  To view details of the `-localize -cleanup` options, enter the following command on Windows systems:

  ```
  runcat.cmd -localize -cleanup -help
  ```

- Some physical item names on disk might become corrupted by a third-party ftp program. You can discover this issue if you notice catalog errors about failing to read items, and you can see the issue using a tool such as File Explorer on Windows systems. For example, the correct file name of "/system/privs/sa%2esales" might become "/system/privs/sa%252esales". The ftp program changed the escape character from '%' to '%25'. If you use the ftp program multiple times, then the error repeats, so the file name might become similar to the following: "sa%2525252525252esales".

  To repair the corrupted file names, enter the following command before performing the upgrade on Windows system. (Use `runcat.sh` on UNIX systems.) Some files might still require manual renaming.

  ```
  runcat.cmd -cmd repair
  ```

  To view details of the `repair` option, enter the following command on Windows systems:

  ```
  runcat.cmd -cmd repair -help
  ```

- After upgrading a catalog, you might find that some analyses in 11*g* do not run at all and instead produce SQL errors.

  The Oracle BI Server in 11*g* enforces that table names and column names must contain no leading or trailing white space. You must remove any leading or trailing white spaces in all uses of those object names in the catalog. You can use either Catalog Manager's XML Search and Replace functionality or another text replacement tool such as sed.

  For example, an analysis that eventually ran a SQL query against " Product Sales . Unit Price ", where " Product Sales " is the table and " Unit Price " is the column, must have the SQL code changed to instead use "Product Sales.Unit Price".

  This replacement is made more difficult by the various escaping rules for handling table and column names in SQL and HTML code. The representation in the XML file for the analysis with the sqlExpression node might be similar to the following:

  ```
  "   &quot; \" Product Sales \" &quot;  .  &quot; \" Unit Price \" &quot;  "
  ```

But you must change it to the following:

```
"&quot;Product Sales&quot;.&quot;Unit Price&quot;"
```

The \" characters are not actually part of the names, but serve as another level of quoting.

- To take full advantage of 11*g* functionality, it is important to consider the configuration of the Web server. You can improve the performance of the Oracle BI Web client by configuring the Web server to serve up all static files, as well as enabling compression for both static and dynamic resources. By enabling caching and content expiration on the Web server, Web browsers can determine how often to reload the static files from the server. For more information, see "Improving Oracle BI Web Client Performance" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

## 1.3.2 Oracle BI Presentation Catalog: Other Upgrade Considerations

Keep the following considerations in mind when upgrading an Oracle BI Presentation Catalog. See Appendix B, "Possible Changes in Oracle BI Enterprise Edition Appearance and Behavior After Upgrade" for additional information.

### 1.3.2.1 Upgrading Actions

Actions are upgraded as follows:

- Custom script actions that were attached to 10*g* iBots on the Advanced tab of the iBot definition are upgraded to Invoke Server Script actions.
- Custom Java program actions are upgraded to Invoke Java Jobs actions and continue to run as before. However, these actions are read-only. For any new custom code that you want to run on the server, use the Invoke Java Method (EJB) action or the Invoke Web Services action.
- Actions that linked to Siebel operational applications are upgraded to Navigate to Siebel CRM actions.
- Siebel workflow actions are not upgraded. To achieve equivalent functionality for an action that invoked a workflow in a previous release (prior to 11*g*), it is recommended that you expose the workflow as a Web service, and then create an Invoke a Web Service action.

For information on actions, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.3.2.2 Upgrading Analyses that Use Advanced SQL

If you upgrade an analysis whose SQL statement was edited on the Advanced tab, then you cannot add any hierarchical columns, selections, or groups to that analysis. If you try to include any of these features in such an upgraded analyses, then you see a message that states that the feature is unavailable.

For more information, see "Examining the Logical SQL Statement for Analyses" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.3.2.3 Upgrading Calculated Items

In previous releases, when you created a calculated item in a pivot table, that calculated item applied only to that pivot table for that analysis. When you upgrade to 11*g*, all calculated items are automatically converted to selection steps, which apply to all views for an analysis.

For example, suppose that you created an analysis in a previous release (prior to 11*g*) whose criteria includes a Products column and three views: one graph and two pivot tables. Suppose that one pivot table called pivotTable1 has a calculated item called calcItem1 on the Products column. The second pivot table called pivotTable2 also includes a calculated item called calcItem2 on the Products column. After the upgrade to 11*g*, because the calculated items are converted to selection steps, all three views include both of these calculated items.

When an exact match of the view from a previous release is required, with respect to the display of calculated items, then you must implement a manual workaround. For the analysis in 11*g*, decide if multiple calculated items on the same column can be reduced. For instance, using the previous example, decide whether calcItem1 and calcItem2 can be combined, which removes one step from the list of selection steps.

Secondly, if a calculated item must be removed from a view, then the criteria column that the calculated item is defined on should be added a second time on the Criteria tab. Use the new instance of that column on the view and exclude the original instance. In the previous example, if the graph view uses the Products column and the view should not include calcItem1 or calcItem2, then add Products a second time from the Subject Areas pane to the selected columns in the Criteria tab. Edit the graph view and include the second instance of the Products column on the view and exclude the original Products column.

Any column properties on the original Products column added in this analysis must be reapplied to the new instance of the Products column.

#### 1.3.2.4 Upgrading Hidden Dashboards

In 10*g*, you hide a dashboard by setting an internal attribute. In 11*g*, you hide a dashboard by making the Dashboard folder a hidden folder within its higher-level folder. Note that during upgrade and migration of the catalog, the Hidden attribute was applied to the child folders that contain the hidden dashboards.

#### 1.3.2.5 Upgrading iBots

Note the following when upgrading iBots:

- In previous releases (prior to 11*g*), you could create iBots (now known as agents) that were set to start immediately. If you upgrade iBots with this setting, then they do not have their schedule settings imported to the current release. All other agents have their schedule settings imported.

  When you upgrade iBots that were set to start immediately, their Frequency setting on the Schedule tab of the Agent editor is Never. The actual start time from the "Start Immediately" schedule is guaranteed to be in the past, so is no longer valid.

- In previous releases (prior to 11*g*), you could create iBots that delivered the content to you as the owner of the iBot if you had selected the Me option. If you upgrade an iBot in which the Me option is selected, then the owner of the agent in 11*g* is one of the following:

  – A subscriber, if the agent is published.

  – A recipient, if the agent is not published.

- In previous releases (prior to 11*g*), you could create iBots that were conditionally triggered based on the results of requests (now known as analyses).

  In this release, to create agents that are conditionally triggered, you use conditions. You can use an inline condition, that is, one that you define at the point of use and

do not save to the Oracle BI Presentation Catalog, or you can use a named condition, that is, one that you have saved by name in the catalog. For more information, see "Working with Conditions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

An iBot conditionally triggered in a previous release (prior to 11*g*) is upgraded to use an inline condition with the default name of AgentCondition1. This inline condition evaluates whether the number of rows returned by the selected request is greater than 0. (Note that you can still edit these conditions from within the agent, see the location of the analysis that it is based on, and save it elsewhere in the catalog.)

- In previous releases (prior to 11*g*), you could specify that when a particular iBot completed, a custom Java program action was to execute. In this release, custom Java program actions are upgraded to Invoke Java Jobs actions and continue to run as before. However, these actions are read-only. For any new custom code that you want to run on the server, use the Invoke Java Method (EJB) action or the Invoke Web Services action.

#### 1.3.2.6 Upgrading Pivot Tables

Note the following when upgrading pivot tables:

- In 10*g*, by default, all rows of pivot tables are displayed. In 11*g*, you can page through the data as you can with table views, so by default, the first 25 rows are visible. When you click Graph Pivoted Results in the Pivot Table editor, you see a graph that displays only what is currently displayed on-screen in the pivot table. A graph is displayed per section in the pivot table. Users can then page through that graph using tape deck controls.
- A pivot page prompt does not combine columns into one drop-down list. Instead, every column has its own drop-down list.
- For pivot tables, there is an additional row in the column headers for the row heading labels. If there are no columns in either row or column, then there is also an extra column area or row area.

#### 1.3.2.7 Upgrading Interactions in Views

In previous releases (prior to 11*g*), you could set up interactions at the view level, which allowed you to override the interactions that had been set up at the criteria level. In this release, you create left-click interactions at the criteria level. If you upgrade from a previous release (prior to 11*g*), then all left-click interactions are moved to the measures at the criteria level and take effect for all views.

For example, suppose that you had created an analysis in a previous release (prior to 11*g*) whose criteria was defined as Region, District, Dollars, and Units. In addition, you had created an interaction for a graph view. To upgrade the interaction for this release, the interaction is moved to both Dollars and Units at the criteria level.

#### 1.3.2.8 Upgrading Conditional Formats

In 11*g*, conditional formatting that is added to a column in the "Analysis Editor: Criteria tab" applies to both table and pivot table views. In 10*g*, conditional formats based on another column apply only to table views.

For example, suppose that you create an analysis that uses both a Product and a Sales column. If a conditional format is setup on Product to format Product where Sales is greater than some value, then when the condition is met, the format would apply to

table views that include the Product column as well as pivot views that include Product.

Conditional formats on attribute columns might need the column's **Value Suppression** option in the "Edit Column Properties dialog: Column Format tab" set to 'repeat' to match 10*g* conditional formats displayed on table views. This applies only when the column is used in a table view and the conditional format is setup to be based on a measure. By changing the **Value Suppression** option for a column in Criteria, it might impact the layout of other table or pivot views in the analysis that use this column.

For more information about conditional formatting, see "Applying Conditional Formatting to Tables and Pivot Tables" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

#### 1.3.2.9 Upgrading Measure Columns

In previous releases (prior to 11*g*), measure columns could easily be treated as attribute columns, which allowed you to move them freely among the edges of views.

11*g* introduces functionality that specifies to not show all the detail when a measure column is moved to an edge but rather to aggregate the measure column to the grain of the edge.

During upgrade, all measure columns have the **Treat as an Attribute Column** box selected in the Edit Column Formula dialog: Column Formula tab. This allows for upgraded reports with measures moved to an edge of a pivot table or to the "group by" of a graph to work the same way as in 10*g*. New 11*g* analyses have the **Treat as an Attribute Column** option for measures set to false by default.

#### 1.3.2.10 Upgrading Report-Based Totals

In previous releases (prior to 11*g*), you had the ability to create report-based totals in table views. Because report-based totals are handled slightly differently in this release, you might notice a difference in totals as follows:

- If the previous table included all report-based totals, then all measure columns and attribute columns in the upgraded table use the Default option with the Report-Based Total option.
- If the previous table view included a mix of report-based totals and non-report-based totals, then all measure columns and attribute columns in the upgraded table use the Default option with the Report-Based Total option.

  You can work around the upgraded totals manually. If you want to use the same measure value as in the previous release (prior to 11*g*), then duplicate the measure column in the table and use the Aggregation Rule menu to specify a non-report-based total.
- If the previous table view included all non-report-based totals, then all measure columns and attribute columns in the upgraded table continue to use non-report-based totals.

#### 1.3.2.11 Upgrading Sorts

Note the following when upgrading sorts:

- In previous releases (prior to 11*g*), sorts added to columns on the Criteria tab are applied to all views. If you upgrade from a previous release (prior to 11*g*), then you might notice a different sort being applied in table, pivot table, or graph views. The upgraded report retains the sorts that are specified on criteria columns.

However, in 11*g*, a sort that is specified on a criteria column is applied to a view only if that view includes the column.

If you want to continue sorting on a column that is not in a view, then you can reproduce the 10*g* behavior by including the column as a hidden column.

To include a column as a hidden column:

1. On the Results tab, click the **Edit View** button for the view.
2. In the Layout pane, click the **More Options** button for the column and select **Hidden**.

- If a primary sort was specified on a measure column on the Criteria tab in the previous release (prior to 11*g*), then when the analysis is upgraded, that primary sort is not applied to a pivot table or graph that uses the same measure column.
- Pivot tables always sort each edge from outer to inner layer by default. This differs from previous releases (prior to 11*g*) that used a tabular sort, determined by the sorts specified on the criteria columns, as the default sort for pivot tables.
- Pivot tables and graphs use only the sort order that is specified on the Criteria tab, except for measure columns. Sorts that you specify for measure columns on the Criteria tab are ignored.

#### 1.3.2.12 Upgrading Prompts

Note the following when upgrading prompts:

- When you upgrade prompts, you might find that they do not exactly match the appearance and behavior of the original 10*g* system. It requires significant manual intervention to re-create the 10*g* appearance and if you make manual updates, you might lose the ability to take advantage of enhancements that have been introduced into 11*g*. The upgraded prompts will function in the same way but they might be displayed slightly differently. For example, if you have a dashboard page that includes two stacked rows that contain multiple prompts, you might find that the upgraded prompts have a different alignment, because the width of each prompt has increased to 120 pixels.
- In previous releases (prior to 11*g*), you could not specify the width of a prompt field or whether to wrap the prompt labels on the prompt page. If you upgrade prompts from a previous release, then note the following:
  - On the New Prompt dialog, the **Choice List Width** field is set to the default pixel width value that is specified for the DefaultPromptWidth element in the instanceconfig.xml file (by default, 120 pixels).
  - On the Edit Page Settings dialog:
    * The **Wrap label to fit** option is not selected.
    * The **Set width of all prompts to** field is set to the default pixel width value that is specified for the DefaultPromptWidth element in the instanceconfig.xml file (by default, 120 pixels).
- In 10*g*, you could use dashboard prompts against dummy columns to set variables. The data type of the dummy column was often different from the data type of the SQL statement value that populated it. This method worked because all 10*g* variables were strings.

  After an upgrade to 11*g*, the dummy column used for the prompt must have the same data type as the SQL return value. If they are not the same, then run-time data type validation errors occur.

No errors occur during the upgrade process because the SQL statement is not run at that time to determine its data type. The potential issue becomes visible in 11*g* only at runtime when the prompt is executed. At run time, ensure that you validate matching data types for any dummy column prompts that were used to set variables prior to executing them.

Oracle recommends that in 11*g*, you use the new variable prompt type to create and set variables. This usage eliminates the need for a dummy column and any resulting data type inconsistencies.

#### 1.3.2.13 Upgrading Custom Files

Custom files (for example, images and help files) that were stored locally in previous releases (prior to 11*g*) and referenced using the fmap function must be manually copied to the following directory in 11*g*:

```
ORACLE_INSTANCE/bifoundation/OracleBIPresentationServicesComponent
     /coreapplication_obipsn/analyticsRes
```

#### 1.3.2.14 Upgrading Custom Styles and Skins

As a result of the significant changes in architecture and user interface elements in Oracle BI 11*g*, migration from previous skins and styles to the 11*g* instance requires new effort. Custom styles and skins are not upgraded. If you used custom styles and skins in 10*g*, then you should manually re-create them for 11*g*.

Note that certain types of customizations that were possible in 10*g* using XML template customization are no longer possible in 11*g*.

#### 1.3.2.15 Upgrading Charts

See Appendix B, "Possible Changes in Oracle BI Enterprise Edition Appearance and Behavior After Upgrade" for information on the differences when charts are upgraded to graphs in 11*g*.

#### 1.3.2.16 Upgrading the Agents Folder

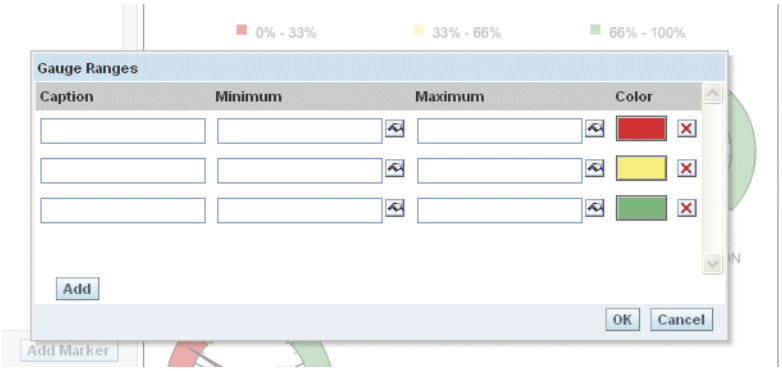
During the upgrade, the previously hidden folder named -ibots is renamed Agents, is no longer hidden, and is stored in the My Folders and Shared Folders folders.

#### 1.3.2.17 Upgrading Gauges

In previous releases (prior to 11*g*), you input the minimum and maximum value for a range from the user interface, from which the gauge is rendered. Ranges that were not continuous were allowed (for example, range1: 0-200, range2: 400-500, and range3: 200-400).

In Oracle BI EE 11*g*, the ranges for gauges are continuous (for example, range1: 1-200, range2: 200-400, and range3: 400-500). From the Gauge Ranges dialog, you can specify only the thresholds from which the ranges are calculated. If the input thresholds result in an irregular gauge range, then the gauge is not rendered and an error message is displayed.

***Figure 1–3 Gauge Ranges Thresholds***




Oracle BI EE 11*g* is based on thresholds, as show in Figure 1–3. During upgrade, the Low/Minimum values specified for each range are considered, and attempts are made to upgrade the ranges and make them as continuous as possible. If the ranges cannot be upgraded properly, then you must modify the ranges after the upgrade finishes.

The following scenarios illustrate the rendering of upgraded gauges:

1. If the ranges are not specified in an ascending order, but are otherwise continuous, (they are not overlapped or nested).

   In Oracle BI EE 10*g*, see Table 1–2.

***Table 1–2 Gauge Ranges Not Specified in an Ascending Order 10g***

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 (red) |
| Range2 | Minimum = 400 | Maximum = 500 (green) |
| Range3 | Minimum = 200 | Maximum = 400 (yellow) |

   The Upgraded 11*g* graphs, see Table 1–3.

***Table 1–3 Gauge Ranges Not Specified in an Ascending Order 11g***

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 (red) |
| Range2 | Minimum = 200 | Maximum = 400 (yellow) |
| Range3 | Minimum = 400 | Maximum = 500 (green) |

   Ranges are ordered based on their minimum values, as long as they are logical and correct.

   The upgraded 11*g* gauge rendered is identical to the 10*g* gauge.

2. If the minimum or maximum value is not specified for a range, then the gauge is populated in accordance with the 10*g* gauge in the following manner. If the final ranges obtained are continuous and valid, then the gauge is rendered for the upgraded gauge.

   a. If the minimum value is missing for the first range specified, then the minimum scale limit is used, as described in Table 1–4.

***Table 1–4 Gauge Ranges with Minimum or Maximum Values Not Specified***

| | | |
|---|---|---|
| Range1 | Minimum = ? (0) (This value is used for the missing value) | Maximum = 200 (red) |

*Table 1–4 (Cont.) Gauge Ranges with Minimum or Maximum Values Not Specified*

| | | |
|---|---|---|
| Range2 | Minimum = 200 | Maximum = 400 (yellow) |

**b.** If the minimum value is missing for the other ranges (not in first range), then the maximum value specified for the preceding range is used, as described in Table 1–5.

*Table 1–5 Gauge Ranges with Minimum Value Missing*

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 (red) |
| Range2 | Minimum = ? (200) (This value is used for the missing value) | Maximum = 400 (yellow) |

**c.** If the maximum value is missing for the Last range specified, then the range extent of the preceding range plus the minimum value specified is used, as described in Table 1–6.

*Table 1–6 Gauge Ranges with Maximum Value Missing for Last Range*

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 |
| Range2 | Minimum = 200 | Maximum = 500 |
| Range3 | Minimum = 500 | Maximum = ? ((500-200) + 500 = 800) |

**d.** If the maximum value is missing for other ranges (not in the last range), then the minimum value specified for the following range is used, as described in Table 1–7.

*Table 1–7 Gauge Ranges with Maximum Value Missing for Other Ranges*

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 |
| Range2 | Minimum = 200 | Maximum = 600 |
| Range3 | Minimum= 600 | Maximum = 700 |

**3.** If the ranges are disjointed, then see Table 1–8.

*Table 1–8 Gauge Ranges Disjointed in 10g*

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 100 (red) |
| Range2 | Minimum = 200 | Maximum = 300 (yellow) |
| Range3 | Minimum= 400 | Maximum = 500 (green) |

The upgraded gauge is rendered based on the Minimum/Low values that are specified.

For the upgraded gauge, the range is described in Table 1–9.

*Table 1–9 Gauge Ranges Disjointed 11g*

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 (red) |
| Range2 | Minimum = 200 | Maximum = 400 (yellow) |
| Range3 | Minimum = 400 | Maximum = 500 (green) |

4. If the specified ranges overlap, then see Table 1–10.

***Table 1–10 Gauge Ranges Specified Overlap 10g***

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 200 |
| Range2 | Minimum = 100 | Maximum = 500 |

The upgraded range might not be identical to the 10*g* gauge, as described in Table 1–11.

***Table 1–11 Gauge Ranges Specified Overlap 11g***

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 100 |
| Range2 | Minimum = 100 | Maximum = 500 |

5. If the ranges specified are nested, then see Table 1–12.

***Table 1–12 Gauge Ranges Nested 10g***

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 500 |
| Range2 | Minimum = 100 | Maximum = 200 |

The upgraded range might not be identical to the 10*g* gauge, as described in .Table 1–13.

***Table 1–13 Gauge Ranges Nested 11g***

| | | |
|---|---|---|
| Range1 | Minimum = 0 | Maximum = 100 |
| Range2 | Minimum = 100 | Maximum = 200 |

6. If the minimum value specified is higher than the maximum value, then see Table 1–14.

***Table 1–14 Gauge Range Minimum Higher than Maximum 10g***

| | | |
|---|---|---|
| Range1 | Minimum = 500 | Maximum = 200 |
| Range2 | Minimum = 100 | Maximum = 200 |

The upgraded range might not be identical to the 10*g* gauge, as described in .Table 1–15.

***Table 1–15 Gauge Range Minimum Higher than Maximum 11g***

| | | |
|---|---|---|
| Range2 | Minimum = 100 | Maximum = 500 (synchronized) |
| Range1 | Minimum = 500 | Maximum = 200 (ignored) |

### 1.3.2.18 Other Changes in Behavior

Various changes have been implemented to configuration settings that affect the display of data in views. For example, the MaxVisibleRows element governs the maximum value for all other row settings. For information on these changes, see "Configuring for Displaying and Processing Data in Views" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.3.3 Oracle BI Presentation Catalog: Highlighted New 11*g* Functionality to Leverage

You can use the following features that relate to the catalog in Oracle BI EE 11*g*:

- Hierarchical columns — Release 11*g* introduces hierarchical columns. This type of column holds data values that are organized using both named levels and parent-child relationships. This column is displayed using a tree-like structure. Individual members are shown in an outline manner. Hierarchies allow you to drill deeper into the data in analyses, to view more detailed information.
- Selection steps — You can create "selection steps" to work with columns in analyses. These steps are transversal to every view in an analysis and allow intuitive and powerful groupings, calculations, and selections within members of columns in the analysis. Calculations that involve values of a column can easily be extended in analyses and can be saved as single elements in the catalog. These saved calculations or selections can then immediately be re-used across analyses in the catalog.
- Catalog objects — The following items can now be saved as catalog objects: selection steps, conditions, and actions. By saving them as catalog objects, you allow them to be used across multiple analyses.
- Multiple subject areas — You can create analyses that contain columns from more than one subject area.
- Calculation functions — You can use new functions within analysis. For example, use the "Aggregate at" function to aggregate any metric at a given level in the analysis, according to the metric aggregation rule set in the repository. You can also use dynamic time series functions to retrieve time series data without specifying any time level.
- Zooming and sliders — Graphs have been enhanced to include interactive zooming. You can use a "section slider" to display members of one or more attribute or hierarchical columns as values on a rectangular bar and to provide mechanisms to select a value. You use a section slider to limit the data that is shown in a graph or gauge.

For more information about other new features available with the 11*g* version of the Oracle BI Presentation Catalog, refer to "New Features" in the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

## 1.4 Understanding BI Publisher Upgrade

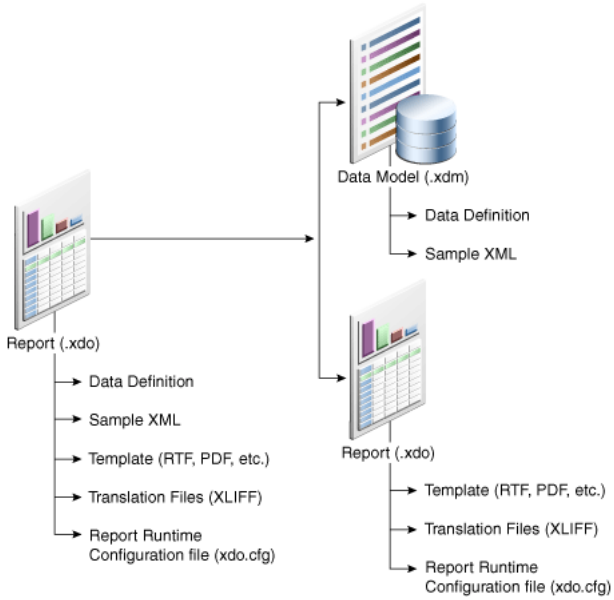
To upgrade BI Publisher, you run Upgrade Assistant in two steps: Once to upgrade the BI Publisher repository and once to upgrade the BI Publisher scheduler schema. This section provides an overview of these two processes:

- "BI Publisher Repository Upgrade (Reports and Configuration Files)"
- "Scheduler Schema Upgrade"

#### BI Publisher Repository Upgrade (Reports and Configuration Files)

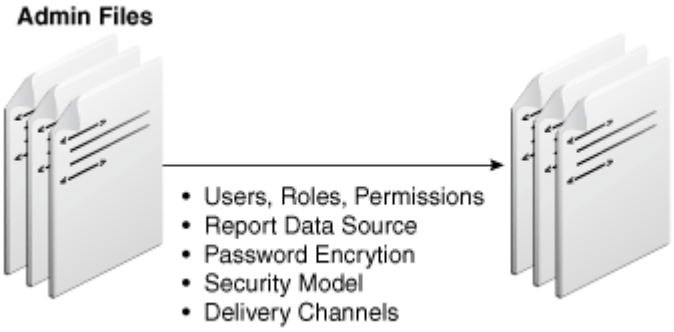
When you upgrade the BI Publisher repository, 10*g* reports are upgraded and placed in the 11*g* repository. In 11*g*, the most significant change in the report definition is the separation of the data model as a separate object in the catalog. The upgrade from 10*g* to 11*g* splits the 10*g* report object into a report definition file (.xdo) and a data model file (.xdm). The resulting objects are shown in Figure 1–4.

*Figure 1–4 10g to 11g Report Upgrade*




The administration files that contain all users and roles, data source definitions, delivery server configurations, system property settings, and so on, are copied to the new location in the 11*g* installation, retaining all configuration settings when you upgrade the repository. Figure 1–5 illustrates the Administration files upgrade.

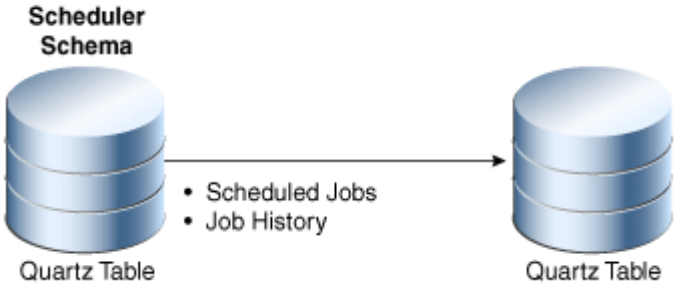
*Figure 1–5 Administration Files Upgrade*




### Scheduler Schema Upgrade

Upgrade Assistant copies over the 10*g* schedule jobs and job history into the new 11*g* scheduler schema you created with the Repository Creation Utility. Figure 1–6 illustrates the scheduler schema upgrade.

*Figure 1–6 Scheduler Schema Upgrade*




Before you run Upgrade Assistant, there are a number of areas in particular to be aware of. For more information see Section 1.4.1, "BI Publisher: Major Upgrade Considerations."

In addition to the above, there are other factors to consider when planning to upgrade BI Publisher. For more information, see Section 1.4.2, "BI Publisher: Other Upgrade Considerations."

