Oracle® Fusion Middleware

Installing and Configuring Oracle Business Intelligence

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Preface

This document describes how to install and configure Oracle Business Intelligence.

- Audience
- Documentation Accessibility
- Related Documents
- Conventions
  Learn about the conventions used in this document.

Audience

This guide is intended for system administrators or application developers who are installing and configuring Oracle Business Intelligence. It is assumed that readers are familiar with web technologies and have a general understanding of Windows and UNIX platforms.

Documentation Accessibility

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Related Documents

Refer to the Oracle Fusion Middleware Library for additional information.

- For more information about Oracle Business Intelligence, see Oracle Business Intelligence Enterprise Edition Documentation.
- For installation information, see Fusion Middleware Installation Documentation.
- For upgrade information, see Fusion Middleware Upgrade Documentation.
- For administration-related information, see Fusion Middleware Administration Documentation.
- For release-related information, see Fusion Middleware Release Notes.

Conventions

Learn about the conventions used in this document.

This document uses the following text conventions:

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

1

About the Oracle Business Intelligence Installation

The standard installation for Oracle Business Intelligence described in this guide creates the standard topology, which represents a sample starting topology for this product.

- Introduction to Installing a Production Environment
  This guide describes how to use Oracle Business Intelligence distribution to install and configure a standard installation topology as a starting point for a production environment.
- Using the Standard Installation Topology as a Starting Point
  The standard installation topology is a flexible topology that you can use as a starting point in production environments.
- Using This Document to Extend an Existing Domain
  The procedures in this guide describe how to create a new domain. The assumption is that no other Oracle Fusion Middleware products are installed on your system.

Introduction to Installing a Production Environment

This guide describes how to use Oracle Business Intelligence distribution to install and configure a standard installation topology as a starting point for a production environment.

To install Oracle BI in a production environment, Oracle recommends that you download, install, and configure Oracle BI on a single host, by following the instructions given in this guide.

See Understanding the Business Intelligence Enterprise Deployment Topology in *Enterprise Deployment Guide for Oracle Business Intelligence*.

Using the Standard Installation Topology as a Starting Point

The standard installation topology is a flexible topology that you can use as a starting point in production environments.

The information in this guide helps you to create a standard installation topology for Oracle Business Intelligence. If required, you can later extend the standard installation topology to create a secure and highly available production environment, see Next Steps After Configuring the Domain.

The standard installation topology represents a sample topology for this product. It is not the only topology that this product supports. See About the Standard Installation Topology in *Planning an Installation of Oracle Fusion Middleware*.

- About the Business Intelligence Standard Installation Topology
  This topology represents a standard WebLogic Server domain that contains an Administration Server and a cluster that contains two Managed Servers.
- About Elements in the Standard Installation Topology Illustration
  The standard installation topology typically includes common elements.

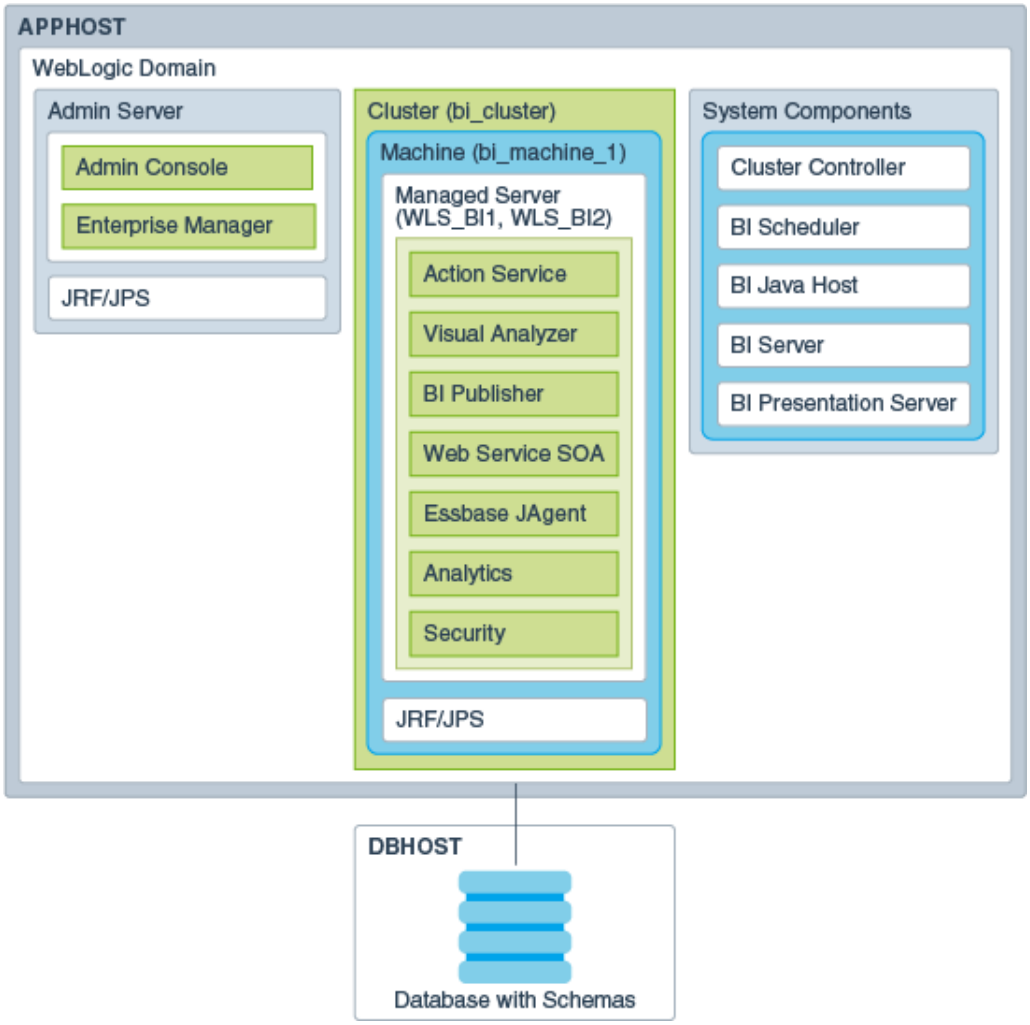
About the Business Intelligence Standard Installation Topology

This topology represents a standard WebLogic Server domain that contains an Administration Server and a cluster that contains two Managed Servers.

The following figure shows the standard installation topology for Business Intelligence.

See Table 1-1 for information on the elements for this topology.

Figure 1-1 Business Intelligence Standard Installation Topology



Note:

About Elements in the Standard Installation Topology Illustration

The standard installation topology typically includes common elements.

The following table describes all elements of the topology illustration:

Table 1-1 Description of Elements in Standard Installation Topologies

Element	Description and Links to Related Documentation
APPHOST	A standard term used in Oracle documentation to refer to the machine that hosts the application tier.
DBHOST	A standard term used in Oracle documentation to refer to the machine that hosts the database.
WebLogic Domain	A logically related group of Java components (in this case, the Administration Server, Managed Servers, and other related software components). See What Is an Oracle WebLogic Server Domain? in *Understanding Oracle Fusion Middleware*.
Administration Server	Central control entity of a WebLogic domain. It maintains configuration objects for that domain and distributes configuration changes to Managed Servers. See What Is the Administration Server? in *Understanding Oracle Fusion Middleware*.
Enterprise Manager	The Oracle Enterprise Manager Fusion Middleware Control is a primary tool used to manage a domain. See Oracle Enterprise Manager Fusion Middleware Control in *Understanding Oracle Fusion Middleware*.
Cluster	A collection of multiple WebLogic Server instances running simultaneously and working together. See Overview of Managed Servers and Managed Server Clusters in *Understanding Oracle Fusion Middleware*.
Machine	A logical representation of the computer that hosts one or more WebLogic Server instances (servers). Machines are also the logical glue between the Managed Servers and the Node Manager. In order to start or stop the Managed Servers using the Node Manager, associate the Managed Servers with a machine.
Managed Server	A host for your applications, application components, web services, and their associated resources. See Overview of Managed Servers and Managed Server Clusters in *Understanding Oracle Fusion Middleware*.
Infrastructure	A collection of services that include the following: • Metadata repository (MDS) contains the metadata for Oracle Fusion Middleware components, such as the Oracle Application Developer Framework. See What Is the Metadata Repository? in *Understanding Oracle Fusion Middleware*. • Oracle Application Developer Framework (Oracle ADF). • Oracle Web Services Manager (OWSM).

Using This Document to Extend an Existing Domain

The procedures in this guide describe how to create a new domain. The assumption is that no other Oracle Fusion Middleware products are installed on your system.

If you have installed and configured other Oracle Fusion Middleware products on your system (for example, Fusion Middleware Infrastructure, with a domain that is up and running) and wish to extend the same domain to include Oracle Business Intelligence, see Installing Multiple Products in the Same Domain.

2

Preparing to Install and Configure Oracle Business Intelligence

To prepare for your Oracle Business Intelligence installation, verify that your system meets the basic requirements, then obtain the correct installation software.

- Roadmap for Installing and Configuring a Standard Installation Topology
  This roadmap provides the steps required to install and configure a standard Oracle Business Intelligence installation topology.
- Roadmap for Verifying Your System Environment
  Before you begin the installation and configuration process, you must verify your system environment.
- Obtaining the Product Distribution
  You can obtain the Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence distribution on the Oracle Technology Network (OTN).
- About Product Distributions
  You create the initial Oracle Business Intelligence domain using the Oracle Fusion Middleware Infrastructure distribution, which contains both Oracle WebLogic Server software and Oracle Java Required Files (JRF) software.
- Verifying Whether EndPoint URLs are Resolving to a Fully Qualified Domain Name
  Before you install Oracle BI, you must make sure that the EndPoint URLs resolves to a FQDN or you use the Frontend Load Balancer for server-side configuration.

Roadmap for Installing and Configuring a Standard Installation Topology

This roadmap provides the steps required to install and configure a standard Oracle Business Intelligence installation topology.

Table 2-1 provides the high-level steps required for installing a standard installation topology.

Table 2-1 Standard Installation Roadmap

Task	Description	Documentation
Verify your system environment.	Before you begin the installation, verify that the minimum system and network requirements are met.	See Roadmap for Verifying Your System Environment.
Check for any mandatory patches that are required before the installation.	Review the Oracle Fusion Middleware Infrastructure release notes to see if there are any mandatory patches required for the software products that you are installing.	See Install and Configure in *Release Notes for Oracle Fusion Middleware Infrastructure*.

