

Oracle® Communications Session Report Manager

Installation Guide for Oracle Database 19c and Oracle BI Publisher 12c



Release 9.0
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The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

ORACLE®

F52434-03

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About This Guide

This document and other product-related documents are described in the Related Documentation table.

Related Documentation

Table 1 Oracle Communications Product Plug-in Documentation Library

Document Name	Description
Session Element Manager User Guide	Provides information for managing and optimizing network infrastructure elements and their functions with comprehensive tools and applications used to provision fault, configuration, accounting, performance, and security (FCAPS) support for managed network functions and their associated devices in Oracle Communications Session Delivery Manager (SDM).
Report Manager User Guide	Provides information about configuring Report Manager to interoperate with Oracle BI Publisher as well as creating reports on Session Delivery product network devices.
Report Manager Installation Guides	Provides information for installing Oracle Communications Report Manager product as an addition to SDM including the Oracle database and BI Publisher components. The Oracle session delivery product plugin must be added to Oracle Communications Session Delivery Manager before performing the Report Manager installation.
Report Manager Upgrade Guide	Provides information on upgrading the Oracle BI Publisher components from 12.2.1.2 to 12.2.1.4.
Route Manager User Guide	Provides information for updating local route table (LRT) data on a single device or multiple devices.

Table 2 Oracle Communications Session Delivery Manager Documentation Library

Document Name	Document Description
Administration Guide	<p>Provides the following administration information:</p> <ul style="list-style-type: none"> • Implement SDM on your network as a standalone server or high availability (HA) server. • Login to the SDM application, access GUI menus including help, customize the SDM application, and change your password. • Access the product plugin service through the GUI to manage product plugin tasks, including how product plugins are uploaded and installed. • Manage security, faults, and transport layer security certificates for east-west peer SDM server communication, and southbound communication with network function (NF) devices. • Configure northbound interface (destination) fault trap receivers and configure the heartbeat trap for northbound systems. • Monitor SDM server health to detect heartbeat messages and display the server status to prevent health problems, or view server disk utilization information and server directory statistics. • Maintain SDM server operations, which includes database backup and database restoration and performing server cluster operations. • Use available SDM server scripts, the contents of fault trap notifications, and a list of northbound notification traps generated by the SDM server.
Installation Guide	<p>Provides the following installation information:</p> <ul style="list-style-type: none"> • Do pre-installation tasks, which include reviewing system requirements, adjusting linux and firewall settings, completing SDM server settings and configuring your NNCentral account for security reasons. • Do the typical installation to perform the minimal configuration required to run the SDM server. • Do the custom installation to perform more advanced configurations including the mail server, cluster management, Route Manager, transport layer security (TLS), and Oracle database configuration.
Release Notes	<p>Contains information about the administration and software configuration of the SDM feature support new to this release.</p>

Table 2 (Cont.) Oracle Communications Session Delivery Manager Documentation Library

Document Name	Document Description
Security Guide	Provides the following security guidelines: <ul style="list-style-type: none"> • Use guidelines to perform a secure installation of SDM on your server, which includes methods for securing the server, firewall settings, system support for encryption and random number generators (RNG), using HTTPS, and password guidelines. • Review Security Manager features that are used to configure groups, users, operations, privileges, and manage access to the system. • Follow a checklist to securely deploy SDM on your network and maintain security updates.
REST API Guide	Provides information for the supported REST APIs and how to use the REST API interface. The REST API interface allows a northbound client application, such as a network service orchestrator (NSO), to interact with SDM and its supported product plugins.
SOAP API Guide	The SOAP API guide provides information for the SOAP and XML provisioning Application Programming Interface (API) client and server programming model that enables users to write client applications that automate the provisioning of devices. The web service consists of operations that can be performed on devices managed by the SDM server and data structures that are used as input and output parameters for these operations.

My Oracle Support

My Oracle Support (<https://support.oracle.com>) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with My Oracle Support registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select 2 for New Service Request.
2. Select 3 for Hardware, Networking, and Solaris Operating System Support.
3. Select one of the following options:
 - For technical issues such as creating a new Service Request (SR), select 1.
 - For non-technical issues such as registration or assistance with My Oracle Support, select 2.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

My Oracle Support is available 24 hours a day, 7 days a week, 365 days a year.

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A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at <http://www.adobe.com>.

1. Access the Oracle Help Center site at <http://docs.oracle.com>.
2. Click **Industries**.
3. Under the Oracle Communications sub-header, click the **Oracle Communications documentation** link.
The Communications Documentation page appears. Most products covered by these documentation sets appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."
4. Click on your Product and then Release Number.
A list of the entire documentation set for the selected product and release appears.
5. To download a file to your location, right-click the **PDF** link, select **Save target as** (or similar command based on your browser), and save to a local folder.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Revision History

This section provides a revision history for this document.

Date	Revision
April 2022	Initial Release.
April 2024	Adds content updates for the SDM 9.0.3 Release.

1

Pre-Installation Tasks

Read and understand the summary of pre-installation steps that need to be done before installing Oracle® Communications Report Manager on your Oracle Communications Session Delivery Manager system.



Note:

The Oracle® Communications Report Manager for Oracle Fusion Middleware 12c installation is a new, clean installation. The previous Report Manager databases are not upgraded.

1. Check Linux server requirements before installing the required software.
2. Decide if you are going to implement Oracle® Communications Report Manager in a local or remote configuration.
3. Create an Oracle group and user account on your Linux system(s).
4. Select either X11 forwarding using secure shell (SSH) or the virtual network computing (VNC) to install the Oracle database and BI Publisher software with a graphical user interface (GUI) installer on your Linux system.

Check System Requirements

Oracle has certified the following requirements for the Oracle® Communications Report Manager installation with Oracle Fusion Middleware 12c Standard Edition 2 and Oracle Database 19c:

- Operating system: Oracle Linux (64-bit) 8.0 to 8.9
- Oracle Fusion Middleware Infrastructure: `fmw_12.2.1.3.0_infrastructure_Disk1_1of1.zip` with the latest JDK version 1.8 or later.
- BI Publisher:
 - `fmw_12.2.1.4.0_bi_linux64_Disk1_1of2.zip`
 - `fmw_12.2.1.4.0_bi_linux64_Disk1_2of2.zip`
- 300 GB hard drive minimum
- 8 GB RAM for 64-bit JVM in large, high volume deployments
- 2 GB RAM for 32-bit JVM in small deployments
- 30 GB shared disk space for cluster deployments
- 20 GB non-shared, temporary disk space for document processing
- Plan to have 300 GB of disk space for storing HDR data, whether it is on the same system on which SDM is running or on a separate FTP or SFTP repository.

 **Note:**

For more information about Oracle Communications Session Delivery Manager system requirements, see the *Oracle Communications Session Delivery Manager Installation Guide* for more information.

Decide How You Want to Implement Report Manager

The information in this section is used to determine which Report Manager implementation is appropriate for your organization before doing any installations.

Oracle Communications Report Manager is an optional application within Oracle Communications Session Delivery Manager that is used to centrally manage the following database functions, display functions, and applications:

- Use Oracle Business Intelligence Publisher (Oracle BI Publisher) application to render reports.
- Report Manager uses Oracle BI Publisher to render reports based on metrics collected from Historical Data Recording (HDR). HDR is a group of management features used to configure a managed device in order to collect statistics about system operation and function. The Report Manager collects raw data in CSV files from designated devices to aggregate it into time granularities (raw, hourly, daily, monthly, yearly), and make this data available for running reports.

 **Note:**

With the introduction of Oracle Communications Session Delivery Manager, Release 7.5, both the Oracle Communications Session Delivery Manager and Oracle database software, must be installed together on the same server if you are using Report Manager. The Oracle Communications Session Delivery Manager Data Warehouse (OSCDMDW) database software that is used to store collected data from devices that are managed by Oracle Communications Session Delivery Manager.

You can do a simple or Oracle BI Publisher cluster installation for Report Manager:

- Simple installation—A local standalone installation, local cluster installation, or a remote standalone installation. See the *Simple Implementation of Report Manager* section for more information.
- Oracle BI Publisher Cluster Installation and scale-out installation—A remote cluster installation, in which multiple instances of Oracle BI Publisher and Oracle Communications Session Delivery Manager are installed on separate servers. See the *Oracle BI Publisher Cluster Implementation of Report Manager* section for more information.

 **Note:**

You can select this installation option (Enterprise Install) later when you are installing Oracle BI Publisher and creating an Oracle BI Publisher cluster. See the *Create a BI Publisher Cluster* section in this document for more information.

 **Note:**

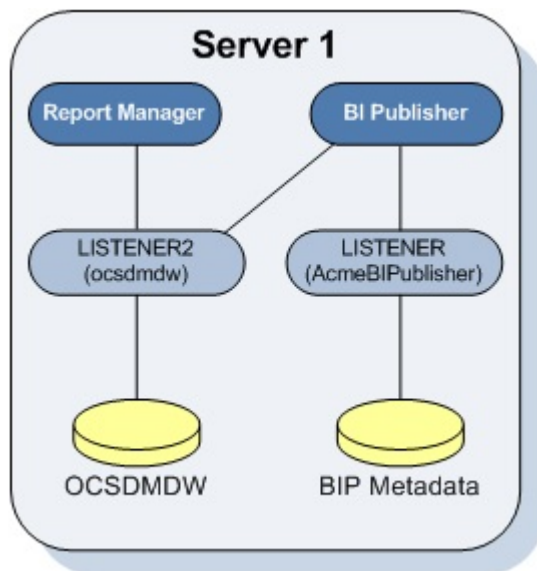
In a remote cluster installation (Enterprise Install), the Oracle BI Publisher is not on the same server as the Oracle Communications Session Delivery Manager. Ensure that the Oracle database application is installed on one of the servers on which Oracle BI Publisher is installed and on both servers on which Oracle Communications Session Delivery Manager is installed.

Simple Implementation of Report Manager

A simple implementation of Report Manager can include the following types of installations:

- **Local standalone installation**—A single local server that has Oracle Communications Session Delivery Manager, Oracle BI Publisher, and their respective databases that work together to generate reports.