As well as differences in appearance and behavior between the original 10*g* system and the upgraded 11*g* system, there are also a number of new features introduced in BI Publisher 11*g* that you will want to consider implementing in the upgraded system. For more information, see Section 1.4.3, "BI Publisher: Highlighted New 11g Functionality to Leverage."

## 1.4.1 BI Publisher: Major Upgrade Considerations

The major upgrade considerations are described in the following sections:

- Section 1.4.1.1, "Deployment to Oracle WebLogic Server"
- Section 1.4.1.2, "Security Model Changes"
- Section 1.4.1.3, "Shared Catalog with Oracle Business Intelligence Presentation Services"
- Section 1.4.1.4, "Changes to Report Architecture"
- Section 1.4.1.5, "Enhanced Catalog Object Security"

### 1.4.1.1 Deployment to Oracle WebLogic Server

A fundamental difference between Oracle Business Intelligence 10*g* and 11*g* is the deployment to Oracle WebLogic Server, and the integration of Oracle Business Intelligence with Oracle Fusion Middleware. For more information, see Section 4.1, "Oracle Business Intelligence 11g and Oracle WebLogic Server."

### 1.4.1.2 Security Model Changes

If you are upgrading a standalone installation of BI Publisher, then the security model does not change after the upgrade and you can maintain the security model from 10*g*. However, in 11*g*, it is recommended that you implement Oracle Fusion Middleware Security. With this security model, you manage users and roles from the Oracle WebLogic Administration Console. For more information about implementing this security model, see "Configuring Oracle Fusion Middleware Security Model" in *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Publisher*.

If BI Publisher is integrated with Oracle BI EE, then users and groups are migrated from the 10*g* repository file to the default 11*g* identity store (Oracle WebLogic Server

embedded LDAP server). If the 10*g* security model was BI Server, then Upgrade Assistant maintains BI Server as the 11*g* security model; however, you must update the security model in the BI Publisher Administration interface to Oracle Fusion Middleware Security if you are also moving Oracle BI EE to the Oracle Fusion Middleware Security model. See Section 1.5, "Understanding Oracle Business Intelligence Security Upgrade."

> **Note:** If you choose to continue to use BI Server security, then the shared user-interface functionality introduced in 11*g* does not work with the 10*g* initialization block based security models.

#### 1.4.1.3 Shared Catalog with Oracle Business Intelligence Presentation Services

For integrated versions of BI Publisher and Oracle BI EE, in 11*g* the catalog is fully shared with Presentation Services. This necessitates the one-time required upgrade step of uploading the BI Publisher catalog to the Presentation Services catalog. Although you can still access the BI Publisher application independently, the shared interface provides complete integration of the Business Intelligence functionalities. For more information on this post-upgrade step, see Section 8.2, "Post-Upgrade Tasks and Considerations for BI Publisher."

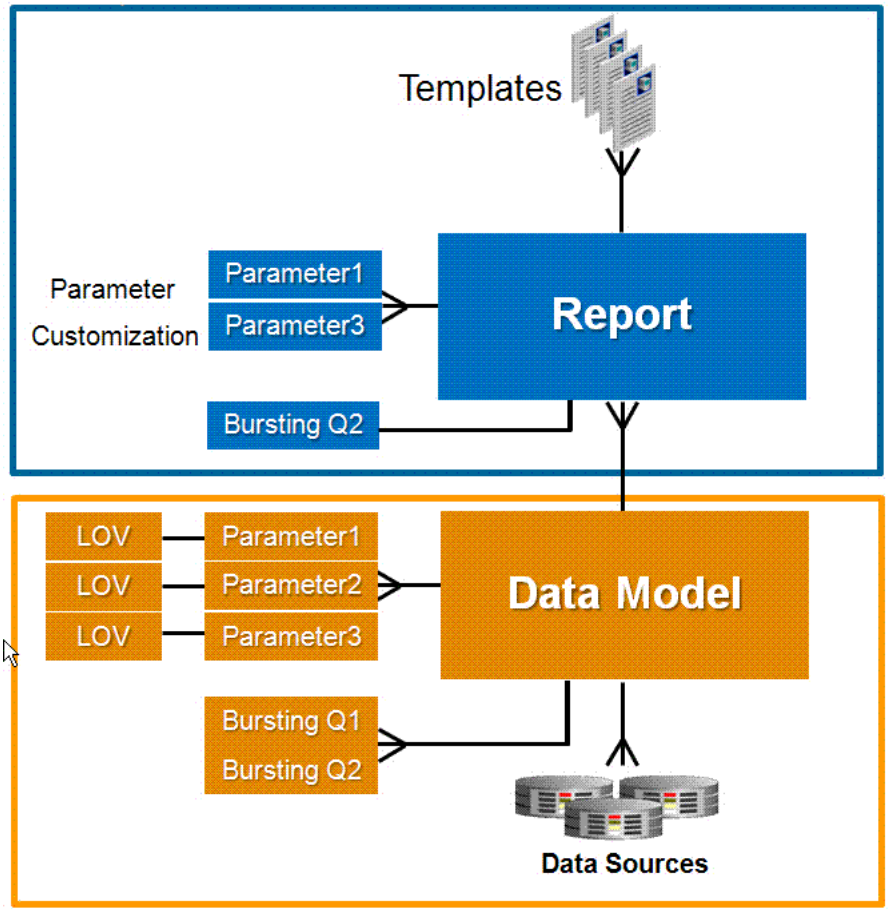
#### 1.4.1.4 Changes to Report Architecture

In 11*g* the following objects can reside independently in the catalog:

- Reports
- Data Models
- Sub Templates
- Style Templates (new component in 11*g*)

In 10*g* the data model was embedded in the report. In 11*g* the data model is a separate object that can be reused by multiple reports. Figure 1–7 shows the relationship between the report and data model objects in 11*g*.

*Figure 1–7 BI Publisher 11g Report and Data Model*




Note the following:

- A single data model can be used by multiple reports
- The parameters from the data model can be customized at the report level
- Multiple bursting definitions can be created for a data model and then selected at the report level

In 10*g*, a sub template resided in a location outside the BI Publisher repository. In 11*g*, sub templates are maintained as objects within the catalog. For more information, see Section 1.4.3.8, "Sub Template Management in Catalog."

A style template is a specialized template introduced in 11*g* to simplify the maintenance of styles across multiple reports, similar to a stylesheet. For more information, see Section 1.4.3.7, "Consistent Look and Feel Using Style Templates."

### 1.4.1.5 Enhanced Catalog Object Security

In 10*g* granting access to catalog objects was performed in the Administration **Roles and Permissions** page. To grant a user role access to run a report, the Administrator simply mapped the folder in which the report resided to the role in the Roles and Permissions page. Any user with that role would then have permission to view any report within the folder.

In 11*g*, the granting of permissions is performed within the catalog using the **Permissions** task. A new set of permissions are available to more granularly define what users can do. The permissions are:

- Read
- Write
- Delete
- Run Report Online
- Schedule Report
- View Report Output

It is important to note that for a report consumer to successfully run a report, his role must have the read permission granted for every object that is referenced by the report. For example, in 10*g*, to run the Employee Salary Report, a user required only access to the folder in which the report resided. In 11*g*, now that the data model is a separate object, a user also requires read permissions on the data model object. If the report references additional objects, such as a Style Template or Sub Template, then read permissions must also be granted for these objects.

Also note that in 11*g*, all roles that must access the data source, even just for viewing reports, must be granted access to that data source. This requires assigning roles to data sources in the BI Publisher Administration page. For more information, see "Granting Data Access" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Publisher*.

## 1.4.2 BI Publisher: Other Upgrade Considerations

Other upgrade considerations are described in the following sections:



### 1.4.2.1 Support for BI Publisher File-Based Catalog or Oracle BI Presentation Catalog

Release 11*g* supports the following catalog types:

- Oracle BI Publisher - File System, for standalone implementations
- Oracle BI Presentation Catalog, for integrated implementations

The 10*g* option, XML DB repository type, is not an option in 11*g*.

### 1.4.2.2 Discoverer Workbooks Not Supported as a Data Set Type

If the 10*g* implementation includes reports that use Discoverer workbooks as data sources, these reports cannot run in 11*g*. A workaround to continue to use the

Discoverer data in reports is to create a new data model in BI Publisher by manually copying the SQL query from the Discoverer workbook to have BI Publisher directly issue the SQL statements to retrieve the data.

#### 1.4.2.3 Compatibility Between 10*g* and 11*g* Reports

The following list summarizes report compatibility:

- You cannot download reports from 10*g* and then simply upload and run them in the new 11*g* environment. All 10*g* reports must be upgraded by Upgrade Assistant first.
- You cannot download reports from 11*g* and then simply upload and run them in the 10*g* environment. There is no backward compatibility.
- You can use a template that was created in 10*g* with a report that is created in 11*g*.
- You can use the BI Publisher Template Builder for Word 11*g* to design reports for 10*g*, if you run the Template Builder in Backward Compatible mode. Backward Compatible mode can be set from the **Options** dialog of the Template Builder.

#### 1.4.2.4 Upgraded Data Models Might Not Be Editable

When the 10*g* report data model is using a SQL Query or BI Answers as the data source type, after the upgrade, the data sets do not display any column information in the Data Model Editor. This occurs because these data set types in 10*g* do not capture the necessary information to populate the columns for the new 11*g*data model. These data models continue to work after the upgrade without any modification, however, it might be difficult to edit this data model in the future (for example, you cannot add a calculated column or create a link with other data sets).

If you decide to keep the data sets as upgraded, then you can still choose to edit them in the future if needed by copying the same SQL query from the original data set, and deleting the original data set. It is important to note that when you do create a new data set, you must ensure that the generated XML structure and the element names match the templates using the report data model. Instead of updating the RTF templates, which can be cumbersome, you can use the data model editor's Structure Pane to update the XML element names.

#### 1.4.2.5 Upgraded Data Templates Might Cause Validation Errors in 11*g*

The data model editor introduces restrictions on data models that were not present in 10*g*. Therefore, a data template-based data model that was valid in 10*g* might invoke a warning message when you try to save it. There are two new restrictions to be aware of:

- Case sensitivity

  The 10*g* data template allowed you to reference elements within the data template without regard to the case being used. Therefore, a reference to either "G_ EMP.salary" or 'G_EMP.SALARY' works. In 11*g*, the case must match the referenced item.

- Orphan elements

  In 10*g*, it was possible for a data template to declare an element name that referenced a column that did not exist in the SQL query. In 10*g* this situation returned a null value for the element. In 11*g* this construction causes an invalid warning. To correct this issue, delete the column using the data model editor.

#### 1.4.2.6 Applications Using 10*g* Web Services for Integration Will Require Changes to Application Code

If you have applications that use Web service APIs for integration with BI Publisher, then you must update the application code to continue to implement BI Publisher functionality in custom applications. The 11*g* Web services are described in *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Publisher*.

#### 1.4.2.7 Differences Between 10*g* and 11*g* Sub Template Implementation

If you have reports in 10*g* that use sub templates, then after upgrade those sub templates continue to work in 11*g* if the import protocols used were HTTP or FTP. If you used File protocol, then you must copy the sub templates manually to the 11*g* server and provide the same relative path as in 10*g*.

In 11*g* BI Publisher, sub templates have been introduced as catalog objects. Oracle recommends migrating the 10*g* sub templates to the catalog to leverage the enhanced security and manageability. This migration also requires updating the import syntax in the calling templates. For more information, see Section 1.4.3.8, "Sub Template Management in Catalog."

### 1.4.3 BI Publisher: Highlighted New 11*g* Functionality to Leverage

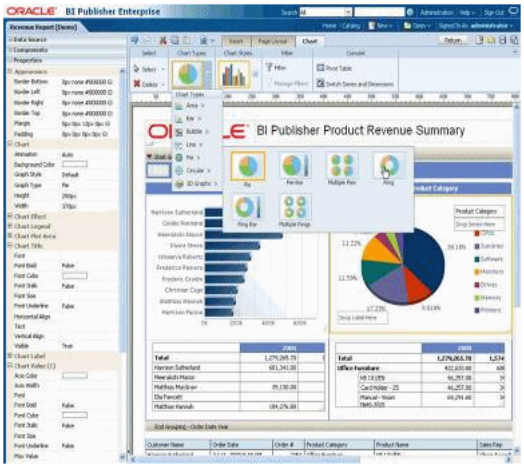
Features of the new 11*g* functionality are described in the following sections:



#### 1.4.3.1 Graphical Web-Based Report Design Tool

Figure 1–8 shows BI Publisher's layout design tool.

***Figure 1–8 BI Publisher's Layout Editor***

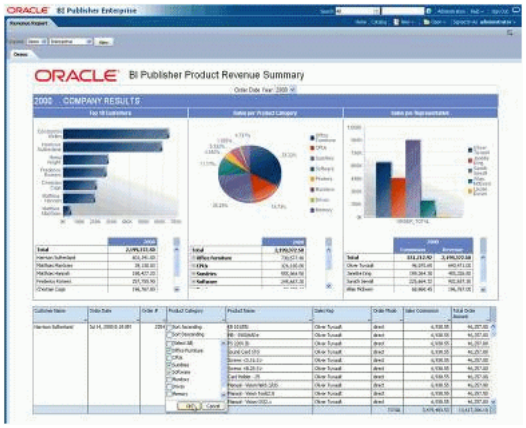


The layout editor is targeted for both business users and report developers. It is a new browser-based graphical design tool that provides an intuitive, drag and drop interface for creating pixel perfect reports in PDF, RTF, Excel, PowerPoint, and HTML. It also provides dynamic HTML output that supports lightweight interaction through a browser (as described in Section 1.4.3.2, "Report Interactivity"). Using sample data from the data model, the layout editor immediately updates the design with the data as you add components to the layout, so that you know exactly how that finished product will be displayed.

### 1.4.3.2 Report Interactivity

Figure 1–9 shows the Interactive Viewer.

***Figure 1–9 BI Publisher's Interactive Viewer***

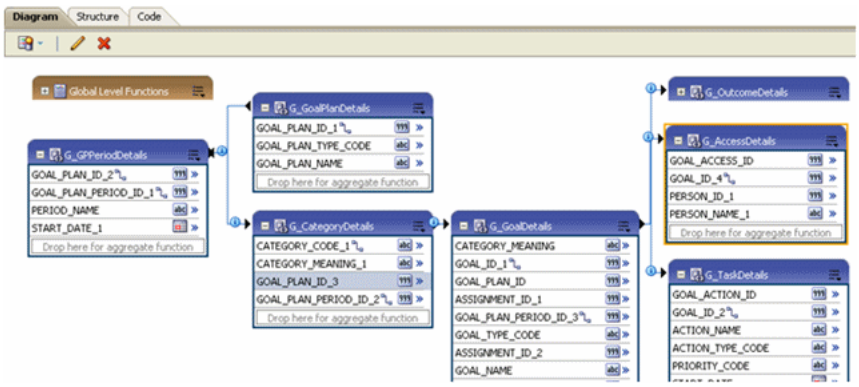



Reports designed with the layout editor can not only generate the output in a pixel-perfect format, but the same reports can also support interaction with the data to gain deeper insights. You can click any chart or pivot table within the report and all the data presented in the report is automatically updated and filtered based on the item clicked. With the Interactive Viewer, you can create just one report to meet both requirements of printable output and online interactivity.

### 1.4.3.3 Retrieve and Structure Data with the Data Model Editor

Figure 1–10 shows the data model editor.

***Figure 1–10 BI Publisher's Data Model Editor***



BI Publisher 11*g* introduces the data model editor to create report data models. The data model editor enables you to combine data from multiple data sets from different data sources, such as SQL, Excel files, Web services, HTTP feeds, and other applications into a single XML data structure. You can build queries, link data, group data, create calculations, and define the data structure all in the data model web user interface. The data model editor saves the data model as an independent catalog object that can be used by multiple reports.

#### 1.4.3.4 Support for Additional Data Sources

The BI Publisher 11*g* data model editor can retrieve data from the following sources that were not available in 10*g*:

- Excel workbooks

  Upload the Excel workbooks to a central location that BI Publisher can connect to, or simply upload the workbooks from the local client directly to the data model editor. You can link the data from the workbook to the data from other data sets or modify the output structure.

- LDAP directories

  This release supports queries against Lightweight Directory Access protocol (LDAP) data sources. You can query user information that is stored in LDAP directories and then use the data model editor to link the user information with data retrieved from other data sources.

- View Objects

  BI Publisher enables you to connect to custom applications built with Oracle Application Development Framework and use view objects in the applications as data sources for reports.

- CLOB XML

  The data engine can now extract well-formed XML data that is stored in a database column as a character large object (CLOB) data type and maintain its structure. This feature enables you to use XML data that is generated by a separate process and stored in the database as input to a BI Publisher data model.

#### 1.4.3.5 Scheduled Jobs Management Enhancements

The updated architecture of the BI Publisher Scheduler uses the Java Messaging Service (JMS) queue technology. This architecture enables you to add multiple BI Publisher servers to a cluster and then dedicate each server to a particular function: report generation, document generation, or specific delivery channels. This increases the flexibility to scale up BI Publisher for high-volume scheduled jobs. In addition, the status and current load of all processors can be viewed in real-time using the new Scheduler Diagnostics tool.

#### 1.4.3.6 Auditing and Monitoring Capabilities

The 11*g* auditing framework enables administrators to collect data to audit and monitor user activities and interaction with BI Publisher. In addition, 11*g* includes a new framework to store all the data into database tables so that you can also use BI Publisher to visualize and analyze it. The auditing enhancements enable administrators to go beyond compliance requirements to improve customer service by understanding what users like to do, how they access and view reports, and when the usage times peak.

#### 1.4.3.7 Consistent Look and Feel Using Style Templates

A style template is an RTF template that defines style information to apply to multiple RTF layouts to achieve a consistent look and feel across enterprise reports. You associate a style template to a report layout in the report definition. In addition to simplifying the application of consistent styles across the reports, you can also define header and footer content, such company logos, headings and page numbering that can be applied across multiple reports and maintained in a single template.

#### 1.4.3.8 Sub Template Management in Catalog

If you use sub templates in RTF templates, you can now maintain the sub template as an object in the catalog. To take advantage of this new functionality for existing sub templates, you must change the calling syntax in the primary RTF template to point BI Publisher to the new location of the sub template. For more information about sub templates in 11*g*, see "Creating and Implementing Sub Templates" in the *Oracle Fusion Middleware Report Designer's Guide for Oracle Business Intelligence Publisher*.

## 1.5 Understanding Oracle Business Intelligence Security Upgrade

The security policy for Oracle Business Intelligence 11*g* defines what individual users and users with certain application roles can access and do. In Oracle Business Intelligence 11*g*, the security policy definition is split across the following:

- **Oracle BI Presentation Catalog** — This defines which catalog objects and Presentation Services functionality that particular users and application roles can access.
- **Repository** — This defines which application roles and users have access to which items of metadata within the repository. You define this security policy in the Administration Console.
- **Policy Store** — This defines which Oracle BI Server, BI Publisher, and Real Time Decisions functionality can be accessed by particular users or users with particular application roles. Use Fusion Middleware Control to configure the default Oracle Business Intelligence Policy Store.

Oracle Business Intelligence10*g* and 11*g* security models differ in the following areas:

- **Defining users and groups** — In Oracle Business Intelligence 10*g*, you can define users and groups within a repository file using the Oracle BI Administration tool. In Oracle Business Intelligence 11*g*, you can no longer define users and groups within a repository. The Oracle BI EE Upgrade Assistant migrates users and groups from a 10*g* repository into the embedded LDAP server in an 11*g* installation.
- **Defining security policies** — In Oracle Business Intelligence 10*g*, security policies in the catalog and repository can be defined to reference groups within a directory. In Oracle Business Intelligence 11*g*, security policies are defined in terms of application roles, which are in turn mapped to users and groups in a directory. This allows an Oracle Business Intelligence 11*g* system to be deployed without changes to the corporate directory and eases movement of artifacts between development, test, and production environments.
- **Use of the Administrator user** — In an Oracle Business Intelligence 10*g* installation, a special user named, **Administrator** has full administrative permissions and is also used to establish trust between processes within that installation. In Oracle Business Intelligence 11*g*, there is no special significance to the name Administrator, and one or more users can be authorized to undertake different sets of administrative functions. In Oracle Business Intelligence 11*g*, the

identity used to establish trust between processes in an installation is configurable and independent.

- **Repository encryption** — In Oracle Business Intelligence 10*g*, certain sensitive elements within a repository are encrypted. In Oracle Business Intelligence 11*g*, the entire repository is encrypted using a key derived from a user-supplied password. An 11*g* repository can be opened only with the password, and there is no mechanism to recover a lost password.

The following aspects of the Oracle Business Intelligence 10*g* security model remain in 11*g*:

- **Oracle Business Intelligence Server Initialization Blocks** — Oracle BI Server 11*g* continues to support the use of initialization blocks for authentication and authorization. In 10*g*, BI Server falls back to use initialization blocks if a matching user cannot be found in the repository. In 11*g*, Oracle Business Intelligence falls back to use initialization blocks if the user cannot be authenticated by the installation's configured authentication provider.

  For information see "Creating Initialization Blocks" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

- **Catalog Groups** — Oracle Business Intelligence 11*g* continues to support the definition of catalog groups within the Oracle BI Presentation Catalog. These groups are visible only within Oracle BI Presentation Services. Oracle recommends that catalog groups be used for backward compatibility only and that application roles be used instead for new installations.

  For information see "Working with Catalog Groups" in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

- **SA System Subject Area** — Oracle Business Intelligence 11*g* supports the use of SA System Subject Area in combination with BI Server initialization blocks to access user, group, and profile information that is stored in database tables. This subject area is available for backward compatibility only and embedded LDAP is recommended for new installations.

  For information see "Setting Up the SA System Subject Area" in *Oracle Fusion Middleware Scheduling Jobs Guide for Oracle Business Intelligence Enterprise Edition*.

For more information about Oracle Business Intelligence security, see *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

During the upgrade process, the existing 10*g* security mechanism is upgraded.

The upgrade process handle any combination of the security mechanisms supported in 10*g*, including the following: repository users and groups, authentication initialization blocks, catalog groups, and the SA System Subject Area.

However, before you run Upgrade Assistant, there are a number of Oracle BI security areas to be aware of. For more information, see Section 1.5.1, "Oracle BI Security: Major Upgrade Considerations."

In addition to the areas that are described in Section 1.5.1, there are a number of other factors to consider when planning to upgrade BI security. For more information, see Section 1.5.2, "Oracle BI Security: Other Upgrade Considerations."

### 1.5.1 Oracle BI Security: Major Upgrade Considerations

Significant changes have been made to the security model regarding how and where users, groups, and credentials are defined and stored as described in the following list.

See *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition* for complete information on security.

- Users, passwords, and groups are moved from the default 10*g* repository file to the default 11*g* identity store (Oracle WebLogic Server embedded LDAP server). Repository groups receive a matching Application Role in the Policy Store. Any other authentication mechanism remains as it was in 10*g*.

  If you used a different LDAP server in 10*g*, then the upgraded 11*g* system continues to point to the LDAP server that was specified in 10*g* through initialization blocks. Under certain circumstances, you can replace these initialization blocks with WebLogic Authenticators.

  If you intend to use another LDAP server, such as Oracle Identity Management (OID), then you must upgrade to the embedded LDAP server first, then migrate to the production LDAP server. While it is technically possible to configure the 11*g* environment with an alternative security model before the upgrade, the environment is upgraded to the embedded LDAP server.

  Oracle recommends that Presentation Services groups (also known as "Web Groups") be used for backward compatibility only and that application roles be used instead for new installations.

- Passwords for other repository objects, such as connection pools and LDAP servers, remain in the repository and are encrypted. The repository itself is encrypted.
- The Administrator user is migrated from the default 10*g* repository file to the default identity store and becomes a member of the BIAdministrators group. The BIAdministrators group is granted the BIAdministrator role and by that association has system administrative rights.
- References to old groups and users in the Oracle BI Presentation Catalog are updated.
- The variable names ROLES, PERMISSIONS, USERGUID and ROLEGUIDS are reserved 11*g* system variable names. Before upgrading a 10*g* repository file, these variables must be renamed if they exist. Other references to these variable names, as in reports, also must be renamed for consistency.
- The "Everyone" Presentation Services group has been replaced with the AuthenticatedUser role, which is the same as the authenticated-role Application Role. For information, see "Managing Security for Dashboards and Analyses" in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.
- Users who belonged to the Presentation Services group that is called "Presentation Services Administrators" in 10*g* must be re-assigned to this Presentation Services group if you still want to use this group. It is recommended that you instead use either an appropriate existing Application Role or create a new Application Role for these users.
- If you use the default authentication, then any initialization blocks in the repository that contain the :USER system variable must be disabled or deleted. For more information, see "Detailed List of Steps for Setting Up Security in Oracle Business Intelligence" in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.5.2 Oracle BI Security: Other Upgrade Considerations

Keep the following considerations for security in mind when upgrading to 11*g*:

#### 1.5.2.1 Changes Affecting the Identity Store

Upgrade Assistant automatically creates the following entries in the Oracle WebLogic Server embedded LDAP server for the target system:

- An LDAP group that corresponds to each group in the repository. This does not include the Administrators group that is present in prior releases. Any users that were in this Administrators group are added to the BIAdministrators LDAP group.
- LDAP group hierarchies that match the repository group hierarchies.
- The Administrator user is migrated and made a part of the BIAdministrators group.

All users, other than the Administrator user, who are members of the Administrators group in the specified repository are added to the BIAdministrators group in the embedded LDAP server. The 11*g* Administrator user that is created from information provided during installation is also added to the BIAdministrators group in the embedded LDAP server.

#### 1.5.2.2 Changes that Affect the Policy Store

Upgrade Assistant automatically creates the following entries in the file-based policy store for the target system:

- An Application Role that corresponds to each group in the specified repository. This does not include the Administrators group that is present in prior releases. The Application Role is granted to the group with the same name.
- Application Role hierarchies that match the repository group hierarchies.

#### 1.5.2.3 Changes that Affect the Repository File

Upgrade Assistant automatically upgrades the specified Oracle BI metadata repository and makes the following changes:

- All groups in the specified 10*g* repository are converted to Application Role references (placeholders) that are created in the policy store during upgrade.
- All users are removed from the specified repository during upgrade and replaced with references (name and GUID) to LDAP users that are created in the embedded LDAP server on the target system.

The upgraded repository has the following characteristics in the 11*g* system:

- The upgraded repository is now protected and encrypted by the password that is entered during the upgrade.
- The repository file is upgraded to contain references to users it expects to be present in the identity store and references to Application Roles it expects to be present in the policy store.
- A numerical suffix is added to the name of an upgraded repository file. A number is added to indicate the number of times that file has been upgraded.

The upgraded repository can be opened in the Oracle BI Administration Tool in offline mode as usual, and can be deployed to an Oracle BI Server to be opened in online mode.

#### 1.5.2.4 Changes that Affect the Oracle BI Presentation Catalog

Upgrade Assistant automatically makes the following changes to the Oracle BI Presentation Services Catalog:

- The catalog is scanned and the old security representations are converted to the new ones. Permissions and privileges that existed in 10*g* are migrated. Each user in the upgraded Oracle BI Presentation Catalog is referenced using a user name and a new GUID attribute. This attribute has a unique value for each user. The value of the GUID attribute is inherited from the identity store that Oracle BI EE uses. Therefore, if you later switch identity stores, you can follow the instructions in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition* to update GUIDs.
- The upgrade process leaves the 10*g* catalog groups in the upgraded catalog and assigns the same privileges, access, and membership.