Table 2-1 (Cont.) Standard Installation Roadmap

Task	Description	Documentation
Obtain the appropriate distributions.	Oracle BI EE requires an existing Oracle Fusion Middleware Infrastructure installation and must be installed in the same Oracle home directory as Oracle Fusion Middleware Infrastructure. Therefore, you must obtain the following distributions: `fmw_12.2.1.3.0_infrastructure_generic.jar`, (UNIX) `fmw_12.2.1.3.0_bi_platform_linux64.bin`, or (Windows) `setup_fmw_12.2.1.3.0_bi_platform_win64.exe`.	See About Product Distributions.
Determine your installation directories.	Verify that the installer can access or create the required installer directories. Also, verify that the directories exist on systems that meet the minimum requirements.	See What Are the Key Oracle Fusion Middleware Directories? in *Understanding Oracle Fusion Middleware*.
Install prerequisite software.	Install Oracle Fusion Middleware Infrastructure to create the Oracle home directory. Then install Oracle Business Intelligence in to the same Oracle home.	See Installing the Infrastructure Softwarein *Installing and Configuring the Oracle Fusion Middleware Infrastructure*.
Install the software.	Run the Oracle Universal Installer to install Oracle Business Intelligence. Installing the software transfers the software to your system and creates the Oracle home directory.	See Installing the Oracle Business Intelligence Software.
Select a database profile and review any required custom variables.	Before you install the required schemas in the database, review the information about any custom variables you need to set for the Oracle Business Intelligence schemas.	See About Database Requirements for an Oracle Fusion Middleware Installation.
Create the schemas.	Run the Repository Creation Utility to create the schemas required for configuration.	See Creating the Database Schemas.
Create a WebLogic domain.	Use the Configuration Wizard/ Assistant to create and configure the WebLogic domain.	See Configuring the BI Domain with the Configuration Assistant to create the standard topology for Oracle Business Intelligence.
Administer and prepare your domain for high availability.	Discover additional tools and resources to administer your domain and configure your domain to be highly available.	See Next Steps After Configuring the Domain.

Roadmap for Verifying Your System Environment

Before you begin the installation and configuration process, you must verify your system environment.

Table 2-2 identifies important tasks and checks to perform to ensure that your environment is prepared to install and configure Oracle Business Intelligence.

Table 2-2 Roadmap for Verifying Your System Environment

Task	Description	Documentation
Verify certification and system requirements.	Verify that your operating system is certified and configured for installation and configuration.	See Verifying Certification, System, and Interoperability Requirements.
Identify a proper installation user.	Verify that the installation user has the required permissions to install and configure the software.	See Selecting an Installation User.
Select the installation and configuration directories on your system.	Verify that you can create the necessary directories to install and configure the software, according to the recommended directory structure.	See About the Directories for Installation and Configuration.
Install a certified JDK.	The installation program for the distribution requires a certified JDK present on your system.	See About JDK Requirements for an Oracle Fusion Middleware Installation.
Install and configure a database for mid-tier schemas.	To configure your WebLogic domain, you must have access to a certified database that is configured for the schemas required by Oracle Business Intelligence.	See About Database Requirements for an Oracle Fusion Middleware Installation.

- Verifying Certification, System, and Interoperability Requirements
  Oracle recommends that you use the certification matrix and system requirements documents with each other to verify that your environment meets the requirements for installation.
- Selecting an Installation User
  The user who installs and configures your system must have the required permissions and privileges.
- About the Directories for Installation and Configuration
  During the installation and domain configuration process, you must plan on providing the locations for these directories: Oracle home, Domain home, and the Application home.
- About JDK Requirements for an Oracle Fusion Middleware Installation
  Most Fusion Middleware products are in `.jar` file format. These distributions do not include a JDK. To run a `.jar` distribution installer, you must have a certified JDK installed on your system.
- About Database Requirements for an Oracle Fusion Middleware Installation
  Many Oracle Fusion Middleware products require database schemas prior to configuration. If you do not already have a database where you can install these schemas, you must install and configure a certified database.

Verifying Certification, System, and Interoperability Requirements

Oracle recommends that you use the certification matrix and system requirements documents with each other to verify that your environment meets the requirements for installation.

1. **Verifying that your environment meets certification requirements:**

   Make sure that you install your product on a supported hardware and software configuration. See the certification document for your release on the *Oracle Fusion Middleware Supported System Configurations* page.

   Oracle has tested and verified the performance of your product on all certified systems and environments. Whenever new certifications are released, they are added to the certification document right away. New certifications can be released at any time. Therefore, the certification documents are kept outside the documentation libraries and are available on Oracle Technology Network.

2. **Using the system requirements document to verify certification:**

   Oracle recommends that you use the *Oracle Fusion Middleware System Requirements and Specifications* document to verify that the certification requirements are met. For example, if the certification document indicates that your product is certified for installation on 64-Bit Oracle Linux 6.5, use this document to verify that your system meets the required minimum specifications. These include disk space, available memory, specific platform packages and patches, and other operating system-specific requirements. System requirements can change in the future. Therefore, the system requirement documents are kept outside of the documentation libraries and are available on Oracle Technology Network.

3. **Verifying interoperability among multiple products:**

   To learn how to install and run multiple Fusion Middleware products from the same release or mixed releases with each other, see Oracle Fusion Middleware 12c Interoperability and Compatibility in *Understanding Interoperability and Compatibility*.

Selecting an Installation User

The user who installs and configures your system must have the required permissions and privileges.

- About User Permissions
  The user who installs a Fusion Middleware product owns the files and has certain permissions on the files.
- About Non-Default User Permissions on UNIX Operating Systems
  Changing the default permission setting reduces the security of the installation and your system. Oracle does not recommend that change the default permission settings.
- Verifying that the Installation User has Administrator Privileges on Windows Operating Systems
  To update the Windows Registry, you must have administrator privileges.

About User Permissions

The user who installs a Fusion Middleware product owns the files and has certain permissions on the files.

- Read and write permissions on all non-executable files (for example, `.jar`, `.properties`, or `.xml`). All other users in the same group as the file owner have read permissions only.
- Read, write, and execute permissions on all executable files (for example, `.exe`, `.sh`, or `.cmd`). All other users in the same group as the file owner have read and execute permissions only.

This means that someone other than the person who installs the software can use the installed binaries in the Oracle home directory to configure a domain or set of Fusion Middleware products.

During configuration, the files generated by the configuration process are owned by the user who ran the Configuration Wizard. This user has the same permissions as described above for the installation user. However, security-sensitive files are not created with group permissions. Only the user that created the domain has read and write permissions and can administer the domain.

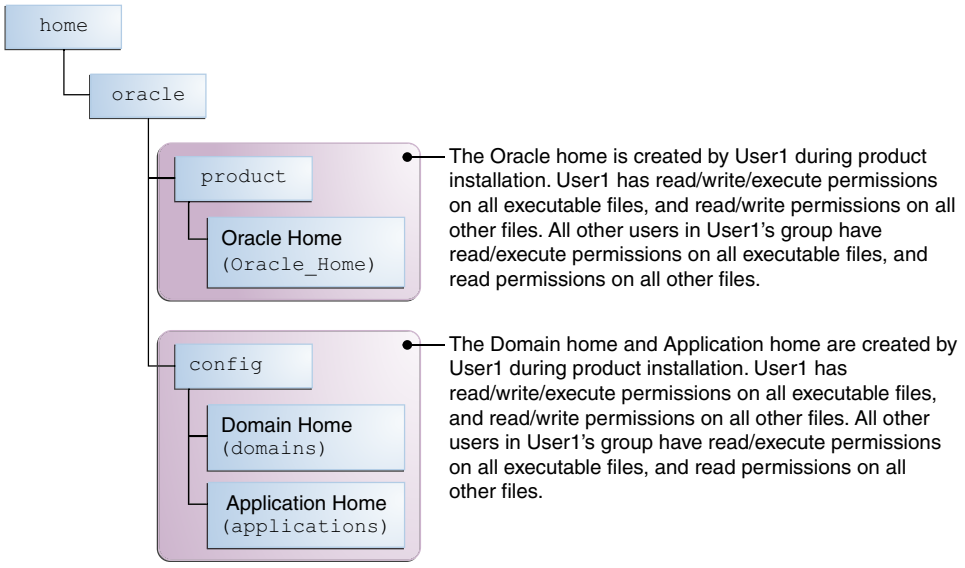
Consider the following examples:

- **Example 1: A Single User Installs the Software and Configures the Domain**

  This example explains the file permissions where the same user installs the software and configures the domain.

  To ensure proper permissions and privileges for all files, Oracle recommends that the same owner perform both tasks: install the Oracle Fusion Middleware product and configure the WebLogic Server domain by using the Configuration Wizard.

Figure 2-1 Directory Structure when a Single User Installs the Software and Configures the Domain

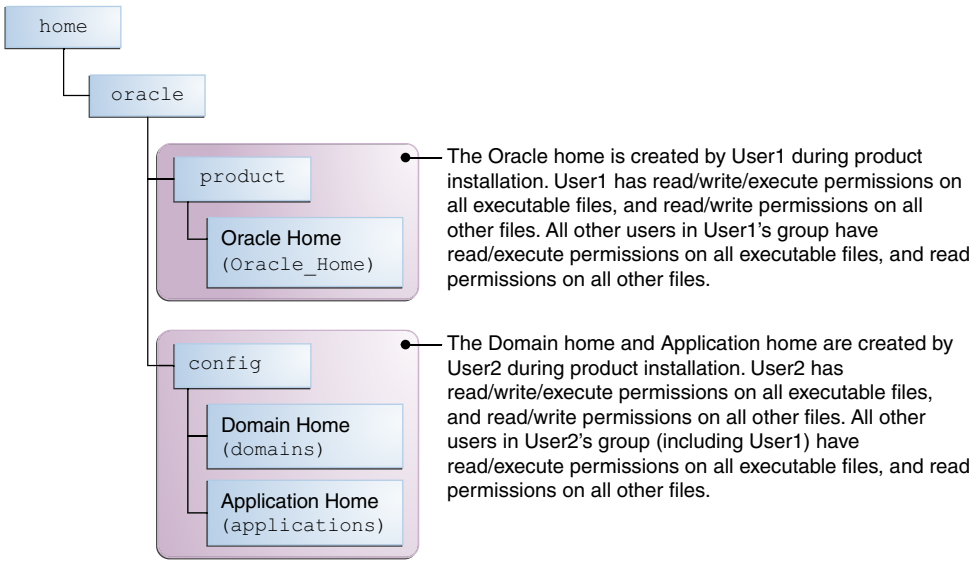


If the user who creates the domain is different than the user who installed the software, then both users must have the same privileges, as shown in the next example.

- **Example 2: The Oracle Home Directory and Domain are Created by Different Users**

This example explains the file permissions where one user creates the Oracle home and another user configures the domain.

Figure 2-2 Directory Structure when Different Users Install the Software and Configure the Domain



> **Note:**
>
> Certain domain files do not have group permissions. For example, `cwallet.sso`.

Consider the following points before you run the installer:

- On UNIX operating systems, Oracle recommends that you set `umask` to `027` on your system before you install the software. This ensures that the file permissions are set properly during installation. Use the following command:

  ```
  umask 027
  ```

  You must enter this command in the same terminal window from which you plan to run the product installer.
- On UNIX operating systems, do not run the installation program as a `root` user. If you run the installer as a root user, the startup validation may fail and you cannot continue the installation.
- When you manage a product installation (for example, applying patches or starting managed Servers), use the same user ID that you used to install the product.
- On Windows operating systems, you must have administrative privileges to install the product. See Verifying the Installation User has Administrator Privileges on Windows Operating Systems.

About Non-Default User Permissions on UNIX Operating Systems

Changing the default permission setting reduces the security of the installation and your system. Oracle does not recommend that change the default permission settings.

If other users require access to a particular file or executable, use the UNIX `sudo` command or other similar commands to change the file permissions.

Refer to your UNIX operating system Administrator's Guide or contact your operating system vendor, if you need further assistance.

Verifying that the Installation User has Administrator Privileges on Windows Operating Systems

To update the Windows Registry, you must have administrator privileges.

By default, users with the administrator privilege sign in to the system with regular privileges, but can request elevated permissions to perform administrative tasks.