Figure 1-1 Local standalone installation of Report Manager

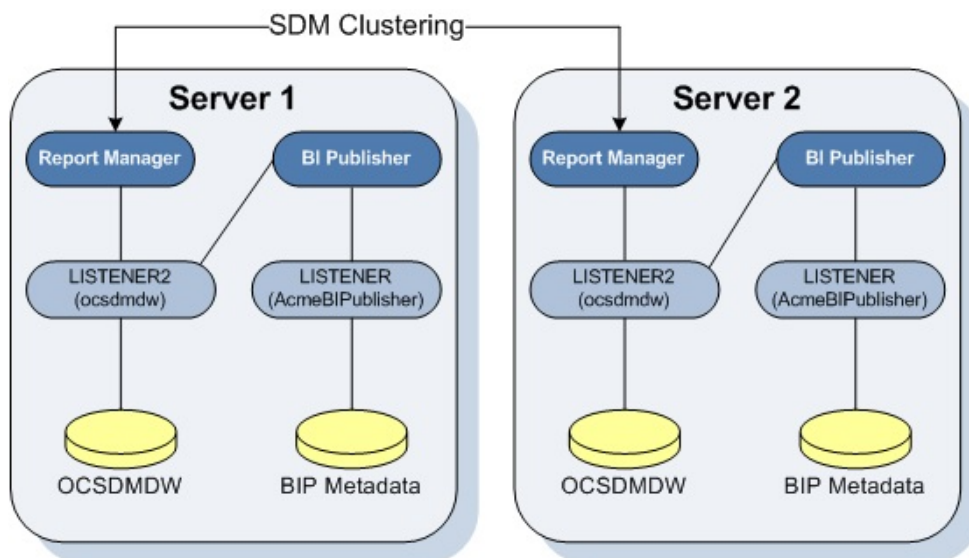


- **Local cluster installation**—A cluster of local servers that generate reports and provide high availability in case one system experiences a sudden failure. On each local server that is part of the same cluster, Oracle BI Publisher and Oracle Communications Session Delivery Manager are installed with their respective databases. Once installed, the Oracle BI Publisher application is local to the Oracle Communications Session Delivery Manager application.

 **Note:**

In a local cluster, the databases synchronize every night. The database content of all non-master cluster nodes is synchronized with the master cluster node. All identifying information for one host, such as a username, password, and database prefix, should be identical to the identifying information of another host in the same cluster.

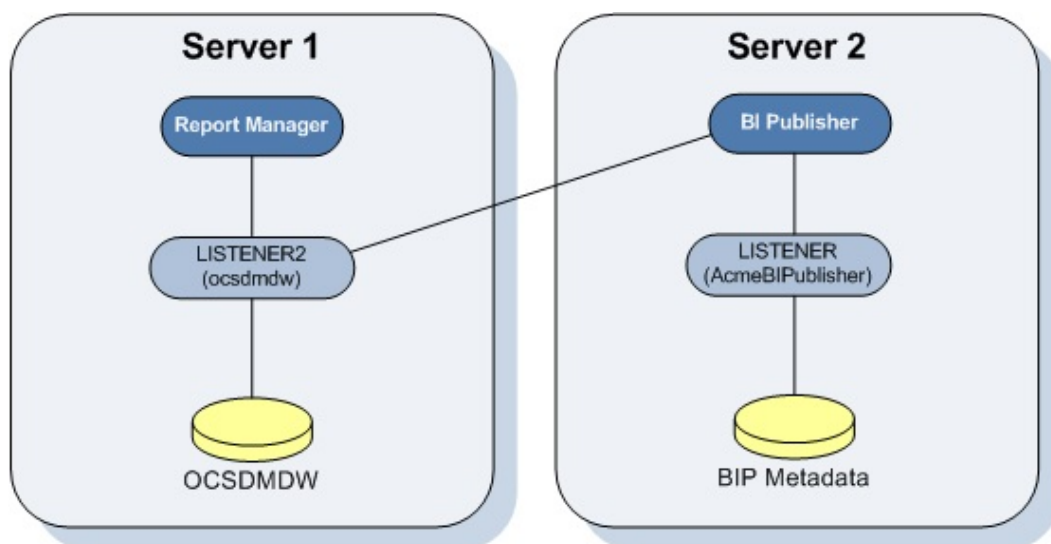
Figure 1-2 Local cluster installation of Report Manager



- **Remote standalone installation**—A single remote server that has Oracle Communications Session Delivery Manager, Oracle BI Publisher, and their respective databases.

 **Note:**

If you select this type of installation, install Oracle Communications Session Delivery Manager on its server first on Server 1, and next install the Oracle BI Publisher software on Server 2.

Figure 1-3 Remote standalone installation of Report Manager

The distinct databases in the illustration above function in the following ways for Oracle Communications Session Delivery Manager, Oracle BI Publisher, and Oracle Communications Report Manager:

- The Berkeley (SDM) XML database is embedded into the Oracle Communications Session Delivery Manager infrastructure, and provides database storage for Oracle Communications Session Delivery Manager user name and user group variables. It is initiated by the database service.
- The AcmeBIPublisher database is maintained and used by the Oracle database to hold the schemas and configuration required by the Oracle BI Publisher application.
- The Oracle Communications Session Delivery Manager Data Warehouse (ocsdmdw) database is maintained by Oracle Communications Session Delivery Manager and it is used to store data that is collected from devices for which collection is enabled is OCSDM.

Create an Oracle User Account

Create an Oracle group and user account on your Linux system(s).

1. Use either the `-X` or `-Y` flag to enable X11 forwarding through SSH when you log in as root. For example:

```
ssh -Y root@server-name
```

2. Create a new group called **oracle**.

```
$ groupadd oracle
```

3. Create a new user account called **oracle** that belongs to the **oracle** group.

```
useradd -m -g oracle -d /home/oracle -s /bin/bash oracle
```

4. Set the password for the oracle user account.

```
passwd oracle
```

Select the GUI Installer Method

Select either X11 forwarding using secure shell (SSH) or the virtual network computing (VNC) to do installations with a graphical user interface (GUI) installer on your Linux system.

Configure SSH with X11 Forwarding

1. You can use either the `-X` or `-Y` flag to enable X11 forwarding through SSH when you log in as the root user. For example:

```
ssh -Y root@server-name
```

 **Note:**

If you do not have DNS on your server or the server name does not work, enter the IP address of the server.

2. (Optional) Install the `xorg-x11-xauth` package (if it is not already installed). For example:

```
yum install xorg-x11-xauth  
yum install xorg-x11-utils
```

3. You can use either the `-X` or `-Y` flag to enable X11 forwarding through SSH when you disconnect and log in as the oracle user. For example:

```
ssh -Y oracle@vm
```

4. Find the values for the `DISPLAY` variable with the `xauth list` command.

```
$ xauth list  
<domain name>/unix:12  
<domain name>/unix:11  
<domain name>/unix:10
```

In the example above, either 12, 11, or 10 are suitable values for the `DISPLAY` variable.

Configure VNC

1. You can use either the `-X` or `-Y` flag to enable X11 forwarding through SSH when you log in as root. For example:

```
ssh -Y root@server-name
```


2. Install the Desktop package group, which includes X11 and gnome-desktop. For example:

```
yum install @desktop
```

3. Install a VNC server. For example:

```
yum install tigervnc-server
```

4. Reboot the server.
5. Log in as root.
6. Start the VNC server.

```
vncserver :1
```

2

Install the Oracle Database Software

Install the Oracle database software on your Linux server for Oracle® Communications Report Manager by downloading and running the Oracle database installer, then start the *oracle* database and listeners.

Install Dependencies for the Oracle Database Software

You must install software packages that the Oracle database software depends on for its proper operation.

1. Log in to the server as the root user.
2. Execute the command:

```
dnf install -y oracle-database-preinstall-19c
```

3. Install the following libraries. Install each of the libraries as per the example given below:

```
dnf install -y libnsl
```

```
libnsl.i686, libnsl2, libnsl2.i686,  
vsftpd, binutils, glibc,  
glibc-devel, gcc, cpp,  
glibc-headers, gcc-c++, libstdc++,  
make, ksh, elfutils-libelf,  
elfutils-libelf-devel, sysstat,  
libaio, libaio-devel,  
unixODBC, unixODBC-devel
```

4. Download the following:

```
compat-libcap1-1.10-7.el7.x86_64.rpm  
compat-libstdc++-33-3.2.3-72.el7.x86_64.rpm
```

5. Install using the following commands:

```
i. yum -y localinstall compat-libcap1-1.10-7.el7.x86_64.rpm  
ii. yum -y localinstall compat-libstdc++-33-3.2.3-72.el7.x86_64.rpm
```

Download the Oracle Database Software Installer

1. As root, create an `/home/oracle/app/oracle/product/19.3.0/dbhome_1` directory that is owned by the `oracle` user.

```
[oracle@vm ~]$ su
Password:
[root@vm oracle]# mkdir /home/oracle/app
[root@vm oracle]# chown oracle:oracle /home/oracle/app
[root@vm oracle]# exit
exit
[oracle@vm ~]$ mkdir /home/nncentral/app/oracle/
[oracle@vm ~]$ mkdir /home/oracle/app/oracle/product/
[oracle@vm ~]$ mkdir /home/oracle/app/oracle/product/19.3.0/
[oracle@vm ~]$ mkdir /home/oracle/app/oracle/product/19.3.0/dbhome_1
```

2. Navigate your browser to the Oracle Database Software Downloads page:
[Oracle Database 19c Software Downloads](#).
3. Under the "Oracle Database Software Downloads" heading, select Accept License Agreement.
4. Download the [Oracle Database 19c Release 3](#) for Linux x86-64 (LINUX.X64_193000_db_home.zip).
5. Copy the files to the `/home/oracle/app/oracle/product/19.3.0/dbhome_1` directory.

