

**Oracle Fusion Middleware - WebLogic
Server 12cR2 (12.2.1.3.0) on SUSE
Linux Enterprise Server 15 for x86-64**



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Introduction

This document provides details on installing Oracle WebLogic Server 12cR2 on SUSE Linux Enterprise Server 15. Details are provided for Intel(x86-64) versions of both Oracle WebLogic Server 12cR2 and SUSE Linux Enterprise Server 15. Similar steps apply to other platforms (x86, ia64, System z, etc.). If you encounter issues or have general questions, please post your query to suse-oracle@listx.novell.com .

Official Oracle product documentation is available at: <http://docs.oracle.com/en/>

System Requirements and Specifications

Hardware Requirements

Requirement	Minimum
CPU	1-GHz CPU
Physical Memory	4 GB
Swap space	Approx. twice the size of RAM
Disk space in /tmp	2 GB
Disk space for software files	2 GB

Software Requirements

SUSE

- SUSE Linux Enterprise Server 15 GM (x86-64)
(<http://download.suse.de/install>)

Oracle

- WebLogic Server 12cR2 (12.2.1.3.0) (fmw_12.2.1.3.0_wls_Disk1_1of1.zip)
(<http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html>)
- Java SE Development Kit 8 (jdk-8u161-linux-x64.tar.gz)
(<http://www.oracle.com/technetwork/indexes/downloads/index.html#java>)

Testing machine information

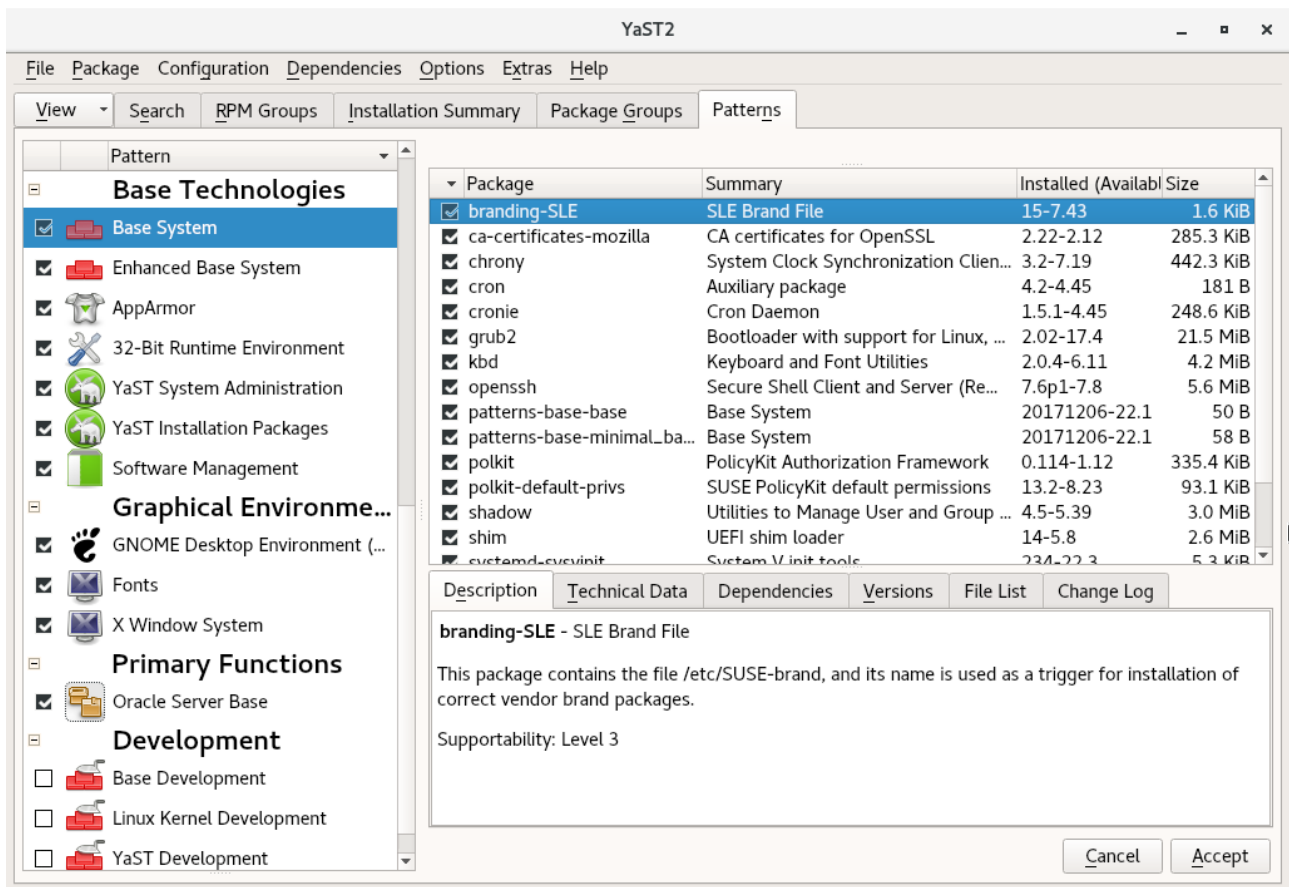
HP DL388 Gen9 Server
 CPU: 2 * Intel(R) Xeon(R) CPU E5-2630 v3 @ 2.40GHz
 RAM: 64 GB
 NIC: 8
 Local HDD: 2TB
 OS: SUSE Linux Enterprise Server 15 GM (x86-64) - Kernel version: 4.12.14-23-default