To perform a task with elevated privileges:

1. Find the Command Prompt icon, either from the Start menu or the Windows icon in the lower-left corner.
2. Right-click **Command Prompt** and select **Run as administrator**.

   This opens a new command prompt window, and all actions performed in this window are done with administrator privileges.

   > **Note:**
   >
   > If you have User Access Control enabled on your system, you may see an additional window asking you to confirm this action. Confirm and continue with this procedure.

3. Perform the desired task.

   For example, to start the product installer:

   For a jar file, enter:

   `java –jar distribution_name.jar`

   For an executable (`.exe`, `.bin`, or `.sh` file), enter:

   `distribution_name.exe`

About the Directories for Installation and Configuration

During the installation and domain configuration process, you must plan on providing the locations for these directories: Oracle home, Domain home, and the Application home.

- About the Recommended Directory Structure
  Oracle recommends specific locations for the Oracle Home, Domain Home, and Application Home.

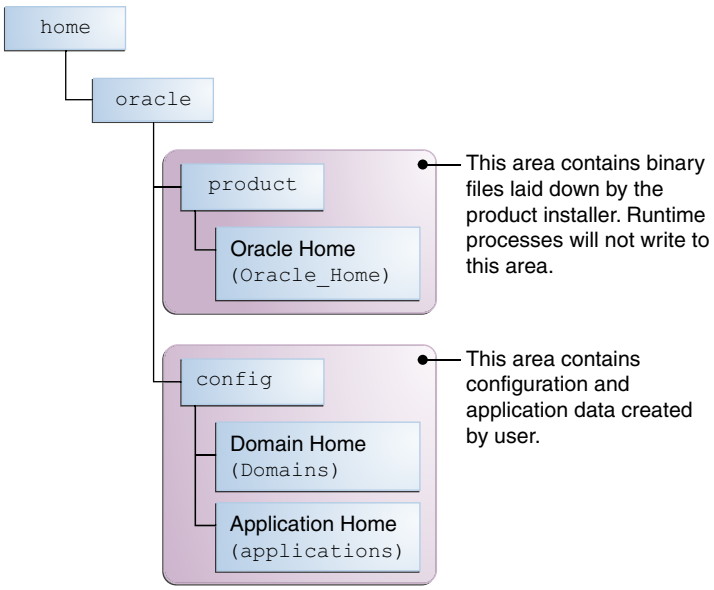
- About the Oracle Home Directory
  When you install any Oracle Fusion Middleware product, you must use an Oracle home directory.
- About the Domain Home Directory
  The Domain home is the directory where domains that you configure are created.
- About the Application Home Directory
  The Application home is the directory where applications for domains you configure are created.
- Installing Multiple Products in the Same Domain
  There are two methods to install and configure multiple products in one domain. This is also known as *extending* a domain.
- Preparing for Shared Storage
  Oracle Fusion Middleware allows you to configure multiple WebLogic Server domains from a single Oracle home. This allows you to install the Oracle home in a single location on a shared volume and reuse the Oracle home for multiple host installations.

About the Recommended Directory Structure

Oracle recommends specific locations for the Oracle Home, Domain Home, and Application Home.

Oracle recommends a directory structure similar to the one shown in Figure 2-3.

Figure 2-3 Recommended Oracle Fusion Middleware Directory Structure



A base location (Oracle base) should be established on your system (for example, `/home/oracle`). From this base location, create two separate branches, namely, the `product` directory and the `config` directory. The `product` directory should contain the product binary files and all the Oracle home directories. The `config` directory should contain your domain and application data.

Oracle recommends that you do not keep your configuration datain the Oracle home directory; if you upgrade your product to another major release, are required to create a new Oracle home for binaries. You must also make sure that your configuration data exists in a location where the binaries in the Oracle home have access.

The `/home/oracle/product` (for the Oracle home) and `/home/oracle/config` (for the application and configuration data) directories are used in the examples throughout the documentation; be sure to replace these directories with the actual directories on your system.

About the Oracle Home Directory

When you install any Oracle Fusion Middleware product, you must use an Oracle home directory.

This directory is a repository for common files that are used by multiple Fusion Middleware products installed on the same machine. These files ensure that Fusion Middleware operates correctly on your system. They facilitate checking of cross-product dependencies during installation. For this reason, you can consider the Oracle home directory a *central support directory* for all Oracle Fusion Middleware products installed on your system.

Fusion Middleware documentation refers to the Oracle home directory as *ORACLE_HOME*.

Oracle Home Considerations

Keep the following in mind when you create the Oracle home directory and install Fusion Middleware products:

- Do not include spaces in the name of your Oracle home directory; the installer displays an error message if your Oracle home directory path contains spaces.
- You can install only one instance of each Oracle Fusion Middleware product in a single Oracle home directory. If you need to maintain separate versions of a product on the same machine, each version must be in its own Oracle home directory.

  Although you can have several different products in a single Oracle home, only one version of each product can be in the Oracle home.

Multiple Home Directories

Although in most situations, a single Oracle home directory is sufficient, it is possible to create more than one Oracle home directory. For example, you need to maintain multiple Oracle home directories in the following situations:

- You prefer to maintain separate development and production environments, with a separate product stack for each. With two directories, you can update your development environment without modifying the production environment until you are ready to do so.
- You want to maintain two different versions of a Fusion Middleware product at the same time. For example, you want to install a new version of a product while keeping your existing version intact. In this case, you must install each product version in its own Oracle home directory.
- You need to install multiple products that are not compatible with each other. See Oracle Fusion Middleware 12*c* (12.2.1.3.0) Interoperability and Compatibility in *Understanding Interoperability and Compatibility* .

> **Note:**
>
> If you create more than one Oracle home directory, you must provide non-overlapping port ranges during the configuration phase for each product.

About the Domain Home Directory

The Domain home is the directory where domains that you configure are created.

The default Domain home location is *ORACLE_HOME*/user_projects/domains/*domain_name*. However, Oracle strongly recommends that you do not use this default location. Put your Domain home *outside* of the Oracle home directory, for example, in /home/oracle/config/domains. The config directory should contain domain and application data. Oracle recommends a separate domain directory so that new installs, patches, and other operations update the *ORACLE_HOME* only, *not* the domain configuration.

See About the Recommended Directory Structure for more on the recommended directory structure and locating your Domain home.

Fusion Middleware documentation refers to the Domain home directory as *DOMAIN_HOME* and includes all folders up to and including the domain name. For example, if you name your domain exampledomain and locate your domain data in the /home/oracle/config/domains directory, the documentation would use *DOMAIN_HOME* to refer to /home/oracle/config/domains/exampledomain.

About the Application Home Directory

The Application home is the directory where applications for domains you configure are created.

The default Application home location is *ORACLE_HOME*/user_projects/applications/*domain_name*. However, Oracle strongly recommends that you locate your Application home *outside* of the Oracle home directory; if you upgrade your product to another major release, you must create a new Oracle home for binaries.

See About the Recommended Directory Structure for more on the recommended directory structure and locating your Application home..

Fusion Middleware documentation refers to the Application home directory as *APPLICATION_HOME* and includes all folders up to and including the domain name. For example, if you name your domain exampledomain and you locate your application data in the /home/oracle/config/applications directory, the documentation uses *APPLICATION_HOME* to refer to /home/oracle/config/applications/exampledomain.

Installing Multiple Products in the Same Domain

There are two methods to install and configure multiple products in one domain. This is also known as *extending* a domain.

- **Method 1.**

  Install and configure Product A, including creating the schemas and starting all servers in the domain to verify a successful domain configuration.

This is the method used in all installation guides in the Fusion Middleware library. You can repeat this process for as many products as necessary. It allows you to validate one product at a time and add more products incrementally.

To install Product B in the same domain as Product A:

1. Stop all servers to prevent any updates to the domain while you add the new product.

   See Starting and Stopping Oracle Fusion Middleware in *Administering Oracle Fusion Middleware*.

2. Follow the instructions in the installation guide for Product B, including creating the necessary schemas.

3. Run the Configuration Wizard to configure the domain.

   During configuration, the Configuration Wizard automatically detects the components that have been installed and offers you the option to extend the existing Product A domain to include Product B.

- **Method 2.**

  Install all of the required products, then create the schemas for all of the products. After you create the schemas, configure the domain by using the necessary product templates, then start all the servers.

  This method of creating a multi-product domain may be slightly faster than Method 1; however, the installation guides in the Fusion Middleware library do not provide specific instructions for this method of domain creation.

See Also:

- To update WebLogic domains, see Updating WebLogic Domains in *Creating WebLogic Domains Using the Configuration Wizard*.
- For important information regarding the ability of Oracle Fusion Middleware products to function with previous versions of other Oracle Fusion Middleware, Oracle, or third-party products, see Oracle Fusion Middleware 12*c* (12.2.1.3.0) Interoperability and Compatibility in *Understanding Interoperability and Compatibility*.

Preparing for Shared Storage

Oracle Fusion Middleware allows you to configure multiple WebLogic Server domains from a single Oracle home. This allows you to install the Oracle home in a single location on a shared volume and reuse the Oracle home for multiple host installations.

If you plan to use shared storage in your environment, see Using Shared Storage in *High Availability Guide* for more information.

About JDK Requirements for an Oracle Fusion Middleware Installation

Most Fusion Middleware products are in `.jar` file format. These distributions do not include a JDK. To run a `.jar` distribution installer, you must have a certified JDK installed on your system.

Make sure that the JDK is installed *outside* of the Oracle home. If you install the JDK under the Oracle home, you may encounter problems when you try to perform tasks in the future. Oracle Universal Installer validates that the Oracle home directory is empty; the install does not progress until you specify an empty directory. Oracle recommends that you locate your JDK installation in the `/home/oracle/products/jdk` directory.

Platform-specific distributions have a `.bin` (for UNIX operating systems) or `.exe` (for Windows operating systems) installer; in these cases, a platform-specific JDK is in the distribution and you do not need to install a JDK separately. However, you may need to upgrade this JDK to a more recent version, depending on the JDK versions that are certified.

Always verify the required JDK version by reviewing the certification information on the *Oracle Fusion Middleware Supported System Configurations* page. For 12*c* (12.2.1.3.0), the certified JDK is 1.8.0_131 and later.

To download the required JDK, navigate to the following URL and download the Java SE JDK:

http://www.oracle.com/technetwork/java/javase/downloads/index.html

About Database Requirements for an Oracle Fusion Middleware Installation

Many Oracle Fusion Middleware products require database schemas prior to configuration. If you do not already have a database where you can install these schemas, you must install and configure a certified database.

To find a certified database for your operating system, see the certification document for your release on the *Oracle Fusion Middleware Supported System Configurations* page on the Oracle Technology Network (OTN).

To make sure that your database is properly configured for schema creation, see *Repository Creation Utility Requirements* in the *Oracle Fusion Middleware System Requirements and Specifications* document.

After your database is properly configured, you use the Repository Creation Utility (RCU) to create product schemas in your database. This tool is available in the Oracle home for your Oracle Fusion Middleware product. See About the Repository Creation Utility in *Creating Schemas with the Repository Creation Utility*.

Obtaining the Product Distribution

You can obtain the Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence distribution on the Oracle Technology Network (OTN).

To prepare to install Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence:

1. Enter `java -version` on the command line to verify that a certified JDK is installed on your system. For 12*c* (12.2.1.3.0), the certified JDK is 1.8.0_131 and later.