Start the Oracle Database Software Installer

1. Log in as the `oracle` user with the `-Y` flag.

```
ssh -Y oracle@vm
```

2. Navigate to the following directory:

```
cd /home/oracle/app/oracle/product/19.3.0/dbhome_1
```

3. Unzip the Oracle database software installer.

 **Note:**

If necessary, install `unzip` with the command `yum install unzip`.

```
unzip LINUX.X64_193000_db_home.zip
```

4. Export the command:

```
export CV_ASSUME_DISTID=OEL8
```

5. Run the Oracle database software installer.

```
./runInstaller
```

6. When you run the installer you will see this message.

```
[oracle@myserver dbhome_1]$ ./runInstaller
```

```
Launching Oracle Database Setup Wizard...
```

 **Note:**

If you see a warning message on insufficient swap space, type **y** to ignore this message and continue the installation.

Install the Oracle Database Software

1. In the **Configuration Option** window, click **Create and configure a single instance database**, and click **Next**.



2. In the **Select System Class** window, select **Desktop Class** and click **Next**.

 **Note:**

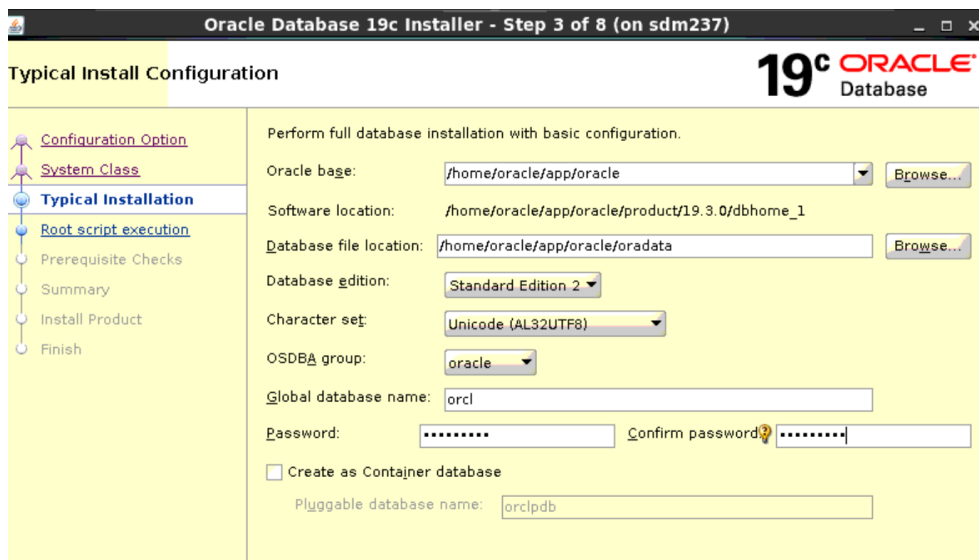
The **Desktop Class** is sufficient for Report Manager and BI Publisher to use the Oracle database.

3. In the **Typical Installation Configuration** window, keep the fields identified with default values and change any of the fields as required below:

Oracle base field	(Default) /home/oracle/app/oracle
Software Location field	(Non -editable) /home/oracle/app/oracle/product/19.3.0/dbhome_1
Database file location field	(Default) /home/oracle/app/oracle/oradata
Database edition drop-down list	Select Standard Edition 2 .
Character Set drop-down list	Select Unicode (AL32UTF8) .

OSDBA Group drop-down list	(Default) oracle If the OSDBA Group is specified with another group by default, you must change it to oracle .
Global database name field	(Default) orcl
Password field	Enter the password for the Global Database name.
Create as Container database checkbox	Uncheck the checkbox.

The following example shows the completed **Typical Installation Configuration** window.



4. Click **Next**.
5. If the **Create Inventory** window displays, accept the default values. For example:

Inventory Directory	/home/oracle/app/oraInventory
oraInventory Group Name	oracle

6. In the **Root script execution** window, clear the **Automatically run configuration scripts** check box if it is already selected, and click **Next**.
7. In the **Perform Prerequisite Checks** window, you may encounter error messages, take the appropriate actions. However, if you do not want to correct them, check **Ignore All**, and click **Next**.
8. In the **Summary** window, click **Install**.

A default database is created. The global database name is **orcl** and its SID is **orcl**.

The **Install Product** window appears and shows the progress of your installation. At some point in the installation, the **Execute Configuration Scripts** dialog box appears. Proceed to the next section for more information.

Execute Configuration Scripts to Access the Oracle Database Software

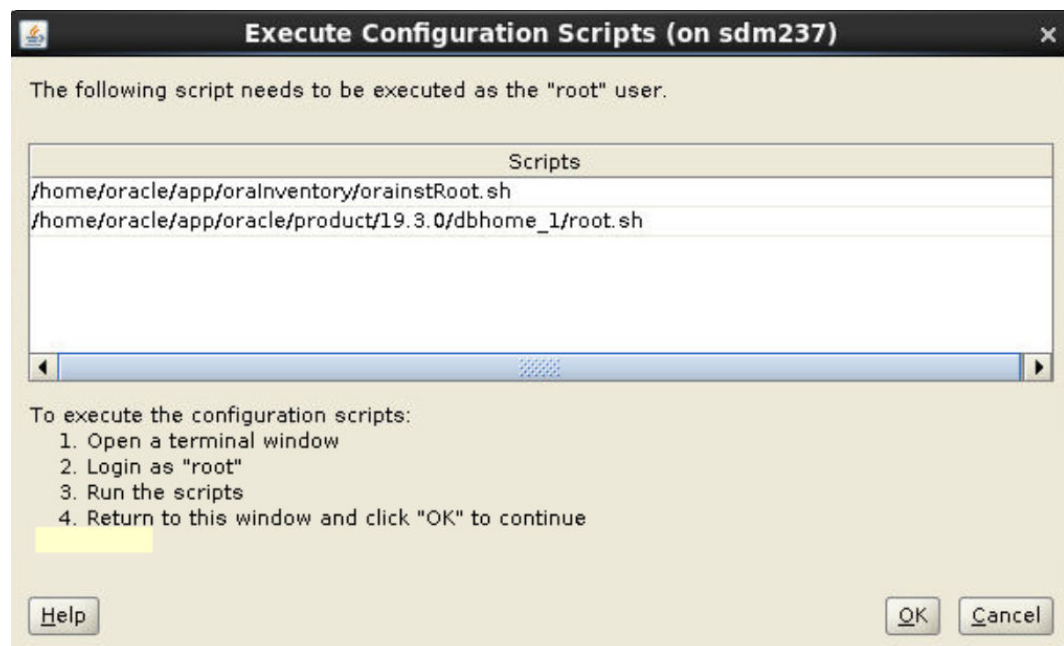
The **Execute Configuration scripts** dialog box opens to display the location of scripts that must be run by the root user before continuing.

1. Open a separate terminal window and login to the server as the root user.
2. Run the following scripts displayed in the following **Execute Configuration scripts** dialog box in the separate terminal window that you opened:

```
cd /home/oracle/app/oraInventory/  
./orainstRoot.sh
```

```
cd /home/oracle/app/oracle/product/19.3.0/dbhome_1  
./root.sh
```

The **Execute Configuration scripts** dialog box displays the scripts you need to execute to create the Oracle database:



3. Go back to the **Execute Configuration scripts** dialog box, and click **OK**. Continue to monitor the **Install Product** window.

```

Performing root user operation.

The following environment variables are set as:
  ORACLE_OWNER= oracle
  ORACLE_HOME=  /home/oracle/app/oracle/product/19.3.0/dbhome_1

Enter the full pathname of the local bin directory: [/usr/local/bin]:
The contents of "dbhome" have not changed. No need to overwrite.
The contents of "oraenv" have not changed. No need to overwrite.
The contents of "coraenv" have not changed. No need to overwrite.

Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
Oracle Trace File Analyzer (TFA - Standalone Mode) is available at :
  /home/oracle/app/oracle/product/19.3.0/dbhome_1/bin/tfactl

Note :
1. tfactl will use TFA Service if that service is running and user has been granted access
2. tfactl will configure TFA Standalone Mode only if user has no access to TFA Service or TFA is not installed

```

4. When the installation finishes, the **Finish** window appears and tells you that the installation was successful. Click **Close** .

The Oracle database is created and can now be reached at `https://<localhost>:5500/em`.

Change the Oracle Database Listener Configuration File

Edit the Listener to ensure the Oracle database software is accessible remotely by BI Publisher, edit the listener.ora file.

1. Change directories to the admin directory.

```
[oracle@vm ~]$ cd /home/oracle/app/oracle/product/19.3.0/dbhome_1/network/admin/
```

2. Change the value of the HOST parameter from "localhost" to the hostname of your server.

```
[oracle@vm admin]$ sed -i s/localhost/`hostname`/ listener.ora
```

3. If you desire, refer to the [How to Start, Stop, and Check the Status of the Oracle Database Listeners](#) section for more information regarding the Oracle Database listener that you configured here.

3

Create an Oracle Database Instance for BI Publisher

1. Log in as the oracle user. For example:

```
ssh -Y oracle@<my_oracle_server>
```

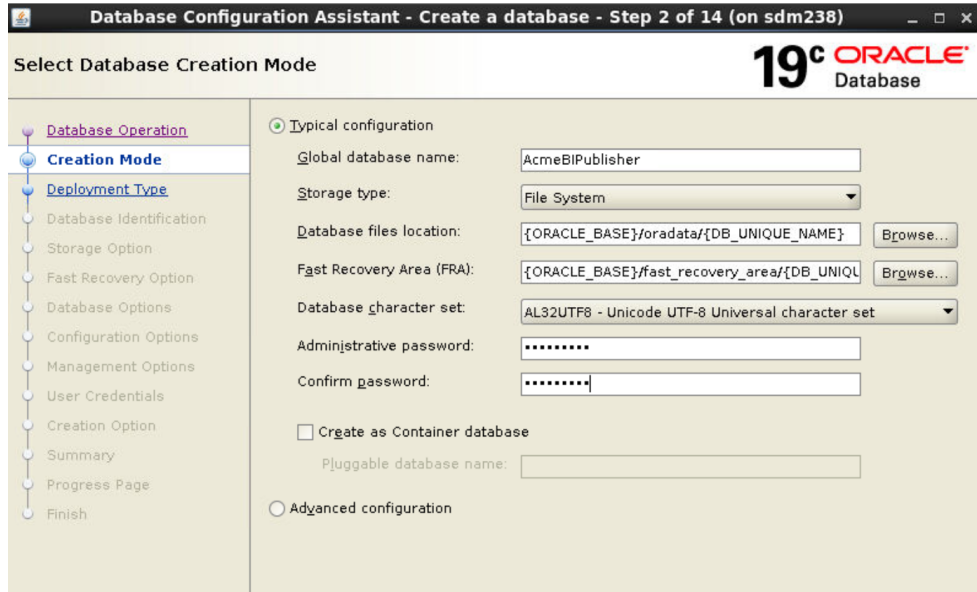
2. Run the Database Creation Assistant.

```
[oracle@vm ~]$ cd /home/oracle/app/oracle/product/19.3.0/dbhome_1/bin  
[oracle@vm bin]$ ./dbca
```