Prerequisites

1. Installing SUSE Linux Enterprise Server 15

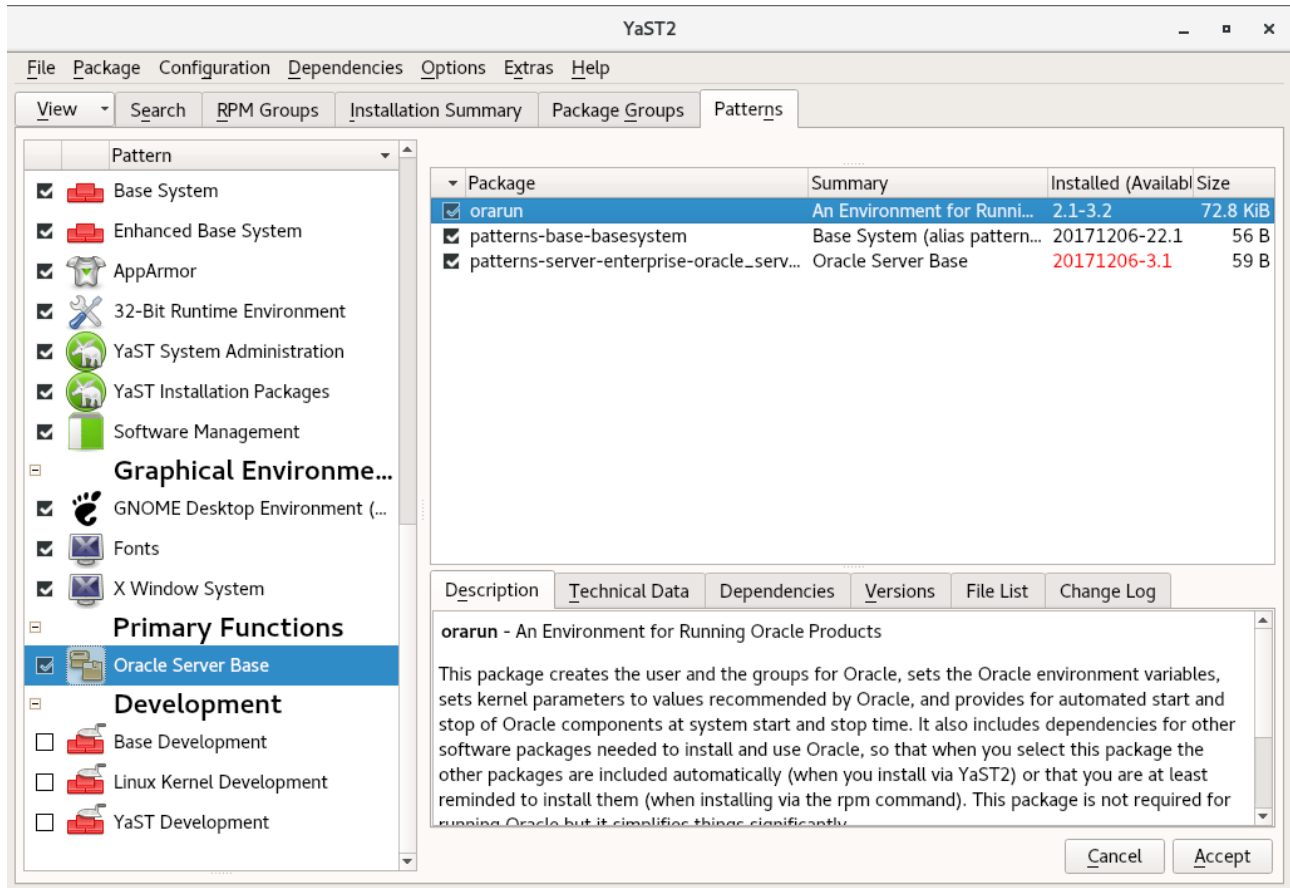
Install SUSE Linux Enterprise Server 15 on your testing machine. To do so, follow the instructions in the official SUSE Linux Enterprise Server documentation at <https://www.suse.com/documentation/>.

Figure 1-1 Software Installed as shown below



In YaST, select the patterns you need. Make sure you select the patterns and packages required to run Oracle products.

Figure 1-2 Software Installed as shown below



After the installation of SUSE Linux Enterprise Server, the following information about the operating system and the kernel version is displayed.

Figure 1-3 OS release information and kernel version

```
oracle@hpgen9-01:~> more /etc/os-release
NAME="SLES"
VERSION="15"
VERSION_ID="15"
PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"
oracle@hpgen9-01:~> uname -a
Linux hpgen9-01 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b) x86_64 x86_64 x86_64 GNU/Linux
oracle@hpgen9-01:~> more /etc/issue

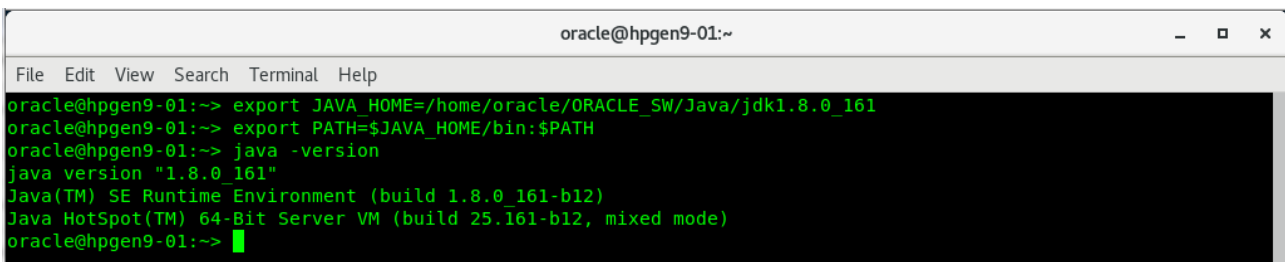
Welcome to SUSE Linux Enterprise Server 15 (x86_64) - Kernel \r (\l).
```

2. Installing Java

2-1. For Oracle FMW components 12c (12.2.1.3.0), the certified JDK is 1.8.0_131 and later. Log in to the target system (SUSE Linux Enterprise Server 12 64-bit OS) as a non-admin user. Download Java SE Development Kit 8 (jdk-8u161-linux-x64.tar.gz) from <http://www.oracle.com/technetwork/indexes/downloads/index.html#java>

2-2. Set environment variables JAVA_HOME and PATH to ensure the proper JDK version is installed and ready for use.