   See About JDK Requirements for an Oracle Fusion Middleware Installation.

2. Locate and download the Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence software.

See Obtaining Product Distributions in *Planning an Installation of Oracle Fusion Middleware*.

About Product Distributions

You create the initial Oracle Business Intelligence domain using the Oracle Fusion Middleware Infrastructure distribution, which contains both Oracle WebLogic Server software and Oracle Java Required Files (JRF) software.

Oracle JRF software consists of:

- Oracle Web Services Manager
- Oracle Application Development Framework (Oracle ADF)
- Oracle Enterprise Manager Fusion Middleware Control
- Repository Creation Utility (RCU)
- Other libraries and technologies required to support Oracle Fusion Middleware products

Installing Oracle Fusion Middleware Infrastructure is a prerequisite to installing Oracle Business Intelligence.

Verifying Whether EndPoint URLs are Resolving to a Fully Qualified Domain Name

Before you install Oracle BI, you must make sure that the EndPoint URLs resolves to a FQDN or you use the Frontend Load Balancer for server-side configuration.

You must configure the front-end host with a FQDN.

3

Installing the Oracle Business Intelligence Software

Follow the steps in this section to install the Oracle Business Intelligence software. Before beginning the installation, ensure that you have verified the prerequisites and completed all steps covered in Preparing to Install and Configure Oracle Business Intelligence.

- Verifying the Installation Checklist
  The installation process requires specific information.
- Starting the Installation Program
  You can start the installation program on UNIX or Windows.
- Navigating the Installation Screens
  The installer shows a series of screens where you verify or enter information.
- Verifying the Installation
  After you complete the installation, verify whether it was successful by completing a series of tasks.
- Checking the Directory Structure
  After you install Oracle Business Intelligence, you should see the directory structure as shown in this topic. The contents of your installation vary based on the options you selected during the installation.

Verifying the Installation Checklist

The installation process requires specific information.

Table 3-1 lists important items that you must know before, or decide during, Oracle Business Intelligence installation.

Table 3-1 Installation Checklist

Information	Example Value	Description
JAVA_HOME	/home/Oracle/Java/jdk1.8.0_131	Environment variable that points to the Java JDK home directory.
Database host	examplehost.exampledomain	Name and domain of the host where the database is running.
Database port	1521	Port number that the database listens on. The default Oracle database listen port is 1521.
Database service name	orcl.exampledomain	Oracle databases require a unique service name. The default service name is orcl.

Table 3-1 (Cont.) Installation Checklist

Information	Example Value	Description
DBA username	`SYS`	Name of user with database administration privileges. The default DBA user on Oracle databases is SYS.
DBA password	`myDBApw957`	Password of the user with database administration privileges.
`ORACLE_HOME`	`/home/Oracle/`*`product`*`/ORACLE_HOME`	Directory in which you will install your software. This directory will include Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence, as needed.
WebLogic Server hostname	`examplehost.exampledomain`	Host name for Oracle WebLogic Server and Oracle Business Intelligence consoles.
Console port	`7001`	Port for Oracle WebLogic Server and Oracle Business Intelligence consoles.
`DOMAIN_HOME`	`/home/Oracle/config/domains/bi_domain`	Location in which your domain data is stored.
`APPLICATION_HOME`	`/home/Oracle/config/applications/bi_domain`	Location in which your application data is stored.
Administrator user name for your WebLogic domain	`weblogic`	Name of the user with Oracle WebLogic Server administration privileges. The default administrator user is `weblogic`.
Administrator user password	`myADMpw902`	Password of the user with Oracle WebLogic Server administration privileges.
RCU	*`ORACLE_HOME`*`/oracle_common/bin`	Path to the Repository Creation Utility (RCU).
RCU schema prefix	`BI`	Prefix for names of database schemas used by Oracle Business Intelligence.
RCU schema password	`myRCUpw674`	Password for the database schemas used by Oracle Business Intelligence.
Configuration utility	*`ORACLE_HOME`*`/oracle_common/common/bin`	Path to the Configuration Wizard for domain creation and configuration.
Configuration Assistant	*`ORACLE_HOME`*`/bi/bin`	Path to the Configuration Assistant for domain creation and configuration. Oracle recommends that you use the Configuration Assistant to configure your BI domain.

Starting the Installation Program

You can start the installation program on UNIX or Windows.

To start the installation program:

1. Sign in to the host system.
2. Go to the directory where you downloaded the installation program.
3. Enter the following command:
   - (UNIX) `./fmw_12.2.1.3.0_bi_platform_linux64.bin`
   - (Windows) `setup_fmw_12.2.1.3.0_bi_platform_win64.exe`

> **Note:**
>
> You will not be able to execute `./fmw_12.2.1.3.0_bi_platform_linux64.bin` if it does not have execute permission. Make sure to check and grant execute permission before running this command.

When the installation program appears, you are ready to begin the installation.

Navigating the Installation Screens

The installer shows a series of screens where you verify or enter information.

The following table lists the order in which installer screens appear. If you need additional help with an installation screen, click **Help**.

Table 3-2 Oracle Business Intelligence Install Screens

Screen	Description
Installation Inventory Setup	On UNIX operating systems, this screen opens if this is the first time you are installing any Oracle product on this host. Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location. For more about the central inventory, see About the Oracle Central Inventory in *Installing Software with the Oracle Universal Installer*. This screen does not appear on Windows operating systems.
Welcome	Review the information to make sure that you have met all the prerequisites, then click **Next**.
Auto Updates	Select to skip automatic updates, select patches, or search for the latest software updates, including important security updates, through your My Oracle Support account.
Installation Location	Specify your Oracle home directory location. You can click **View** to verify and ensure that you are installing Oracle Business Intelligence in the correct Oracle home.

Table 3-2 (Cont.) Oracle Business Intelligence Install Screens

Screen	Description
Installation Type	Use this screen to select the type of installation and consequently, the products and feature sets you want to install. For this topology, select **BI Platform Distribution with Samples**.
Prerequisite Checks	This screen verifies that your system meets the minimum necessary requirements. To view the list of tasks that gets verified, select **View Successful Tasks**. To view log details, select **View Log**. If any prerequisite check fails, then an error message appears at the bottom of the screen. Fix the error and click **Rerun** to try again. To ignore the error or the warning message and continue with the installation, click **Skip** (not recommended).
Installation Summary	Use this screen to verify installation options you selected. If you want to save these options to a response file, click **Save Response File** and enter the response file location and name. The response file collects and stores all the information that you have entered, and enables you to perform a silent installation (from the command line) at a later time. Click **Install** to begin the installation.
Installation Progress	This screen shows the installation progress. When the progress bar reaches 100% complete, click **Finish** to dismiss the installer, or click **Next** to see a summary.
Installation Complete	This screen displays the Installation Location and the Feature Sets that are installed. Review this information and click **Finish** to close the installer.

Verifying the Installation

After you complete the installation, verify whether it was successful by completing a series of tasks.

- Reviewing the Installation Log Files
  Review the contents of the installation log files to make sure that the installer did not encounter any problems.
- Checking the Directory Structure
  The contents of your installation vary based on the options that you selected during the installation.
- Viewing the Contents of the Oracle Home
  You can view the contents of the Oracle home directory by using the `viewInventory` script.

Reviewing the Installation Log Files

Review the contents of the installation log files to make sure that the installer did not encounter any problems.

By default, the installer writes logs files to the *`Oracle_Inventory_Location`*`/logs` (on UNIX operating systems) or *`Oracle_Inventory_Location`*`\logs` (on Windows operating systems) directory.

For a description of the log files and where to find them, see Installation Log Files in *Installing Software with the Oracle Universal Installer*.

Checking the Directory Structure

The contents of your installation vary based on the options that you selected during the installation.

See What Are the Key Oracle Fusion Middleware Directories? in *Understanding Oracle Fusion Middleware*.

Viewing the Contents of the Oracle Home

You can view the contents of the Oracle home directory by using the `viewInventory` script.

See Viewing the Contents of an Oracle Home in *Installing Software with the Oracle Universal Installer*.

Checking the Directory Structure

After you install Oracle Business Intelligence, you should see the directory structure as shown in this topic. The contents of your installation vary based on the options you selected during the installation.

To see the directory structure:

1. Change to the *ORACLE_HOME* directory where you installed BI.
2. Enter the following command:

   ```
   ls --format=single-column
   ```

   The directory structure on your system should match the structure shown in the following example:

   ```
   /u01/oracle/products/fmw/bi

   bi-epm-registry
   bifoundation
   bin
   clients
   common
   endpointmanager
   file_templates
   jlib
   lib
   modules
   nls
   oracore
   plugins
   products
   schema
   upgrade
   vcredist_x64.exe
   vcredist_x86.exe
   xsd
   ```

See What are the Key Oracle Fusion Middleware Directories? in *Understanding Oracle Fusion Middleware*.

4
Configuring Oracle Business Intelligence

This chapter walks you through a step-by-step process to configure Oracle BI standard topology using the Oracle Business Intelligence 12*c* Configuration Assistant.

- About the Oracle Business Intelligence Configuration Assistant
  The Oracle Business Intelligence 12*c* Configuration Assistant is a multi-functional utility that helps you to create database schemas, specify a port range, create system components, and start the application servers in addition to configuring the BI standard topology. Oracle strongly recommends that you to use the Configuration Assistant to configure the BI domain.
- Configuration Assistant Prerequisites
  It is important to make sure that you meet the criteria listed in this topic for a smooth, error-free domain configuration by using the Configuration Assistant.
- Creating the Database Schemas
  Before you can configure an Oracle Business Intelligence domain, you must install required schemas on a certified database for use with this release of Oracle Fusion Middleware.
- Configuring the BI Domain with the Configuration Assistant
  The Oracle BI 12*c* Configuration Assistant is a `.sh` (UNIX) or `.cmd` (Windows) file. Start the Configuration Assistant by starting the config executable from the `bi/bin` directory inside the Oracle home. Follow the procedure in this topic to complete the configuration step-by-step.

About the Oracle Business Intelligence Configuration Assistant

The Oracle Business Intelligence 12*c* Configuration Assistant is a multi-functional utility that helps you to create database schemas, specify a port range, create system components, and start the application servers in addition to configuring the BI standard topology. Oracle strongly recommends that you to use the Configuration Assistant to configure the BI domain.

Oracle recommends you to create the Domain home and Application home directories under `/home/oracle/config`. But if you use the Configuration Assistant to configure the domain, the Application home is created under `/home/oracle/product` directory. To achieve the recommended directory structure, configure the domain using the Configuration Wizard by following the procedure described in Configuring the BI Domain in *Enterprise Deployment Guide for Oracle Business Intelligence*.

Configuration Assistant Prerequisites

It is important to make sure that you meet the criteria listed in this topic for a smooth, error-free domain configuration by using the Configuration Assistant.

To verify whether the required conditions are met, see that:

- You have correctly installed the BI product binary files.
- You have the latest supported JDK installed on your system.
- You have access to any one of the Oracle certified databases: Oracle, DB2, SQLServer, or RAC.
- (Optional) You have connection details of existing RCU schema prefix (STB) and you have already created BIPLATFORM, IAU, OPSS, MDS, STB, and WLS schemas in a single session.