3. In the **Select Database Operation** window, select **Create a Database** (Default) and click **Next**.
4. In the **Select Database Creation Mode** window, the **Typical configuration** is selected by default. Keep the fields identified with default values and change any of the fields as required below:

Global Database Name field	Enter AcmeBIPublisher .
Storage type drop-down list	(Default) File System
Database files location field	(Default) {ORACLE_BASE}/oradata/ {DB_UNIQUE_NAME}
Fast Recovery Area (FRA) field	(Default) {ORACLE_BASE}/ fast_recovery_area{DB_UNIQUE_NAME}
Database character set drop-down list	(Default) AL32UTF8 - Unicode UTF-8 Universal character set
Administrative password field	Enter the AcmeBIPublisher database password.
Confirm password field	Reenter the AcmeBIPublisher database password to confirm it.
Create as Container database check box	Uncheck the checkbox. Ensure that the password conforms to the Oracle recommended standards.

The following example shows the completed **Select Database Creation Mode** window with the AcmeBIPublisher database parameters that you entered above.



5. Click **Next**.
6. In the **Summary** window, click **Finish**.
The **Progress Page** window appears to show the progress of the AcmeBIPublisher database installation.
7. In the **Finish** window, click **Close** to finish the AcmeBIPublisher database installation.

Specify Oracle Database Software Variables

Use the following steps to specify the variable for the oracle database (ORACLE_HOME), and the system identifier (SID) variable that identifies the BI Publisher database.

1. Append the following lines to /home/oracle/.bash_profile.

```
export ORACLE_HOME=/home/oracle/app/oracle/product/19.3.0/dbhome_1
export ORACLE_SID=AcmeBIPublis
```

Note:

Make sure the ORACLE_HOME path has no trailing slash.

2. Switch to the nncentral user.


```
su - nncentral
```
3. Append the following line to /home/nncentral/.bash_profile.

```
export ORACLE_HOME=/home/oracle/app/oracle/product/19.3.0/dbhome_1
```

 **Note:**

The ORACLE_HOME variable must be set when restarting either the listener or Oracle Communications Session Delivery Manager.

4. Start a new bash shell as the "oracle" Linux user. For example:

```
ssh -Y oracle@<my_oracle_server>
```

Add an Oracle Database User that Connects to BI Publisher for Backup and Restore Functions

Add an Oracle database user called nncentral to connect BI Publisher database for backup and restore functions work properly. This task needs to be done for local installations only.

1. Log into the Oracle database.

```
[oracle@vm ~]$ echo $ORACLE_SID  
AcmeBIPublis  
[oracle@vm ~]$ cd $ORACLE_HOME/bin/  
[oracle@vm bin]$ ./sqlplus '/as sysdba'
```

2. Create a user called nncentral and the user password.

 **Note:**

The password that you configure expires after 180 days. Seven days before the password expires, a password expiry trap warns you through SDM that your password needs to be reset. If you need to reset this user password later, see the *Reset the Password for the Oracle Database User* section in the *Oracle Communications Report Manager User Guide* for more information.

```
SQL> CREATE USER nncentral IDENTIFIED BY <password>;
```

3. Grant the appropriate privileges.

```
SQL> GRANT CONNECT, DBA, SYSDBA, CREATE SESSION TO nncentral;
```

4. Exit the Oracle database prompt.

```
SQL> exit
```

4

Install Oracle BI Publisher

This chapter describes the BI Publisher WebLogic server, the Oracle Fusion Middleware Infrastructure and the Oracle Business Intelligence 12c installation.



Note:

If you encounter errors during the installation process, see the [Administrator's Troubleshooting Guide](#) for BI Publisher.

Install the Latest Java Development Kit 8

The BI Publisher WebLogic Server that is part of the Fusion Middleware infrastructure must be installed separately before the Oracle Fusion Middleware product. Prior to the 12c release of BI Publisher, the Fusion Middleware product was part of the Oracle Business Intelligence Suite.

1. Get the latest version of the Java Development Kit (JDK) version 8 from the Oracle customer portal.
2. Save the tar.gz file to the directory on your server where you want to install it.
3. Login to your server as the root user.
4. Navigate to the directory where you downloaded the tar.gz file.
5. Extract the tar.gz file. For example:

```
tar xzf jdk-8u144-linux-x64.tar.gz
```

6. Add the following two lines to the `/home/oracle/.bashrc` file to permanently set the `JAVA_HOME` environment variable and set the java binary as part of the system `PATH`:

```
export JAVA_HOME=/opt/jdk1.8.0_144
export PATH=$JAVA_HOME/bin:$PATH
```



Note:

`JAVA_HOME` must be accessible to the oracle user. In the above example, the `/opt` directory must be accessible to the oracle user.

 **Note:**

Install JDK earlier than JDK 1.8.0_188 for NNC Version 8.2.1 and below. For JDK versions that are later than JDK 1.8.0_188, "Subject Alt names" is expected by BIP in the BIP Certificate for BIP Registration in the HTTPS mode. For more information, see [Register BI Publisher in HTTPS Mode](#). For NNC 8.2.2 and above, you can install any latest JDK version.

Install the Oracle Fusion Middleware Infrastructure

With the introduction of Business Intelligence (BI) Publisher, Release 12c, the Repository Creation Utility is part of the Oracle Fusion Middleware product. This task is used to install the Oracle Fusion Middleware infrastructure in preparation for installing the BI Publisher application.

1. Download the Oracle Fusion Middleware version 12c zip file (fmw_12.2.1.3.0_infrastructure_Disk1_1of1.zip) from the [Oracle Business Intelligence Downloads](#) page.

 **Note:**

Report Manager only supports Oracle Fusion Middleware version 12.2.1.3.0

2. Copy the file to your server.
3. Log in to your server as the oracle user with the -Y flag.

```
ssh -Y oracle@vm
```

4. To ensure the file was not corrupted during transfer, match the checksum of the file to checksum that Oracle publishes for the file. The checksum displays next to the download link on the right.

The checksum output has the following format: <checksum> <byte count>
<filename>

5. Unzip the file.

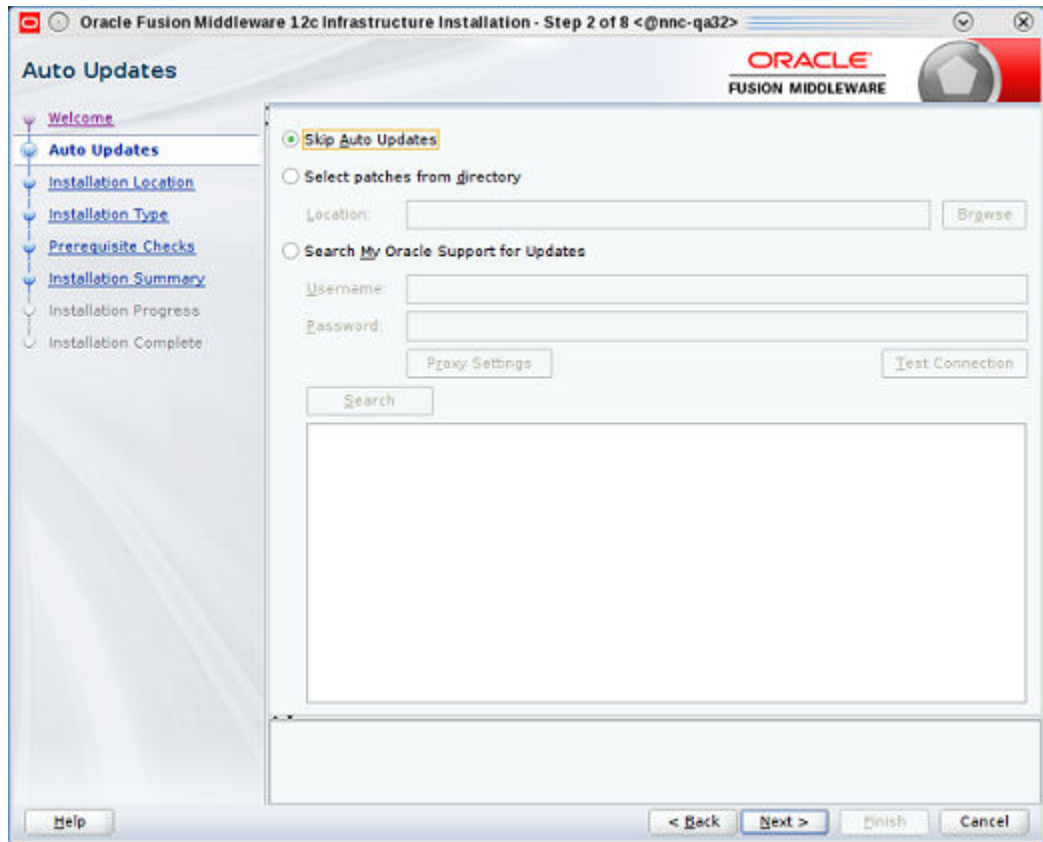
```
unzip fmw_12.2.1.3.0_infrastructure_Disk1_1of1.zip
```