Figure 2-1 Java information

A terminal window titled 'oracle@hpgen9-01:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
oracle@hpgen9-01:~> export JAVA_HOME=/home/oracle/ORACLE_SW/Java/jdk1.8.0_161
oracle@hpgen9-01:~> export PATH=$JAVA_HOME/bin:$PATH
oracle@hpgen9-01:~> java -version
java version "1.8.0_161"
Java(TM) SE Runtime Environment (build 1.8.0_161-b12)
Java HotSpot(TM) 64-Bit Server VM (build 25.161-b12, mixed mode)
oracle@hpgen9-01:~> █
```

Oracle WebLogic Server 12cR2 Installation

1. Installing Oracle WebLogic Server software

1-1. Log in to the target system (SUSE Linux Enterprise Server 15 64-bit OS) as a non-admin user. Download the Oracle WebLogic Server 12cR2 (12.2.1.3.0) from <http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html>.

(**Note:** Please ensure the installation user has the proper permissions to install and configure the software.)

1-2. Go to the directory where you downloaded the installation program. Extract the contents of this .zip (fmw_12.2.1.3.0_wls_Disk1_1of1.zip) file and launch the installation program by running '**java -jar fmw.xxxx.jar**'

Install Flow:

1). Installation Inventory Setup.

If this is your first Oracle installation on a host that is running SLES, please use this screen to specify the location of the Oracle central inventory directory and Operating System Group Name, then click **OK** to continue.

The screenshot shows the 'Installation Inventory Setup' dialog box for Oracle Fusion Middleware 12c WebLogic. The window title is 'Oracle Fusion Middleware 12c WebLogic Installation'. The dialog has a header with the Oracle logo and 'FUSION MIDDLEWARE'. The main content area is titled 'Installation Inventory Setup' and contains the following sections:

- Central Inventory Directory:** A text box with the value '/home/oracle/orainventory' and a 'Browse' button. Below the text box is the instruction: 'Enter the full path for the directory.'
- Operating System Group:** A dropdown menu with the value 'oinstall' and a downward arrow. Below the dropdown is the instruction: 'Specify a group with write permission to the inventory directory.'
- Central Inventory Pointer File:** A section with the instruction: 'Click OK to create a script (createCentralInventory.sh) in the inventory directory. Run this script to create a pointer file, which is used to identify the location of the central inventory for future installations and administrative operations, such as patching and upgrade.'

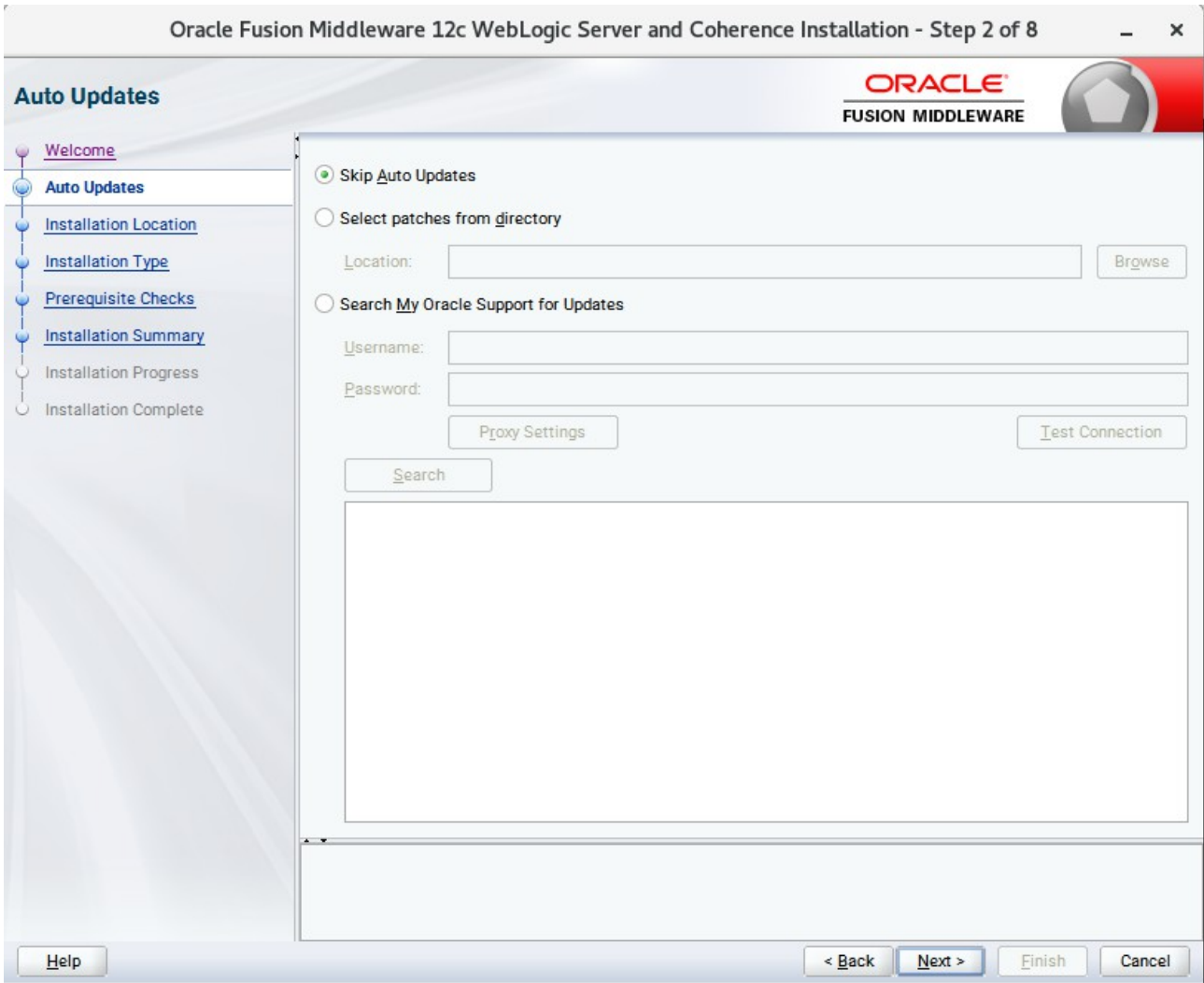
At the bottom of the dialog, there are three buttons: 'Help', 'OK', and 'Cancel'.

2). Welcome.



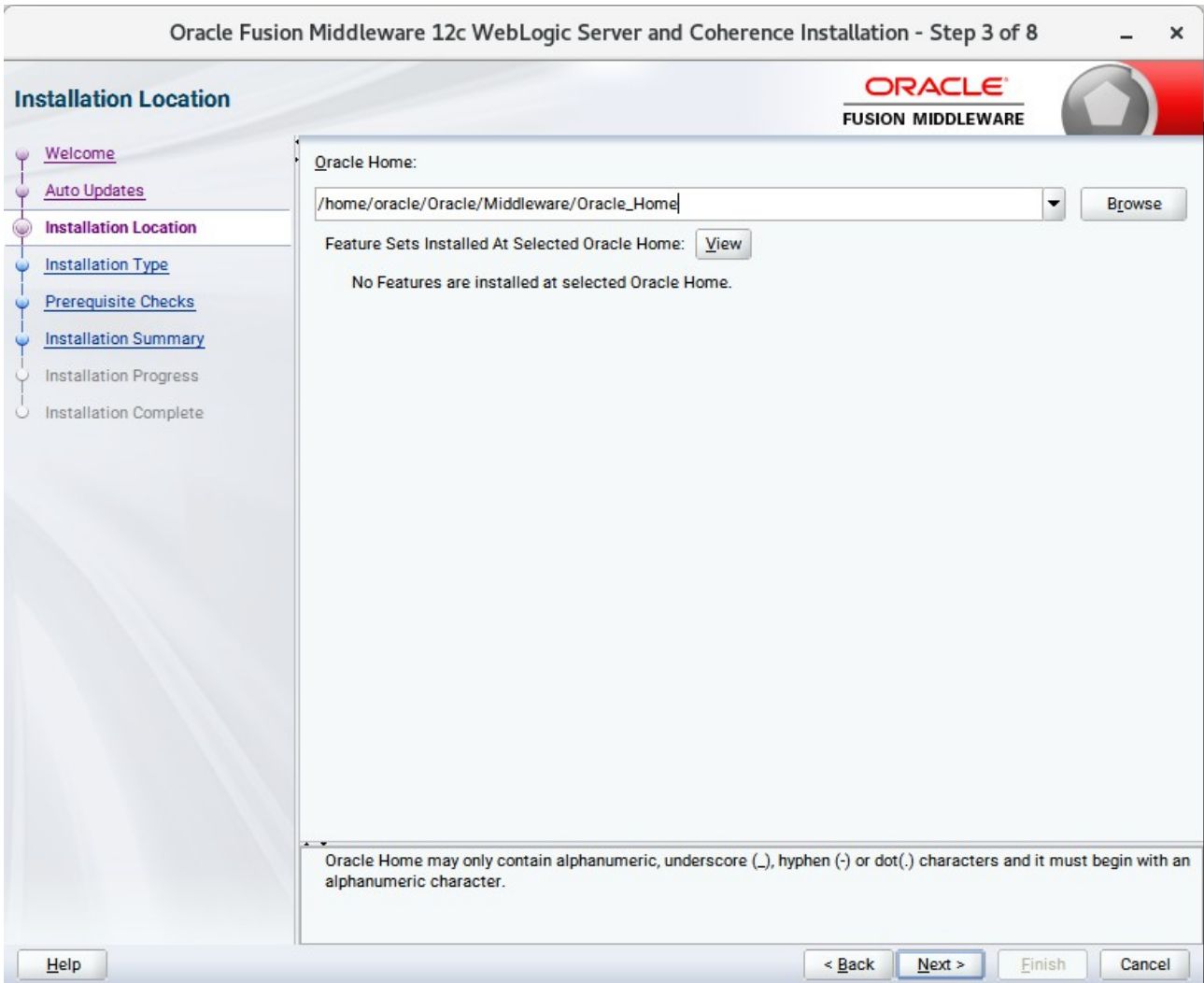