> **Note:**
>
> You can, alternatively, generate a schema prefix (STB) and create the BIPLATFORM, IAU, OPSS, MDS, STB, and WLS schemas while you run the BI Configuration Assistant, provided you have the DBA credentials.

> **Note:**
>
> The database schemas are required to store internal housekeeping information. These schemas are different from any data sources which you plan to analyze by using Oracle BI.

Creating the Database Schemas

Before you can configure an Oracle Business Intelligence domain, you must install required schemas on a certified database for use with this release of Oracle Fusion Middleware.

- Installing and Configuring a Certified Database
  Before you create the database schemas, you must install and configure a certified database, and verify that the database is up and running.
- Starting the Repository Creation Utility
  Start the Repository Creation Utility (RCU) after you verify that a certified JDK is installed on your system.
- Navigating the Repository Creation Utility Screens to Create Schemas
  Enter required information in the RCU screens to create the database schemas.

Installing and Configuring a Certified Database

Before you create the database schemas, you must install and configure a certified database, and verify that the database is up and running.

See About Database Requirements for an Oracle Fusion Middleware Installation.

Starting the Repository Creation Utility

Start the Repository Creation Utility (RCU) after you verify that a certified JDK is installed on your system.

To start the RCU:

1. Verify that a certified JDK already exists on your system by running `java -version` from the command line. For 12*c* (12.2.1.3.0), the certified JDK is 1.8.0_131 and later.

   See About JDK Requirements for an Oracle Fusion Middleware Installation.

2. Ensure that the `JAVA_HOME` environment variable is set to the location of the certified JDK. For example:
   - (UNIX) `setenv JAVA_HOME /home/Oracle/Java/jdk1.8.0_131`
   - (Windows) `set JAVA_HOME=C:\home\Oracle\Java\jdk1.8.0_131`
3. Change to the following directory:
   - (UNIX) *`ORACLE_HOME`*`/oracle_common/bin`
   - (Windows) *`ORACLE_HOME`*`\oracle_common\bin`
4. Enter the following command:
   - (UNIX) `./rcu`
   - (Windows) `rcu.bat`

Navigating the Repository Creation Utility Screens to Create Schemas

Enter required information in the RCU screens to create the database schemas.

- Introducing the RCU
  The Welcome screen is the first screen that appears when you start the RCU.
- Selecting a Method of Schema Creation
  Use the Create Repository screen to select a method to create and load component schemas into the database.
- Providing Database Connection Details
  On the Database Connection Details screen, provide the database connection details for the RCU to connect to your database.
- Specifying Schema Passwords
  On the Schema Passwords screen, specify how you want to set the schema passwords on your database, then enter and confirm your passwords.
- Completing Schema Creation
  Navigate through the remaining RCU screens to complete schema creation.

Introducing the RCU

The Welcome screen is the first screen that appears when you start the RCU.

Click **Next**.

Selecting a Method of Schema Creation

Use the Create Repository screen to select a method to create and load component schemas into the database.

On the Create Repository screen:

- If you have the necessary permissions and privileges to perform DBA activities on your database, select **System Load and Product Load**. This procedure assumes that you have SYSDBA privileges.
- If you do *not* have the necessary permissions or privileges to perform DBA activities in the database, you must select **Prepare Scripts for System Load** on this screen. This option generates a SQL script that you can give to your database administrator. See About System Load and Product Load in *Creating Schemas with the Repository Creation Utility*.
- If the DBA has already run the SQL script for System Load, select **Perform Product Load**.

Providing Database Connection Details

On the Database Connection Details screen, provide the database connection details for the RCU to connect to your database.

> **Note:**
>
> If you are unsure of the service name for your database, you can obtain it from the `SERVICE_NAMES` parameter in the initialization parameter file of the database. If the initialization parameter file does not contain the `SERVICE_NAMES` parameter, then the service name is the same as the global database name, which is specified in the `DB_NAME` and `DB_DOMAIN` parameters.

For example:

Database Type: `Oracle Database`
Host Name: `examplehost.exampledomain.com`
Port: `1521`
Service Name: `Orcl.exampledomain.com`
User Name: `sys`
Password: `******`
Role: `SYSDBA`

Click **Next** to proceed, then click **OK** in the dialog window that confirms a successful database connection.

Specifying Schema Passwords

On the Schema Passwords screen, specify how you want to set the schema passwords on your database, then enter and confirm your passwords.

You must make a note of the passwords you set on this screen; you will need them later on during the domain creation process.

Completing Schema Creation

Navigate through the remaining RCU screens to complete schema creation.

On the Map Tablespaces screen, the Encrypt Tablespace check box appears *only* if you enabled Transparent Data Encryption (TDE) in the database (Oracle or Oracle EBR) when you start the RCU. Select the **Encrypt Tablespace** check box if you want to encrypt all new tablespaces that the RCU creates.

When you reach the Completion Summary screen, click **Close** to dismiss the RCU.

Configuring the BI Domain with the Configuration Assistant

The Oracle BI 12*c* Configuration Assistant is a `.sh` (UNIX) or `.cmd` (Windows) file. Start the Configuration Assistant by starting the config executable from the `bi/bin` directory inside the Oracle home. Follow the procedure in this topic to complete the configuration step-by-step.

> **Note:**
>
> Oracle recommends that you use the Oracle BI 12*c* Configuration Assistant to configure your 12*c* system.

To configure the BI standard topology:

> **Important:**
>
> If you are extending the WebLogic domain with Oracle Business Intelligence by using the Configuration Assistant, make sure that the Administration Server for the domain is named *AdminServer*. Other names for the Administration Server are not supported.

> **Note:**
>
> Context-sensitive help is available on each screen as you navigate through the Configuration Assistant. Click **Help** to seek more information about the elements on that screen.

1. Change to the following directory:

   (UNIX) *`ORACLE_HOME`*`/bi/bin`

   (Windows) *`ORACLE_HOME`*`\bi\bin`
2. Start the Configuration Assistant by entering the following command:

   (UNIX) `./config.sh`

   (Windows) `config.cmd`
3. Select the components to install and click **Next**.

> **Note:**
>
> To ensure that a consistent set of suites are deployed, the Configuration Assistant automatically adjusts your selection.

- Essbase: Includes components such as Essbase Server, Cube Deployment Server, and Analytic Provider Services.
- Business Intelligence Enterprise Edition: Includes components such as Presentation Services, Visual Analyzer, BI Composer, web services, proactive intelligence (Delivers and Actions), Web Services for SOA (WS4SOA), and Mobile Application Designer.
- Business Intelligence Publisher: Includes Oracle BI Publisher.

4. On the Prerequisite Checks screen, after the prerequisite checks conclude with no errors, click **Next**.

   If any of the prerequisite checks fail, then a short error message appears at the bottom of the screen. Fix the error and click **Rerun** to try again. To ignore the error or warning messages and continue with the installation, click **Skip**, although this approach is not recommended.

> **Note:**
>
> The configuration might not function normally if you continue without resolving the issue that caused an error or warning message during the prerequisite checks.

5. On the Define New Domain screen, specify the following, and click **Next**:

Table 4-1 Field-name descriptions for the Define New Domain screen

Field	Description
Domains Directory	Specify the path where you want to set up the domain directory.
Domain Name	Specify domain.
Username	Specify a username for the System Administrator. **Note:** This user is created in the embedded LDAP and is granted WebLogic Administrator permissions.
Password	Specify a password for the System Administrator.
Confirm Password	Confirm the password by reentering it.

6. On the Database Schema screen, either create a new schema or use an existing schema by clicking the appropriate option.

If you select to create a new schema, the Configuration Assistant creates a schema for you. Specify the following and click **Next**.

Table 4-2 Field-name descriptions for the Database Schema screen

Field	Description
Schema prefix	Specify a unique schema prefix.
Schema password	Specify a password for your schema.
Confirm password	Confirm the password by reentering it.
Database type	Select the database that you are using from the list of values. Supported databases are: • Oracle Database • Microsoft SQL Server • IBM DB2
Username	Enter the privileged username to create the schema.
Password	Enter the password for the above username.
Simple connect string	The connect string that you specify varies depending on the type of database you are using. • (Oracle Database) `host:port/service` or `host:port:SID` or `TNS` connect string • (Microsoft SQL Server) `//host:port;DatabaseName=dbname` • (IBM DB2) `//host:port;DatabaseName=dbname`

If you select to use an existing schema, you must create STB, BIPLATFORM, IAU, MDS, OPSS, and WLS schemas using the RCU. Specify the following and click **Next**.

> **Note:**
>
> If you are using Oracle Database version 12.2.0.1 or higher, you must create a pluggable database within a container database to create repository schemas. You cannot create schemas within a container database without using a pluggable database.

7. On the Port Range screen, specify the port range and click **Next**.

> **Note:**
>
> The default, allocated port range is from 9500 to 9999, both inclusive. You can keep the default values or specify different values within this range.

8. On the Initial Application screen, select one of the following options as per your requirement, and click **Next**:
   - Oracle sample application (SampleAppLite).
   - Your own existing BI Application from export bundle (`.jar`).

> **Note:**
>
> This option is applicable if you are migrating from Oracle BI 11*g* to 12*c*. See Upgrading Oracle Business Intelligence from 11*g* (Out-of-place Migration) in *Upgrading Oracle Business Intelligence*.

- Clean Slate (no predefined application).

9. On the Summary screen, verify the values that you specified on each screen.

   Click **Save** to generate a response file used for silent installation (optional).

   Click **Configure**.

   The configuration process starts and the Configuration Progress screen is displayed.

10. After the configuration concludes without any errors, click **Next** to go to the Configuration Complete screen.

11. On the Configuration Complete screen, review the configuration summary.

    Click **Save** to save the information displayed on this screen in a file.

    Click **Finish** to close the Configuration Assistant.

    The BI Application opens in the browser. Use the login credentials that you specified while configuring to sign in to the BI application home.

You have configured the standard BI topology. The Configuration Assistant automatically starts the newly configured BI instance after successful completion. However, if you want to restart a domain that has been shut down manually, see Starting the BI Instance.

5

Next Steps After Configuring the Domain

After you configure a product domain, there are additional tasks that you may want to perform.

- Performing Basic Administrative Tasks
  Review the administrative tasks you will likely want to perform on a new domain.
- Performing Additional Domain Configuration Tasks
  You can add a Web Tier component to your BI domain, such as Oracle HTTP Server.
- Preparing Your Environment for High Availability
  Scaling out for high availability requires additional steps.
- Configuring Visual Analyzer
  If you have installed Oracle HTTP Server and Oracle Data Integrator or Oracle Access Management along with Oracle BI, then follow the procedure in this topic to configure Visual Analyzer so that it works properly in this environment. Visual Analyzer is a web-based tool that enables you to explore analytics data visually and on an individual basis.

Performing Basic Administrative Tasks

Review the administrative tasks you will likely want to perform on a new domain.