6. Run the following command on the resulting JAR file to run the Oracle Fusion Middleware installer:

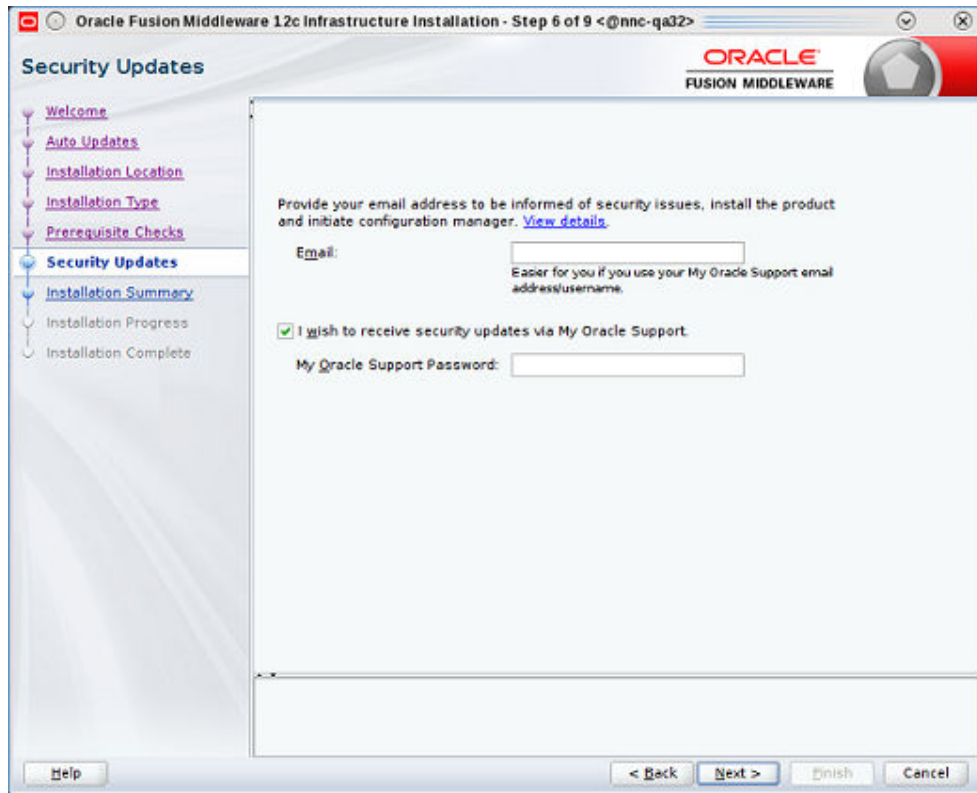
```
java -d64 -jar fmw_12.2.1.3.0_infrastructure.jar
```

7. In the **Welcome** window, click **Next**.
8. In the **Auto Updates** window, you can use the default choice (**Skip Auto Updates**) if you do not plan on receiving any updates for Oracle Fusion Middleware from Oracle Support and click **Next**. However, if you want automatic

updates later or the ability to search updates through Oracle Support you can choose the other options and click **Next**. For example:



9. In the **Installation Location** window, click **Next**.
10. In the **Installation Type** window, keep the default choice (**Fusion Middleware Infrastructure**) and click **Next**.
11. In the **Prerequisite Checks** window, checks are performed. Click **Next**.
12. In the **Security Updates** window, provide an email address in the **Email** field and click **Next**. You can optionally check the checkbox to receive security updates through your My Oracle Support account. Enter your password for this account in the **My Oracle Support Password** field. For example:



13. In the **Installation Summary** window, click **Install** to begin the Oracle Fusion Middleware installation.
The **Installation Progress** window appears to display the progress of the installation.
14. When the installation completes, click **Next**.
15. In the **Installation Complete** window, click **Finish**.

Start Oracle Business Intelligence 12c Installation

Installing the Oracle Business Intelligence 12c software is important part of the Oracle BI Publisher installation.

1. Download the following Oracle Business Intelligence 12c Installation files from the [Oracle Business Intelligence 12c \(12.2.1.4.0\) Downloads](#).

```
fmw_12.2.1.4.0_bi_linux64_Disk1_1of2.zip  
fmw_12.2.1.4.0_bi_linux64_Disk1_2of2.zip
```

2. Extract the contents of the .zip files to get:

```
bi_platform-12.2.1.4.0_linux64-2.zip  
and  
bi_platform-12.2.1.4.0_linux64.bin
```

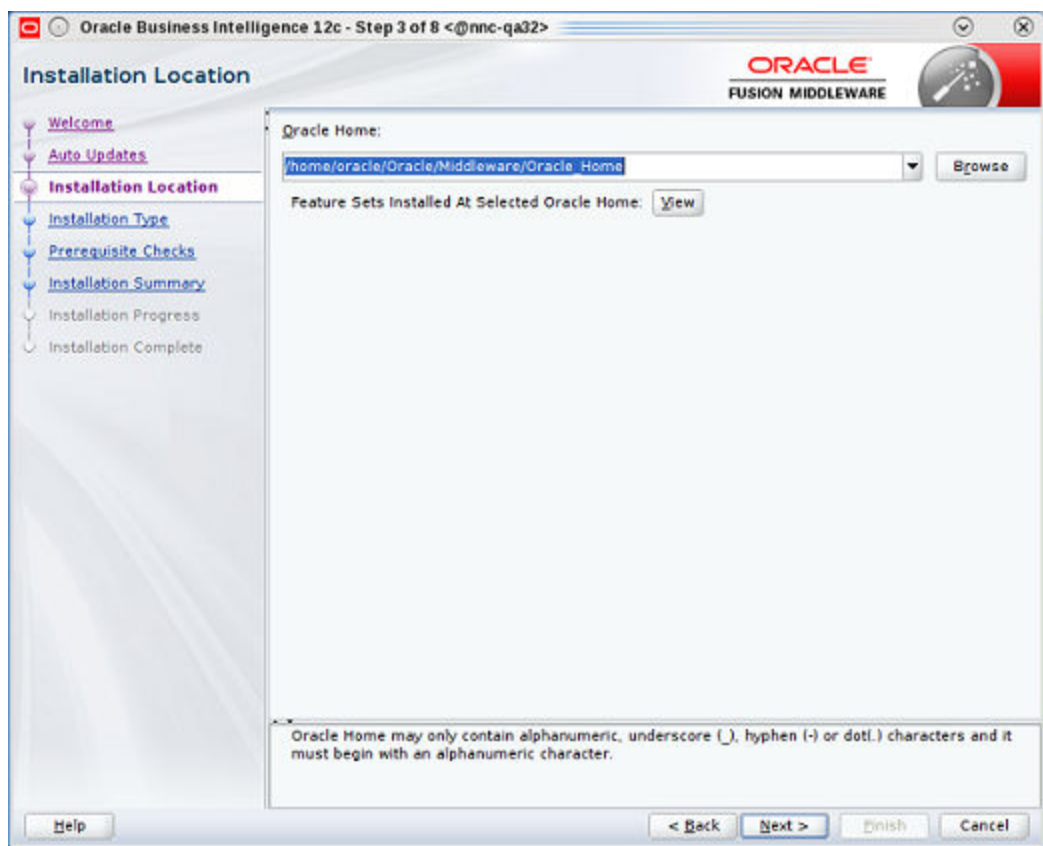
3. Execute the Oracle Business Intelligence 12c installer as oracle user:

```
./bi_platform-12.2.1.4.0_linux64.bin
```

4. In the **Welcome** window click **Next**.
5. In the **Auto Updates** window, you can use the default choice (**Skip Auto Updates**) if you do not plan on receiving any updates for the Oracle Business Intelligence 12c software from Oracle Support and click **Next**. However, if you want automatic updates later or the ability to search updates through Oracle Support you can choose the other options and click **Next**.
6. In the **Installation Location** window, select the directory from the **Oracle Home** drop-down list or you can browse to the directory where you want to install the software.

The following example shows the /home/oracle/Oracle/Middleware/Oracle_Home directory:

Figure 4-1 Installation Location



7. In the **Installation Type** window, select the BI Platform distribution option that you want. The default is **BI Platform Distribution with Samples**.
8. In the **Prerequisite Checks** window, click **Next**.
9. In the **Installation Summary** window, click **Install**.
10. In the **Installation Progress** window, click **Next**.
11. In the **Installation Complete** window, click **Finish**.

Applying the Oracle Middleware Patch

Perform the tasks given in this section to Oracle Middleware Patch.

1. As the Oracle User, export ORACLE_HOME using the following command:

```
export ORACLE_HOME=/home/oracle/Oracle/Middleware/Oracle_Home
```

2. Download the .zip file for the patch. Follow the patch download instructions given in the [Downloading Patches](#). The patch number is 28264679.
3. Extract the contents of the .Zip file of the patch using this command:

```
[oracle@sdm]$ unzip patch.zip
```

4. Go to the 28264679 directory inside patch directory using these command:

```
[oracle@sdm]$ cd patch
[oracle@sdm patch]$ ls
28264679  p28264679_122140_Generic.zip
[oracle@sdm patch]$ cd 28264679
```

5. To apply the patch execute the following commands as an Oracle user:

```
[oracle@sdm 28264679]$
/home/oracle/Oracle/Middleware/Oracle_Home/OPatch/opatch lsinventory
[oracle@sdm 28264679]$ /home/oracle/Oracle/Middleware/Oracle_Home/
OPatch/opatch apply
```

The message "OPatch applied successfully" confirms that the patch has been applied successfully.

Install the Oracle Business Intelligence 12c Configuration Assistant

Now that the Oracle Fusion Middleware and Oracle Business Intelligence 12c software is installed, you must install the Oracle Business Intelligence 12c Configuration Assistant.



Note:

Any values that you configure in this section, save a record of them for future use.