#### 1.5.2.5 Upgrading an Existing SSL Environment

Configuration settings, such as SSL settings, are not carried over from the upgrade source. For information regarding configuring SSL, see "SSL Configuration in Oracle Business Intelligence" in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

#### 1.5.2.6 Upgrading an Existing SSO Environment

Configuration settings, such as single sign-on (SSO) settings, are not carried over from the upgrade source. For information regarding configuring SSO, see "Enabling SSO Authentication" in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.5.3 Oracle BI Security: Highlighted New 11*g* Functionality to Leverage

You can use the following security features in Oracle BI EE 11*g*:

- Integrated with Fusion Middleware Security Model
- Direct Access to LDAP Servers
- Simplified SSL Configuration
- Improved Model for Managing Administrative Privileges
- Repository Protection and Encryption

For more information about new features, see "New Features in Oracle Business Intelligence Security" in *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

## 1.6 Moving from 11.1.1.3 or 11.1.1.5 to 11.1.1.6

Moving from Oracle BI EE 11.1.1.3 or 11.1.1.5 to 11.1.1.6 is different from upgrading from 10*g* to 11*g*. For example, instead of using the Oracle Fusion Middleware Upgrade Assistant, you use various other tools, including the Patch Set Assistant.

Another important difference is that upgrading from 10*g* to 11*g* is called an "out-of-place upgrade" while moving to another 11*g* release is called an "in-place upgrade," because you apply the new sofware to your existing files. Moving from one 11*g* release to another 11*g* release is also referred to as applying a patch set.

The steps are described in detail in *Oracle Fusion Middleware Patching Guide*. A summary of the steps is included in Table 1–16.

Note that not all the steps in Table 1–16 are required if you are starting from 11g Release 1 (11.1.1.5.0). See the referenced information in the *Oracle Fusion Middleware Patching Guide* for more information.

***Table 1–16 Summary of Steps to Apply the Oracle BI 11.1.1.6 Patch Set***

| Step | Description | Notes |
|---|---|---|
| 1 | Perform the following general pre-upgrade tasks:<br>■ Stop all WebLogic Servers, Node Manager, OPMN, and OPMN-managed system components that are part of all Oracle BI domains that use the Middleware Home that you must upgrade.<br>On Windows systems, also stop the component that is called Oracle WebLogic NodeManager (*name*).<br>■ Back up directories.<br>For information, see "Perform General Pre-Patching Tasks" in *Oracle Fusion Middleware Patching Guide*. | Perform this step on each computer that is part of the BI Domain that you want to upgrade. |
| 2 | Download the appropriate Product Installers, as described in "Download the Installer" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once to obtain the files for the Installer, which you can use multiple times. |
| 3 | Patch Oracle WebLogic Server to the latest version (10.3.5), as described in "Applying the Latest Oracle Fusion Middleware Patch Set" in *Oracle Fusion Middleware Patching Guide*. | Perform this step on each computer that is part of the BI Domain that you want to upgrade. For a shared Middleware Home, perform this step only once. |
| 4 | Run the Oracle BI Product Installer, and perform a Software Only installation, specifying the existing Middleware home to be patched.<br>For information, see "Start the Installer" in *Oracle Fusion Middleware Patching Guide*. | Perform this step on each computer that is part of the BI Domain that you want to upgrade. For a shared Middleware Home, perform this step only once. |
| 5 | Run the Patch Set Assistant for each of the Oracle BI schemas created with RCU, as described in the following list. Update the MDS schema first.<br>■ MDS<br>■ BIPLATFORM<br>For information, see "Before You Begin Using the Patch Set Assistant" and "Verifying the Schema Version Number After Update" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once per domain. |
| 6 | Upgrade various system components, as described in "Upgrading System Components" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once per domain. |
| 7 | Update libraries, as described in "Updating Fusion Middleware Shared Libraries" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once per domain. |
| 8 | Update configurations and stores, as described in "Updating Configurations and Stores" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once per domain. |
| 9 | Upgrade code grants (that is, security policy artifacts) for Oracle BI, as described in "Upgrading Oracle Business Intelligence Code Grants" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once per domain. |
| 10 | Upgrade catalogs (applicable only if you installed Oracle BI EE), as described in "Updating Oracle Business Intelligence Catalogs" in *Oracle Fusion Middleware Patching Guide*. | Perform this step once per domain. |

***Table 1–16 (Cont.) Summary of Steps to Apply the Oracle BI 11.1.1.6 Patch Set***

| Step | Description | Notes |
|---|---|---|
| 11 | Start servers and processes.<br>For information, see "Starting and Stopping Oracle Business Intelligence" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*. | Perform this step once per computer in the domain. |
| 12 | If you installed Oracle Real Time Decisions, then update it using the information in "Updating Oracle Real-Time Decisions" in *Oracle Fusion Middleware Patching Guide* | Perform this step once per domain. |
| 13 | Verify the upgraded installation by starting Oracle BI EE, if you installed it.<br>For information, see "Signing In to Oracle BI Enterprise Edition" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*. | Perform this step for the entire installation. |

## 1.7 Considerations for Oracle BI Applications Customers

Before upgrading to Oracle BI EE 11*g* for use as part of an Oracle BI Applications system, always see the appropriate *Oracle Business Intelligence Applications Upgrade Guide* that accompanies the Oracle BI Applications release to which you are upgrading for the specific steps to follow, and the order in which to perform them. For example, depending on the release of Oracle BI Applications from which you are upgrading, the first step in upgrading to a new release of Oracle BI Applications might be to upgrade the release of Oracle BI EE that you are using.

Oracle BI Applications releases have ETL technology components. The hardware, platforms, and supported databases might be different from (usually a subset of) those supported by Oracle BI EE. Always consult the certification and system requirements information for Oracle BI Applications to confirm which release of Oracle BI EE 11*g* is certified with a particular release of Oracle BI Applications.

Oracle BI Applications Release 7.9.6.3 is certified on Oracle Business Intelligence Enterprise Edition Release 11*g* (Oracle BI EE 11.1.1.5.0 and later). Previous releases of Oracle BI Applications are not certified on Oracle BI EE Release 11*g*. As with any upgrade, Oracle recommends that Oracle BI Applications customers who currently use Oracle BI EE 10*g* consider when is the right time to upgrade to Oracle BI 11g, based on the business benefit of the new Oracle BI 11*g* features, and plan an appropriate upgrade project to migrate Oracle BI Applications and custom content. A recommended strategy is to upgrade both to Oracle BI Applications 7.9.6.3 and to Oracle BI EE 11*g* as part of the same project. Staying on Oracle BI EE 10*g* may be a suitable option worth considering.

Oracle BI Applications customers upgrading to Oracle BI EE 11*g* should note that the BI Server in 11*g* is more stringent in its metadata validation checks and produces a number of warnings on the repositories that are upgraded from earlier Oracle BI Applications releases. These warnings were addressed in Oracle BI Applications release 7.9.6.3. and might not be displayed when customers upgrade Oracle BI Applications to release 7.9.6.3.

# 2

# Summary of the Oracle Business Intelligence Upgrade Process

This chapter provides a high-level summary of the steps that are required to upgrade the following Oracle Business Intelligence components from Oracle Business Intelligence 10*g* to Oracle Business Intelligence 11*g*:

- Oracle Business Intelligence Enterprise Edition (Oracle BI EE)
- Oracle Business Intelligence Publisher (Oracle BI Publisher)
- Oracle Real-Time Decisions (Oracle RTD)

This chapter includes the following topics:



## 2.1 Upgrade Overview

Upgrading Oracle Business Intelligence from 10*g* to 11*g* is an out-of-place process performed by Upgrade Assistant. You run a clean installation of Oracle BI 11*g* and import data from the 10*g* system. Run Upgrade Assistant once to upgrade the repository and catalog, or Publisher Repository, and once to upgrade the Scheduler schema. Upgrade Assistant configures the 11*g* installation with the imported 10*g* repository and catalog, so if you updated system A, then system B using the same Upgrade Assistant, you would have a running 11*g* system B, with all the users and groups from both system A and B.

Upgrade Assistant does not upgrade customizations that were made to the Oracle BI 10*g* system. Any configurations made in 10*g* must be manually copied over to the 11*g* system after the upgrade process is complete. For other post-upgrade tasks and considerations, see Chapter 8, "Oracle Business Intelligence Post-Upgrade Tasks and Considerations."

You cannot upgrade Oracle Real-Time Decisions using Upgrade Assistant. See the high-level procedures for upgrading Real-Time Decisions in Figure 2–2. For a road map of the procedure, see Table 2–3. For the Oracle Real-Time Decisions upgrade procedure, see Chapter 7, "Upgrading Oracle Real-Time Decisions."

## 2.2 Flow Chart of the Oracle Business Intelligence Upgrade Process

Figure 2–1 provides a flow chart of the Oracle Business Intelligence upgrade process. Review this chart to become familiar with the steps that you must follow, based on the existing environment.

Figure 2–2 provides a flow chart of the Oracle Real-Time Decisions upgrade process. Review this chart to become familiar with the steps that you must follow, based on the existing environment.

***Figure 2–1 Flow Chart of the Oracle Business Intelligence Upgrade Process***

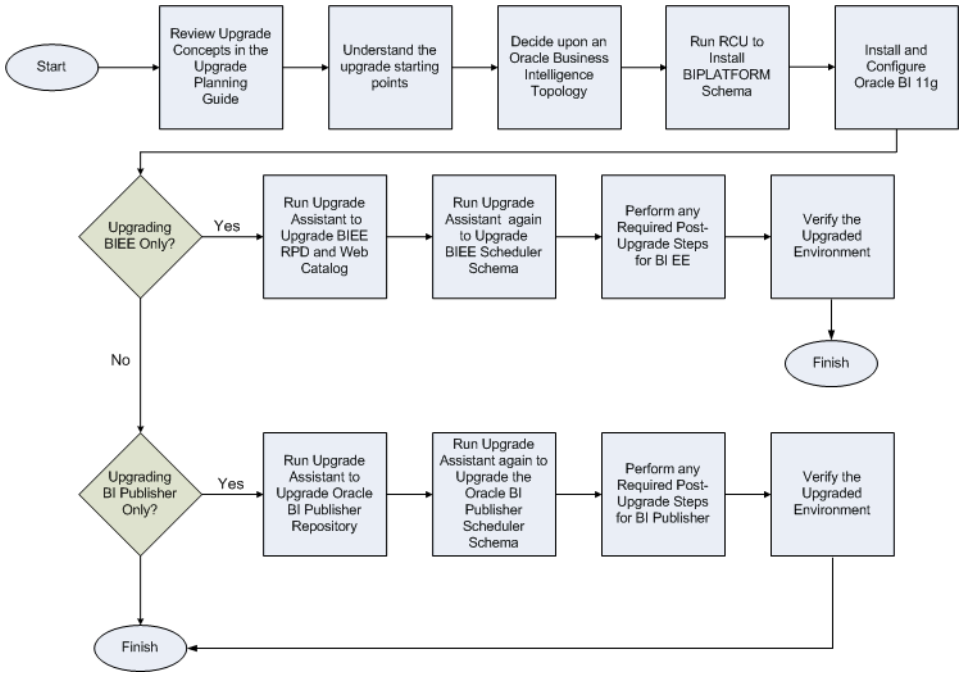
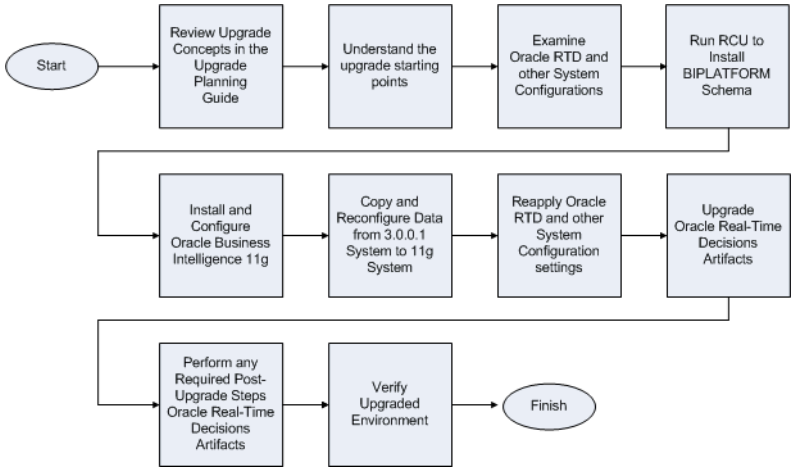



***Figure 2–2 Flow Chart of the Oracle Real-Time Decisions Upgrade Process***



## 2.3 Steps in the Oracle BI EE Upgrade Process

Table 2–1 describes each of the steps in the upgrade process flow chart for Oracle BI EE, shown in Figure 2–1. The table also provides information on where to obtain more information on each step in the process.

***Table 2–1 Steps in the Oracle BI EE Upgrade Process***

| Step | Description | More Information |
|---|---|---|
| Review the Upgrade Concepts in *Oracle Fusion Middleware Upgrade Planning Guide* | *Oracle Fusion Middleware Upgrade Planning Guide* provides a high-level overview of how to upgrade Oracle Fusion Middleware, including compatibility information and instructions for upgrading any databases that support the middleware components. | *Oracle Fusion Middleware Upgrade Planning Guide* |
| Understand the upgrade starting points | Before planning the upgrade, become familiar with the supported starting points for an Oracle Business Intelligence upgrade. | Task 1: Understand the Starting Points for Oracle BI EE Upgrade |
| Decide on an Oracle Business Intelligence topology | Before you begin an upgrade, ensure that you are familiar with the basic topologies in Oracle Business Intelligence 11*g*. | Task 2: Decide Upon an Oracle Business Intelligence Topology |
| Run RCU to install the BIPLATFORM schema | Run the Repository Creation Utility to create the destination Oracle Business Intelligence 11*g* BIPLATFORM schema, which can be on a different database instance than the 10*g* schema. | Task 3: Run RCU to Create the Destination BIPLATFORM Schemas |
| Install and configure Oracle BI 11*g* | For upgrade purposes, use the **Enterprise** install option.<br>These options lead to the creation of an 11*g* configuration that contains a domain with a single managed server instance. | Task 4: Install and Configure Oracle BI EE 11g |
| Run Upgrade Assistant to upgrade the Oracle BI repository and catalog. | Upgrade the repository and catalog for Oracle BI EE .<br>If the destination is on a different machine than the source, then the source repository and catalog files must be accessible from the destination machine.<br>When prompted:<br>■ Provide a pointer to the source repository file and catalog directory and to the password to be used for securing the destination repository file.<br>■ Provide the destination WebLogic Server Administration Server information. This information must be on the same machine where Upgrade Assistant is running. | Task 5: Upgrade the Oracle BI Repository and Catalog |

*Table 2–1 (Cont.) Steps in the Oracle BI EE Upgrade Process*

| Step | Description | More Information |
|---|---|---|
| Run Upgrade Assistant again to upgrade the Oracle BI EE Scheduler schema | Upgrade the Oracle BI EE scheduler schema.<br>When prompted:<br>▪ Select the Oracle BI EE Scheduler schema upgrade option.<br>▪ Provide source Business Intelligence Scheduler schema information, such as RDBMS type, connection string, and schema credentials.<br>▪ Provide destination BIPLATFORM schema information, such as schema name and credentials. | Task 6: Upgrade the Oracle BI EE Scheduler Schema |
| Perform any required post-upgrade manual steps for Oracle BI EE | The Upgrade Assistant automates many of the upgrade tasks, but there are cases where you must manually modify the configuration settings after running Upgrade Assistant. | Task 7: Perform Any Required Post-Upgrade Configuration Tasks |
| Verify the upgraded environment | Log into the 11*g* Oracle BI EE system to verify that the upgrade was successful. | Task 8: Verify the Oracle BI EE Upgrade |

## 2.4 Steps in the Oracle BI Publisher Upgrade Process

Table 2–2 describes each of the steps in the upgrade process flow chart for BI Publisher, shown in Figure 2–1. The table also provides information on where to obtain more information on each step in the process.

*Table 2–2 Steps in the BI Publisher Upgrade Process*

| Step | Description | More Information |
|---|---|---|
| Review the Upgrade Concepts in *Oracle Fusion Middleware Upgrade Planning Guide* | *Oracle Fusion Middleware Upgrade Planning Guide* provides a high-level overview of how to upgrade Oracle Fusion Middleware, including compatibility information and instructions for upgrading any databases that support the middleware components. | *Oracle Fusion Middleware Upgrade Planning Guide* |
| Understand the upgrade starting points | Before planning the upgrade, become familiar with the supported starting points for an Oracle Business Intelligence upgrade. | Task 1: Understand the Starting Points for BI Publisher Upgrade |
| Decide on an Oracle Business Intelligence topology | Before you begin an upgrade, ensure that you are familiar with the basic topologies in Oracle Business Intelligence 11*g*. | Task 2: Decide Upon an Oracle Business Intelligence Topology |

***Table 2–2 (Cont.) Steps in the BI Publisher Upgrade Process***

| Step | Description | More Information |
|---|---|---|
| Run RCU to install the BIPLATFORM Schema | Run the Repository Creation Utility to create the destination BIPLATFORM schemas within the same, or a separate database instance from where the 10*g* schema exists.<br>Note: If you have already run RCU to create the destination BIPLATFORM schema for Oracle BI EE, then you are not required to perform Task 3. Oracle BI EE and BI Publisher share the BIPLATFORM schema. | Task 3: Run RCU to Create the Destination BIPLATFORM Schemas |
| Install and configure Oracle BI 11*g* | If you have already installed Oracle BI EE and selected the option to install BI Publisher, then you are not required to perform Task 4. | Task 4: Install and Configure BI Publisher 11g |
| Run Upgrade Assistant to upgrade the BI Publisher Repository | Upgrade the BI Publisher repository.<br>When prompted:<br>■ Select the BI Publisher repository upgrade option.<br>■ Provide the 10*g* metadata repository or dataTemplate.xml (there could be multiple files) directory path.<br>■ Provide the 11*g* metadata repository path. | Task 5: Upgrade the BI Publisher Repository |
| Run Upgrade Assistant again to upgrade the BI Publisher Scheduler Schema.<br>Note: You can upgrade the repository and Scheduler Schema in any order. | Upgrade BI Publisher Scheduler schemas.<br>When prompted:<br>■ Select the Scheduler Schema Upgrade option.<br>■ Provide source schema information: RDBMS type, connection string, schema credentials.<br>■ Provide destination BIPLATFORM schema information: connection string, schema name, and credentials. | Task 6: Upgrade the BI Publisher Schema |
| Perform any required post-upgrade manual steps for BI Publisher | The Upgrade Assistant automates many of the upgrade tasks, but there are cases where you must manually modify the configuration settings after running Upgrade Assistant. | Task 7: Perform Any Required Post-Upgrade Configuration Tasks |
| Verify the upgraded environment | Log into the 11*g* BI Publisher system to verify that the upgrade was successful. | Task 8: Verify the BI Publisher Upgrade |

## 2.5 Steps in the Oracle Real-Time Decisions Upgrade Process

Table 2–3 describes each of the steps in the upgrade process flow chart for Oracle Real-Time Decisions, shown in Figure 2–2. The table also provides information on where to obtain more information on each step in the process.

***Table 2–3 Steps in the Oracle Business Intelligence Real-Time Decisions Upgrade Process***

| Step | Description | More Information |
|---|---|---|
| Review the Upgrade Concepts in *Oracle Fusion Middleware Upgrade Planning Guide* | *Oracle Fusion Middleware Upgrade Planning Guide* provides a high-level overview of how to upgrade Oracle Fusion Middleware, including compatibility information and instructions for upgrading any databases that support the middleware components. | *Oracle Fusion Middleware Upgrade Planning Guide* |
| Understand the upgrade starting points | Before planning the upgrade, become familiar with the supported starting points for an Oracle Real-Time Decisions upgrade. | Task 1: Understand the Starting Points for Oracle Real-Time Decisions Upgrade |
| Examine Oracle RTD and other system configurations | If you have customized the 3.0.0.1 Oracle Real-Time Decisions system with specific server-side configuration parameter values, then examine and note down the customizations. If they have a direct equivalent, then you can replicate them later in the 11*g* upgraded system. | Task 2: Examine Oracle RTD and Other System Configuration Settings |
| Run RCU to install the BIPLATFORM Schema | Run the Repository Creation Utility to create the destination BIPLATFORM schemas within the same, or a separate database instance from where the 10*g* schema exists.<br>If you have already run RCU to create the BIPLATFORM schema for Oracle BI EE, or BI Publisher, then ignore this step. | Task 3: Run RCU to Create the Destination BIPLATFORM Schema |
| Install and configure Oracle Business Intelligence 11*g*. | Installs Oracle Real-Time Decisions 11*g* on the same machine as the 10*g* installation. | Task 4: Install and Configure Oracle Real-Time Decisions 11g |
| Copy and reconfigure data from the 3.0.0.1 system to the 11*g* system | There are three broad categories of data that affect Oracle RTD users, and the upgrade considerations for each category are slightly different. The three categories are:<br>■ The SDDS database that stores all the metadata that is required to run Oracle RTD.<br>■ The model snapshot tables, which are optional.<br>■ Enterprise data that is stored in external data sources, which are referenced by Inline Services. | Task 5: Copy and Reconfigure Data from 3.0.0.1 System to 11g System |

***Table 2–3 (Cont.) Steps in the Oracle Business Intelligence Real-Time Decisions Upgrade Process***

| Step | Description | More Information |
|---|---|---|
| Reapply Oracle RTD and other system configuration settings | If you had previously customized the Version 3.0.0.1 Oracle Real-Time Decisions system with specific server-side configuration parameter values, then you can reapply the settings that have a direct equivalent in 11*g*. | Task 6: Reapply Oracle RTD and Other System Configuration Settings |
| Upgrade Oracle Real-Time Decisions artifacts | Upgrade the existing Oracle RTD 3.0 artifacts. | Task 7: Upgrade the Oracle Real-Time Decisions Artifacts |
| Perform any required post-upgrade steps for Oracle Real-Time Decisions artifacts | If you have Oracle RTD 3.0 clients, such as Java Smart Client, then turn off Web service security and run the clients in the new 11*g* environment. (This assumes that you do not need Web service security for the clients.) | Task 8: Perform Any Required Post-Upgrade Configuration Tasks |
| Verify the upgraded environment | To verify that the Oracle Real-Time Decisions upgrade was successful, run test integration points in the Inline Services, then log into Decision Center, and verify that your reports are visible. | Task 9: Verify the Oracle Real-Time Decisions Upgrade |

# 3

# Supported Starting Points for Oracle Business Intelligence Upgrade

See the following sections for information about the supported starting points for upgrading to Oracle Business Intelligence 11*g*:

- Oracle BI EE Supported Starting Points
- Oracle BI Publisher Supported Starting Points
- Oracle Real-Time Decisions Supported Starting Points

If you are already running Oracle Fusion Middleware 11*g*, then see *Oracle Fusion Middleware Patching Guide*, which provides information about applying the latest Oracle Fusion Middleware patches.

## 3.1 Oracle BI EE Supported Starting Points

This guide documents the procedure for upgrading from Oracle BI EE 10*g* Release 3 (10.1.3.2 or later) to Oracle BI EE 11*g*.

## 3.2 Oracle BI Publisher Supported Starting Points

This guide documents the procedure for upgrading from Oracle BI Publisher 10*g* Release 3 (10.1.3.4 or later) to Oracle BI Publisher 11*g*.

## 3.3 Oracle Real-Time Decisions Supported Starting Points

This guide documents the procedure for upgrading from Oracle Real-Time Decisions 3.0.0.1 to Oracle Real-Time Decisions 11*g*.

# 4

# Oracle Business Intelligence for 10*g* Users

Before you begin your upgrade Oracle Business Intelligence 11*g*, you should be sure that you understand the architecture, features, and benefits of Oracle Business Intelligence 11*g*.

Specifically, you should carefully review the information in Chapter 1, "Planning to Upgrade from Oracle BI 10g to BI 11g". Besides providing guidance on possible upgrade strategies, it also provides extensive information about the differences between the Oracle Business Intelligence components in 10*g* and 11*g*.

Refer to the following sections for additional information about Oracle Business Intelligence 11*g* that is of particular interest to Oracle Business Intelligence 10*g* users:

- Section 4.1, "Oracle Business Intelligence 11g and Oracle WebLogic Server"
- Section 4.2, "Oracle Business Intelligence Directory Structure"
- Section 4.3, "Changes to Oracle Business Intelligence Directory Structure"
- Section 4.4, "Resources for Learning About Oracle Business Intelligence 11g"

## 4.1 Oracle Business Intelligence 11*g* and Oracle WebLogic Server

One of the more significant differences between Oracle Business Intelligence 10*g* and 11*g* is the deployment to Oracle WebLogic Server and the integration of Oracle Business Intelligence with Oracle Fusion Middleware.

For more information about Oracle Fusion Middleware Components, see Chapter 1, "Introduction to Oracle Fusion Middleware" in *Oracle Fusion Middleware Administrator's Guide*.

### Oracle WebLogic Server Middleware Home

Oracle Business Intelligence requires a Middleware home with Oracle WebLogic Server on the system. If the system does not already have Oracle WebLogic Server, then you can install it in a new Middleware Home directory.

A Middleware home is a container for the Oracle WebLogic Server home, and, optionally, one Oracle Common home and one or more Oracle homes, with a directory structure like this:

```
/middleware_home
     wlserver_<version>
     jdk_<verion>
     oracle_common
     BI_ORACLE_HOME
     user_projects
```

The BI Oracle home contains the binary and library files necessary for Oracle BI. *BI_ORACLE_HOME* represents the BI Oracle home in path names.

The BI Oracle home can be associated with multiple Oracle WebLogic Server domains. The Oracle Common home contains the binary and library files required for Oracle Enterprise Manager 11*g* Fusion Middleware Control and Java Required Files (JRF).

A Middleware home can reside on a local file system or on a remote shared disk that is accessible through a network file system.

For more information about the structure and contents of a Middleware home, see "Understanding Oracle Fusion Middleware Concepts" in *Oracle Fusion Middleware Administrator's Guide*.

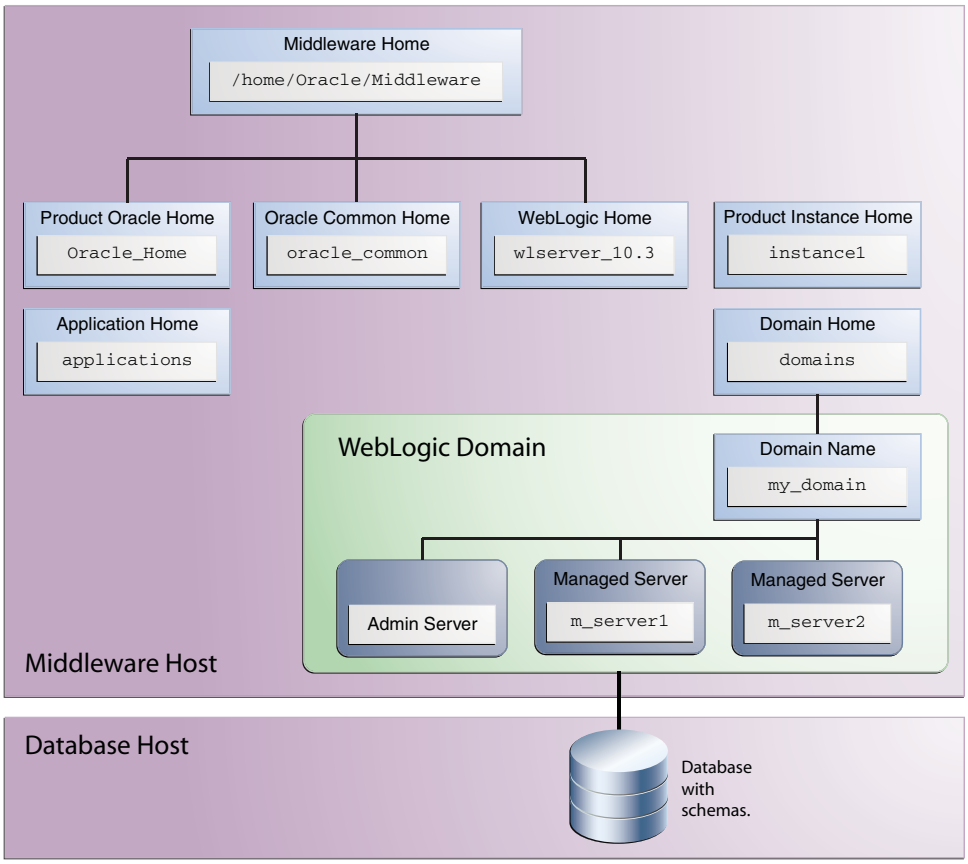
## 4.2 Oracle Business Intelligence Directory Structure

A typical Oracle Business Intelligence installation consists of a Fusion Middleware home and the following subdirectories:

- `wlserver_10.3`: The WebLogic Server home, which contains Java components, one Administration Server, and one or more Managed Servers.
- `bi_oracle_home`: The Oracle Home contains binary and library files for Oracle BI.
- `oracle_common`: The Oracle Common Home contains the binary and library files required for Fusion Middleware Control and Java Required Files (JRF). There can be only one Oracle Common home within each Middleware home.