Table 5-1 Basic Administration Tasks for a New Domain

Task	Description	More Information
Getting familiar with Fusion Middleware administration tools	Get familiar with various tools that you can use to manage your environment.	See Overview of Oracle Fusion Middleware Administration Tools in *Administering Oracle Fusion Middleware*.
Starting and stopping products and servers	Learn how to start and stop Oracle Fusion Middleware, including the Administration Server, Managed Servers, and components.	See Starting and Stopping Oracle Fusion Middleware in *Administering Oracle Fusion Middleware*.
Configuring Secure Sockets Layer (SSL)	Learn how to set up secure communications between Oracle Fusion Middleware components using SSL.	See Configuring SSL in Oracle Fusion Middleware in *Administering Oracle Fusion Middleware*.
Monitoring Oracle Fusion Middleware	Learn how to keep track of the status of Oracle Fusion Middleware components.	See Monitoring Oracle Fusion Middleware in *Administering Oracle Fusion Middleware*.
Understanding Backup and Recovery Procedures	Learn the recommended backup and recovery procedures for Oracle Fusion Middleware.	See Introduction to Backup and Recovery in *Administering Oracle Fusion Middleware*.
Configuring a system for deployment after installation	Configuring metadata and content, general preferences, and default system settings.	NA

Table 5-1 (Cont.) Basic Administration Tasks for a New Domain

Task	Description	More Information
Configuring security	Securing access to the Oracle Business Intelligence system, metadata, and data, configuring Secure Sockets Layer (SSL) and Single Sign-On (SSO), and integration with identity management systems.	NA
Scaling out and configuring for high availability	Configuring the Oracle Business Intelligence system for linear scale-out (increasing capacity with more components on a machine) and identifying and removing single points of failure (adding more machines).	NA
Managing performance and availability	Monitoring service levels and tuning performance.	NA
Managing and resolving issues	Diagnosing errors and establishing resolutions.	NA
Moving a system from test to production	Managing the steps for moving from a test to a production environment.	NA

Performing Additional Domain Configuration Tasks

You can add a Web Tier component to your BI domain, such as Oracle HTTP Server.

Table 5-2 lists additional tasks you could perform on your new domain.

Table 5-2 Additional Domain Configuration Tasks

Task	Description	More Information
Adding a Web Tier front end to your domain	Oracle Web Tier hosts Web pages (static and dynamic), provides security and high performance along with built-in clustering, load balancing, and failover features. In particular, the Web Tier contains Oracle HTTP Server.	To install and configure Oracle HTTP Server in the WebLogic Server domain, see Installing the Oracle HTTP Server Software in *Oracle Fusion Middleware Installing and Configuring Oracle HTTP Server*. Also, see Installing Multiple Products in the Same Domain in *Planning an Installation of Oracle Fusion Middleware* for important information.

Preparing Your Environment for High Availability

Scaling out for high availability requires additional steps.

Table 5-3 provides a list of tasks to perform if you want to scale out your standard installation environment for high availability.

Table 5-3 Tasks Required to Prepare Your Environment for High Availability

Task	Description	More Information
Scaling out to multiple host computers	To enable high availability, it is important to provide failover capabilities to another host computer. That way, if one computer goes down, your environment can continue to serve the consumers of your deployed applications.	See Scaling Out a Topology (Machine Scale Out) in the *High Availability Guide*.
Configuring high availability for your Web Tier components.	If you have added a Web tier front-end, then you must configure the Web Tier for high availability, as well as the WebLogic Server software.	See Configuring High Availability for Web Tier Components in *High Availability Guide*.
Setting up a front-end load balancer	A load balancer can be used to distribute requests across servers more evenly.	See Server Load Balancing in a High Availability Environment and Configuring Load Balancer Virtual Server Names and Ports in *High Availability Guide*.
Configuring Node Manager	Node Manager enables you to start, shut down, and restart the Administration Server and Managed Server instances from a remote location. This document assumes you have configured a per-domain Node Manager. Review the Node Manager documentation, for information on advanced Node Manager configuration options and features.	See Advanced Node Manager Configuration in *Administering Node Manager for Oracle WebLogic Server*.
Configuring high availability for Oracle BI components	To configure Oracle BI for high availability, ensure that the system has no single points of failure by scaling out the Oracle BI Server, Presentation Services, and the JavaHost so that you have at least two of each component types, distributed across at least two computers.	See Deploying Oracle Business Intelligence for High Availability in *System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.
Managing performance tuning and query caching	For Oracle BI Server database queries to return quickly, the underlying databases must be configured, tuned, and indexed correctly. The BI Server can store query results for reuse by subsequent queries. Query caching can dramatically improve the performance of the system for users, particularly for commonly used dashboards. However, it does not improve performance for most ad-hoc analysis.	See Managing Performance Tuning and Query Caching in *System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

Configuring Visual Analyzer

If you have installed Oracle HTTP Server and Oracle Data Integrator or Oracle Access Management along with Oracle BI, then follow the procedure in this topic to configure Visual Analyzer so that it works properly in this environment. Visual Analyzer is a web-based tool that enables you to explore analytics data visually and on an individual basis.

Complete the following settings:

1. Change to the following directory:

```
/u01/user_projects/domains/ohs/config/fmwconfig/
components/OHS/ohs1
```

2. Locate the following file and open it for editing:

   ```
   mod_wl_ohs.conf
   ```

3. Go to the `IfModule weblogic_module` section and verify whether the following lines are present:

   ```
   WLProxySSLPassThrough On
   ```

   ```
   WLProxySSL On
   ```

   If these lines are not present, append them to the `IfModule weblogic_module` section. Save and close the file.

4. Restart the Oracle HTTP Server instance.
5. Sign in to the WebLogic Console.
6. From **Environment**, expand **Servers** and click **bi_server1**. From the **Protocols** tab, go to the **HTTP** tab.
7. Verify whether **Frontend Host** is set to `aseng-analytics.us.oracle.com`.
8. Again, from **Environment**, expand **Servers** and click **bi_server1**. From the **Configuration** tab, go to the **Advanced** section.
9. Set **WebLogic Plug-In Enabled** field to **yes**.

6

Uninstalling or Reinstalling Oracle Business Intelligence

Follow the instructions in this section to uninstall or reinstall Oracle Business Intelligence.

Oracle recommends that you always use the instructions in this section to remove the software. If you try to remove the software manually, you may encounter problems when you try to reinstall the software again at a later time. Following the procedures in this section ensures that the software is properly removed.

- Removing Your Database Schemas
  Before you remove the Oracle home, Oracle recommends that you run the Repository Creation Utility (RCU) to remove database schemas associated with this domain.
- Uninstalling the Software
  Follow the instructions in this section to start the Uninstall Wizard and remove the software.
- Removing the Oracle Home Directory Manually
  After you uninstall the software, you must manually remove your Oracle home directory and any existing subdirectories that the Uninstall Wizard did not remove.
- Removing the Program Shortcuts on Windows Operating Systems
  On Windows operating systems, you must also manually remove the program shortcuts; the Deinstallation Wizard does not remove them for you.
- Removing the Domain and Application Data
  After you uninstall the software, you must remove the domain and application data.
- Reinstalling the Software
  You can reinstall your software into the same Oracle home as a previous installation only if you uninstalled the software by following the instructions in this section, including manually removing the Oracle home directory.

Removing Your Database Schemas

Before you remove the Oracle home, Oracle recommends that you run the Repository Creation Utility (RCU) to remove database schemas associated with this domain.

Each domain has its own set of schemas, uniquely identified by a custom prefix. For more information about custom prefixes, see About Custom Prefixes in *Creating Schemas with the Repository Creation Utility*. This set of schemas cannot be shared with any other domain. For more information about creating schemas with the RCU, see Planning Your Schema Creation in *Creating Schemas with the Repository Creation Utility*.

If there are multiple sets of schemas on your database, be sure to identify the schema prefix associated with the domain that you are removing.

For schema removal steps, see Dropping Schemas in *Creating Schemas with the Repository Creation Utility*.

Uninstalling the Software

Follow the instructions in this section to start the Uninstall Wizard and remove the software.

If you want to uninstall the product in a silent (command-line) mode, see Running the Oracle Universal Installer for Silent Uninstallation in *Installing Software with the Oracle Universal Installer*.

- Starting the Uninstall Wizard
- Selecting the Product to Uninstall
- Navigating the Uninstall Wizard Screens

Starting the Uninstall Wizard

To start the Uninstall Wizard:

1. Change to the following directory:

   (UNIX) *`ORACLE_HOME`*`/oui/bin`

   (Windows) *`ORACLE_HOME`*`\oui\bin`

2. Enter the following command:

   (UNIX) `./deinstall.sh`

   (Windows) `deinstall.cmd`

Selecting the Product to Uninstall

Because multiple products exist in the Oracle home, ensure that you are uninstalling the correct product.

After you run the Uninstall Wizard, the Distribution to Uninstall screen opens. From the dropdown menu, select **bi_platform 12.2.1.3.0** and click **Uninstall**. The uninstallation program shows the screens listed in Navigating the Uninstall Wizard Screens.

> **Note:**
>
> You can uninstall Oracle Fusion Middleware Infrastructure after you uninstall Oracle Business Intelligence software by running the Uninstall Wizard again. Before doing so, make sure that there are no other products using the Infrastructure; those products will no longer function once the Infrastructure is removed. You will not encounter the Distribution to Uninstall screen if no other software depends on Oracle Fusion Middleware Infrastructure. See Uninstalling Oracle Fusion Middleware Infrastructure in *Installing and Configuring the Oracle Fusion Middleware Infrastructure*.

Navigating the Uninstall Wizard Screens

The Uninstall Wizard shows a series of screens to confirm the removal of the software.

If you need help on screen listed in Table 6-1, click **Help** on the screen.

Table 6-1 Uninstall Wizard Screens and Descriptions

Screen	Description
Welcome	Introduces you to the product Uninstall Wizard.
Uninstall Summary	Shows the Oracle home directory and its contents that are uninstalled. Verify that this is the correct directory. If you want to save these options to a response file, click **Save Response File** and enter the response file location and name. You can use the response file later to uninstall the product in silent (command-line) mode. See Running the Oracle Universal Installer for Silent Uninstall in *Installing Software with the Oracle Universal Installer*. Click **Deinstall**, to begin removing the software.
Uninstall Progress	Shows the uninstallation progress.
Uninstall Complete	Appears when the uninstallation is complete. Review the information on this screen, then click **Finish** to close the Uninstall Wizard.

Removing the Oracle Home Directory Manually

After you uninstall the software, you must manually remove your Oracle home directory and any existing subdirectories that the Uninstall Wizard did not remove.

For example, if your Oracle home directory is `/home/Oracle/product/ORACLE_HOME` on a UNIX operating system, enter the following commands:

```
cd /home/Oracle/product
rm -rf ORACLE_HOME
```

On a Windows operating system, if your Oracle home directory is `C:\Oracle\Product\ORACLE_HOME`, use a file manager window and navigate to the `C:\Oracle\Product` directory. Right-click on the *ORACLE_HOME* folder and select **Delete**.

Removing the Program Shortcuts on Windows Operating Systems

On Windows operating systems, you must also manually remove the program shortcuts; the Deinstallation Wizard does not remove them for you.

To remove the program shortcuts on Windows:

1. Change to the following directory: `C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Oracle\ORACLE_HOME\Product`
2. If you only have one product installed in your Oracle home, delete the *ORACLE_HOME* directory. If you have multiple products installed in your Oracle home, delete all products before you delete the *ORACLE_HOME* directory.

Removing the Domain and Application Data

After you uninstall the software, you must remove the domain and application data.

To remove the domain and application data:

1. Manually remove your Domain home directory. For example:

   On a UNIX operating system, if your Domain home directory is `/home/Oracle/config/domains/bi_domain`, enter the following command:

   ```
   cd /home/Oracle/config/domains
   ```

   ```
   rm -rf bi_domain
   ```

   On a Windows operating system, if your Domain home directory is `C:\Oracle\Config\domains\bi_domain`, use a file manager window and navigate to the `C:\Oracle\Config\domains` directory. Right-click on the `bi_domain` folder and select **Delete**.