Review the information on this screen carefully to be sure you have performed all the necessary prerequisites, then click **Next** to continue.

3). Auto Updates.



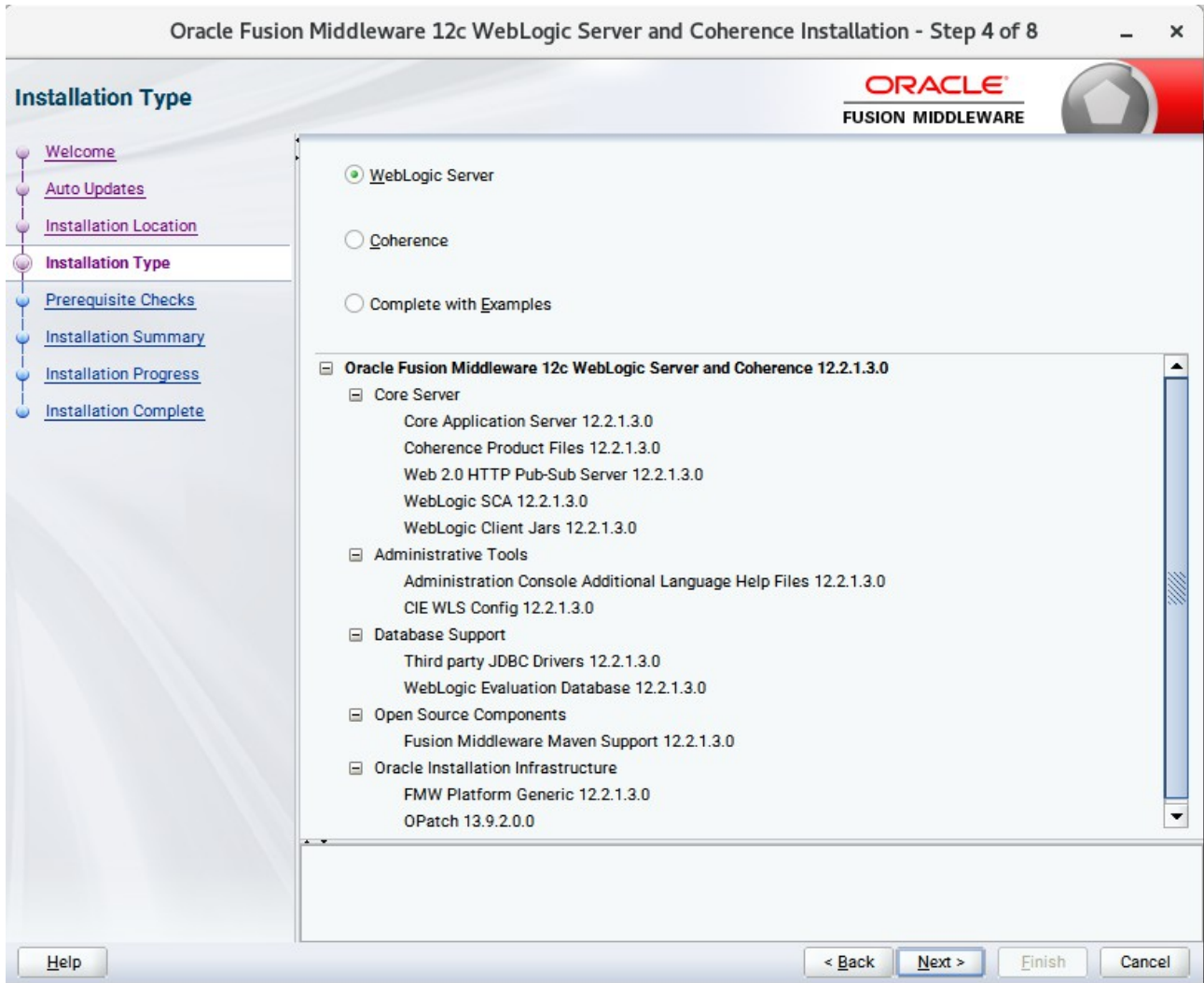
Select option "Skip Auto Updates" to skip this screen, then click **Next** to continue.

4). Installation Location.



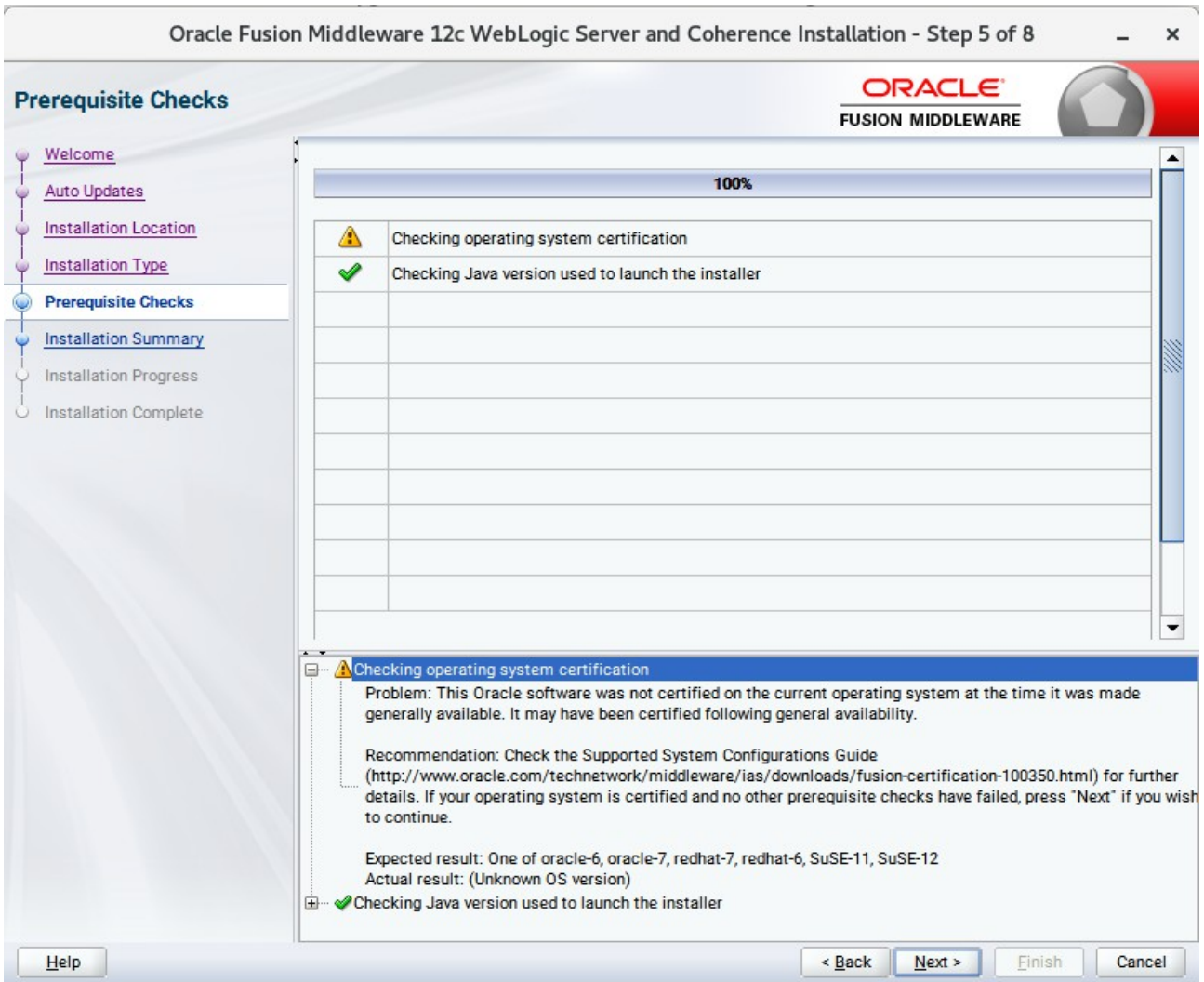
Type the full path of the directory in the Oracle Home field, then click **Next** to continue.

5). Installation Type.



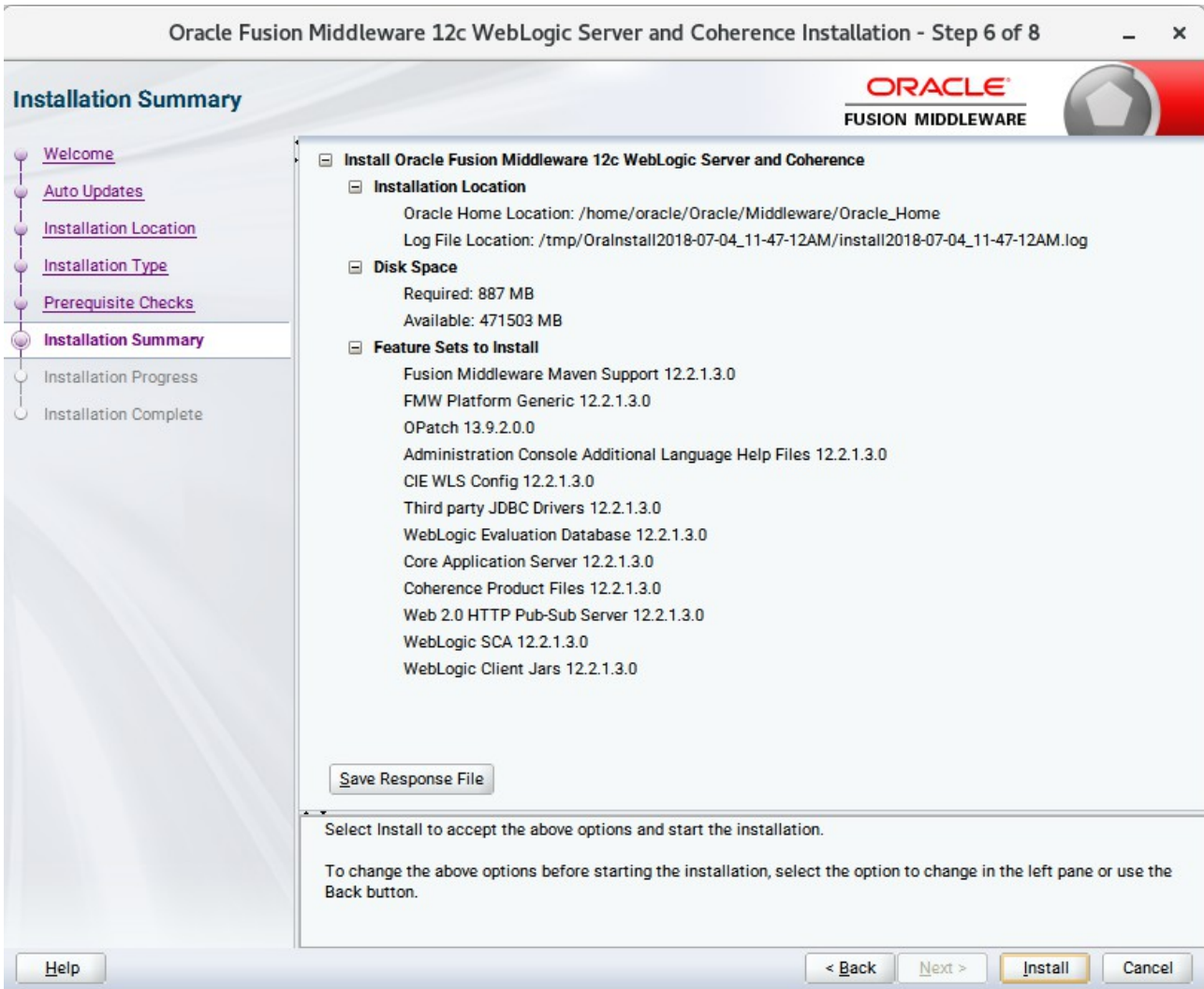
Use this screen to determine the type of installation you want to perform, then click **Next** to continue.

6). Prerequisite Checks.



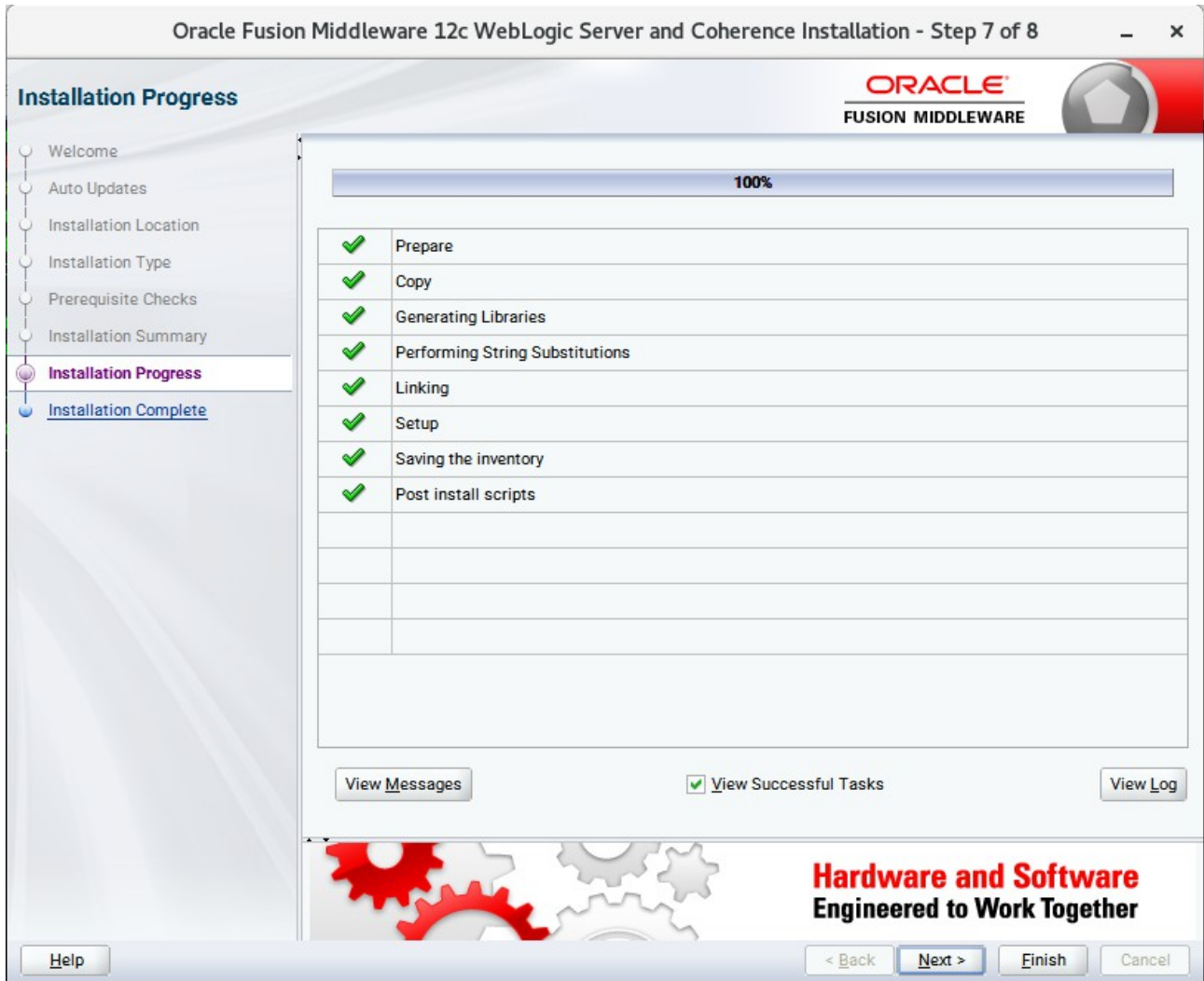
Prerequisite Checks results will be shown as above, there is a problem with "Checking operating system certification". Ignore the warning message, click **Next** to continue.