Figure 4–1 shows the directory structure of a typical Oracle Fusion Middleware installation on a single host, using all of the default values.

***Figure 4–1 Typical Oracle Business Intelligence Directory Structure***




## 4.3 Changes to Oracle Business Intelligence Directory Structure

Table 4–1 describes the changes in directory structure from Oracle BI 10*g* to 11*g*.

***Table 4–1 Oracle BI content changes***

| Directory or Files | 10*g* Location | 11*g* Location |
|---|---|---|
| AdminTool.sh<br>equalizerpds.sh/equalizerpds.exe<br>JobManager.sh<br>MigrateEUL.sh<br>NQClient.sh<br>nqcmd.sh/nqcmd.exe | *BI_ORACLE_HOME*/server/Bin | *BI_ORACLE_HOME*/bifoundation/server/bin |
| DBFeatures.INI<br>NQSConfig.INI | *BI_ORACLE_HOME*/server/Config | *ORACLE_INSTANCE*/config/OracleBIServerComponent/coreapplication_obis*n* |
| NQClusterConfig.INI | *BI_ORACLE_HOME*/server/Config | *ORACLE_INSTANCE*/config/OracleBIApplication/coreapplication |
| NQQuery.log<br>NQSAdminTool.log<br>NQServer.log | *BI_ORACLE_HOME*/server/Log | *ORACLE_INSTANCE*/diagnostics/logs/OracleBIServerComponent/coreapplication_obis1 |

***Table 4–1 (Cont.) Oracle BI content changes***

| Directory or Files | 10*g* Location | 11*g* Location |
|---|---|---|
| Oracle BI Server repository directory:<br>■ SampleAppLite.rpd<br>■ paint.rpd | *BI_ORACLE_HOME*/server/Repository | *ORACLE_INSTANCE*/bifoundation/OracleBIServerComponent/coreapplication_obis*n*/repository |
| Samples:<br>■ order.xml<br>■ Product.xml<br>■ samplesales.udml | *BI_ORACLE_HOME*/server/Sample/samplesales | *ORACLE_INSTANCE*/bifoundation/OracleBIServerComponent/coreapplication_obis*n*/sample/SampleAppFiles |
| Usage Tracking:<br>■ SQL_Server_Time<br>■ UsageTracking.rpd<br>■ UsageTracking.zip | *BI_ORACLE_HOME*/server/Sample/usagetracking | *ORACLE_INSTANCE*/bifoundation/OracleBIServerComponent/coreapplication_obis*n*/sample/usagetracking |
| Other Schemas (for example):<br>■ Oracle_alter_nq_acct.sql<br>■ SAACCT.DB2.sql<br>■ SAACCT.MSSQL.sql<br>■ SAACCT.Oracle.sql<br>Note: Use the Repository Creation Utility to install the Oracle BI Schema | *BI_ORACLE_HOME*/server/Sample/Schema | *ORACLE_INSTANCE*/bifoundation/OracleBIServerComponent/coreapplication_obis*n*/schema |
| ■ credentialstore.xml<br>■ instanceconfig.xml (for Presentation Services)<br>■ userpref_currencies.xml | OracleBIData/web/config | *ORACLE_INSTANCE*/config/OracleBIPresentationServicesComponent/coreapplication_obips*n* |
| ■ JavaHost<br>■ sawlog0.log | OracleBIData/web/log | *ORACLE_INSTANCE*/diagnostics/logs/OracleBIPresentationServicesComponent/coreapplication_obips*n* |
| catalogmanager.exe | *BI_ORACLE_HOME*\web\catalogmanager | *ORACLE_INSTANCE*\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips*n*\catalogmanager\runcat.cmd |
| instanceconfig.xml (for Oracle BI Scheduler) | OracleBIData\web\config | *ORACLE_INSTANCE*\config\OracleBISchedulerComponent\coreapplication_obisch*n* |
| ■ odbc.ini<br>■ user.sh | BI_ORACLE_HOME/setup | *ORACLE_INSTANCE*/bifoundation/OracleBIApplication/coreapplication/setup |

## 4.4 Resources for Learning About Oracle Business Intelligence 11*g*

For more information about Oracle Business Intelligence 11*g*, refer to the following:

- For an introduction to Oracle Fusion Middleware, see "Introduction to Oracle Fusion Middleware for 10g Users" in the *Oracle Fusion Middleware Upgrade Planning Guide*.
- For information about the key concepts of Oracle Fusion Middleware, see "Understanding Oracle Fusion Middleware Concepts" in the *Oracle Fusion Middleware Administrator's Guide*.
- For information about installing Oracle Business Intelligence 11*g* and the components, install types, and architecture of the installation, see "Installation Overview" in the *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.
- For a list of additional resources for new Oracle Business Intelligence 11*g* users, see "Topics of Interest in Other Guides" in the *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

# Part II

## How you Upgrade

The chapters included in this part of the guide provide information for upgrading Oracle Buiness Intelligence from 10*g* to 11 *g*.

Part II contains the following chapters:

- Chapter 5, "Upgrading Oracle Business Intelligence Enterprise Edition"
- Chapter 6, "Upgrading Oracle BI Publisher"
- Chapter 7, "Upgrading Oracle Real-Time Decisions"

# 5

# Upgrading Oracle Business Intelligence Enterprise Edition

This chapter describes how to upgrade an existing Oracle Business Intelligence Enterprise Edition (Oracle BI EE) 10*g* Release 3 (10.1.3.2 or later) environment to Oracle Business Intelligence 11*g*.

This chapter contains the following sections:



## 5.1 Task 1: Understand the Starting Points for Oracle BI EE Upgrade

For information about starting points for an Oracle Business Intelligence upgrade, see Chapter 3, "Supported Starting Points for Oracle Business Intelligence Upgrade." If you are running a version of Oracle Business Intelligence older than version specified in Chapter 3, then you must upgrade to the supported starting point version before attempting to upgrade to 11*g*.

If you are already running Oracle Fusion Middleware 11*g*, then see *Oracle Fusion Middleware Patching Guide*, which provides information about applying the latest Oracle Fusion Middleware patches.

This guide provides instructions for upgrading from Oracle Business Intelligence 10*g* to the latest Oracle Business Intelligence 11*g*.

## 5.2 Task 2: Decide Upon an Oracle Business Intelligence Topology

To help you decide on a target topology for the Oracle Business Intelligence 11*g* deployment, see Chapter 4, "Oracle Business Intelligence for 10g Users," which compares 10*g* and 11*g* features, directory structures, and architecture. It also describes Oracle Business Intelligence 11*g* integration with Oracle WebLogic Server and Oracle Fusion Middleware applications.

## 5.3 Task 3: Run RCU to Create the Destination BIPLATFORM Schemas

Before you can install Oracle Business Intelligence 11*g*, you must first identify and prepare a database for the Oracle Business Intelligence 11*g* schemas. You can then run the Repository Creation Utility (RCU) to install the required schemas in the database.

For complete information about using RCU to install the required Oracle Fusion Middleware schemas, refer to the following:

- The *Oracle Fusion Middleware Repository Creation Utility User's Guide*
- "Create Database Schemas Using the Repository Creation Utility" in *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

While using RCU to install the Oracle Business Intelligence schemas, note the following important information:

- **Database Connection Details** screen — Select the type of database on the system. This is the database in which you create the Oracle Business Intelligence schemas. Provide the necessary credentials for RCU to be able to connect to the database.
- **Select Components** screen — Near the top of the screen, select **Create a New Prefix**. The default prefix is **DEV**. You can provide another prefix, if preferred. Select a prefix that will allow you to quickly and easily identify the schema.

  Expand the Business Intelligence component group by clicking the plus sign (+) next to it. Then, click **Business Intelligence Platform** so that a check appears next to it. This action automatically selects the **Metadata Services (MDS)** schema (under the AS Common Schemas group), which is also required by Oracle Business Intelligence.

## 5.4 Task 4: Install and Configure Oracle BI EE 11*g*

Use the Oracle Business Intelligence 11*g* installer to install Oracle Business Intelligence 11*g* on a separate host computer. Do not install Oracle Business Intelligence 11*g* on a computer that is running Oracle Business Intelligence 10*g*, as this installation scenario is not supported.

For more information, see the following topics:

- Section 5.4.1, "Availability of the 10g Oracle BI Repository and Catalog Files"
- Section 5.4.2, "Installing Oracle Business Intelligence 11g in Preparation for Upgrade"

### 5.4.1 Availability of the 10*g* Oracle BI Repository and Catalog Files

When you install Oracle Business Intelligence 11*g*, ensure that the following 10*g* source directories are accessible to the Oracle Business Intelligence 11*g* Upgrade Assistant, which you run from the Business Intelligence 11*g* Oracle home. Upgrade Assistant must be able to browse to and access these directories:

- Directories that contain the 10*g* Oracle BI repository files
- The 10*g* Catalog and Catalog Deliveries directories

If the 10*g* installation is not available to Upgrade Assistant, then you can make them available in other ways. For example, you can copy them to a shared network disk or to a USB drive.

For more information, see Table 5–2 for information about specifying the source details for these components on the Specify Source Details screen of Upgrade Assistant.

## 5.4.2 Installing Oracle Business Intelligence 11*g* in Preparation for Upgrade

Before you upgrade to Oracle Business Intelligence 11*g*, you must install and configure a new Oracle Business Intelligence 11*g* environment on a separate host from the Oracle Business Intelligence 10*g* host computer.

When you perform the installation with the Oracle Business Intelligence 11*g* installer, you can select the **Enterprise install for new installations** installation type, or you can select the **Software Only** installation type.

For more information, see the following sections:

- Installing Oracle Business Intelligence Using the Enterprise Installation Type
- Installing Oracle Business Intelligence 11g Using the Software Only Installation Type

### 5.4.2.1 Installing Oracle Business Intelligence Using the Enterprise Installation Type

The **Enterprise install for new installations** installation type automatically installs Oracle WebLogic Server and provides all the options you need to configure an enterprise-ready Oracle Business Intelligence 11*g* installation.

For more information, see "Enterprise Install for New Installations" in *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

When you are using the Oracle Business Intelligence 11*g* installer, note the following when you are installing in preparation for an upgrade from Oracle Business Intelligence 10*g*:

- On the Select Installation Type screen, select **Enterprise install for new installations**. This option installs and configures a new Oracle Business Intelligence system for a hosted deployment.
- On the Create or Scale Out BI System screen, select **Create New BI System**.
- On the Specify Installation Location screen, specify the location of the new Oracle Middleware home that will be created by the installer. The installer will install Oracle WebLogic Server and the Oracle Business Intelligence 11*g* Oracle home inside the Middleware home.
- On the Database Details screen, specify the database type, the database connection string, and the user name and password for the Business Intelligence Platform schema you installed in Section 5.3, "Task 3: Run RCU to Create the Destination BIPLATFORM Schemas".

### 5.4.2.2 Installing Oracle Business Intelligence 11*g* Using the Software Only Installation Type

If you are installing on a 64-bit operating system, then you must perform the steps listed in Table 5–1.

***Table 5–1 Summary of the Steps Required to install Oracle Business Intelligence 10g on a 64-bit Operating System***

| Task | Description | Tool | More Information |
|---|---|---|---|
| Install Oracle WebLogic Server and create a Middleware home. | This step copies the Oracle WebLogic Server binary files to disk and creates a Middleware home directory where you will install your Oracle Business Intelligence 11*g* Oracle home. | Oracle WebLogic Server Installer | *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server* |
| Install the Oracle Business Intelligence 11*g* files and create the BI Oracle home. | This step copies the Oracle Business Intelligence 11*g* binaries files to disk and creates a new Oracle Business Intelligence Oracle home inside the Middleware home. | Oracle Business Intelligence 11*g* Installer | "Software Only Install" in the *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence* |
| Configure your new Oracle Business Intelligence 11*g* environment. | This steps creates a new Oracle WebLogic Server domain and the required Oracle WebLogic Server servers for your new 11*g* environment. | Oracle Business Intelligence 11*g* Configuration Assistant | "Configuring Oracle Business Intelligence with the Configuration Assistant" in the *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence* |

## 5.5 Task 5: Upgrade the Oracle BI Repository and Catalog

Use the Oracle Fusion Middleware Upgrade Assistant to upgrade the Oracle BI repository and Catalog. For more information, see the following topics:

- Before Running Upgrade Assistant
- Verifying that the Administration Server and Managed Servers Are Up and Running
- Running Upgrade Assistant

### 5.5.1 Before Running Upgrade Assistant

Before running Upgrade Assistant configure TNSNAMES.ora in the 11*g* system so that it connects to any databases that are used by the Oracle BI repository.

In addition, any custom changes to the Oracle BI EE 10*g* configuration files, for example, instanceconfig.xml, are not upgraded by Upgrade Assistant. You must manually edit the 11*g* configuration files to re-apply the customizations.

The following configuration changes might be necessary before running Upgrade Assistant:

1. Confirm that any data sources that are used by the Oracle BI repository are configured in the 11*g* system.
2. If you configured the nqsconfig.ini file in the 10*g* system for database authentication, then you must copy over the same configurations to the 11*g* version of the files.

   For example, to add the following parameter in the nqsconfig.ini file for this type of authentication:

```
SECURITY
AUTHENTICATION_TYPE = DATABASE;
DATABASE
DATABASE = "mydb";
```

For more information about using the `nqsconfig.ini` file in Oracle Business Intelligence 11*g*, see "NQSConfig.INI File Configuration Settings" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 5.5.2 Verifying that the Administration Server and Managed Servers Are Up and Running

The Administration Server and the Managed Server must remain running during the upgrade process.

### 5.5.3 Running Upgrade Assistant

Upgrade Assistant is installed automatically into the `bin` directory of the Oracle Fusion Middleware Oracle home. For information on the Oracle home, see Section 4.1, "Oracle Business Intelligence 11g and Oracle WebLogic Server."

**Note:** The following sections describe how to use the Upgrade Assistant in graphical user interface mode. You can also use the Upgrade Assistant command line to perform these tasks.

For more information, see "Using the Upgrade Assistant Command-Line Interface" in *Oracle Fusion Middleware Upgrade Planning Guide*.

***Table 5–2 Running Upgrade Assistant to Upgrade the Oracle BI Repository and Catalog***

| Step | Screen | Description and Action Required |
|---|---|---|
| 1 | None. | To start Upgrade Assistant using the graphical user interface, change the directory to the *ORACLE_HOME*`/bin` directory of the Oracle Fusion Middleware installation:<br>Note: If you have multiple Oracle BI repositories, you must run Upgrade Assistant once for each Oracle BI repository.<br>`(UNIX) ./ua`<br>`(Windows) ua.bat` |
| 2 | Welcome Screen | Click **Next** to continue. |
| 3 | Specify Operation | Select **Upgrade Oracle BI RPD and Presentation Catalog**.<br>Click **Next** to continue. |

*Table 5–2 (Cont.) Running Upgrade Assistant to Upgrade the Oracle BI Repository and*

| Step | Screen | Description and Action Required |
|---|---|---|
| 4 | Specify Source Details | Enter the details for the source 10*g* Oracle BI repository and Catalog. This could be in the existing 10*g* installation, or a copy made to a shared network location or USB drive:<br>**Upgrade Repository (RPD)**<br>**RPD File**: Enter the name of the Oracle BI repository file.<br>**Administrator User Name**: Enter the 10*g* Administrator User Name. Typically the name is `Administrator`.<br>**Administrator Password**: Enter the 10*g* Administrator Password<br>**Enter the password which will be used to secure the upgraded 11g RPD**: The repository password does not have to match the Administrator or any other password.<br>**Upgrade Catalog**<br>**Catalog Directory**: Enter the name, or browse to the Catalog Directory.<br>**Catalog Deliveries Directory**:<br>In 10*g*, the `deliveries` directory is a special directory used for data such as Dashboard snapshots used by Briefing Books. The directory is called `deliveries` by default and is located in the following directory:<br>*`OracleBIData`*`/web/catalog`<br>In many cases, the 10*g* directory is empty. If the 10*g* `deliveries` directory is not available, any empty directory named `deliveries` can be given for upgrade. If Upgrade Assistant finds a directory called `deliveries` in the same folder as the catalog, it is selected by default.<br>Click **Next** to continue. |
| 5 | Specify WebLogic Server | Enter the following:<br>■ In the **Host** field is always `localhost` for this type of upgrade.<br>■ In the **Port** field, enter the server's port number, for example, **7001**.<br>■ In the **Username** field, enter the administrator user name, for example, **weblogic**.<br>■ In the **Password** field, enter the password associated with the specified administrator user.<br>Click **Next** to continue. |
| 6 | Examining Components | During the examination process, Upgrade Assistant checks for the following:<br>■ The source directory exists.<br>■ The source directory is readable and contains a file for upgrade.<br>Under the **Status** column, the word **succeeded** should appear. If instead, the word **failed** appears, inspect the log file for details.<br>Click **Next** to continue. |

*Table 5–2 (Cont.) Running Upgrade Assistant to Upgrade the Oracle BI Repository and*

| Step | Screen | Description and Action Required |
|---|---|---|
| 7 | Upgrade Summary | Click **Upgrade**. |
| 8 | Upgrading Components | The upgrade process begins, and is completed when the status bar reaches 100 percent.<br>If there are errors during the upgrade, inspect the log file for details. The log files are located in the following directory:<br>*BI_ORACLE_HOME*/upgrade/logs/ua<timestamp>.log<br>For Windows Operating Systems:<br>*BI_ORACLE_HOME*\upgrade\logs\ua<timestamp>.log<br>Where <timestamp> is the current date and time.<br>You can also check the component log files, in directories organized by component under *ORACLE_INSTANCE*\diagnostics\logs<br>Click **Next** to continue. |
| 9 | Upgrade Complete | Click **Close**. |

**Note:** Review the log for any errors or warnings. Resolve any errors or warnings in 10*g* files and resolve them manually in the upgraded 11*g* repositories and catalogs.

## 5.6 Task 6: Upgrade the Oracle BI EE Scheduler Schema

The 10*g* iBots (called agents in 11*g*) are stored entirely in the Oracle BI Presentation Catalog. If you upgrade the catalog, then you have all the agents, but they will not run automatically. (The scheduler schema holds the list of jobs that the scheduler runs, including agents).

You could choose to re-enable the agents in the catalog instead of upgrading the scheduler schema. This is a valid use case as you might want to enable a subset of agents for test purposes after upgrading.

Use the Oracle Fusion Middleware Upgrade Assistant to upgrade the Oracle BI EE Scheduler schema to the new BIPLATFORM schema.

Upgrade Assistant is installed automatically into the `bin` directory of the Oracle Fusion Middleware Oracle home.

**Note:** The following sections describe how to use the Upgrade Assistant in graphical user interface mode. You can also use the Upgrade Assistant command line to perform these tasks.

For more information, see "Using the Upgrade Assistant Command-Line Interface" in *Oracle Fusion Middleware Upgrade Planning Guide*.

Upgrade Assistant performs the Scheduler schema upgrade by upgrading source schema content into the destination Oracle Business Intelligence Scheduler schema content.

*Table 5–3 Running Upgrade Assistant to Upgrade the Oracle BI EE Scheduler Schema*

| Step | Screen | Description and Action Required |
|---|---|---|
| 1 | None. | To start Upgrade Assistant using the graphical user interface:<br>Change the directory to the *ORACLE_HOME*/bin directory of the Oracle Fusion Middleware installation:<br>For UNIX:<br>`./ua`<br>On a Windows operating system:<br>`ua.bat` |
| 2 | Welcome | Click **Next** to continue. |
| 3 | Specify Operation | Select **Oracle BI Platform Schemas**.<br>Select **Upgrade Oracle BIEE Content**. |
| 4 | Specify BIEE Source Database | Enter the details for the database that hosts the Oracle BI EE 10*g* Scheduler schema:<br>**Database Type**: Select the database type from the drop-down list.<br>**Connect String**: Enter the second portion of the connection string. Examples of the appropriate syntax for this field appear immediately below the field.<br>**BIEE 10g Schema**: Enter the name of the existing 10*g* schema database user.<br>**BIEE 10g Password**: Enter the password associated with the specified source schema.<br>**DBA User Name**: To log in as the Oracle SYS database account specify `SYS AS SYSDBA` in this field.<br>**DBA Password**: Enter the password associated with the specified DBA Username. |
| 5 | Specify Target Database | Enter the details for the database that hosts the Oracle BI EE 11*g* BI Scheduler target database:<br>**Target Database Types**: The target database type is based on the source database type.<br>**Connect String**: Enter the second portion of the JdbcConnectionString. Examples of the appropriate syntax for this field appear immediately below the field.<br>**Password**: Enter the password associated with the specified source schema.<br>**DBA Username**: To log in as the Oracle SYS database account specify **SYS AS SYSDBA** in this field.<br>**DBA Password**: Enter the password associated with the specified DBA Username. |
| 6 | Specify Schema Name | Enter the 11*g* BI schema name for the target database.<br>**Schema Name**: Select BIPLATFORM schema from the drop-down list, which has a prefix that is defined when you create the schema with RCU.<br>**Password**: Enter the password associated with the specified schema.<br>Click **Next** to continue. |

*Table 5–3 (Cont.) Running Upgrade Assistant to Upgrade the Oracle BI EE Scheduler*

| Step | Screen | Description and Action Required |
|---|---|---|
| 7 | Examining Components | Upgrade Assistant examines the components and checks that the source and target schemas contain the expected columns.<br>Under the **Status** column, the word **succeeded** should appear. If instead, the word **failed** appears, inspect the log file for details.<br>Click **Next** to continue. |
| 8 | Upgrade Summary | Click **Upgrade**. |
| 9 | Upgrading Components | The upgrade process begins, and is completed when the status bar reaches 100 percent.<br>If there are errors during the upgrade, inspect the log file for details. The log files are located in the following directory:<br>*BI_ORACLE_HOME*/upgrade/logs/ua<timestamp>.log<br>For Windows Operating Systems:<br>*BI_ORACLE_HOME*\upgrade\logs\ua<timestamp>.log<br>Where <timestamp> is the current date and time.<br>Click **Next** to continue. |
| 10 | Upgrade Complete | Click **Close**. |

**Note:** Review the log file for any errors or warnings. Resolve any errors or warnings found in the 10*g* files manually in the upgraded 11*g* repositories and catalogs.

## 5.7 Task 7: Perform Any Required Post-Upgrade Configuration Tasks

See Section 8.1, "Post-Upgrade Tasks and Considerations for Oracle Business Intelligence Enterprise Edition" for a description of the post-upgrade tasks you might need to perform for Oracle BI EE components.

**Note:** Check the final Upgrade Assistant screen for suggested manual upgrade steps.

## 5.8 Task 8: Verify the Oracle BI EE Upgrade

You can verify that Oracle BI EE has been upgraded successfully by logging into the 11*g* system to confirm that the Oracle BI EE components are up and running.

You can also verify the upgrade using either of the following methods:

1. Run the Upgrade Assistant again and select **Verify Instance** on the Specify Operation page.

   Follow the instructions on the screen for information on how to verify that specific Oracle Fusion Middleware components are up and running.

2. Use the Fusion Middleware Control to verify that the Oracle Business Intelligence components are up and running.

   For more information, see "Getting Started Using Oracle Enterprise Manager Fusion Middleware Control" in *Oracle Fusion Middleware Administrator's Guide*.

# 6

# Upgrading Oracle BI Publisher

This chapter describes how to upgrade an existing Oracle BI Publisher 10*g* Release 3 (10.1.3.4 or later) environment to Oracle BI Publisher 11*g*.

This chapter contains the following sections:



## 6.1 Task 1: Understand the Starting Points for BI Publisher Upgrade

For information about starting points for a BI Publisher upgrade, see Chapter 3, "Supported Starting Points for Oracle Business Intelligence Upgrade." If you are running a version of BI Publisher older than the version specified in Chapter 3, then you must upgrade to the supported starting point version before attempting to upgrade to 11*g*.

If you are already running Oracle Fusion Middleware 11*g*, see *Oracle Fusion Middleware Patching Guide*, which provides information about applying the latest Oracle Fusion Middleware patches.

This guide provides instructions for upgrading from BI Publisher 10*g* to the latest BI Publisher 11*g*.

## 6.2 Task 2: Decide Upon an Oracle Business Intelligence Topology

To help you decide on a target topology for the Oracle Business Intelligence 11*g* deployment, see Chapter 4, "Oracle Business Intelligence for 10g Users," which compares 10*g* and 11*g* features, directory structures, and architecture. It also describes BI Publisher 11*g* integration with Oracle WebLogic Server and Oracle Fusion Middleware applications.

For more information, see "Understanding Oracle Fusion Middleware Concepts" in *Oracle Fusion Middleware Administrator's Guide*.

## 6.3 Task 3: Run RCU to Create the Destination BIPLATFORM Schemas

Before you can install Oracle Business Intelligence 11*g*, you must first identify and prepare a database for the Oracle Business Intelligence 11*g* schemas. You can then run the Repository Creation Utility (RCU) to install the required schemas in the database.

For complete information about using RCU to install the required Oracle Fusion Middleware schemas, refer to the following:

- The *Oracle Fusion Middleware Repository Creation Utility User's Guide*
- "Create Database Schemas Using the Repository Creation Utility" in *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

Important screens when running RCU:

- **Database Connection Details** screen — Select the type of database on the system. This is the database in which you create the Oracle Business Intelligence schemas. Provide the necessary credentials for RCU to connect to the database.
- **Select Components** screen — Near the top of the screen, select **Create a New Prefix**. The default prefix is **DEV**. You can provide another prefix, if preferred.

  Expand the Business Intelligence component group by clicking the plus sign (+) next to it. Then, click **Business Intelligence Platform** so that a check is displayed next to it. This action automatically selects the **Metadata Services (MDS)** schema (under the AS Common Schemas group), which is also required by Oracle Business Intelligence.

---

**Note:** If you have already run RCU to create the destination BIPLATFORM schema for Oracle BI EE, then you are not required to perform Task 3. Oracle BI EE and BI Publisher share the BIPLATFORM schema.

---

## 6.4 Task 4: Install and Configure BI Publisher 11*g*

Use the Oracle Business Intelligence 11*g* installer to install BI Publisher 11*g* on a separate host computer. Do not install Oracle Business Intelligence 11*g* on a computer that is running Oracle Business Intelligence 10*g*, because this installation scenario is not supported.

---

**Note:** If you have already installed Oracle BI EE and BI Publisher, using the **Enterprise Install for new installations**, as described in Section 5.4.2, "Installing Oracle Business Intelligence 11g in Preparation for Upgrade", then you can skip Task 4.

---

See the following topics for more information:

- Section 6.4.1, "Availability of the BI Publisher 10g Directories"
- Section 6.4.2, "Installing Oracle Business Intelligence Publisher 11g in Preparation for Upgrade"

### 6.4.1 Availability of the BI Publisher 10*g* Directories

When you install BI Publisher 11*g*, ensure that the following 10*g* source directories are accessible to the Oracle Business Intelligence 11*g* Upgrade Assistant, which you run from the Business Intelligence 11*g* Oracle home.

Upgrade Assistant must be able to browse to and access these directories:

- The BI Publisher Repository 10*g* directory
- The E-Business Data Template 10*g* directory

If the 10*g* installation directories are not available to Upgrade Assistant, then you can make them available in other ways. For example, you can copy them to a shared network disk or to a USB drive.

For more information, see Table 6–1 for information about specifying the source details for these components on the Specify Source Details screen of Upgrade Assistant.