2. Manually remove your Application home directory. For example:

   On a UNIX operating system, if your Application home directory is `/home/Oracle/config/applications/bi_domain`, enter the following commands:

   ```
   cd /home/Oracle/config/applications
   ```

   ```
   rm -rf bi_domain
   ```

   On a Windows operating system, if your Application home directory is `C:\Oracle\Config\applications\bi_domain`, use a file manager window and navigate to the `C:\Oracle\Config\applications` directory. Right-click on the `bi_domain` folder and select **Delete**.

3. Back up the `domain_registry.xml` file in your Oracle home, then edit the file and remove the line associated with the domain that you are removing. For example, to remove the `bi_domain`, find the following line and remove it:

   ```
   <domain location="/home/Oracle/config/domains/bi_domain"/>
   ```

   Save and exit the file when you are finished.

Reinstalling the Software

You can reinstall your software into the same Oracle home as a previous installation only if you uninstalled the software by following the instructions in this section, including manually removing the Oracle home directory.

When you reinstall, you can then specify the same Oracle home as your previous installation.

If ODI is installed again in the same location where it was previously deleted, delete the entire Oracle Home where it was previously installed.

Consider the following cases where the Oracle home is not empty:

- Installing in an existing Oracle home that contains the same feature sets.

  The installer warns you that the Oracle home that you specified during installation already contains the same software you are trying to install.

- Installing in an existing, non-empty Oracle home.

  For example, suppose you chose to create your Domain home or Application home somewhere inside your existing Oracle home. This data is not removed when you uninstall a product, so if you try to reinstall into the same Oracle home, the installer does not allow it. Your options are:

  – Uninstall your software from the Oracle home (as this section describes) and then remove the Oracle home directory. After you uninstall the software and remove the Oracle home directory, you can reinstall and reuse the same Oracle home location. Any domain or application data that was in the Oracle home must be re-created.

  – Select a different Oracle home directory.

7

Installing R and Oracle R Enterprise for External Logical SQL Functions

The external Logical SQL functions such as EVALUATE_SCRIPT, FORECAST, and CLUSTER feed input data to the standalone R-process or to Oracle R Enterprise. Therefore, to create analyses that include these functions, you must install either the R or Oracle R Enterprise external engine in your environment.

R is a widely used environment for statistical computing and graphics and can be used with many different data sources including external files or databases. Oracle R Enterprise is installed specifically for use with the Oracle Database, and makes the open source R statistical programming language and environment ready for use by Oracle BI EE.

See Advanced Analytics External Logical SQL Functions in *User's Guide for Oracle Business Intelligence Enterprise Edition* for more information about using these functions in analyses.

- Installing R and R Packages
  To create analyses using the advanced analytics external Logical SQL functions, you must install R and the required R packages.
- Installing Oracle R Enterprise and Required R Packages on the Oracle Database
  Oracle BI EE uses the R engine included in Oracle R Enterprise instead of R. Oracle BI EE can use the Oracle R Enterprise colocation option, where the data can reside in the Oracle R Enterprise database. (In the non-colocation option, the data does not reside in the Oracle R Enterprise database.)

Installing R and R Packages

To create analyses using the advanced analytics external Logical SQL functions, you must install R and the required R packages.

If you are using Oracle Database, then see Installing Oracle R Enterprise and Required R Packages on the Oracle Database for more information.

- Before You Begin the Installation
  You need to install the 3.1.1 R version distributed with Oracle BI.
- Installing R and R Packages on Linux Platforms
  Use the procedures in this section to install R and the R packages on Linux platforms.
- Installing R and R Packages on Windows
  Use the procedures in this section to install R and the R packages on Windows.

Before You Begin the Installation

You need to install the 3.1.1 R version distributed with Oracle BI.

You can find the R installer in the following Oracle BI environment location:

ORACLE_HOME/bi/bifoundation/advanced_analytics/r-installer.zip

The distributed R installation supports Linux (OLE 6 and OLE 7) and Windows (7 and 8).

Installing R and R Packages on Linux Platforms

Use the procedures in this section to install R and the R packages on Linux platforms.

See Before You Begin the Installation for general prerequisite information.

Before you perform the installation, note the following important information and required tasks:

- Run `RInstaller.sh` as root or using the sudo command. See the `README.txt` that is included in `r-installer.zip` for more information.
- Locate `proxy.txt` in the RInstaller directory and edit it to include the proxy server details.
- For OLE 7, before you install the Oracle R distribution, you need to install the TexLive and TexInfo RPMs.
  - The required RPM versions are: `texlive-epsf-svn21461.2.7.4-32.el7.noarch.rpm` and `texinfo-tex-5.1-4.el7.x86_64.rpm`.
  - Download the RPMs and install them using `rpm -ivh <rpm_name>`.
  - You must install the RPMs in this specific order: `texlive` and then `texinfo`.

To Install R on Linux Platforms:

> **Note:**
>
> You must run the RInstaller in the following operation as a Root user.

Open a command line, navigate to the installer's location, and enter the following to decompress and run the distributed R installer:

```
bash-4.1$ unzip r-installer.zip
bash-4.1$ cd RInstaller
bash-4.1$ ./RInstaller.sh
Usage ./RInstaller { install | installpackages | uninstall }
bash-4.1$ sudo ./RInstaller.sh install
```

To Install R Packages on Linux Platforms

For Linux platforms, after you have installed R, then from the same command line, run the following command to download and install the required R packages (forecast, randomForest, RJSONIO, and matrixcalc). Running this command also installs the OBIEEAdvancedAnalytics R package. The installer uses the proxy information from `proxy.txt` to download the packages from CRAN.

```
bash-4.1$ sudo ./RInstaller.sh installpackages
```

Installing R and R Packages on Windows

Use the procedures in this section to install R and the R packages on Windows.

See Before You Begin the Installation for general prerequisite information.

Before you perform the installation, locate the `proxy.txt` file in the RInstaller directory and edit it to include the proxy server details.

To Install R on Windows:

1. Locate and open `NQSConfig.INI`. In the ADVANCE_ANALYTICS_SCRIPT section, update the R_EXECUTABLE_PATH property to point to the R executable path. For example:

   ```
   R_EXECUTABLE_PATH = "C:/Program Files/R/R-3.1.1/bin/x64/R";
   ```

2. Using a zip utility, decompress `r-installer.zip`.
3. If you have not already done so, then go to the RInstaller directory, locate `proxy.txt`, and edit it to include the proxy server details.
4. To run the installer, go to the RInstaller directory where you unzipped `r-installer.zip`, locate and then run `./Rinstaller.bat install` in a command-line session.

To Install R Packages on Windows:

After you have installed R, then from the same command line, run the following command to download and install the required R packages (forecast, randomForest, RJSONIO, and matrixcalc). Running this command also installs the OBIEEAdvancedAnalytics R package.

```
.\RInstaller.bat installpackages
```

Installing Oracle R Enterprise and Required R Packages on the Oracle Database

Oracle BI EE uses the R engine included in Oracle R Enterprise instead of R. Oracle BI EE can use the Oracle R Enterprise colocation option, where the data can reside in the Oracle R Enterprise database. (In the non-colocation option, the data does not reside in the Oracle R Enterprise database.)

See Before You Begin the Installation. If you are using databases other than the Oracle Database, then see Installing R and R Packages.

- Before You Begin the Installation
  Oracle BI EE requires that you install Oracle R Enterprise version 1.4 or 1.4.1.
- Installing Oracle R Enterprise and R Packages
  Use the procedures in this section to install Oracle R Enterprise 1.4.1 on the Oracle database and to install the required R packages on Oracle R Enterprise.
- Configuring Oracle R Enterprise to Work with Oracle BI EE
  After you have installed Oracle R Enterprise and the R Packages, the next step is to configure Oracle R Enterprise.

Before You Begin the Installation

Oracle BI EE requires that you install Oracle R Enterprise version 1.4 or 1.4.1.

Table 7-1 ORE Configuration and Support Matrix

Oracle R Enterprise Version	Oracle R Enterprise Distributed R Version	Oracle Database Version
1.4	3.0.1	11.2.0.3
	3.1.1	11.2.0.4
		12.1.0.1
1.4.1	3.0.1	11.2.0.3
	3.1.1	11.2.0.4
		12.1.0.1

Installing Oracle R Enterprise and R Packages

Use the procedures in this section to install Oracle R Enterprise 1.4.1 on the Oracle database and to install the required R packages on Oracle R Enterprise.

To Install Oracle R Enterprise on the Database

A sample user such as ruser or rqueser is used for R Execution on the database.

To install Oracle R Enterprise 1.4.1 on the database, follow the installation instructions in *Oracle R Enterprise Installation and Administration Guide*, Release 1.4.1.

For information about the steps in a typical installation of Oracle R Enterprise on a Linux server and a Windows client, see A Sample Installation of Oracle R Enterprise in *Oracle R Enterprise Installation and Administration Guide*.

To Install R Packages on Oracle R Enterprise

1. After you have installed Oracle R Enterprise, locate and copy `r-installer.zip` onto the Oracle R Enterprise host.
2. Decompress the `r-installer.zip`.
3. If you have not already done so, then go to the RInstaller directory, locate `proxy.txt`, and edit it to include the proxy server details.
4. Open a command line, and as an Oracle user, run the following command to install the required R packages (forecast, randomForest, RJSONIO, and matrixcalc).

   ```
   NEW_ORACLE_HOME/bin/ORE -f r-package-install.R
   ```

Configuring Oracle R Enterprise to Work with Oracle BI EE

After you have installed Oracle R Enterprise and the R Packages, the next step is to configure Oracle R Enterprise.

To Configure Oracle R Enterprise

1. Open your instance of Oracle BI Presentation Services and click **Administration**. In the Administration page, click **Issue SQL**. The Issue SQL dialog displays.
2. In the Issue SQL dialog, enter and issue the following stored procedures:

```
call NQSRegisterScript("filerepo://obiee.Clustering.xml")
call NQSRegisterScript("filerepo://obiee.RegressionCreateModel.xml")
call NQSRegisterScript("filerepo://obiee.RegressionScoreModel.xml")
call NQSRegisterScript("filerepo://obiee.Outliers.xml")
call NQSRegisterScript("filerepo://obiee.Regression.xml")
call NQSRegisterScript("filerepo://obiee.RegressionCorrelation.xml")
call NQSRegisterScript("filerepo://obiee.TimeSeriesForecast.xml")
```

3. Locate and open `NQSConfig.INI` and in the `ADVANCED_ANALYTICS_SCRIPT` section make the following updates:
   - In the `CONNECTION_POOL` property, specify the name of the connection pool to be defined in the repository.

     For example, suppose the database name is `ORE` and the connection pool name is `ORECP`. Then in the `CONNECTION_POOL` property, you enter:

     ```
     ORE.ORECP
     ```

     > **Note:**
     >
     > The schema user defined in the connection pool `ORECP` should have RQADMIN privileges which can be granted via GRANT RQADMIN TO <SCHEMA_USER>.