7). Installation Summary.



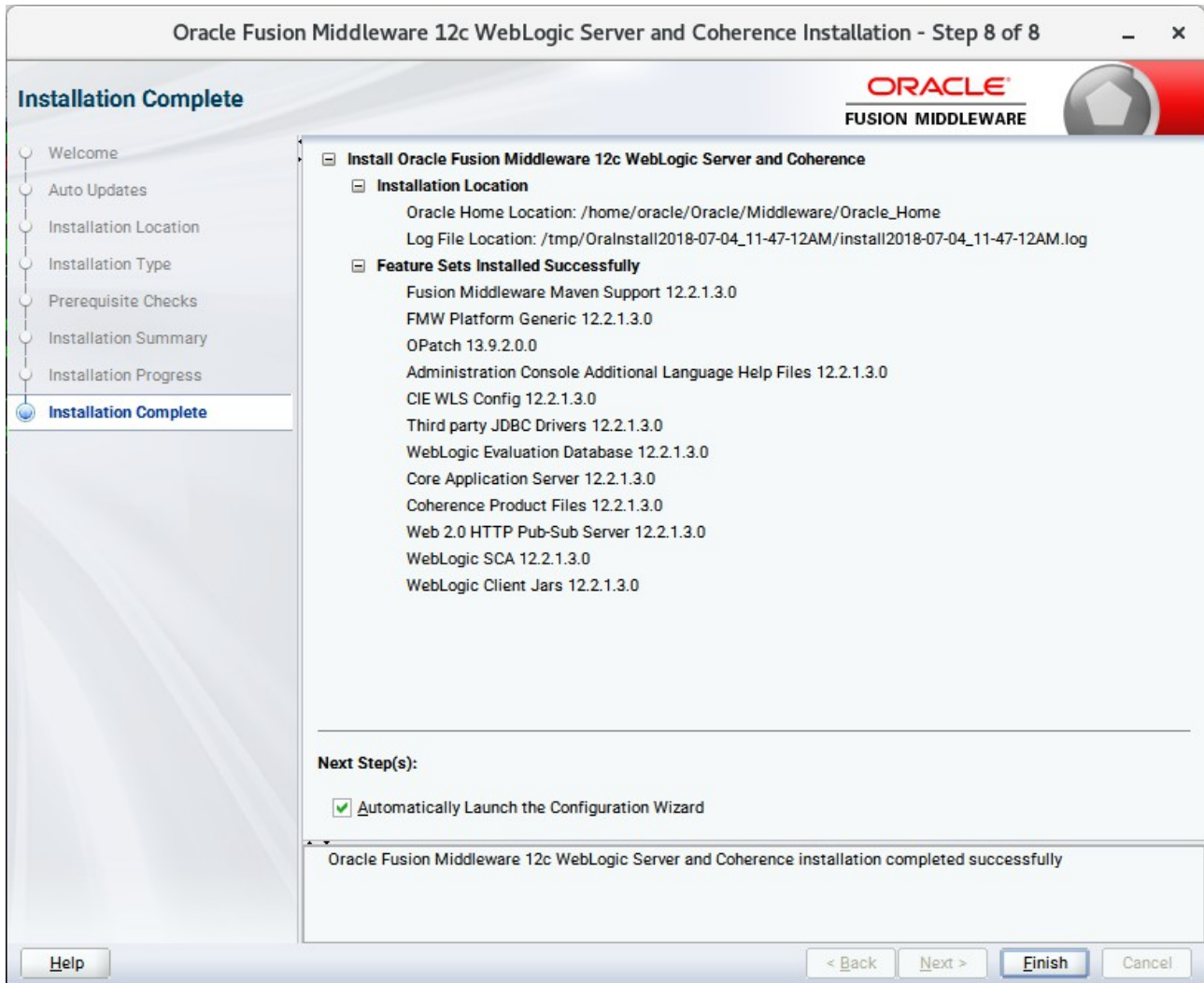
This screen contains a list of the feature sets you selected for installation, along with the approximate amount of disk space to be used by the feature sets once installation is complete. Check the information, then click **Install** to continue.

8). Installation Progress.



This screen shows the progress of the installation. When the progress bar reaches 100%, the installation is complete. Click **Finish** to continue.

9). Installation Complete.



This screen appears at the conclusion of the installation. Select option "**Automatically Launch the Configuration Wizard**", then click **Finish** to dismiss the installer.

2. Creating and Configuring the WebLogic Domain

2-1. To begin domain configuration, you can automatically launch the Configuration Wizard through the option "**Automatically Launch the Configuration