### 6.4.2 Installing Oracle Business Intelligence Publisher 11*g* in Preparation for Upgrade

Follow the instructions in Section 5.4, "Task 4: Install and Configure Oracle BI EE 11g" to install and configure a new Oracle Business Intelligence 11*g* environment.

## 6.5 Task 5: Upgrade the BI Publisher Repository

Use the Oracle Fusion Middleware Upgrade Assistant to upgrade the BI Publisher Repository.

> **Note:** You can upgrade the BI Publisher Repository and Scheduler schema in any order.

For information on what is upgraded by Upgrade Assistant, see Section 1.4, "Understanding BI Publisher Upgrade."

For a descriptions of the security model upgrade path, see Section 1.4.1.2, "Security Model Changes."

To upgrade the BI Publisher repository, see the following sections:

- Section 6.5.1, "Before You Begin the BI Publisher Repository Upgrade"
- Section 6.5.2, "Using the Upgrade Assistant to Upgrade the Repository"
- Section 6.5.3, "About the Destination Directory for the 11g BI Publisher Repository"

### 6.5.1 Before You Begin the BI Publisher Repository Upgrade

Before you start the Upgrade Assistant to upgrade the BI Publisher repository, follow these steps:

1. Back up the 10*g* and 11*g* repositories.
2. Stop the Managed Server on which BI Publisher is running if the environment is using the BI Publisher catalog (file-based).

The Administration Server should remain running.

### 6.5.2 Using the Upgrade Assistant to Upgrade the Repository

Upgrade Assistant is installed automatically into the `bin` directory of the Oracle Fusion Middleware Oracle home.

**Note:** The following sections describe how to use the Upgrade Assistant in graphical user interface mode. You can also use the Upgrade Assistant command line to perform these tasks.

For more information, see "Using the Upgrade Assistant Command-Line Interface" in *Oracle Fusion Middleware Upgrade Planning Guide*.

***Table 6–1 Running Upgrade Assistant to Upgrade the BI Publisher Repository***

| Step | Screen | Description and Action Required |
|---|---|---|
| 1 | None. | To start Upgrade Assistant using the graphical user interface:<br>Change directory to the *ORACLE_HOME*/bin directory of the Oracle Fusion Middleware installation:<br>(UNIX) ./ua<br>(Windows) ua.bat |
| 2 | Welcome Screen | Click **Next** to continue. |
| 3 | Specify Operation | Select **Upgrade Oracle BI Publisher Repository**.<br>Click **Next** to continue. |
| 4 | Specify Source Details | Select **Upgrade 10g BI Publisher Repository Directory** or **Upgrade E-Business Suite Data Template Directory**.<br>For **Upgrade 10g BI Publisher Repository Directory**, enter, or browse to the **Repository Directory**.<br>For **Upgrade E-Business Suite Data Template Directory**, enter, or browse to the **Data Template Directory**.<br>**Note**: Upgrade Assistant does not support reading the data definition from the E-Business Suite environment. Store the data template XML files in a file system and run Upgrade Assistant to create an equivalent data model definition in the BI Publisher Enterprise Server.<br>Click **Next** to continue. |
| 5 | Specify Destination Details | In the **Repository Directory** field, enter the destination 11*g* BI Publisher Repository directory.<br>For more information about the value to provide in this field, see Section 6.5.3, "About the Destination Directory for the 11g BI Publisher Repository".<br>Click **Next** to continue. |
| 6 | Specify WebLogic Server | Enter the following:<br>■ In the **Host** field, enter the WebLogic Administration Server's hostname, for example, localhost.<br>■ In the **Port** field, enter the server's port number, for example, **7001**.<br>■ In the **Username** field, enter the administrator user name, for example, **weblogic**.<br>■ In the **Password** field, enter the password associated with the specified administrator user.<br>Click **Next** to continue. |

*Table 6–1 (Cont.) Running Upgrade Assistant to Upgrade the BI Publisher Repository*

| Step | Screen | Description and Action Required |
|---|---|---|
| 7 | Examining Components | During the examination process, Upgrade Assistant checks for the following:<br>■ The source directory exists.<br>■ The source directory is readable and contains a file for upgrade.<br>■ The destination directory exists.<br>■ Destination directory is writable and has sufficient space.<br>Under the **Status** column, the word **succeeded** should appear. If instead, the word **failed** appears, inspect the log file for details.<br>Click **Upgrade**. |
| 8 | Upgrade Summary | Click **Upgrade** to continue. |
| | Upgrading Components | The upgrade process begins, and is completed when the status bar reaches 100 percent.<br>If there are errors during the upgrade, inspect the log file for details. The log files are located in the following directory:<br>`(UNIX) BI_ORACLE_HOME/upgrade/logs/ua<timestamp>.log`<br>`(Windows) BI_ORACLE_HOME\upgrade\logs\ua<timestamp>.log`<br>Where <timestamp> is the current date and time.<br>Click **Next** to continue. |
| 9 | Upgrade Complete | Click **Close**. |

**Note:** Review the log for any errors or warnings. Resolve any errors or warnings in 10*g* files and resolve them manually in the upgraded 11*g* repositories and catalogs.

### 6.5.3 About the Destination Directory for the 11*g* BI Publisher Repository

During the upgrade, the Upgrade Assistant prompts you for a destination for the 11*g* BI Publisher repository. When prompted for this location, you can enter one of the following:

- The default repository location used by the Oracle Business Intelligence 11*g* installation. This default location is in the `config` directory, inside the domain directory. For example:

  `MW_HOME\user_projects\domains\bifoundation_domain\config\bipublisher\repository`

- A new, temporary location, such as `C:\Temp`.

If you choose a new path for the upgraded repository and do not enter the path to the default 11*g* repository directory, then the Upgrade Assistant upgrades all your 10*g* catalog contents to the new location. Any seeded 11*g* content (such as the Sample Files), which were installed by the 11*g* installer, will not be included.

Make a note of this location, because you will need to reference it after the upgrade, as described in Section 8.2.2, "Completing the Upgrade of the BI Publisher Repository".

## 6.6 Task 6: Upgrade the BI Publisher Schema

Use the Oracle Fusion Middleware Upgrade Assistant to upgrade the BI Publisher Scheduler schema.

Upgrade Assistant is installed automatically into the `bin` directory of the Oracle Fusion Middleware Oracle home.

**Note:** You can upgrade the BI Publisher Repository or Scheduler schema in any order.

Upgrade Assistant performs the schema upgrade by upgrading source BI Publisher Scheduler schema content into the destination BI Platform schema.

***Table 6–2 Running Upgrade Assistant to Upgrade the BI Publisher Scheduler Schema***

| Step | Screen | Description and Action Required |
|---|---|---|
| 1 | None. | To start Upgrade Assistant using the graphical user interface:<br>Change directory to the *ORACLE_HOME*/bin directory of the Oracle Fusion Middleware installation:<br>(UNIX)./ua<br>(Windows) ua.bat |
| 2 | Welcome | Click **Next** to continue. |
| 3 | Specify Operation | Select **Upgrade BI Platform Schema**.<br>Select **Upgrade Oracle BI Publisher Content**.<br>Click **Next** to continue. |
| 4 | Specify BIP Source Database | Enter the details for the database that hosts the BI Publisher 10*g* Scheduler:<br>**Database Types**: Select the database type from the drop-down list.<br>**Connect String**: Enter the second portion of the connection string. Examples of the appropriate syntax for this field appear immediately below the field.<br>**Source Schema**: Enter the name of the existing 10*g* schema/database/user.<br>**Password**: Enter the password associated with the specified source schema.<br>**DBA Username**: To log in as the Oracle SYS database account specify **SYS AS SYSDBA** in this field.<br>**DBA Password**: Enter the password associated with the specified DBA Username.<br>Click **Next** to continue. |
| 5 | Specify Target Database | Enter the details for the database that hosts the Oracle Fusion Middleware 11*g* BI Publisher Scheduler target database:<br>**Target Database Types**: The target database type is based on the source database type.<br>**Connect String**: Enter the second portion of the connection string. Examples of the appropriate syntax for this field appear immediately below the field.<br>**Password**: Enter the password associated with the specified source schema.<br>**DBA Username**: To log in as the Oracle SYS database account specify **SYS AS SYSDBA** in this field.<br>**DBA Password**: Enter the password associated with the specified DBA Username.<br>Click **Next** to continue. |

*Table 6–2 (Cont.) Running Upgrade Assistant to Upgrade the BI Publisher Scheduler*

| Step | Screen | Description and Action Required |
|---|---|---|
| 6 | Specify Schema Name | Enter the 11*g* BI Publisher schema name from the drop-down list.<br>**Schema Name**: Select BIPLATFORM schema from the drop-down list, which has a prefix that is defined when you create the schema with RCU.<br>**Password**: Enter the password associated with the specified schema.<br>Click **Next** to continue. |
| 7 | Examining Components | Upgrade Assistant examines the following:<br>■ The database connection<br>■ The tables exists<br>■ Whether the schema has already been upgraded<br>Under the **Status** column, the word **succeeded** should appear. If instead, the word **failed** appears, inspect the log file for details.<br>Click **Next** to continue. |
| 8 | Upgrade Summary | Click **Upgrade**. |
| 9 | Upgrading Components | The upgrade process begins, and is completed when the status bar reaches 100 percent.<br>If there are errors during the upgrade, inspect the log file for details. The log files are located in the following directory:<br>*BI_ORACLE_HOME*/upgrade/logs/ua<timestamp>.log<br>For Windows Operating Systems:<br>*BI_ORACLE_HOME*\upgrade\logs\ua<timestamp>.log<br>Where <timestamp> is the current date and time.<br>Click **Next** to continue. |
| 10 | Upgrade Complete | Click **Close**. |

**Note:** Review the log for any errors or warnings. Resolve any errors or warnings in 10*g* files and resolve them manually in the upgraded 11*g* repositories and catalogs.

## 6.7 Task 7: Perform Any Required Post-Upgrade Configuration Tasks

See Section 8.2, "Post-Upgrade Tasks and Considerations for BI Publisher" for a description of the post-upgrade tasks that you might need to perform for each of the BI Publisher components.

## 6.8 Task 8: Verify the BI Publisher Upgrade

To verify that the BI Publisher upgrade was successful, see Section 5.8, "Task 8: Verify the Oracle BI EE Upgrade."

# 7

# Upgrading Oracle Real-Time Decisions

This chapter describes how to upgrade an existing Oracle Real-Time Decisions 3.0.0.1 environment to Oracle Real-Time Decisions 11*g*.

This chapter contains the following sections:



## 7.1 Task 1: Understand the Starting Points for Oracle Real-Time Decisions Upgrade

For information about starting points for an Oracle Business Intelligence upgrade, see Chapter 3, "Supported Starting Points for Oracle Business Intelligence Upgrade."

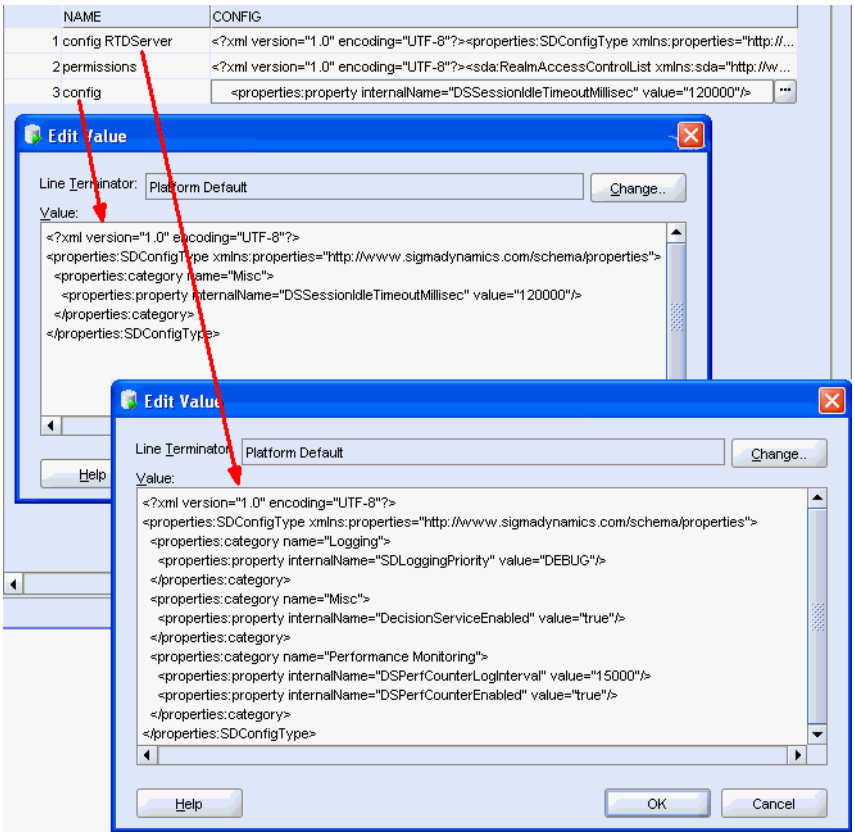
If you are already running Oracle Fusion Middleware 11*g*, then see *Oracle Fusion Middleware Patching Guide*, which provides information about applying the latest Oracle Fusion Middleware patches.

This guide provides instructions for upgrading from Oracle Real-Time Decisions Version 3.0.0.1 to the latest Oracle Real-Time Decisions 11*g*.

## 7.2 Task 2: Examine Oracle RTD and Other System Configuration Settings

If you have customized the 3.0.0.1 Oracle Real-Time Decisions system with specific server-side configuration parameter values, then examine and note down the customizations. If they have a direct equivalent, then you can replicate them later in the 11*g* upgraded system.

The customized Oracle RTD server-side configuration settings are included in the Oracle RTD SDConfig table, as shown in the following image.




**Note:** The Config values for the Name="config" row show the Oracle RTD configuration parameters set at the cluster level, the values for the Name="config *<server_name>*" rows show the parameters for the server level.

You might also have created special configuration settings at the application server level, such as JDBC data source settings, JVM parameters, and memory configuration parameters. Note down any configuration settings that you want to be used, exactly or in an equivalent way, in the upgraded system.

## 7.3 Task 3: Run RCU to Create the Destination BIPLATFORM Schema

The Repository Creation Utility (RCU) is a graphical tool for creating and managing Oracle Fusion Middleware database schemas in the database. To create the Oracle BI EE 11*g* destination BIPLATFORM schema, see "Additional Oracle BI Installer Requirements" in the *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

**Note:** If you have already run RCU to create the destination BIPLATFORM schema for Oracle BI EE or BI Publisher, then you are not required to perform Task 3. Oracle BI EE, BI Publisher, and Oracle Real-Time Decisions share the BIPLATFORM schema.

## 7.4 Task 4: Install and Configure Oracle Real-Time Decisions 11*g*

For installation and configuration instructions, see "Running the Installer" in the *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*.

## 7.5 Task 5: Copy and Reconfigure Data from 3.0.0.1 System to 11*g* System

There are three broad categories of data that affect Oracle RTD users, and the upgrade considerations for each category are slightly different. The three categories are:

- The SDDS database, which stores all the metadata required to run Oracle RTD
- The model snapshot tables, which are optional
- Enterprise data stored in external data sources, which are referenced by Inline Services

This procedure includes the following assumptions:

- You have an existing 3.0.0.1 SDDB database.
- You have an existing set of 3.0.0.1 model snapshot tables.
- You have an existing Oracle RTD 11*g* schema that contains both SDDB tables and model snapshot tables (default installation setup).
- The upgraded Oracle RTD 11*g* system will continue to reference the same external enterprise data that was used by Oracle RTD 3.0.0.1.

> **Note:** For convenience, all three categories of data upgrade are described in this section, although you do not need to upgrade all the types of data at the same time.
>
> Typically, you upgrade the SDDS database first, then the external enterprise data and model snapshot tables when you need to use them.

### SDDS Database

For the SDDS database, copy the existing Oracle RTD 3.0.0.1 database using scripts that are located in *RTD_HOME*\scripts\sql*db_type*, where *db_type* is either Oracle, SQL Server, or DB2, as follows:

To upgrade the Oracle RTD schema:

1. In the *RTD_HOME*\scripts\sql*db_type* folder, read the "readme" for the database.
2. Set up any objects (such as database links) that the readme indicates.
3. Run the `CopyRTDSDDBData.sq` script to copy the 3.0.0.1 SDDB data to the 11*g* database.

### External Database Tables and Model Snapshot Tables

For the external data sources that are referenced in the Inline Services, check the 3.0.0.1 data sources that are defined in WebLogic Server Administration Console. The JDBC data sources to be recreated in 11*g* are the ones for model snapshots (assuming the 3.0.0.1 production model snapshots were created in a non-SDDS database), and the JDBC data sources referenced in the Inline Services.

To create new JDBC data sources and register them with Oracle RTD, follow the steps described in "Configuring Data Access for Oracle Real-Time Decisions" in *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*.

For model snapshots, Oracle recommends setting up the model snapshot tables in a different schema from the SDDB tables. For more information, see "Setting Up and Using Model Snapshots" in *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*.

There are two options for generating contents into the 11*g* model snapshot tables:

- Copy the content from the 3.0.0.1 model snapshot tables to the 11*g* model snapshot tables using the `CopyRTDSnapshotData.sql` script in the *RTD_HOME*\scripts\sql\db_type directory.
- When the 11*g* RTD server has been configured and started, the content of the 11*g* model snapshot tables can be recreated using RTD MBeans in Fusion Middleware Control.

## 7.6 Task 6: Reapply Oracle RTD and Other System Configuration Settings

If you had previously customized the Version 3.0.0.1 Oracle Real-Time Decisions system with specific server-side configuration parameter values, then you can reapply the settings that have a direct equivalent in 11*g*. Generally, these are parameters that were set up in JConsole, whose equivalents can be accessed through Oracle RTD MBeans in Fusion Middleware Control. System parameters set up for specific customizations can also be reapplied if still required.

## 7.7 Task 7: Upgrade the Oracle Real-Time Decisions Artifacts

To upgrade the existing Oracle RTD 3.0 artifacts:

1. Back up the existing 3.0.0.1 Inline Services.
2. Open the Inline Services in the Oracle RTD 11*g* Decision Studio. Ensure that you have created and configured JDBC data sources and JDBC data source references correctly. If there are any errors, correct them.
3. Recompile the 11*g* Inline Services in Decision Studio. For each Inline Service, from the Decision Studio menu, select **Project**, then **Clean.**

---

**Note:** In version 3.0.0.1, Inline Services were protected by a combination of cluster permissions and explicit Inline Service permissions. In 11*g*, no permissions are defined in the Inline Service; all permissions are created and configured through permission grants in application policies in a policy store.

You might need to examine any 3.0.0.1 custom roles that you set up in 3.0.0.1 to control Inline Service access and create equivalent application roles and permissions in 11*g*. For more details, see the Security chapter in *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*.

---

## 7.8 Task 8: Perform Any Required Post-Upgrade Configuration Tasks

If you have Oracle RTD 3.0 clients, such as Java Smart Client, then turn off Web service security, and run the clients in the new 11*g* environment. (This assumes that you do not need Web service security for the clients.)

If you do need Web service security activated, then update the clients as described in Appendix B, "Oracle RTD Web Services and Clients" of *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*, and the chapter appropriate to your client type in "Part II - Integration with Oracle RTD" in *Oracle Fusion Middleware Platform Developer's Guide for Oracle Real-Time Decisions*.

As with Inline Service security, in general, you might need to examine any 3.0.0.1 custom roles that you set up in 3.0.0.1, and create equivalent application roles and permissions in 11*g*. For more details, see the Security chapter in *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*

## 7.9 Task 9: Verify the Oracle Real-Time Decisions Upgrade

To verify that the Oracle Real-Time Decisions upgrade was successful, run test integration points in the Inline Services, then log into Decision Center, and verify that your reports are visible.

# Part III

## After You Upgrade

The chapters included in this part of the guide provide information for after you upgrade Oracle Business Intelligence.

Part III contains the following chapters:

- Chapter 8, "Oracle Business Intelligence Post-Upgrade Tasks and Considerations"
- Appendix A, "Oracle Business Intelligence Upgrade Assistant Screens"
- Appendix B, "Possible Changes in Oracle BI Enterprise Edition Appearance and Behavior After Upgrade"

# 8

# Oracle Business Intelligence Post-Upgrade Tasks and Considerations

The following sections describe post-upgrade tasks and considerations for an Oracle Business Intelligence upgrade:

- Post-Upgrade Tasks and Considerations for Oracle Business Intelligence Enterprise Edition
- Post-Upgrade Tasks and Considerations for BI Publisher

> **Note:** Chapter 1, "Planning to Upgrade from Oracle BI 10g to BI 11g" provides additional considerations and possible post-upgrade tasks, in addition to the tasks provided in this chapter.
>
> Depending upon the Oracle Business Intelligence 11*g* features you are using, you should review the appropriate sections of Chapter 1 before you perform the tasks in this chapter.

## 8.1 Post-Upgrade Tasks and Considerations for Oracle Business Intelligence Enterprise Edition

The following sections describe post-upgrade tasks and considerations for Oracle Business Intelligence Enterprise Edition (Oracle BI EE):

- Section 8.1.1, "Oracle Business Intelligence Agents are Not Scheduled after Upgrade"
- Section 8.1.2, "Copying and Recreating Customized Files from the 10g to 11g Environment"
- Section 8.1.3, "Ensure All Data Source Paths and System Variables Are Accurate"
- Section 8.1.4, "Upgrading a Cluster"
- Section 8.1.5, "Authentication for External Users"
- Section 8.1.6, "Invalid Characters in Repository Are Not Upgraded"
- Section 8.1.7, "Copy Sample Files Manually"
- Section 8.1.8, "Verify the Upgrade of Catalog Objects"
- Section 8.1.9, "Verify the Server Name in Configuration Files"

### 8.1.1 Oracle Business Intelligence Agents are Not Scheduled after Upgrade

In previous releases (prior to 11*g*), you could create iBots (now known as agents in Oracle Business Intelligence 11*g*). For more information about the upgrade of 10*g* iBots to 11*g* agents, see Section 1.3.2.5, "Upgrading iBots."

If you used iBots with a schedule in 10*g*, then the resulting upgraded agents do not have the same schedule in 11*g* until the schema has been imported or until you reschedule the agent by selecting a schedule and saving it in 11*g*.

To fix this problem, after you upgrade the Scheduler schema, use Oracle Enterprise Manager Fusion Middleware Control to verify that the Scheduler is configured to use the upgraded schema.

For more information, see "Using Fusion Middleware Control to Configure a Database for the Oracle BI Scheduler" in the *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 8.1.2 Copying and Recreating Customized Files from the 10*g* to 11*g* Environment

After you upgrade to Oracle Business Intelligence 11*g*, check whether you have made any of the customizations that are described in the following sections:

- Section 8.1.2.1, "Recreating Customized Style Sheets and Skins"
- Section 8.1.2.2, "Customized Files That Must be Copied to the 11g Environment"
- Section 8.1.2.3, "More About Localized (Language-Specific) Custom Messages"

#### 8.1.2.1 Recreating Customized Style Sheets and Skins

For the reasons listed in Section 1.3.2.14, "Upgrading Custom Styles and Skins," you must recreate any customized style sheets or skins that you modified in the Oracle Business Intelligence 10*g* environment.

#### 8.1.2.2 Customized Files That Must be Copied to the 11*g* Environment

If you made modifications in 10*g* to the following files, paths, and other customized files, and you want to use those modifications in the new 11*g* environment, then you must copy your customizations from the Oracle BI EE 10*g* installation to the Oracle BI EE 11*g* installation:

- Scheduler script path.
- Scheduler Default script path.
- Configuration file for user preferred currencies in Presentation Services.
- Presentation Services PDF font map file.
- JavaHost user configuration file. (Move the specific configuration that you require, not the entire file.)
- JavaHost scheduler user jar file path.
- Language specific custom messages. For more information, see Section 8.1.2.3, "More About Localized (Language-Specific) Custom Messages."

For information about the changes in directories and locations from Oracle Business Intelligence 10*g* to 11*g*, see Section 4.3, "Changes to Oracle Business Intelligence Directory Structure".

#### 8.1.2.3 More About Localized (Language-Specific) Custom Messages

If you have localized custom messages to support multiple languages, then note the following:

- In order to follow the Oracle standard internationalization naming convention, some of the directories that contain language-dependent message files have been modified. The following table lists the message file directory names that have been changed between Oracle BI EE 10*g* and 11*g*.

| 10*g* Name | 11*g* Name |
|---|---|
| l_zh | l_zh-CN |
| l_zh-tw | l_zh-TW[1] |
| l_pt-br | l_pt-BR[1] |
| l_iw | l_he |

[1] This name change involves only the case of the last two letters. As a result, this change does not affect Windows systems, which are not case-sensitive.

- Before restarting Presentation Services (coreapplication_obips1), manually copy those localized files from the following 10*g* directory:

  `%\OracleBIData\web\msgdb`

  to the following 11*g* directory:

  `%\instances\instance1\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\msgdb`.

### 8.1.3 Ensure All Data Source Paths and System Variables Are Accurate

After running Upgrade Assistant to upgrade a repository for Oracle BI EE, ensure that Connection Pools in the 11*g* environment still point to the correct data source. In the case of XML data sources, be aware that the path to the source XML is held against each table definition in the physical layer, rather than at the connection pool level.

For additional information about data sources, see the following:

- Section 1.2.2.6, "Changes Related to Data Source Connectivity"
- The information about Stage 2, "Reconfigure Data Source connections" in Table 1–1, " Example Upgrade Test Plan"
- Section 1.4.3.4, "Support for Additional Data Sources"

### 8.1.4 Upgrading a Cluster

You cannot upgrade an entire Oracle BI EE cluster. If you require a clustered 11*g* deployment, then perform a simple installation and upgrade to that single instance before scaling out.

For information about scaling out an Oracle BI EE deployment, see "Extending and Scaling Your Deployment" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 8.1.5 Authentication for External Users

Users migrated from the repository into the embedded WebLogic LDAP server derive their application role memberships directly from the Policy Store, which can be managed within Fusion Middleware Control.

However, users that exist in an external user population and are authenticated using an *Authentication* Init Block, derive their application role memberships from the ROLES (or GROUP) session variable that is set in response to a database query within an *Authorization* Init Block.

To ensure consistent behavior for any given user, ensure that each user exists in only one place. Therefore, any users that were migrated from the repository into WebLogic LDAP should be removed from the external user population.

For more information, see Section 1.5, "Understanding Oracle Business Intelligence Security Upgrade".

### 8.1.6 Invalid Characters in Repository Are Not Upgraded

When upgrading a repository, users or groups with names that contain the following invalid characters are not upgraded:

- ,
- +
- =
- "
- \
- <
- >
- ;
- .

To solve this issue you must create the users or groups after upgrade is complete, with new names that do not contain the invalid characters.

**Important:** When you create new users or groups, the new user or group names must not contain invalid characters.

### 8.1.7 Copy Sample Files Manually

You must copy all sample files manually from the 10*g* folder to the 11*g* folder when upgrading the catalog.

For information on the changes to the directory structure from Oracle Business Intelligence 10*g* to 11*g*, see Section 4.3, "Changes to Oracle Business Intelligence Directory Structure".

### 8.1.8 Verify the Upgrade of Catalog Objects

After upgrading the system, verify whether you must perform the optional task of scanning and updating objects in the catalog. For information on this optional task, see "Updating Catalog Objects" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 8.1.9 Verify the Server Name in Configuration Files

After the upgrade is completed, verify the name of the server referenced in the following configuration files:

- **xmlp-server-config.xml**

  Location:

  *DOMAIN_HOME*/config/bipublisher/repository/Admin/Configuration/

- **datasources.xml**

  Location:

  *DOMAIN_HOME*/config/bipublisher/repository/Admin/DataSource

For more information, see the following:

- Section 8.2.1, "Verifying the Server Names If You Used the BI Server Security Model in Oracle Business Intelligence 10g"
- The information about Stage 5 in Table 1–1, " Example Upgrade Test Plan"

## 8.2 Post-Upgrade Tasks and Considerations for BI Publisher

The following sections describe post-upgrade tasks and considerations for BI Publisher:

- Section 8.2.1, "Verifying the Server Names If You Used the BI Server Security Model in Oracle Business Intelligence 10g"
- Section 8.2.2, "Completing the Upgrade of the BI Publisher Repository"
- Section 8.2.3, "Enabling HTTP Proxy for External Web Service or HTTP Data Sources"
- Section 8.2.4, "Granting Access to Data Sources"

### 8.2.1 Verifying the Server Names If You Used the BI Server Security Model in Oracle Business Intelligence 10*g*

If the 10*g* security model was set to BI Server, then after the upgrade to 11*g*, you must verify that the BI Server name (or IP Address) in the `xmlp-server-config.xml` file is correct.