1. Ensure that the listener is running. Refer to the [How to Start, Stop, and Check the Status of the Oracle Database Listeners](#) section for more information. Look for the expected result in the status display:

```
Service "AcmeBIPublisXDB" has 1 instance(s).
  Instance "AcmeBIPublis", status READY, has 1 handler(s) for this
service...
Service "AcmeBIPublisher" has 1 instance(s).
  Instance "AcmeBIPublis", status READY, has 1 handler(s) for this
```



```
service...
Service "orcl" has 1 instance(s).
```

2. Change the directory to the bin directory that was created for you as part of the Oracle Business Intelligence 12c installation. For example:

```
/home/oracle/Oracle/Middleware/Oracle_Home/bi/bin
```

3. Install the Oracle Business Intelligence 12c Configuration Assistant with the config.sh script:

```
./config.sh
```

4. In the **Welcome** window, uncheck the **Essbase** and **Business Intelligence Enterprise Edition** check boxes under the **Components to include** header and click **Next**.
5. In the **Prerequisite Checks** window, click **Next** when the prerequisite checks are completed.
6. In the **Define New Domain** window, the location and credential information is populated in their respective fields, enter the password credentials for the Weblogic server in the **Credentials for new domain** section (you will use these credentials later when you login to the Weblogic server) and click **Next**. For example:

7. In the **Database Schema** window, you are creating a new schema. The **Create new schema** option is selected for you. Complete the following fields and click **Next**:

Schema prefix field	DEV
Schema password field	Enter a password that is at least nine characters or greater.
Confirm schema password field	Reenter the schema password.
Database type drop-down list	Select Oracle Database (Default).
Username field	Enter the nncentral user. Refer to the Add an Oracle Database User that Connects to BI Publisher for Backup and Restore Functions section for more information.
Password field	Enter the nncentral user password. Refer to the Add an Oracle Database User that Connects to BI Publisher for Backup and Restore Functions section for more information.
Simple connect string field	Use the <server_name>:<port>:<service_name> format. For example: vm:1521:AcmeBIPublisher

8. In the **Port Range** window, the following default Port Range values display:

Port Range Starting Port	9500 (Default) If you need to change the start port number for the Business Intelligence (BI) and Web Logic Server (WLS) processes to use.
Port Range End Port	9999 (Default) If you need to change the end port number for the Business Intelligence (BI) and Web Logic Server (WLS) processes to use.

9. In the **Initial Application** window, we recommend that you select the **Clean Slate** (no predefined application) option.
10. In the **Summary** window, review your configuration and click **Configure**.
11. In the **Configuration Progress** window, when the progress of the configuration is complete, click **Next**.
12. In the **Configuration Complete** window, click **Finish**.

Access BI Publisher and the WebLogic Console

1. In your web browser, access the BI Publisher by navigating to the following URL:
`http://<hostname>:9502/xmlpserver`
2. In another tab in your web browser, access the WebLogic console by navigating to the following URL:
`http://<hostname>:9500/console`

Create the Boot Properties File

The post-installation process involves the creation of a boot.properties file.

1. Change directories to the BI Publisher domain. For example:

```
cd /home/oracle/Oracle/Middleware/Oracle_Home/user_projects/domains/bi
```

2. If the following path does not exist on your system, create it with the `mkdir` command. Otherwise, change directories from the BI Publisher domain to `servers/AdminServer/security`. For example:

```
cd servers/AdminServer/security
```

3. Create a file called `boot.properties`.

```
vi boot.properties
```

4. Add the following two lines:

```
username=weblogic  
password=<password>
```

Use the password which you created for the weblogic user. Refer to [Install the Oracle Business Intelligence 12c Configuration Assistant](#) section for more information.

Configure the BI Publisher Security Model

1. Open your web browser and log into BI Publisher with the following URL:

```
http://<hostname>:9502/xmlpserver
```

2. In the **Oracle BI Publisher Enterprise** login page, enter **weblogic** in the **Username** field.
3. Enter the password for the Weblogic user that you set in the **Define New Domain** window in the Oracle Business Intelligence 12c Configuration Assistant. Refer to [Install the Oracle Business Intelligence 12c Configuration Assistant](#) section for more information.
4. In the top right corner of the page, click **Administration**.
5. In the **Administration** page, under the **Security Center** heading, click **Security Configuration**.
6. Scroll down the page to the **Authorization** heading and select **BI Publisher Security** from the **Security Model** drop-down list.
7. Enter the administrator password in the **New Password** field.
8. Scroll to the top of the page, and in the top right-corner, click **Apply**.

The settings are saved successfully, but do not take effect until the application is restarted.

9. Scroll to the top of the page, and in the top right-corner, click **Sign Out**.
10. Restart the WebLogic server. Refer to the [Start or Stop the WebLogic Server for 12c](#) section for more information.

 **Note:**

After restarting the WebLogic server, the weblogic account is disabled. Administrative actions must be performed with the administrator account.

11. Login to the WebLogic server, complete the following fields:

Username field	Enter administrator in this field.
Password field	Enter the new password that you configured in step 7.

12. Click **Sign In** to enter a new session.

Configuring User Privileges for Local Configurations

For local standalone and local cluster setups only, add the nncentral user to the oracle group and oinstall group, add the oracle user to the nncentral group and oinstall group, and add both the oracle and nncentral users to the dba group.

The following procedure is necessary only when Oracle BI Publisher and Oracle Session Delivery Manager are installed on the same server.

1. SSH to your BI Publisher server.
2. As root, open the /etc/group file.
3. Add **oracle** to the end of the line that begins with `nncentral` and `oinstall`. Add **nncentral** to the end of the line that begins with `oracle` and `oinstall`. Add the **oracle** and **nncentral** to the end of the line that begins with `dba`.

For example:

```
nncentral:x:<###>:oracle
oracle:x:<###>:nncentral
oinstall:x:<###>:oracle,nncentral
dba:x:<###>:oracle,nncentral
```

 **Note:**

The `<###>` represents a series of numbers.

4. Save and close the file.
5. Change from the root user to the oracle user.
6. Grant the nncentral user permission to act as a sysdba.

```
cd $ORACLE_HOME/bin
chmod 6751 oracle
cd $ORACLE_HOME/bin
```

```
su nncentral
chmod 6751 /home/nncentral
```

7. The nncentral user must have read, write, and execute privileges for the oracle user where the Oracle DB is installed. You may grant the necessary privileges as the oracle user with the following command:

```
chmod -Rf g+rwX <ORACLE_DB_INSTALL_PATH>
```

For example:

```
chmod -Rf g+rwX /home/oracle/app
```

8. The nncentral user must have read, write, and execute privileges for the oracle user where Oracle MiddleWare is installed. You may grant the necessary privileges as the oracle user with the following command:

```
chmod -Rf g+rwX <ORACLE_MIDDLEWARE_PATH>
```

For example:

```
chmod -Rf g+rwX /home/oracle/Oracle/Middleware/Oracle_Home
```

9. Switch to the nncentral user to restart Oracle Communications Session Delivery Manager (SDM) if it is currently running.

Configure a Data Pump Directory for Local Installations

If your system is set up as a local standalone or local cluster, you need to manually specify the data pump directory. The data pump directory is used in the backup and restore process for the Oracle database.

1. Connect to the Oracle database as the sysdba.

```
cd $ORACLE_HOME/bin
./sqlplus / as sysdba
```

2. Change the directory location of the data pump files to your desired directory.

Below is an example of the command.

```
CREATE OR REPLACE DIRECTORY "DATA_PUMP_DIR" as '/home/oracle/app/oracle/
product/12.2.0/dbhome_1/rdbms/log/';
```

3. Verify the change took place.

```
SELECT owner, directory_name, directory_path FROM dba_directories WHERE
directory_name='DATA_PUMP_DIR';
```

5

Create a Report Manager Database Instance

If you are using Oracle® Communications Report Manager with Oracle Communications Session Delivery Manager, you must create a Report Manager database instance on the external Oracle database.

When you complete the Report Manager database instance (OCSDMDW) configuration on Oracle Communications Session Delivery Manager, the following items are created on the external Oracle database:

- Oracle database instance for Oracle Communications Report Manager (OCSDMDW).
- Oracle database user (OCSREMDW)
- LISTENER2 instance, which listens on its designated port 1522 (for the Report Manager application) on the Oracle database.

6

Verify the Report Manager Database Instance

You must verify that the Report Manager database instance (OCSDMDW) is created.

1. From your Linux system, query the Oracle database to verify if the OCSDMDW database is active:

```
ssh -Y oracle @vm
export ORACLE_SID=ocsdmdw
cd $ORACLE_HOME/bin
```

2. Enter the path to the OCSDMDW database:

```
./sqlplus ocsremdw/<ocsremdw password>@ocsdmdw
```

If a success message appears, it indicates that the OCSDMDW database is active and installed correctly. If a failure message appears, either the database is not installed or not configured. Continue to step three if you get a failure message.

3. Check the logs directory to discover why a failure happened (if a failure has happened).

```
/home/nncentral/AcmePacket/NNC<version>/logs/SetupApplication.log
```

4. Look for any error messages in the setup application log. We suggest filtering your search with the words LISTENER2 and OCSDMDW. If you are unable to determine what is wrong, contact your Oracle Communications support representative.

7

Verify LISTENER2 is Created on the Oracle Database

You must verify that LISTENER2 on port 1522 is created on the Oracle database.

1. From your Linux system, query the NNC report LISTENER2 status to see if it is active:

```
cd $ORACLE_HOME/bin
```

2. If there is a failure message, manually try activating LISTENER2:

```
./lsnrctl start LISTENER2
```

3. Check the status of LISTENER2 again:

```
./lsnrctl status LISTENER2
```

If a success message appears, it indicates that LISTENER2 is active and the Oracle database is installed correctly. If a failure message appears again, either the database is not installed or the listener is not configured. Continue to step four if you get a failure message.

4. Check the logs directory to discover why a failure happened (if a failure has happened).

```
/home/nncentral/AcmePacket/NNC<version>/logs/SetupApplication.log
```

5. Look for any error messages in the setup application log. We suggest filtering your search with the words LISTENER2 and OCSDMDW. If you are unable to determine what is wrong, contact your Oracle Communications support representative.

8

Register Oracle BI Publisher

Register BI Publisher in HTTPS Mode

Oracle recommends you register BI Publisher in HTTPS mode to encrypt any communication between Oracle Communications Session Delivery Manager and BI Publisher. BI Publisher can be run in both HTTP and HTTPS modes. If you decide to run BI Publisher in HTTP mode, then you can skip this section and go to the Register BI Publisher in Session Delivery Manager section.

Register BI Publisher in Session Delivery Manager

After the Oracle Communications Session Delivery Manager installation, Oracle BI Publisher must be registered from within the SDM GUI application.