   - If the `ORE` database and the source data are located in the same database, then you can improve the speed of the R execution by setting the `CONNECTION_POOL` property to the source database connection pool.
   - In the `TARGET` property, set the value to `"ORE"`. For example, `TARGET="ORE"`.
4. Test the configuration by running an Oracle BI Server query. For example:

```
SELECT
"A - Sample Sales"."Time"."T02 Per Name Month" Month1,
"A - Sample Sales"."Base Facts"."1- Revenue" target,
FORECAST("A - Sample Sales"."Base Facts"."1- Revenue", ("A - Sample
Sales"."Time"."T02 Per Name Month" timeMonth),
'forecast','numPeriods=7;predictionInterval=90;)
FROM "A - Sample Sales" order by 1;
```

A

Troubleshooting the Installation of Oracle BI

This section contains the following topics:

- Starting the BI Instance
  Verifying the configuration involves starting the servers (Admin Servers, and the Managed Servers) and the newly configured BI instance.
- Troubleshooting ImportMeFirst Error
  You may encounter an ImportMeFirst error while creating a pivot table with Visual Analyzer. This error can occur due to any of the following reasons:
- Installing Oracle BI with Oracle Database Release 12.2.0.1.0
  If you are installing Oracle BI 12*c* (12.2.1.3.0) on Oracle Database Release 12.2.0.1.0, you might see a "BI Startup failure" error message on the Configuration Progress screen.

Starting the BI Instance

Verifying the configuration involves starting the servers (Admin Servers, and the Managed Servers) and the newly configured BI instance.

To start the BI instance including the components such as the Node Manager, Admin Servers, and the Managed Servers:

1. Change directory to the following:

   On UNIX operating system:

   DOMAIN_HOME`/bitools/bin`

   On Windows operating system:

   DOMAIN_HOME`\bitools\bin`

2. To start the servers, enter the following command:

   On UNIX operating system:

   ```
   start.sh
   ```

   On Windows operating system:

   ```
   start.cmd
   ```

> **Note:**
>
> When prompted to enter the password, specify the Node Manager password that you entered while configuring the BI domain.

Troubleshooting ImportMeFirst Error

You may encounter an ImportMeFirst error while creating a pivot table with Visual Analyzer. This error can occur due to any of the following reasons:

- The front-end host is not configured.
- The front-end host is configured without a Fully Qualified Domain Name (FQDN).
- The front-end host is not configured and the node manager listen address is not qualified.

To resolve this error:

1. Check whether the EndPoint URLs are returning a hostname or FQDN by entering the following command:

   (UNIX) *JDK_HOME*`/java -jar bi/endpointmanager/jlib/bi-endpoint-manager-impl.jar /scratch/`*DOMAIN_HOME* `/scratch/`*ORACLE_HOME*

   (Windows) *JDK_HOME*`\java -jar bi\endpointmanager\jlib\bi-endpointmanager-impl.jar \scratch\`*DOMAIN_HOME* `\scratch\`*ORACLE_HOME*

   Sample output:

   ```
   BIANALYTICS.bi_server1 - custom channel bi_internal_channel1
   ```

   ```
   Frontend: http://adminserver1:9502/analytics
   ```

2. Check whether the WebLogic Scripting Tool is returning a hostname or FQDN by entering the following commands:

   ```
   wls:/offline> import socket
   wls:/offline> socket.getfqdn()
   ```

   Sample output:

   ```
   'adminserver1'
   ```

3. Change the listen address for the problematic Node Manager by using the WebLogic Scripting Tool or through the WebLogic Console.
4. Restart the servers and processes.
5. Verify whether the WebLogic Scripting Tool is returning the FQDN by entering the following command:

   ```
   hostname -f
   ```

> **Note:**
>
> You must make sure that the hostname resolves to a FQDN or you use the Frontend Load Balancer for server-side configuration.

Installing Oracle BI with Oracle Database Release 12.2.0.1.0

If you are installing Oracle BI 12*c* (12.2.1.3.0) on Oracle Database Release 12.2.0.1.0, you might see a "BI Startup failure" error message on the Configuration Progress screen.

To work around this issue:

1. Stop the database listener by entering the following command:

   ```
   lsnrctl stop
   ```

2. Open the `sqlnet.ora` file in an editor.

   By default, this file is located in the `NEW_ORACLE_HOME/network/admin` directory. You might also find the file in the directory that is specified by the `TNS_ADMIN` environment variable.

3. Add the following line in the `sqlnet.ora` file:

   ```
   SQLNET.ALLOWED_LOGON_VERSION_SERVER=8
   ```

4. Save your changes and close the file.

5. Start the database listener by entering the following command:

   ```
   lsnrctl start
   ```

6. Try to install Oracle BI 12*c* (12.2.1.3.0) again.

B

Updating the JDK After Installing and Configuring an Oracle Fusion Middleware Product

Consider that you have a JDK version jdk1.8.0_121 installed on your machine. When you install and configure an Oracle Fusion Middleware product, the utilities, such as Configuration Wizard (`config.sh|exe`), OPatch, or RCU point to a default JDK, for example, jdk1.8.0_121. After some time, Oracle releases a new version of the JDK, say jdk1.8.0_131 that carries security enhancements and bug fixes.
From 12*c* (12.2.1.3.0) onwards, you can upgrade the existing JDK to a newer version, and can have the complete product stack point to the newer version of the JDK.

You can maintain multiple versions of JDK and switch to the required version on need basis.

- About Updating the JDK Location After Installing an Oracle Fusion Middleware Product
  The binaries and other metadata and utility scripts in the Oracle home and Domain home, such as RCU or Configuration Wizard, use a JDK version that was used while installing the software and continue to refer to the same version of the JDK. The JDK path is stored in a variable called JAVA_HOME which is centrally located in .globalEnv.properties file inside the *`ORACLE_HOME`*`/oui` directory.

About Updating the JDK Location After Installing an Oracle Fusion Middleware Product

The binaries and other metadata and utility scripts in the Oracle home and Domain home, such as RCU or Configuration Wizard, use a JDK version that was used while installing the software and continue to refer to the same version of the JDK. The JDK path is stored in a variable called JAVA_HOME which is centrally located in .globalEnv.properties file inside the *`ORACLE_HOME`*`/oui` directory.

The utility scripts such as config.sh|cmd, launch.sh, or opatch reside in the *ORACLE_HOME*, and when you invoke them, they refer to the JAVA_HOME variable located in .globalEnv.properties file. To point these scripts and utilities to the newer version of JDK, you must update the value of the JAVA_HOME variable in the .globalEnv.properties file by following the directions listed in Updating the JDK Location in an Existing Oracle Home .

To make the scripts and files in your Domain home directory point to the newer version of the JDK, you can follow one of the following approaches:

- Specify the path to the newer JDK on the Domain Mode and JDK screen while running the Configuration Wizard.

  For example, consider that you installed Oracle Fusion Middleware Infrastructure with the JDK version 8u121. So while configuring the WebLogic domain with the Configuration Assistant, you can select the path to the newer JDK on the Domain

Mode and JDK screen of the Configuration Wizard. Example: `/scratch/jdk/jdk1.8.0_131`.

- Manually locate the files that have references to the JDK using `grep` (UNIX) or `findstr` (Windows) commands and update each reference. See Updating the JDK Location in an Existing Domain Home.

> **Note:**
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> If you install the newer version of the JDK in the same location as the existing JDK by overwriting the files, then you don't need to take any action.

- Updating the JDK Location in an Existing Oracle Home
  The `getProperty.sh|cmd` script displays the value of a variable, such as JAVA_HOME, from the .globalEnv.properties file. The `setProperty.sh|cmd` script is used to set the value of variables, such as OLD_JAVA_HOME or JAVA_HOME that contain the locations of old and new JDKs in the .globalEnv.properties file.
- Updating the JDK Location in an Existing Domain Home
  You must search the references to the current JDK, for example jdk1.8.0_121 manually, and replace those instances with the location of the new JDK.

Updating the JDK Location in an Existing Oracle Home

The `getProperty.sh|cmd` script displays the value of a variable, such as JAVA_HOME, from the .globalEnv.properties file. The `setProperty.sh|cmd` script is used to set the value of variables, such as OLD_JAVA_HOME or JAVA_HOME that contain the locations of old and new JDKs in the .globalEnv.properties file.

The `getProperty.sh|cmd` and `setProperty.sh|cmd` scripts are located in the following location:

(UNIX) *ORACLE_HOME*`/oui/bin`
(Windows) *ORACLE_HOME*`\oui\bin`
Where, *ORACLE_HOME* is the directory that contains the products using the current version of the JDK, such as jdk1.8.0_121.

To update the JDK location in the .globalEnv.properties file:

1. Use the `getProperty.sh|cmd` script to display the path of the current JDK from the JAVA_HOME variable. For example:

   (UNIX) *ORACLE_HOME*`/oui/bin/getProperty.sh JAVA_HOME`
   (Windows) *ORACLE_HOME*`\oui\bin\getProperty.cmd JAVA_HOME`
   `echo JAVA_HOME`
   Where JAVA_HOME is the variable in the .globalEnv.properties file that contains the location of the JDK.

2. Back up the path of the current JDK to another variable such as OLD_JAVA_HOME in the .globalEnv.properties file by entering the following commands:

   (UNIX) *ORACLE_HOME*`/oui/bin/setProperty.sh -name OLD_JAVA_HOME -value` *specify_the_path_of_current_JDK*
   (Windows) *ORACLE_HOME*`\oui\bin\setProperty.cmd -name OLD_JAVA_HOME -value` *specify_the_path_of_current_JDK*

This command creates a new variable called OLD_JAVA_HOME in the .globalEnv.properties file, with a value that you have specified.

3. Set the new location of the JDK in the JAVA_HOME variable of the .globalEnv.properties file, by entering the following commands:

   (UNIX) *ORACLE_HOME*`/oui/bin/setProperty.sh -name JAVA_HOME -value` *`specify_the_location_of_new_JDK`*
   (Windows) *ORACLE_HOME*`\oui\bin\setProperty.cmd -name JAVA_HOME -value` *`specify_the_location_of_new_JDK`*

   After you run this command, the JAVA_HOME variable in the .globalEnv.properties file now contains the path to the new JDK, such as jdk1.8.0_131.

Updating the JDK Location in an Existing Domain Home

You must search the references to the current JDK, for example jdk1.8.0_121 manually, and replace those instances with the location of the new JDK.

You can use the `grep` (UNIX) or `findstr` (Windows) commands to search for the jdk-related references.

You'll likely be required to update the location of JDK in the following three files:

(UNIX) *DOMAIN_HOME*`/bin/setNMJavaHome.sh`
(Windows) *DOMAIN_HOME*`\bin\setNMJavaHome.cmd`

(UNIX) *DOMAIN_HOME*`/nodemanager/nodemanager.properties`
(Windows) *DOMAIN_HOME*`\nodemanager\nodemanager.properties`

(UNIX) *DOMAIN_HOME*`/bin/setDomainEnv.sh`
(Windows) *DOMAIN_HOME*`\bin\setDomainEnv.cmd`

Note:

- If you change the value of JAVA_HOME for the Node Manager in the `setNMJavaHome.sh|cmd` file, then the Oracle BI system components that you has started using the Node Manager will automatically use the new JAVA_HOME that you specify in the `setNMJavaHome.sh|cmd` file.
- Observe caution while updating the `setDomainEnv.sh|cmd` file. Any incorrect updates may undo the manual operations, such as scale-out, upgrade, or extending the domain, that were performed on the domain.