For more information, see the following:

- Section 8.1.9, "Verify the Server Name in Configuration Files"
- The information about Stage 5 in Table 1–1, " Example Upgrade Test Plan"

Restart the Managed Server that runs the BI Publisher instance. When the server is running, you can log in with a 10*g* user ID and password.

### 8.2.2 Completing the Upgrade of the BI Publisher Repository

After the upgrade process, you must verify the location of the upgraded BI Publisher file-based repository.

In addition, if you are using BI Publisher with Oracle Business Intelligence Enterprise Edition, then you can upload repository to the Oracle BI Presentation Catalog.

For more information, see "Configuring the Catalog" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Publisher*.

If you upgraded the repository from an E-Business Suite Data Template directory, then the upgraded data model will not have any data source references in the 11*g* environment. Perform the following tasks to update the data source references for Oracle Business Intelligence 11*g*:

1. Create a JDBC/JNDI connection to the EBS database.

   For more information, see "Setting Up Data Sources" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Publisher*.

2. Edit the Data Model to reflect this data source for the data model.

   For more information, see the *Oracle Fusion Middleware Data Modeling Guide for Oracle Business Intelligence Publisher*.

3. Save the Data Model.

4. If the Data model refers to any SQL package function, then verify that the package name is correctly mapped in data model.

### 8.2.3 Enabling HTTP Proxy for External Web Service or HTTP Data Sources

If you were using external Web services or HTTP data sources in Oracle Business Intelligence 10*g* that required an HTTP proxy, then ensure that you enable the proxy for your new Oracle Business Intelligence 11*g* environment.

### 8.2.4 Granting Access to Data Sources

As described in Section 1.4.1.5, "Enhanced Catalog Object Security", the process you use to grant access to data sources in Oracle Business Intelligence 11*g* has changed from Oracle Business Intelligence 10*g*.

As a result, after you upgrade, you must ensure that--for all roles that must access a data source--the role is granted access to the data source. This requires assigning roles to data sources in the BI Publisher Administration page.

For more information, see "Granting Data Access" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Publisher*.

# A

# Oracle Business Intelligence Upgrade Assistant Screens

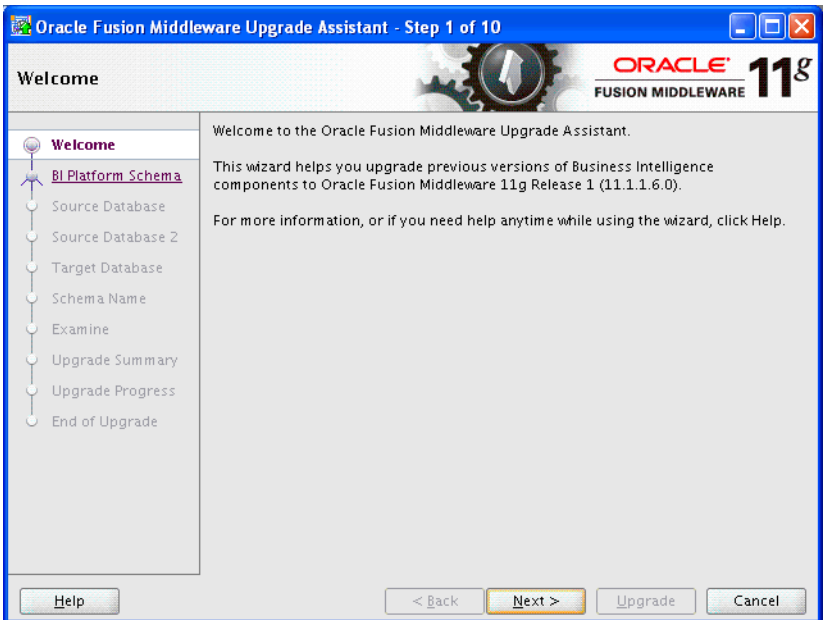
When upgrading Oracle Business Intelligence, you can use Upgrade Assistant to upgrade Oracle Business Intelligence Enterprise Edition (Oracle BI EE) or Oracle Business Intellegence Publisher (Oracle BI Publisher). The procedures for upgrading Oracle BI EE or BI Publisher are documented in Chapter 5, "Upgrading Oracle Business Intelligence Enterprise Edition," and Chapter 6, "Upgrading Oracle BI Publisher."

Upgrade Assistant does not support upgrading Oracle Real-Time Decisions (Oracle RTD). To upgrade an Oracle RTD environment, see Chapter 7, "Upgrading Oracle Real-Time Decisions."

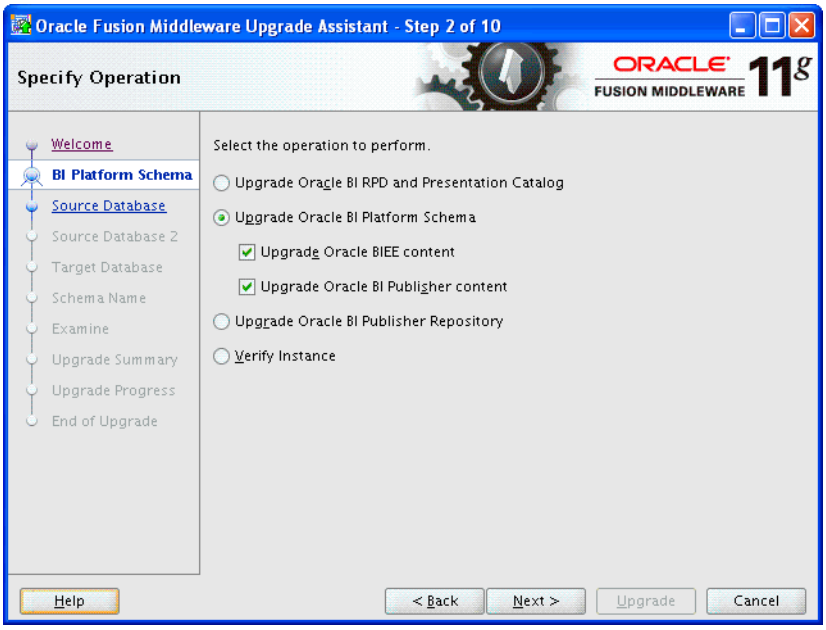
## A.1 Upgrade Assistant Screens for an Oracle BI EE Repository and Catalog Upgrade

This section shows the Upgrade Assistant screens for an Oracle BI EE Repository and Catalog upgrade.

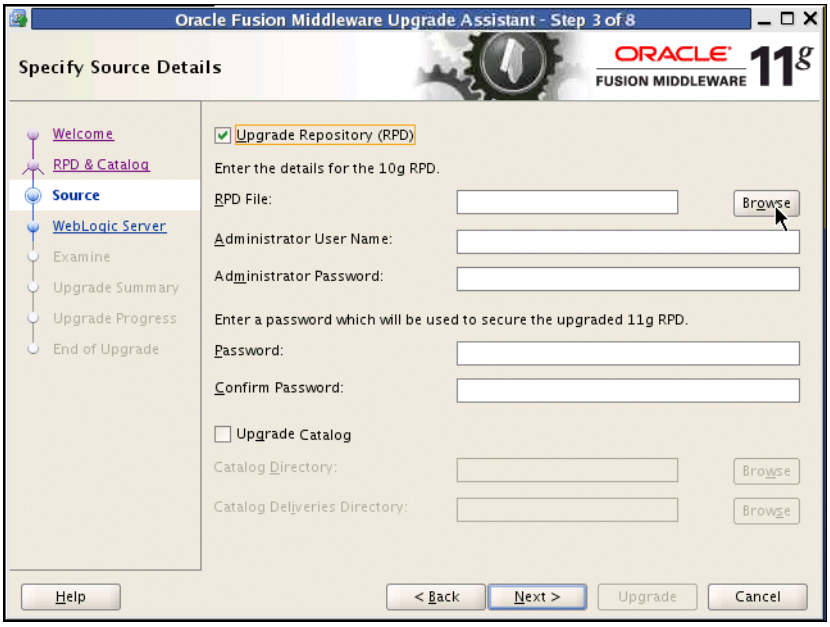
### A.1.1 Welcome Screen



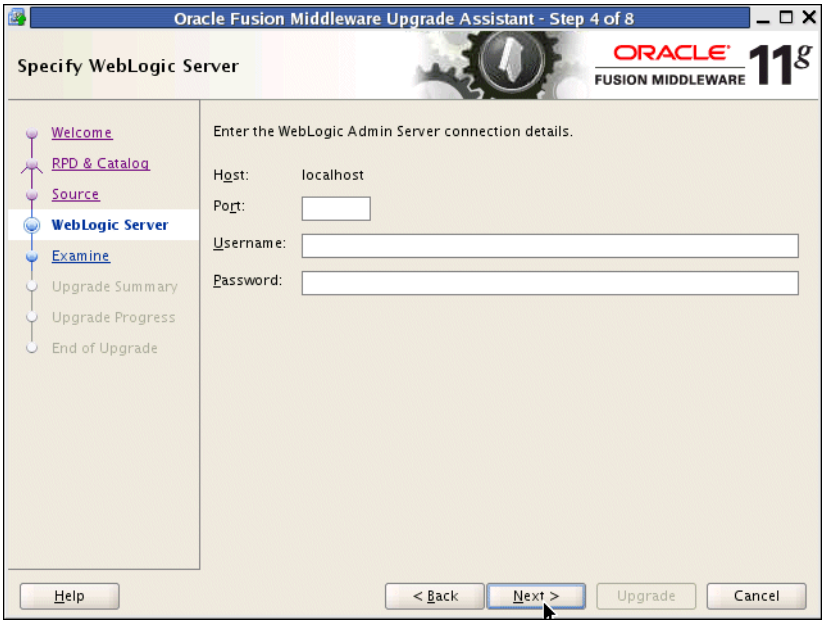
## A.1.2 Specify Operation



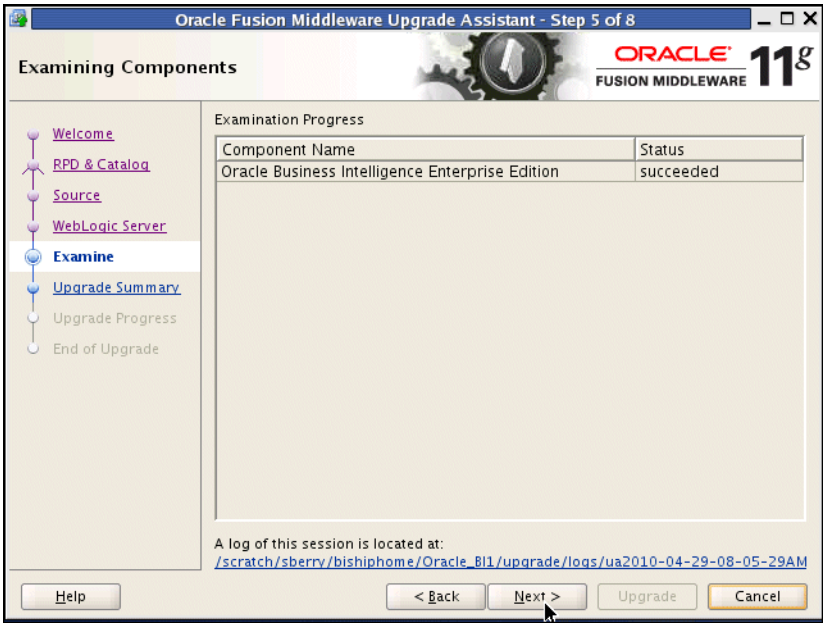

## A.1.3 Specify Source Details



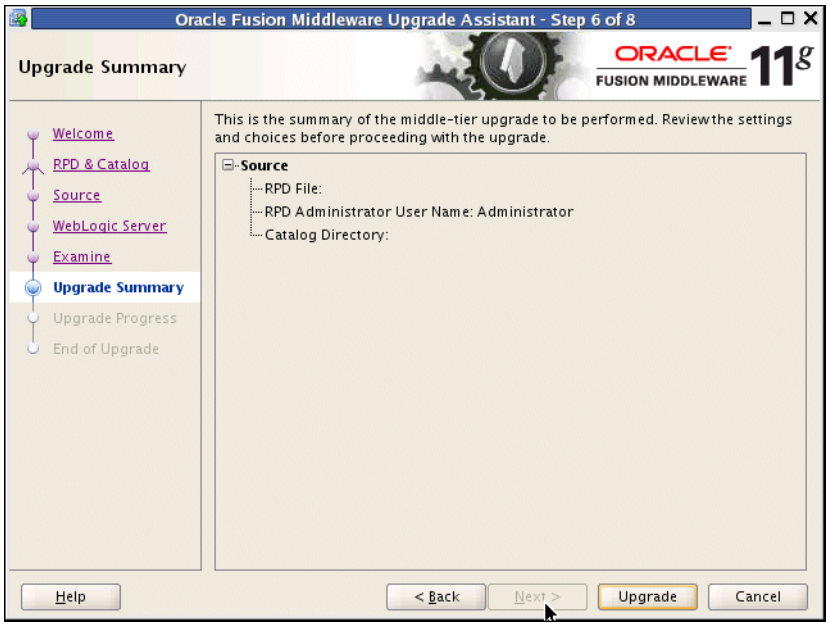
## A.1.4 Specify WebLogic Server



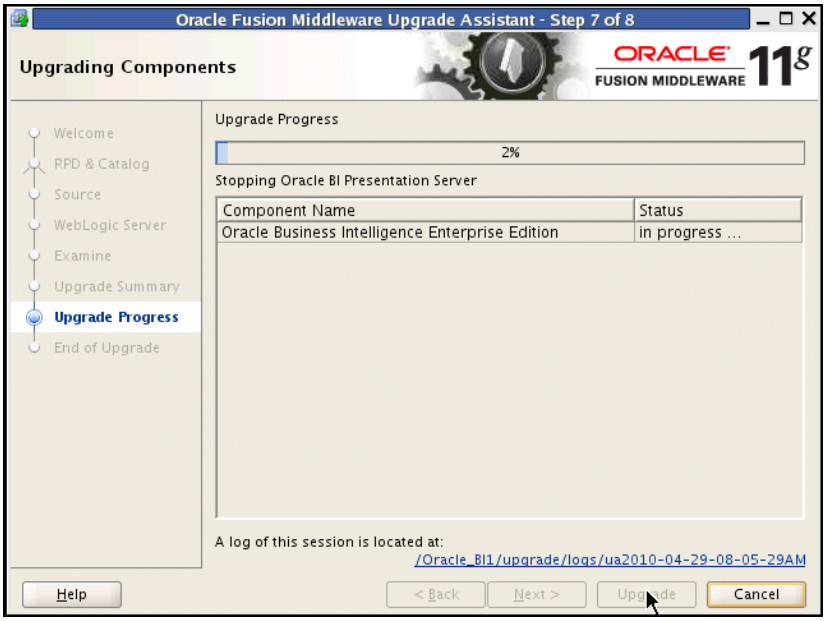

## A.1.5 Examining Components



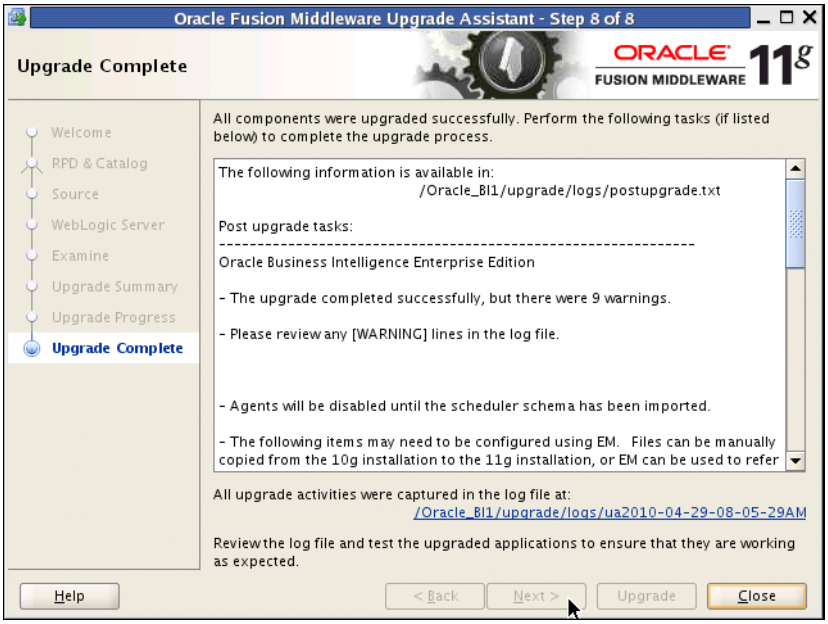
## A.1.6 Upgrade Summary




## A.1.7 Upgrading Components



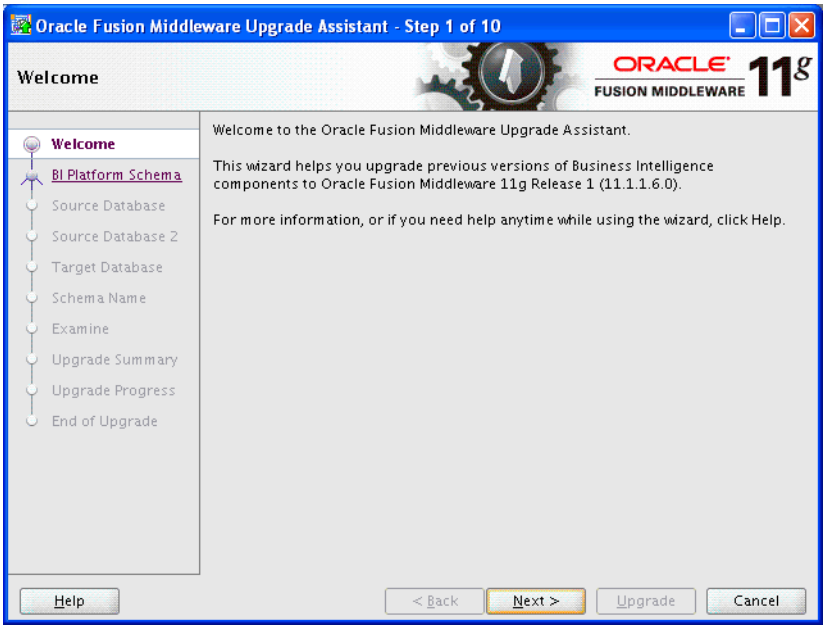
### A.1.8 Upgrade Complete



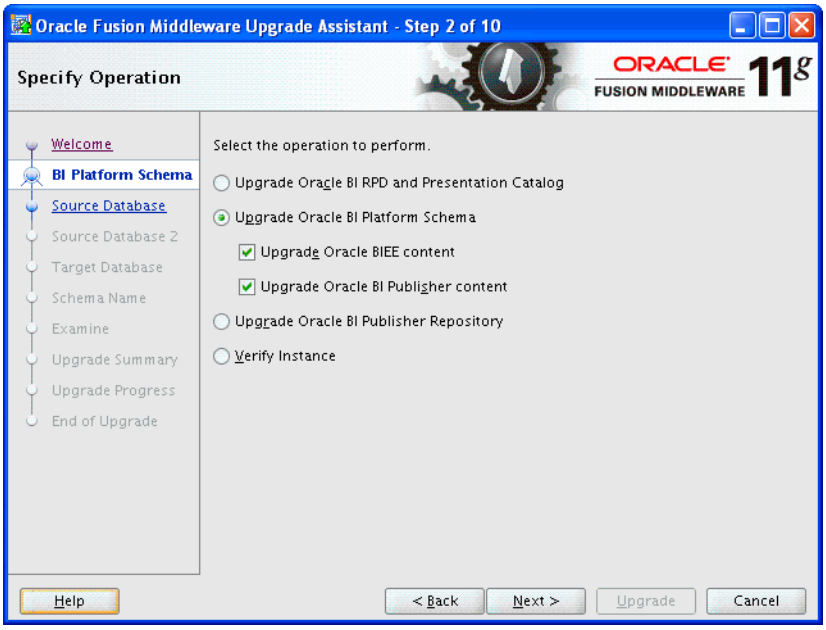

## A.2 Upgrade Assistant Screens for Oracle BI EE Scheduler Schema Upgrade

This section shows the Upgrade Assistant screens for an Oracle BI EE Scheduler schema upgrade.