1. Start the Oracle Communications Session Delivery Manager server as the nncentral user:

```
cd /opt/AcmePacket/NNC<version>/bin/  
./startnnc.sh
```

2. Navigate to your Oracle Communications Session Delivery Manager server IP address on port 8080.
3. Ensure that you have your product plugin installed.
4. Select **Report Manager, Register BI Publisher**.
5. (Use this step to re-register BI Publisher in SDM only) In the **Register BI Publisher** pane, click **Configure Registration**.
6. In the **Register BI Publisher Step 1 of 2** pane, complete the following installation details fields to register a BI Publisher server:

Installation Location radio buttons

Select the following location type:

- **local**—The Report Manager and BI Publisher software is installed on the same server.
- **remote**—The Report Manager and BI Publisher software is installed on separate servers.

 **Note:**

If you are registering BI Publisher with SSL on a local server, a domain name server (DNS) is required.

Installation Type radio buttons	Select the following installation type: <ul style="list-style-type: none"> • standalone—A single or remote installation of Oracle Communications Session Delivery Manager, Oracle BI Publisher, and their respective databases that work together to generate reports. • cluster—A cluster of servers (A local cluster is supported for 12c) that generate reports and provide high availability in case one system experiences a sudden failure. On each server that is part of the same cluster, Oracle BI Publisher and Oracle Communications Session Delivery Manager are installed with their respective databases.
Weblogic Admin User Name field	Enter weblogic . This is the user name that was created when you installed Oracle BI Publisher. Refer to the Install the Oracle Business Intelligence 12c Configuration Assistant section for more information.
Weblogic Admin Password field	Enter the Weblogic password that you created when you installed Oracle BI Publisher. Refer to the Install the Oracle Business Intelligence 12c Configuration Assistant section for more information.
Weblogic Admin Port field	Enter the Weblogic administrator port that you created when you installed Oracle BI Publisher. For example: 9500. Refer to the Install the Oracle Business Intelligence 12c Configuration Assistant section for more information.
Admin User Name field	Enter administrator . This is the user name that you entered when you configured BI Publisher security. Refer to Configure the BI Publisher Security Model section for more information.
Admin Password field	Enter the Oracle BI Publisher administrator password that you created when you installed Oracle BI Publisher. Refer to Configure the BI Publisher Security Model section for more information.

7. Click **Next**.



The available configuration parameters for Step 2 of 2 depend on your selections in Step 1 of 2.

Register a Local Standalone Mode of BI Publisher for Report Manager

If you entered local standalone in the previous section, use this additional task to register a local standalone installation of Oracle BI Publisher for Report Manager:

1. In the **Register BI Publisher Step 2 of 2** pane, complete the following installation details fields to register a local standalone installation of Oracle BI Publisher for Report Manager:

Server Protocol drop-down list	Select http or https for the secure hypertext transfer protocol.
Server Location field	The host name.

	<p> Note:</p> <p>This value should be the same host name used when creating the certificate (For example, server1.oracle.com).</p>
Server Port field	The Oracle BI Publisher server port number. For example, 9502.
BI Publisher Home Folder field	The BI Publisher Home Folder. For the installation previously documented, the path is /home/oracle/Oracle/Middleware/Oracle_Home/user_projects/domains/bi. The path for your installation may differ if you selected a different location for the OracleMiddleWare directory.
Repository Location field	<p>The repository location that can be found by logging into BI Publisher and navigating to Administration, Server Configuration, Catalog, Path. For the installation previously documented, the repository location is /home/oracle/Oracle/Middleware/Oracle_Home/user_projects/domains/bi/bidata/components/bipublisher/repository.</p> <p> Note:</p> <p>The 'nncentral' user must have write privileges for the BIP home folder and repository location.</p>
BI Publisher Schema Prefix field	The prefix schema for BI Publisher. The default prefix is DEV.
Oracle Database User Name field	The nncentral user name for your Oracle database. See the <i>Add an Oracle Database User that Connects to BI Publisher for Backup and Restore Functions</i> section for more information.
Oracle Database User Password	The password for the nncentral database user.
Oracle Database Service Name	The Oracle database service name. Unless you previously selected a different name, enter AcmeBIPublisher .
Oracle Database Home Path	Enter the Oracle database home path. For the installation previously documented, the Oracle database home path is: /home/oracle/app/oracle/product/19.3.0/dbhome_1

Oracle Database SID	Enter the Oracle database SID. The SID is the first 12 characters of the Oracle Database Service Name. If <i>AcmeBIPublisher</i> is the Oracle Database Service Name, enter AcmeBIPublis .
----------------------------	---

2. Click **Apply**.

Registering a Remote Standalone BI Publisher

Use this task if you entered remote standalone in the previous step:

1. In the **Register BI Publisher Step 2 of 2** pane, complete the following fields:

Server Protocol drop-down list	Select https or http for the web server protocol.
Server Location field	The host name of the server on which BI Publisher is installed.
Server Port field	The BI Publisher xmlpserver port. For example: 9502.
FTP User Name field	The FTP user name.
FTP Password field	The FTP password.
FTP Path for BI Publisher Home Folder field	The FTP path for the BI Publisher Home Folder. For example: <code>/home/oracle/Oracle/Middleware/Oracle_Home/user_projects/domains/bi</code> . The path for your installation may differ if you selected a different location for the OracleMiddleWare directory.

2. Click **Apply**.

Register a Local BI Publisher Cluster

If you entered the **local** and **cluster** options in the **Register BI Publisher Step 1 of 2** pane, complete the following task:

1. Select the local cluster node and click **Edit**.
2. In the **BI Publisher Cluster Member** window, enter the protocol, IP address, port, FTP user name, FTP password, BI Publisher home folder, repository location, and Oracle database information for each node in the cluster.

 **Note:**

If setting up a local cluster, the BI Publisher server information is pre-populated.

3. Click **Apply** to save and close the **BI Publisher Cluster Member** window.
4. Click **Apply**.

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Report Manager Administrator Operations

Shutdown Report Manager

1. On the SDM server, log in as the nncentral user.
2. Change the directory to the bin directory.

For example:

```
cd /home/nncentral/AcmePacket/NNC<version>/bin
```

3. Execute the **shutdownnnc.sh** script. By default, the shutdownnnc.sh script detects whether the existing installation is a standalone or clustered system and prompts you with the option to shutdown the entire cluster if no flag options are provided.

 **Note:**

However, you can script an option ahead of time by adding `-local` for single nodes and `- cluster` to shutdown an entire cluster.

```
./shutdownnnc.sh
Shutdown back-end server
Do you wish to shut down the entire cluster (Yes/No)? Yes
```

4. On the server where the Oracle database software and BI Publisher are installed, login as the **Oracle** user.
5. Change to the WebLogic server directory. For example:

```
[oracle@vm ~]$ cd /home/oracle/Oracle/Middleware/Oracle_Home/
user_projects/domains/bi/bin
```

6. Stop the WebLogic server. Go to the section for more information.
7. Stop the BI Publisher database instance listener (LISTENER).

```
[oracle@vm bin]$ ./lsnrctl stop
```

8. [Manage the WebLogic Server](#)
9. Stop the OCSDMDW database instance listener (LISTENER2):

```
[oracle@vm bin]$ ./lsnrctl stop LISTENER2
```

10. If undefined, set the ORACLE_HOME variable in the .bash_profile of both the oracle user and the nncentral user.

```
export ORACLE_HOME=/home/oracle/app/oracle/product/19.3.0/dbhome_1
```

11. Specify the ORACLE_SID variable for the AcmeBIPublisher database.

```
export ORACLE_SID=AcmeBIPublis
```

12. Execute the ORACLE_HOME/bin/sqlplus script.

```
[oracle@vm bin]$ ./sqlplus '/ as sysdba'
```

13. Use the following option to shutdown the Oracle database instance and exit:

```
SQL> shutdown immediate;  
SQL> exit
```

14. Specify the ORACLE_SID variable for the Report Manager database instance (OCSDMDW).

```
export ORACLE_SID=ocsdmdw
```

15. Execute the ORACLE_HOME/bin/sqlplus script.

```
[oracle@vm bin]$ ./sqlplus '/ as sysdba'
```

16. Use the following option to shutdown the Oracle database instance and exit:

```
SQL> shutdown immediate;  
SQL> exit
```

Start Report Manager

1. On the server where the Oracle database software and BI Publisher are installed, login as the **Oracle** user.

```
ssh -Y oracle@myserver
```

2. If undefined, set the ORACLE_HOME variable in the .bash_profile of both the oracle user and nncentral user.

```
export ORACLE_HOME=/home/oracle/app/oracle/product/<oracle-database-  
software-version>/dbhome_1  
cd $ORACLE_HOME/bin
```

3. Specify the ORACLE_SID variable for the AcmeBIPublisher database.

```
export ORACLE_SID=AcmeBIPublis
```

4. Execute the ORACLE_HOME/bin/sqlplus script.

```
./sqlplus '/ as sysdba'
```

5. Use the following option to start the Oracle database and exit:

```
SQL> startup  
SQL> exit
```

6. Specify the ORACLE_SID variable for the Report Manager database instance (OCSDMDW).

```
export ORACLE_SID=ocsdmdw
```

7. Execute the ORACLE_HOME/bin/sqlplus script.

```
./sqlplus '/ as sysdba'
```

8. Use the following option to start the Oracle database and exit:

```
SQL> startup  
SQL> exit
```

9. Start the database listeners. Refer to [How to Start, Stop, and Check the Status of the Oracle Database Listeners](#) section for more information.

10. Start the WebLogic server. Refer to the [Start the WebLogic Server](#) section for more information.

11. On the SDM server, log in as the nncentral user.

12. Change the directory to the bin directory.

For example:

```
cd /home/nncentral/AcmePacket/NNC<version>/bin
```

13. Execute the startnnc.sh script.

```
./startnnc.sh
```

 **Note:**

The console displays the number of services started. After all services have started, the system is ready for use. Do not attempt to log in until the console has indicated that the web servers are up.

Reset the OCSREMDW User Password

The password for the Oracle Communications OCSREMDW User who connects to the Oracle Communications Session Delivery Manager Data Warehouse (ocsdmdw) database expires every 180 days. Use this task to reset the expired password with a new password.

1. Shutdown SDM as the nncentral user.

```
cd /opt/AcmePacket/NNC<version>/bin
./shutdownnnc.sh
```

2. Run setup.sh as root.
3. Select **Custom** and **Oracle DB OCSDMDW Configuration**.
4. Enter and then confirm the OCSDMDW password.
5. Enter the ORACLE_HOME path.