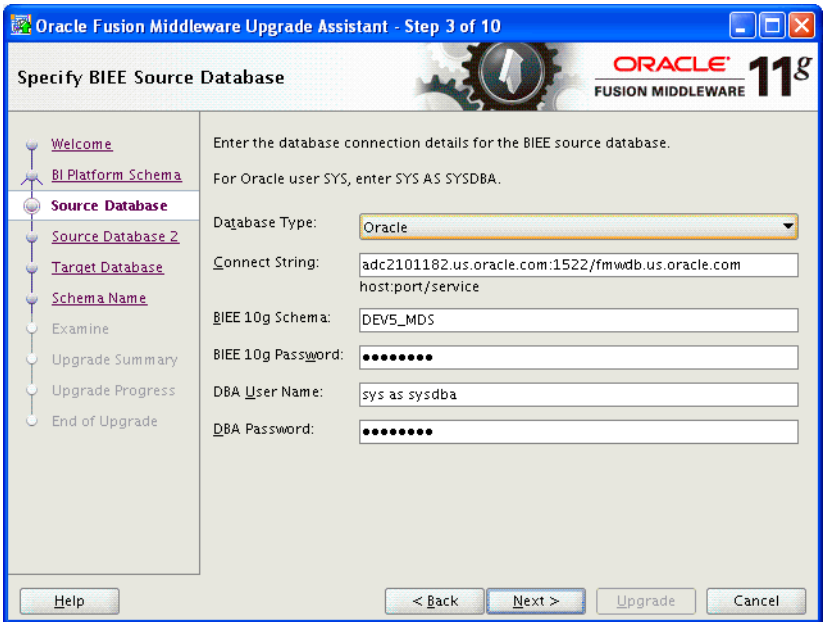
### A.2.1 Welcome



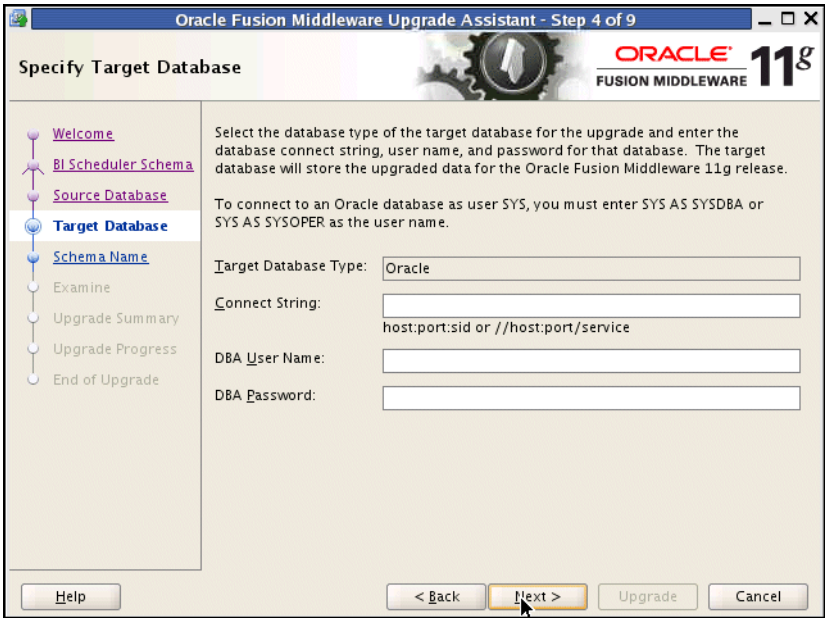
## A.2.2 Specify Operation



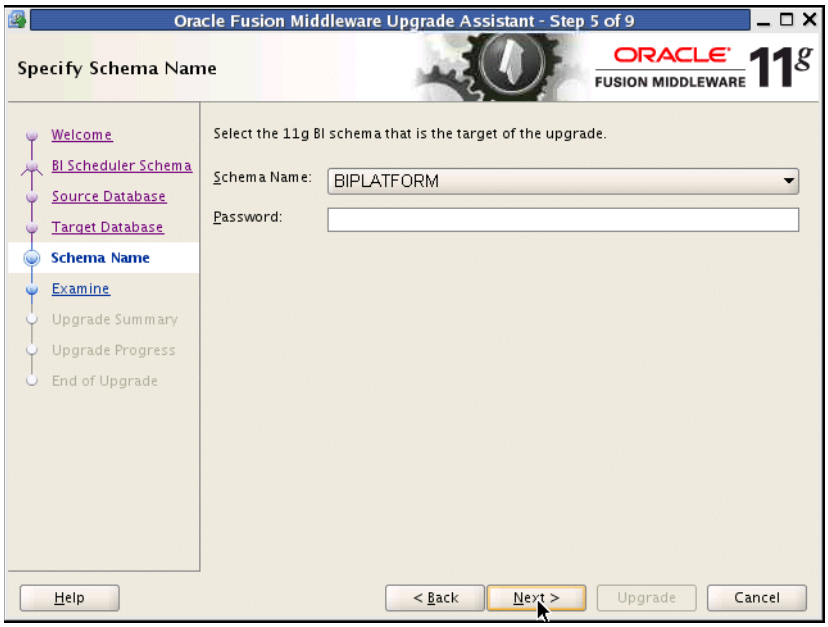

## A.2.3 Specify BIEE Source Database



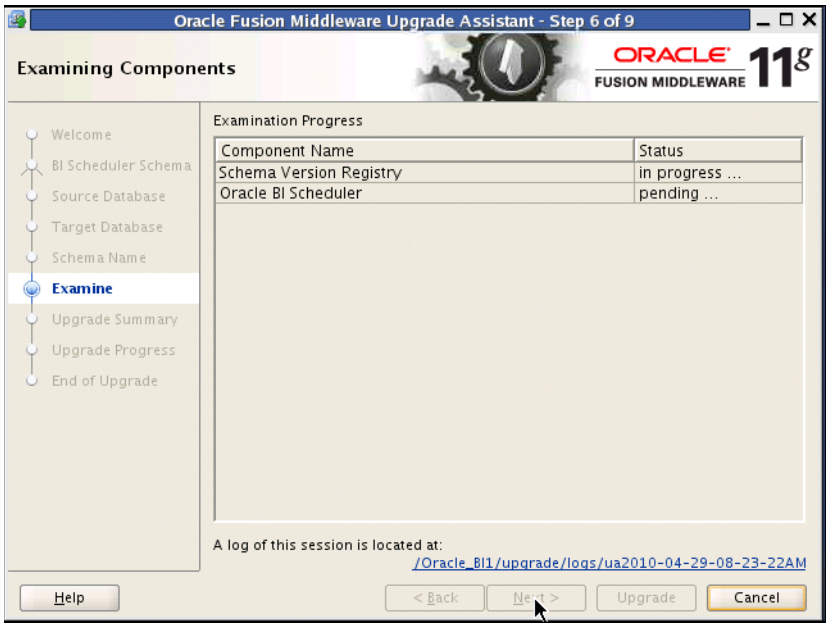
## A.2.4 Specify Target Database



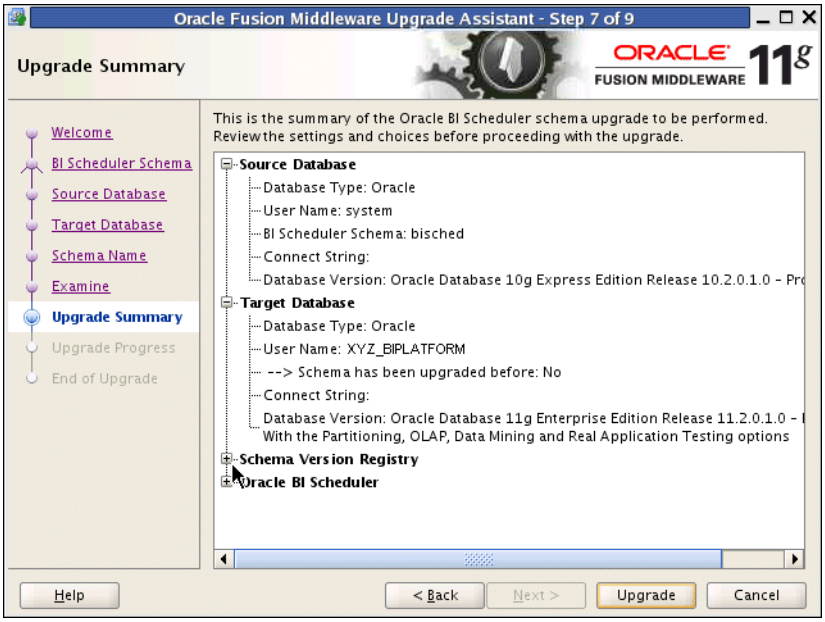

## A.2.5 Specify Schema Name



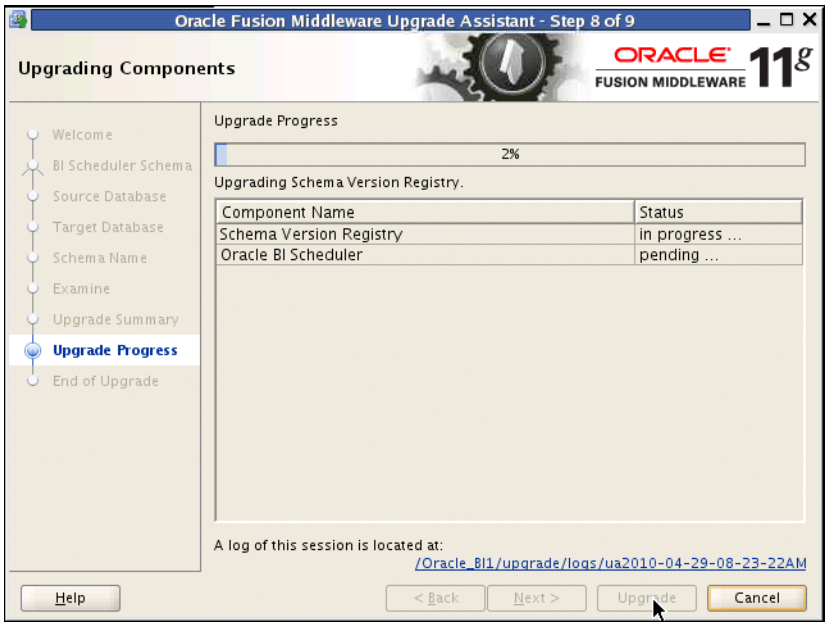
## A.2.6 Examining Components



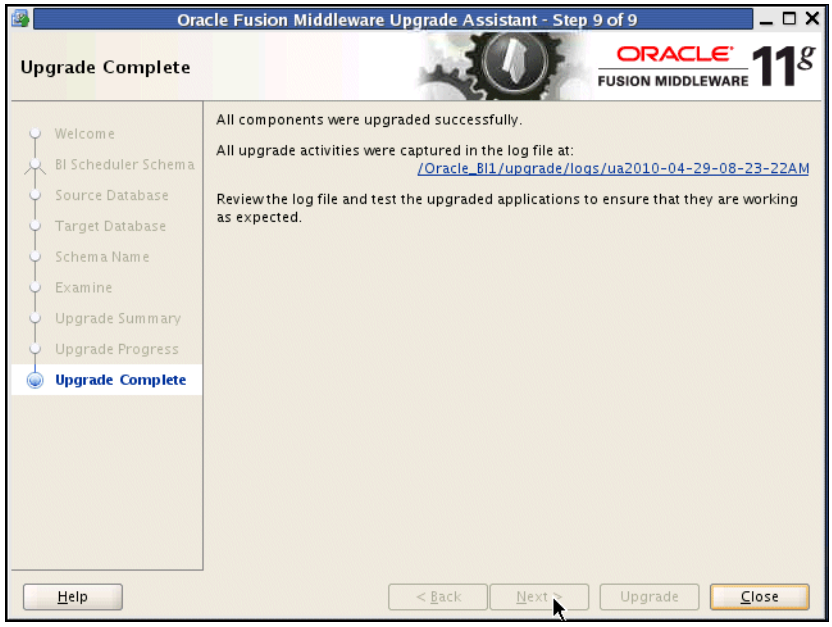

## A.2.7 Upgrade Summary



### A.2.8 Upgrading Components



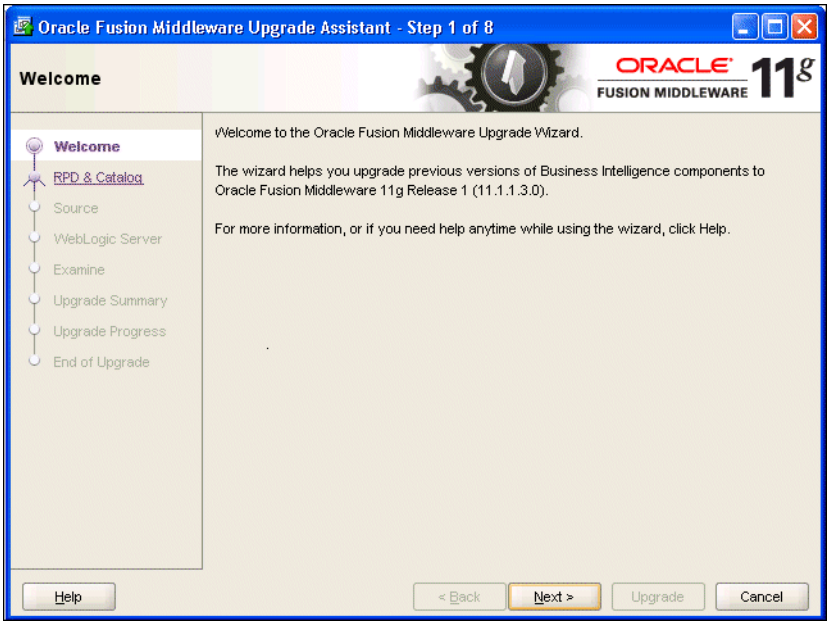

### A.2.9 Upgrade Complete



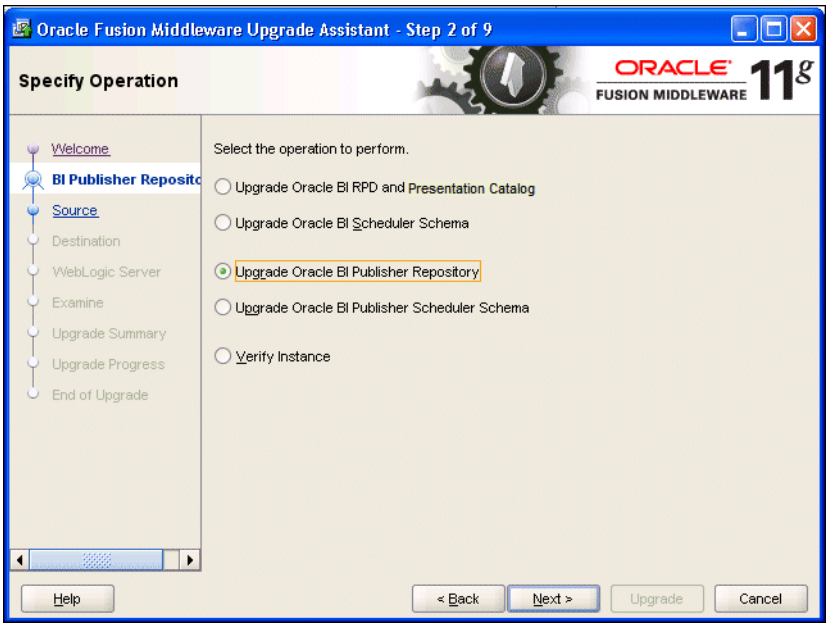

## A.3 Upgrade Assistant Screens for a BI Publisher Repository Upgrade

This section shows the Upgrade Assistant screens for a BI Publisher Repository upgrade.

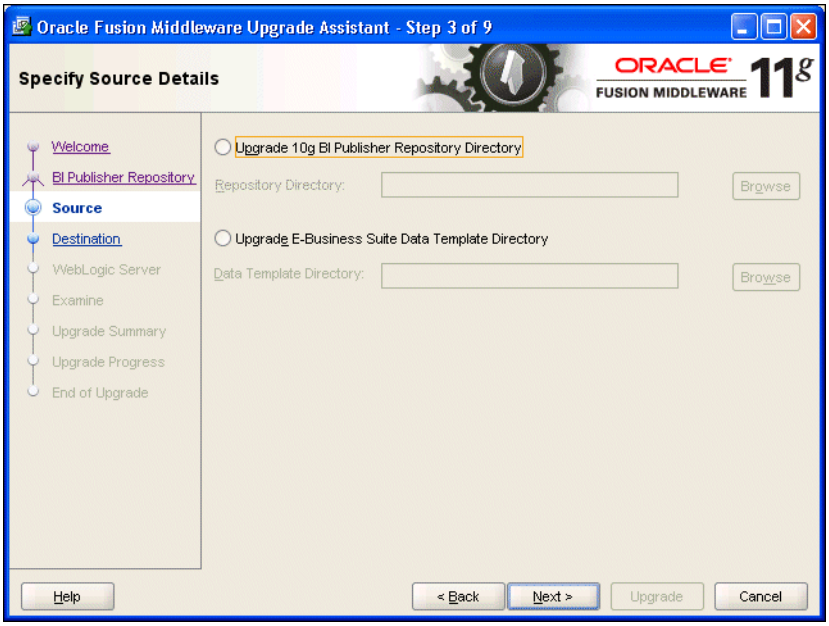
## A.3.1 Welcome Screen



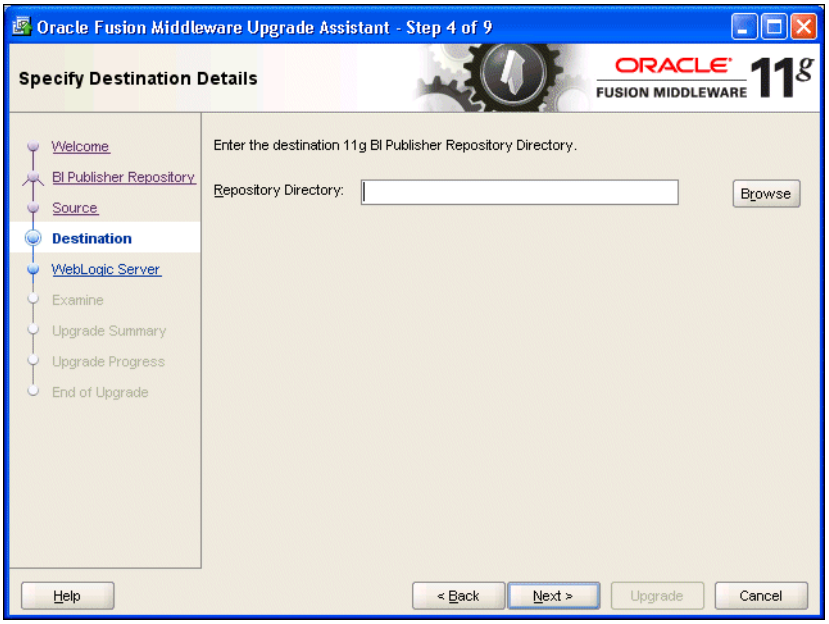

## A.3.2 Specify Operation



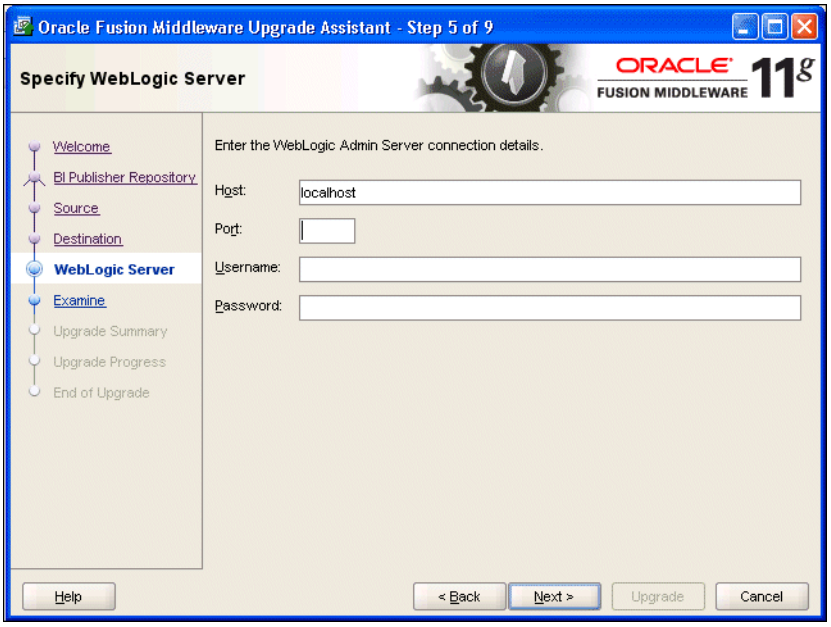
## A.3.3 Specify Source Details



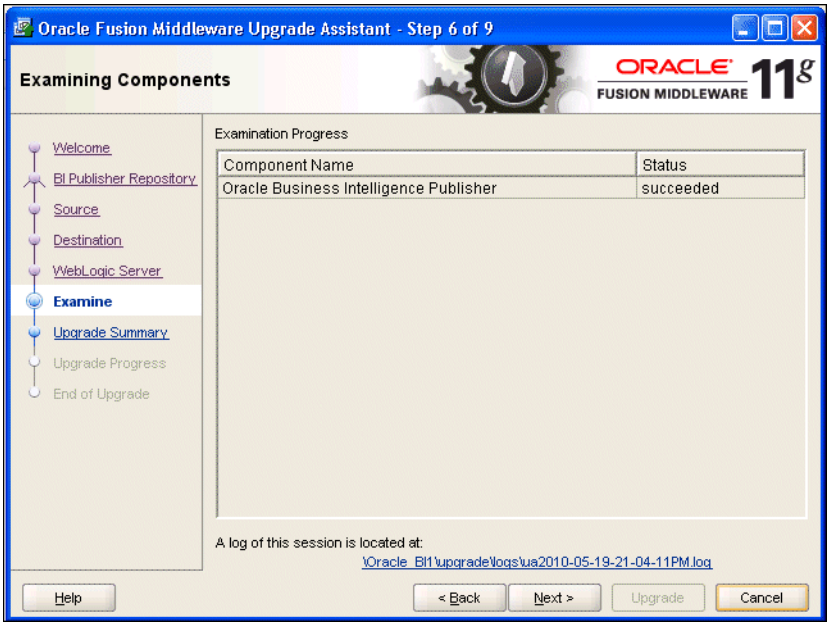

## A.3.4 Specify Destination Details



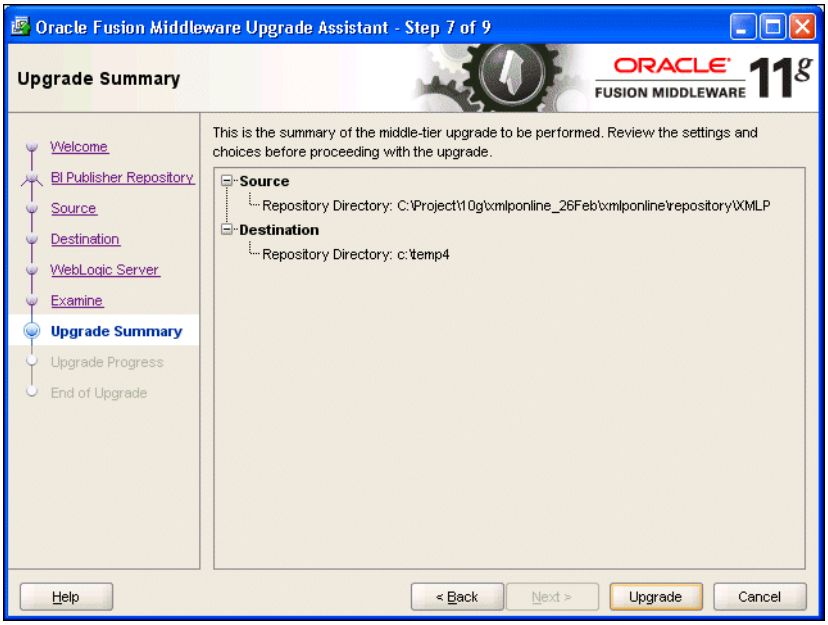
## A.3.5 Specify WebLogic Server



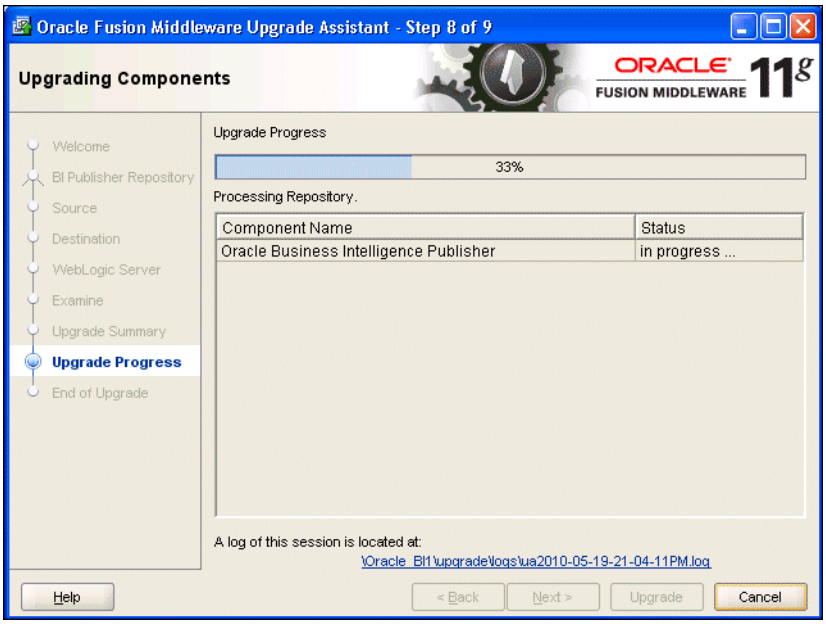

## A.3.6 Examining Components



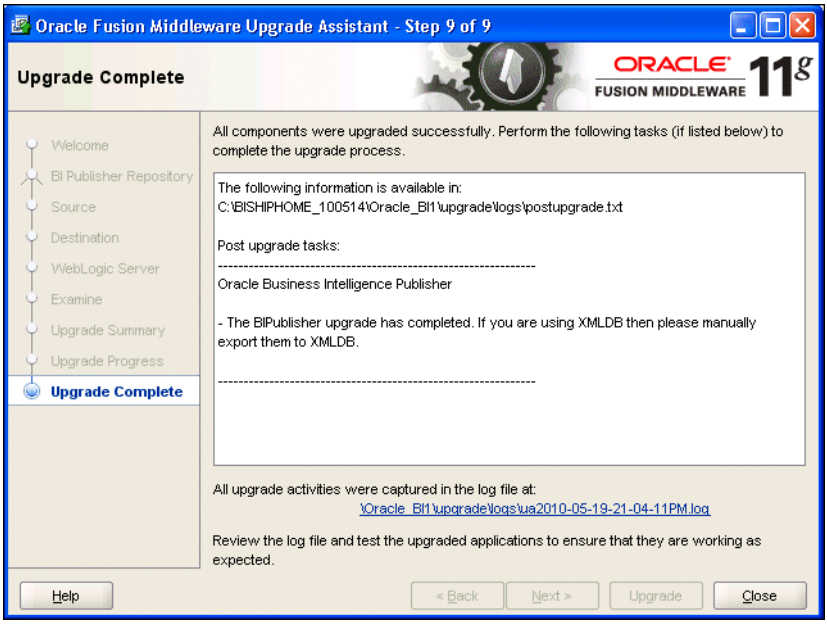
## A.3.7 Upgrade Summary



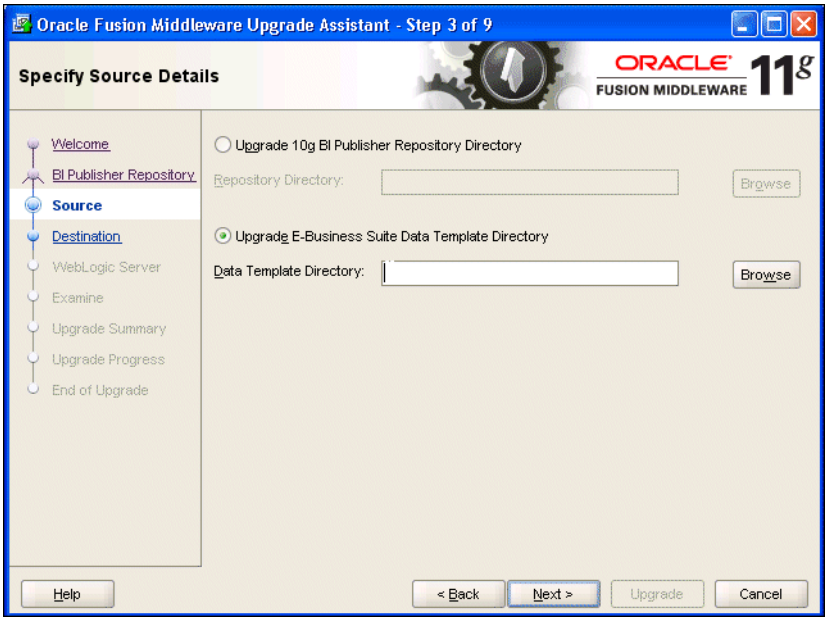

## A.3.8 Upgrading Components



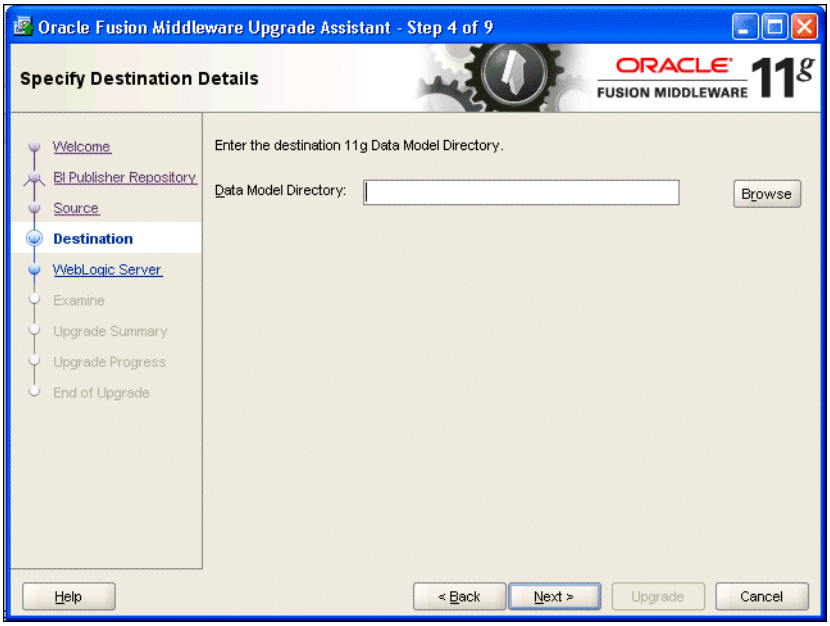
## A.3.9 Upgrade Complete




## A.3.10 Specify Source Details



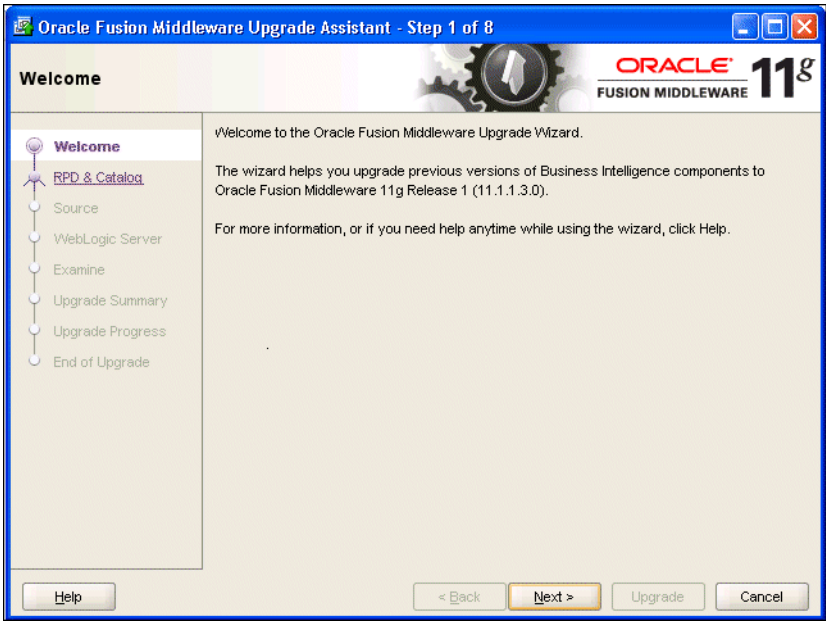
### A.3.11 Specify Destination Details



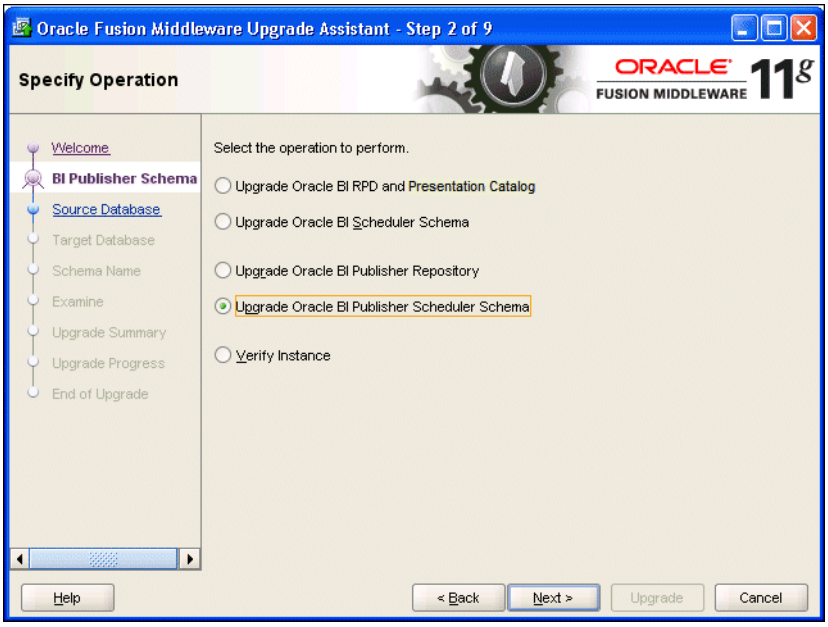

## A.4 Upgrade Assistant Screens for an BI Publisher Scheduler Schema Upgrade

This section shows the Upgrade Assistant screens for an BI Publisher Scheduler schema upgrade.