The error message should say "OCSDMDW Oracle DB already exists. Please drop this DB and try again."

6. Exit setup.sh.
7. Set the ORACLE_HOME and ORACLE_SID variables as the nncentral user.

```
su nncentral
export /home/oracle/app/oracle/product/19.3.0/dbhome_1
export ORACLE_SID=ocsdmdw
```

8. Log in to the Oracle database.

```
cd $ORACLE_HOME/bin
./sqlplus / as sysdba
```

9. If the database user accounts are locked because of multiple failed logins with the wrong password, unlock the nncentral and ocsremdw accounts.

```
alter user nncentral account unlock;
alter user ocsremdw account unlock;
```

10. Change passwords for the nncentral user and the ocsremdw user. The new ocsdmdw password must be the same as the one specified in step 4.

```
alter user nncentral identified by <new_password>;
alter user ocsremdw identified by <new_password>;
```

11. Exit

```
exit;
```

12. Confirm the password changes by looking for a successful log in to the following commands:

```
./sqlplus nncentral/<new_password>@ocsdmdw
./sqlplus ocsremdw/<new_password>@ocsdmdw
```

13. Start SDM as the nncentral user.

```
cd /opt/AcmePacket/NNC<version>/bin/
./startnnc.sh
```


Free Up Disk Space

In local clusters, dump files may be deleted if the server runs low on disk space.



Note:

Do not run this command if a backup or restore is in progress.

1. Log in as the oracle user.
2. Find and remove the dump files.

```
find . -name OCSDMDW_Dump*.dmp | xargs rm -rf
```

Uninstall Oracle Database

To uninstall Oracle database:

1. Run the deinstall script in the \$ORACLE_HOME/deinstall folder.

```
[oracle@vm ~]$ cd $ORACLE_HOME/deinstall/
```

```
[oracle@vm deinstall]$ ./deinstall
```

2. Select the default options unless you need to drop or delete schemas and listeners.
3. Type `y` to continue.
4. After the script finishes, remove the oracle folder.

```
rm -rf /home/oracle/app/oracle
```

How to Start, Stop, and Check the Status of the Oracle Database Listeners

1. Log in as the **Oracle** user.

```
ssh -Y oracle@myserver
```

2. Use the export `ORACLE_HOME` variable to restart the listener. Ensure that this variable identifies (set to equal) the directory path on which you installed the Oracle database software. For example:

```
export ORACLE_HOME=/home/oracle/app/oracle/product/<oracle-database-  
software-version>/dbhome_1  
cd $ORACLE_HOME/bin
```

3. Start the BI Publisher database listener (LISTENER).

```
./lsnrctl start
```

4. Start the OCSDMDW database listener (LISTENER2).

```
./lsnrctl start LISTENER2
```

5. To check the status of either listener mentioned above, use the following command:

```
./lsnrctl status
```

Manage the WebLogic Server

You may need to stop and then restart the WebLogic server for the following reasons:

- After registering BI Publisher server with SDM, you must stop the WebLogic server before restarting the Weblogic server again.
- SSL needs to be reenabled for HTTPS mode.
- The BI Publisher security model is enabled with the single sign-on (SSO) feature.

Stop the WebLogic Server

Note:

If you set up a standalone, stop the WebLogic server. If you set up a cluster, stop all WebLogic servers in the cluster.

1. Login to the WebLogic server as the oracle user. For example:

```
ssh -Y oracle@myweblogicserver
```

2. Change the directory to the DOMAIN_HOME/bin directory:

```
cd /home/oracle/Oracle/Middleware/user_projects/domains/bi/bin
```

3. Check if the WebLogic server is running:

```
ps -ef | grep weblogic
```

Note:

Verify if there are three processes running (by viewing three groups of output text).

4. Open your web browser and use the following URL:

```
http://<myweblogicserver>:9500/console
```

5. Login to the **WebLogic Server Administration Console 12c** welcome page and login using the **weblogic** username and the password that you set when you installed the Oracle Business Intelligence 12c Configuration Assistant. Refer to the [Install the Oracle Business Intelligence 12c Configuration Assistant](#) section for more information.
6. In the **Domain Structure** section on the navigation tree, expand the **Environment** tree and select **Servers**.
7. In the **Summary of Servers** section on the right pane, click the **Control** tab.
8. Check the check boxes for the **AdminServer(admin)** and **bi_server1** listed in the table and select **Force shutdown now** from the **Shutdown** drop-down list.
9. In the confirmation pane, select **Yes** to force the shutdown of the servers.
The WebLogic server console page is no longer available.
10. Go back to your linux session and stop the NodeManager process exactly as shown below:

```
./stopNodeManager.sh &
```

11. Check if the WebLogic server has been stopped:

```
ps -ef | grep weblogic
```

If there is no return of any WebLogic-related processes listed, then the WebLogic server has stopped completely.

Start the WebLogic Server

Note:

If you set up a standalone, restart the WebLogic server. If you set up a cluster, restart all WebLogic servers in the cluster.

1. Login to the WebLogic server as the oracle user. For example:

```
ssh -Y oracle@myweblogicserver
```

2. Change the directory to the DOMAIN_HOME/bin directory:

```
cd /home/oracle/Oracle/Middleware/user_projects/domains/bi/bin
```

3. Check if the WebLogic server is running:

```
ps -ef | grep weblogic
```

If there is no return of any WebLogic-related processes listed, then the WebLogic server is stopped.

4. Start the NodeManager process exactly as shown below:

```
./startNodeManager.sh &
```

5. Start the WebLogic server console.

```
nohup ./startWeblogic.sh &
```

6. Next type the following command to verify if the WebLogic server console has started:

```
tail -f nohup.out
```

The following statement appears in the output:

```
<Mar 30, 2018, 1:31:49,454 PM EDT> <Notice> <WebLogicServer>  
<BEA-000360> <The server started in RUNNING mode.>  
<Mar 30, 2018, 1:31:49,462 PM EDT> <Notice> <WebLogicServer>  
<BEA-000365> <Server state changed to RUNNING.>
```

7. Open your web browser and use the following URL:

```
http://<myweblogicserver>:9500/console
```

8. Login to the **WebLogic Server Administration Console 12c** welcome page and login using the **weblogic** username and the password that you set when you installed the Oracle Business Intelligence 12c Configuration Assistant. Refer to the [Install the Oracle Business Intelligence 12c Configuration Assistant](#) section for more information.
9. In the **Domain Structure** section on the navigation tree, expand the **Environment** tree and select **Servers**.
10. In the **Summary of Servers** section on the right pane, click the **Control** tab.
11. Check the check box for **bi_server1** listed in the table and select **Start**.
12. In the confirmation pane, select **Yes** to start the server.
13. Check if the WebLogic server is running:

```
ps -ef | grep weblogic
```

Verify that there is output for the three WebLogic processes showing that the WebLogic server is running.

10

Troubleshoot Installation Problems

X11 Forwarding

If the `xorg-x11-xauth` program is not installed, the following error appears if X11 forwarding over SSH is used:

```
X11 forwarding request failed on channel 0
```

- If you see this error, install the `xorg-x11-xauth` package.

```
yum install xorg-x11-xauth
```

xdpyinfo Errors

The following error messages indicate that `xdpyinfo` is not installed:

- Checking monitor: must be configured to display at least 256 colors
- Could not execute auto check for display colors using command `/usr/bin/xdpyinfo`. Check if the `DISPLAY` variable is set. Failed.

The `xdpyinfo` program must be installed.

1. Type the following command.

```
yum install xorg-x11-utils-<version-number>
```

2. If the program is already installed, check whether the oracle user has execute privileges.

```
[oracle@ouzo ~]$ cd /usr/bin
[oracle@ouzo bin]$ ls -al | grep xdpyinfo
-rwxr-xr-x  1 root root      38112 Feb 23  2015 xdpyinfo
```

Note:

In this example, the oracle user has execute privileges.

3. If the oracle user does not have executable privileges, log in as root and execute this command:

```
xhost +SI:localuser:oracle
```

4. Log in as the oracle user and run the installer.

```
./runInstaller
```

Browser Path error

After the installation, the Oracle installer attempts to reach the BI Publisher login window by first searching for your default browser. You receive an error if the default browser is not set on your operating system.

If this error occurs, open a web browser and navigate to `<hostname>:9502/xmlpserver`.

Data Pump Directory

Follow these steps if the `expdp` command in the backup script fails.



Note:

You must shut down the SDM server before you complete the steps in this section.

1. Connect to your Oracle database as `sysdba`.

```
cd $ORACLE_HOME/bin  
./sqlplus / as sysdba
```

2. Change the streams pool size to generate data pump files.

```
ALTER SYSTEM SET streams_pool_size=128M;
```

3. Shutdown the Oracle database.

```
SHUTDOWN IMMEDIATE;
```

4. Restart the Oracle database.

```
STARTUP;
```

5. Verify the change took place with the following command:

```
SHOW PARAMETER streams_pool_size;
```

Oracle Database Installer Errors

If you receive an error that says the Oracle Net Configuration Assistant failed or there is an invalid specification for system parameter `LOCAL_LISTENER` ORA-00130, ensure your `/etc/hosts` file contains a valid hostname besides "localhost."

FTP Errors

Connection errors may occur when registering BI Publisher.

1. If you get a "Unknown service vsftpd" error message, install the FTP server on each BI Publisher node.

```
yum install vsftpd
```

2. If you get an "Unable to connect to hosts via ftp protocol" error message, make sure the FTP server has been started on each BI Publisher node.

```
service vsftpd start
```

Hourly Summary Reports

Hourly summary reports may occasionally generate errors for some devices.

If hourly summary reports are not displaying properly:

1. Log into BIPublisher as an administrator.
2. Click **Administrative** and navigate to **Runtime Configuration, Properties**.
3. Select the **Properties** tab and find the **Memory Guard** section of the table.
4. Find the elements that are generating errors and update their default values with new values. After 30 seconds the changes are enabled. A restart of the BIPublisher is not required.
Repeat this process until the reports display properly.