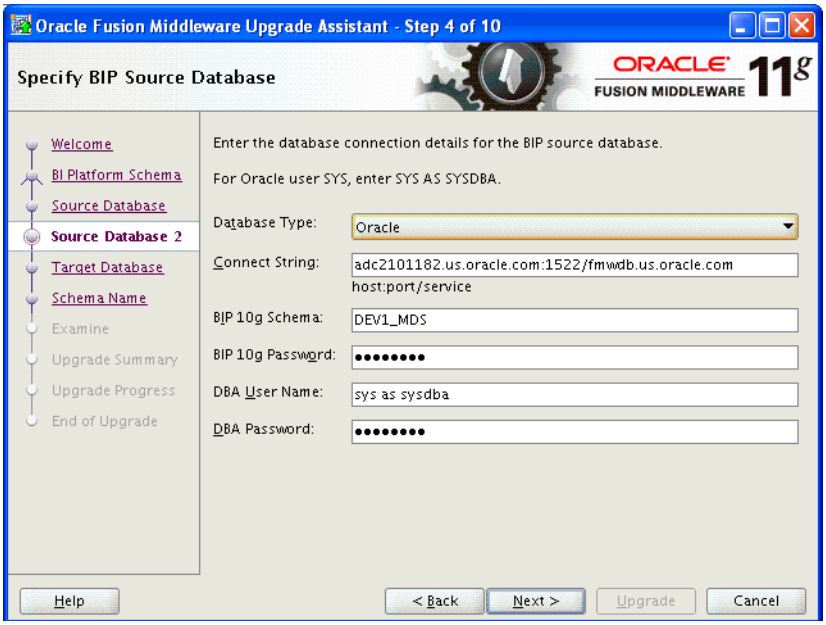
### A.4.1 Welcome



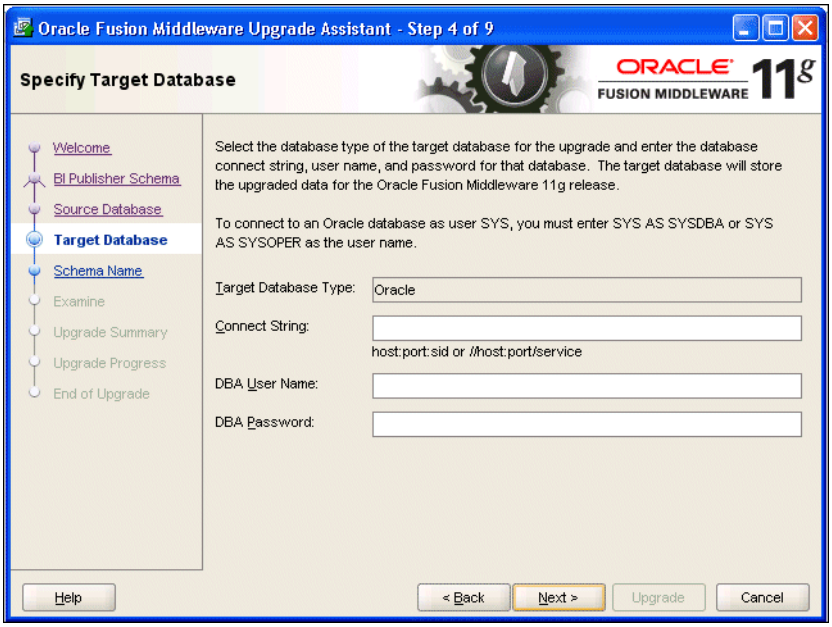
## A.4.2 Specify Operation



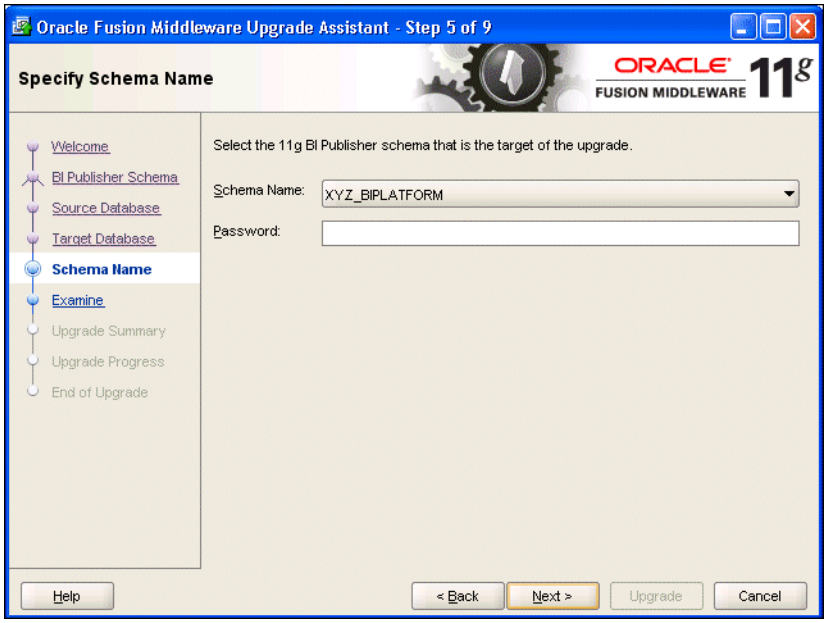

## A.4.3 Specify BIP Source Database



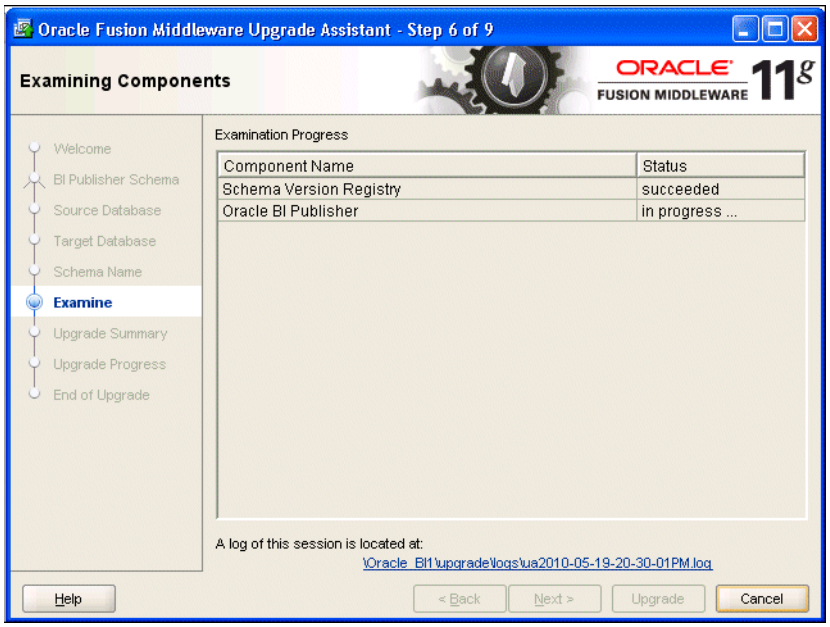
## A.4.4 Specify Target Database



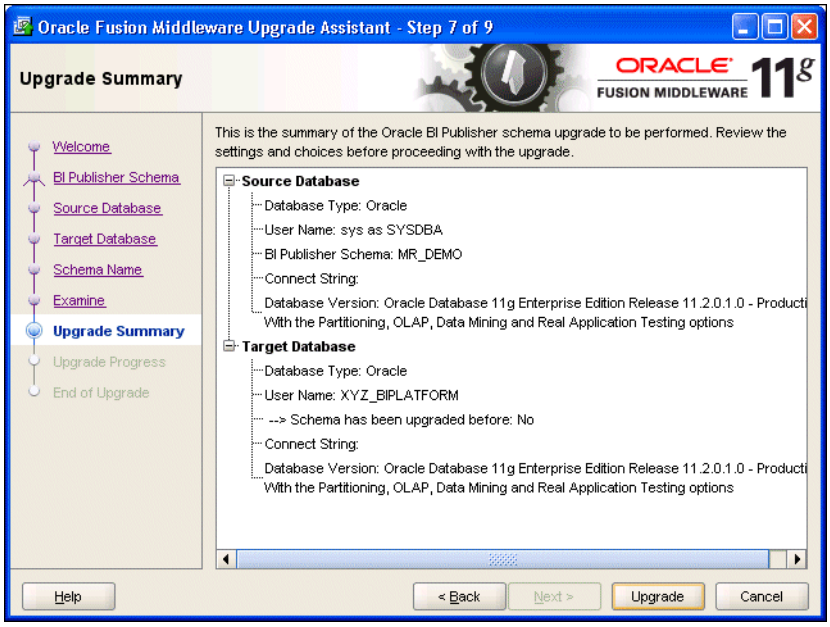

## A.4.5 Specify Schema Name



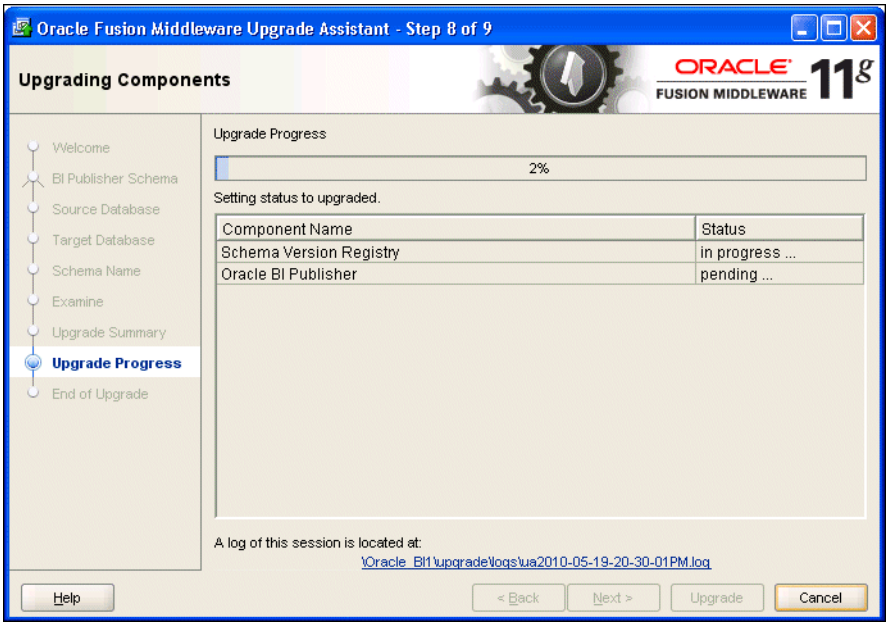
## A.4.6 Examining Components



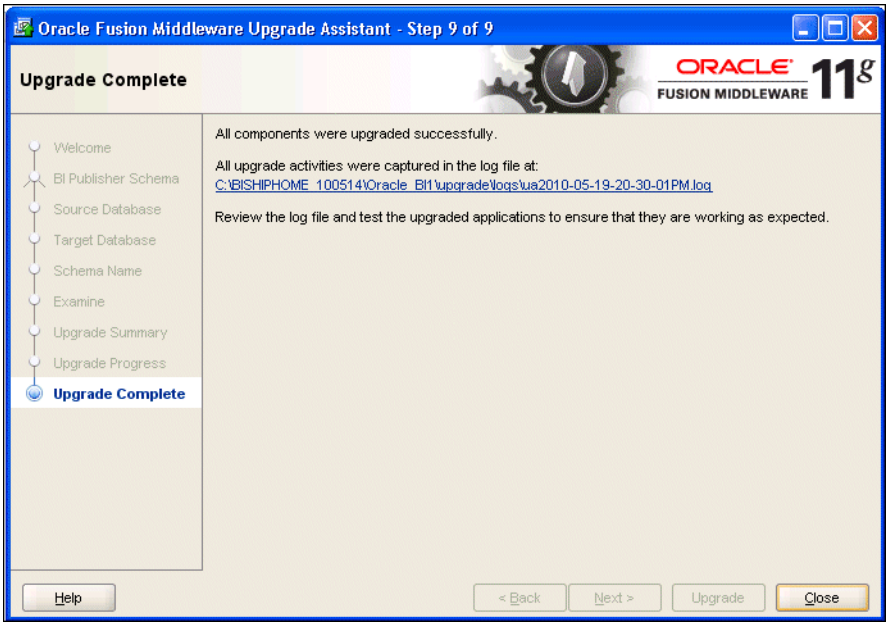

## A.4.7 Upgrade Summary



## A.4.8 Upgrading Components




## A.4.9 Upgrade Complete



# B

# Possible Changes in Oracle BI Enterprise Edition Appearance and Behavior After Upgrade

Table B–1 lists and describes possible changes with Oracle BI EE content after an upgrade from 10*g* to 11*g*. These changes result from enhancements, bug fixes and architectural changes in 11*g*.

***Table B–1 Oracle BI EE Content Changes***

| Change | Description |
|---|---|
| Additional Criteria columns added | After upgrade, additional criteria columns might be added if there are chart interactions defined in 10*g* charts. You might see a column that is repeated multiple times. Chart interactions are migrated to the Interaction tab of the Column Properties dialog for columns within the Criteria tab. To avoid affecting other views, the upgrade process adds new columns to the criteria for each chart that includes chart-level interactions. |
| Additional popup menu for analyses | In 11*g*, you might notice a popup menu for analyses that supports multiple links for navigation. You can turn off the menu in the Interaction tab of the Column Properties dialog if you have only a single link. |
| Aggregate rule for running aggregates must be in Answers Reports after upgrade | If a column formula includes running aggregates (such as, MAVG(), MSUM(), RSUM(), RCOUNT(), RMAX(), RMIN()) and views include sub-totals, grand totals, or other columns in the Excluded columns section, then the data is displayed differently in the results in 11*g*. This difference occurs because the aggregation rule is not specified for this column. Ensure that you determine the correct aggregation rules for the columns. If you want to see the same values as in 10*g*, then include the following aggregation rules in the Edit Column Formula dialog:<br>■ MAVG(), MSUM() = Aggregation Rule: Average<br>■ RSUM(), RCOUNT() = Aggregation Rule: Sum<br>■ RMAX() = Aggregation Rule: Max<br>■ RMIN() -> Aggregation Rule: Min |

*Table B–1 (Cont.) Oracle BI EE Content Changes*

| Change | Description |
|---|---|
| Report-based Aggregate | When using report-based aggregates, you might obtain different results in 10*g* and 11*g*. You might see the different results in 11*g* when the following are true:<br>■ When a column has an aggregation rule of "Server Complex Aggregate".<br>■ When a pivot table includes sub-totals, grand totals, or other columns in the Excluded columns section.<br>■ When a column has **Report-based Total (when applicable)** checked.<br>The difference occurs because the data for this column for sub-totals was produced, for example, by the aggregate() function in 10*g*. In 11*g*, this issue is resolved by using the report_aggregate() function to accurately reflect the **Report-based Total (when applicable)** setting. |
| Attribute column in measure section might be repeated in a pivot table | In 10*g*, if you have an attribute column on the row edge and in the measure section, the column is displayed blank. In 11*g*, the column shows the exact value of the attribute; therefore you might see repeated values. |
| Conditional formatting enhancement | In 11*g*, conditional formatting that is added in criteria applies to both tables and pivot tables. In 10*g*, conditional formats based on another column did not apply to pivot tables. |
| Data formatting might change in 11*g* | In 11*g*, data formatting in some analyses might be different than the data formatting in 10*g*. For example, if an analysis for 10*g* has two decimals, then you might not see those two decimals when the analysis is upgraded to 11*g*.<br>In 11*g*, the system attempts to honor analysis-level or view-level data formats. However, in cases where no data format has been specified, the system relies on the default behavior of the graphing engine. This reliance might create differences in formatting between analyses in 10*g* and 11*g*. |
| Default number of pivot table rows has changed | In 11*g*, pivot tables have a default of 25 display rows. You can change this number using the DefaultRowsDisplayed setting in the instanceconfig.xml file. See Chapter 18 of *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for information. |
| Font weight and alignment issues | In 11*g*, there are changes in font weight and alignment that result from changes in default style sheets and skins. |
| Grand total is not highlighted with color | The default formatting for grand totals is different in 11*g*, and this difference might cause missing color highlighting for the grand total row. |
| Gray cell borders not kept | In 11*g*, there is a change of borders from bottom/right to top/left for hierarchical columns. You can reset the borders manually using analysis definitions. |
| Hidden but included data is not displayed | In 10*g*, if a column is hidden but included in a pivot table, the data is displayed in the pivot table. In 11*g*, if the column is hidden at the criteria level, then the data is not displayed. |
| Hidden columns used for labels are not displayed | Hidden columns used for labels in 10*g* are not displayed in 11*g*. If you have a column that is used as the label for a graph, but the column is hidden from the graph, then in 11*g*, the labels are not displayed. |
| Incorrect formatting while using reserved keywords | In 11*g*, reserved keywords, for example, CASE, WHEN, SELECT, PERCENT, must be double quoted. Otherwise, you might see in incorrect formatting. |

***Table B–1 (Cont.) Oracle BI EE Content Changes***

| Change | Description |
|---|---|
| Missing view in 11*g* | In 11*g*, the query does not run if there are no data views in the analysis. In 10*g*, the query runs and displays a No Results view if there were no results. This difference might cause a missing view in 11*g*. |
| Navigations, drills, or action links might result in additional filters | In 11*g*, extra filters might be displayed while navigating, drilling, or clicking action links. The value of the item clicked and all the values to the left of the item clicked are passed, including the values for any columns that are set to repeat. This could result in additional filters being applied. However, only the value of the item clicked and values of items to the left are passed in 10*g*. |
| No Results message displayed | In 10*g*, if there is a column selector and the first column in the column selector does not return any results, then the column selector view is displayed, which allows you to select other columns. In 11*g*, a No Results message is displayed and you cannot see the other columns. See the "Analysis Properties Dialog" topic in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition* for information on setting the No Results message. |
| Oracle BI Server returns all month and day names as three-letter abbreviations. | The BI Server returns all month and day names as three lettered abbreviations. To use full names, modify the NQSConfig.ini file to specify `YES` for the following values:<br>`USE_LONG_MONTH_NAMES = NO;`<br>`USE_LONG_DAY_NAMES = NO`<br><br>After this change, any analysis that uses a CASE statement with month names or week names must match the statements to be either long name or short name according to the setting in the NQSConfig.ini file. |
| Possible data difference with time-series data | In 11*g*, time-series functions, such as ToDate and Ago, do not automatically add hidden key columns to the analysis as in 10*g*. This might cause possible data differences in 11*g*. |
| Report_count does not support distinct keyword | In 11*g*, Report_count does not support distinct keywords. Therefore, analyses must use count (distinct) instead of countdistinct. This requirement affects the data when you select to use TopN or BottomN in the filter for a measure. |

*Table B–1 (Cont.) Oracle BI EE Content Changes*

| Change | Description |
|---|---|
| Integer division returns integer in 11*g* | Integer division that returns double point data in 10*g* returns an integer in 11*g*. You might notice these return values for a column in the following cases:<br>■ The results of the analysis lose the decimal points.<br>■ Data order is slightly different for the column. Because data is sorted without decimal points, some rows might contain the same values.<br>■ Formatting of the column is changed because the default formatting for integer (if configured) is used. (In 10*g*, the default format is used for double data types.)<br>To force integer division to return double point results, cast the numerator to a double point data type before the division. For example:<br>`"int x" / "int y" = "int z"`<br>`Cast( "int x" as float) / "int y" = "float z"`<br>`Cast( "int x" as double) / "int y" = "double z"`<br>If this is different behavior than you saw in 10*g*, then it is because a known issue caused integer division to incorrectly produce a double point result when certain physical data sources where used. |
| Integer data types now double data types | You can override the default data format for columns that were integer data types in 10*g*, and are now double data types in 11*g*. Without this workaround, the data for this column displays as a decimal number with two digits to the right of the decimal point.<br>You might notice this change for a column in the following cases:<br>■ The results of the analysis show decimal points where integers were shown in 10*g*.<br>■ Formatting of this column is changed because the default formatting for double (if configured) is used in 11*g*.<br>You can using the following options to maintain the same result as 10*g*:<br>■ Use the Cast function to cast the values to the appropriate data type in the metadata repository.<br>■ Change the formatting for the column to display only integers and save that specification as the default format. |

*Table B–1 (Cont.) Oracle BI EE Content Changes*

| Change | Description |
|---|---|
| Return data from certain column might be different | In some situations, the return data type of certain columns in 11*g* can be different from 10*g*. In 10*g*, some data sources, such as SQL Server and IBM DB2, return an integer for division formulas such as AVG, while other data sources return a double. In 11*g*, the results of all division formulas are promoted to a double type regardless of the data source, for consistency and for a more correct and precise value.<br><br>This difference might impact analysis results because some analyses from previous releases might not be formatted properly for decimal points. If this occurs, then override the default data format for columns that were integer data types in the previous release, but that are now double data types. If you do not perform this step, then the data for affected columns is displayed as a decimal number with two digits to the right of the decimal point.<br><br>See the description for the "Integer data types now double data types" change for details on how you might notice this change and on how you can obtain the same results as in 10*g*. |
| Rows might be missing in pivot tables | In 10*g*, rows without any measure data are displayed. In 11*g*, these blank rows are suppressed. As a result, you might notice missing rows. |
| Column sort is discarded | If there are two columns with a sort by the first column and then sorted by the second column, and you choose to exclude the first column in the view, in 10*g*, the first sort is still respected. In 11*g*, the first sort is discarded and the data is sorted only by the secondary column included in the view. |
| Sort order might be different | Some 11*g* reports might have a different sort order than those same reports in 10*g*. For example, the default sorting for pivot tables in 11*g* is from left to right. In 10*g*, pivot tables have no default sort.<br><br>Measure-based sorts are not implemented completely for pivot tables and graphs in 11*g*. Graphs do not provide user-interface elements to emulate measure-based sorts. This is a restriction in 11*g*, and you can use workarounds to resolve sorting issues. |
| Axis label ranges changed | The ranges for the numeric axis labels in graphs have changed from 10*g* to 11*g* due to a different automatic axis range calculation engine. |
| Data different in bar graph-services dashboard | For 11*g*, the data format has been enhanced to show the differences between double and integer data types. You can resolve this issue manually by overriding the default data format for columns that were integer data types in 10*g* and now double data types in 11*g*. |
| Different axis value in 11*g* | In 10*g*, graphs do not always honor criteria-level formats or other global data formats for columns. Data labels and numeric axis labels do not consistently follow this formatting. This issue has been addressed in 11*g*. |
| Drill-down on a graph might show different results | During upgrade, any existing 10*g* interactions are placed on the measures and are no longer available in an axis or a legend. To invoke the action, you must click the measures in the graph rather than the axis labels or legend. You can add action links directly to a column placed on an axis or legend by adding an action link to the column within the criteria, after which the added action links are displayed on an axis label or legend. |

***Table B–1 (Cont.) Oracle BI EE Content Changes***

| Change | Description |
|---|---|
| Graphing engine is not responding | In 11*g*, the default value of the graph data that is sent by the JavaHost to Presentation Services is 4 MB. If you have a graph with a large size, then you might see a message that the graphing engine is not responding. To work around this issue, increase the graph data size in the instanceconfig.xml file. The following example shows how to increase the graph data size to 6 MB. See *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for information on editing the configuration file.<br>`<Views>`<br>`  <Charts>`<br>`<JavaHostReadLimitInKB>6144</JavaHostReadLimitInKB>`<br>`  </Charts>`<br>`</Views>` |
| Graphs might have missing labels | Some axis labels (on both numeric and category axes) might be skipped as a result of the automatic label layout algorithm in use for 11*g*. |
| Graph labels for Y-Axis cannot be rotated | You cannot rotate graph labels for the y-axis other than 0-90 or -90. You cannot perform 45-degree rotations. |
| Behavior of grid lines in area graphs | In 11*g*, grid lines are drawn on top of the area markers in an area graph; that is, the grid lines are visible on top of the plotted area. In 10*g*, the grid lines are not drawn over the area markers. |
| Line graphs are stacked | Stacked line-bar graphs in which 2 or more measures are shown as lines on the same axis and are not stacked in 10*g* are stacked in 11*g*. |
| Some measures rendered as lines are now bars | In 10*g*, some measures are randomly selected to be displayed as lines instead of bars for line-bar graphs. In 11*g*, the plotting of the measures depends upon the graph definition in the analysis and is respected. If the measures are defined to be displayed as bars, then they are displayed as bars. |
| Missing unknown column in a graph | 10*g* adds an unknown column to a graph whenever the graph definition was not completed by the columns currently in the layout. This is fixed in 11*g* so you might see a missing column in the graph. No additional columns are included in the layout, and you see a message box instead. During the upgrade from 10*g* to 11*g*, all such unknown columns are removed from the analysis because they are considered to be invalid; that is, not present in the query for the analysis or in the XML file for the criteria. |
| Multiple pie graphs in 11*g* for single pie graph in 10*g* | Oracle BI EE 10*g* does not support multiple pie graphs; however, 11*g* supports pie graphs for all columns. This enhancement might result in multiple pie graphs after upgrade. |
| Navigations in graphs have changed | 11*g* graph navigations have changed. If you have navigations on the axis labels or legends in 10*g*, then they are now moved to the criteria level and are therefore not available. |
| Negative pie graph values not rendered | In 10*g*, pie graphs display absolute values, including negative values. Negative values are interpreted as positive values and those slices are displayed. In 11*g*, slices are not displayed for negative values. When all the values are negative, the graph is not displayed. In 11*g*, the legend is displayed for negative values. |

*Table B–1 (Cont.) Oracle BI EE Content Changes*

| Change | Description |
|---|---|
| Pie graph has legend with a "mini" pie graph | When you select to use a graph in a legend that reduces the size of the graph to be too small, 10*g* does not show the entire graph. However, in 11*g*, the engine attempts to display graphs in the smallest of spaces. The layout algorithm tries to allocate the maximum area possible to the graph. For legends with too many items, scroll bars are included to avoid compromising the area allocated to the graph. |
| Right-side scale might be missing from graphs | In 11*g*, the graphing engine maps the Y2 axis in a line-bar graph to a line. Therefore, even though axes are not synced, the Y2 axis cannot be shown because there is no data for a line. |
| Possible duplicate navigations | In 11*g*, action links are generic and upgraded to criteria action links for measures. As a result, there might be duplicate navigations. In addition, a view might be pointing to a non-existent analysis, which results in a "Path Not Found" error.<br><br>For example, suppose that you have a 10*g* report with two hidden graphs, and each has an action link on it. When the report is upgraded, all graph action links are upgraded to criteria action links for measures, which results in additional action links in other views. In this example the action links in the original graph point to non-existent analyses. To work around this situation, manually remove such action links. |
| Possible mismatch between legends and graphs in 11*g* | When a stacked bar graph is upgraded from 10*g* to 11*g*, the order or position of the series might change. However, the legend view is upgraded without any change. This might cause a mismatch between the legend that is displayed in the legend view and the color that is displayed in the graph. To resolve this, either change the color in the graph or update the legend to match the color in the graph.<br><br>In addition, the stacking order in the bar graph changes when you include a column in Vary Color By. For other cases, the order and coloring is maintained. The legend is incorrect or mismatched when you specify conditional formatting on the column in Vary Color By. |
| Behavior of pareto graph is different | In this release for a pareto graph, the vertical axis 2 ranges from 0% to 100%. Therefore, you cannot change the abbreviation that is used for scale and data labels, (for example, you cannot change it to **Million(m)**). You also cannot override the default numeric format in which data labels are currently displayed. |
| Behavior of scatter graph is different | In this release for a scatter graph, unlike in previous releases (prior to 11*g*), the scatter graph does not require at least one attribute column on the Group By axis. |
| Order of stacking in a stacked vertical bar and horizontal bar graphs is different | In this release for a stacked vertical bar graph and a stacked horizontal bar graph, the order of stacking is the reverse of the order in previous releases (prior to 11*g*). |

*Table B–1 (Cont.) Oracle BI EE Content Changes*

| Change | Description |
|---|---|
| Behavior of the logarithmic scale is different | In this release, the logarithmic scale behaves in the following ways:<br>■ If you specify the scale limits, then the scale limits for the logarithmic scale must be powers of 10 only. If the number that you specify is not an exact power of 10, then the power of 10 closest to the number that you specify is used.<br>■ If you let the system determine the scale, then the lower limit changes dynamically based on the measure used.<br>In previous releases (prior to 11*g*), the logarithmic scale behaved in the following ways:<br>■ If you specified the scale limits, then the scale limits for the logarithmic scale were numbers fully divisible by 10. If the number that you specified was not divisible by 10, then the number closest to the number that you specified that was fully divisible by 10 was used.<br>■ If you let the system determine the scale, then the lower limit always started at 1 and the upper limit changed based on the measures used. |