Wizard**" on the last Installation complete screen. You can also navigate to the '**ORACLE_HOME/oracle_common/common/bin**' directory and start the WebLogic Server Configuration Wizard by running: '**./config.sh**'.

Starting configuration:

1). Configuration Type.

Fusion Middleware Configuration Wizard - Page 1 of 8

ORACLE
FUSION MIDDLEWARE

Configuration Type

- Create Domain
- Templates
- Administrator Account
- Domain Mode and JDK
- Advanced Configuration
- Configuration Summary
- Configuration Progress
- End Of Configuration

What do you want to do?

Create a new domain

Update an existing domain

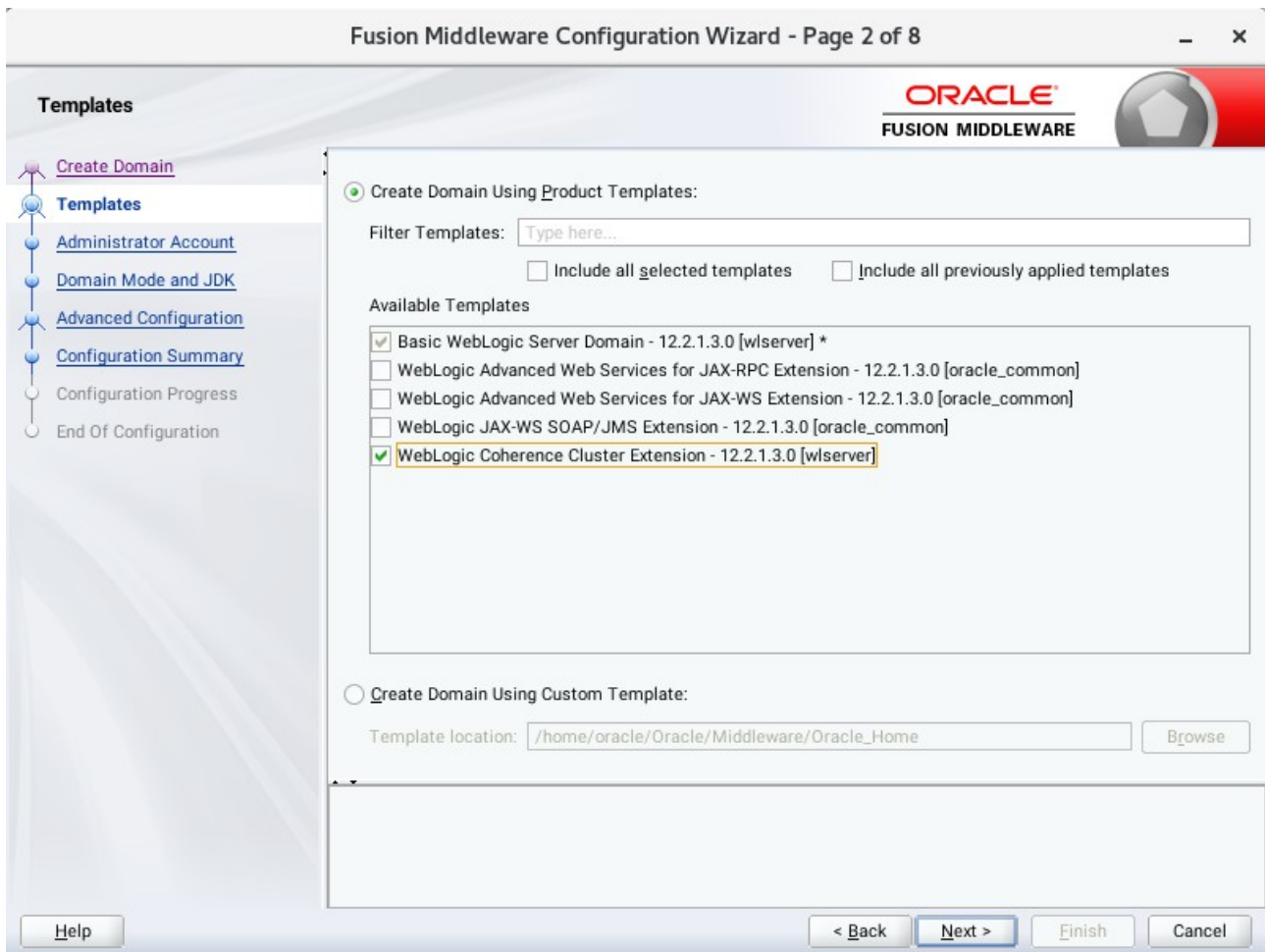
Domain Location:

Create a new domain.

Help < Back Next > Finish Cancel

Select option "**Create a New Domain**" and specify the Domain home directory in the "**Domain Location**" field, then click **Next** to continue.

2). Templates.



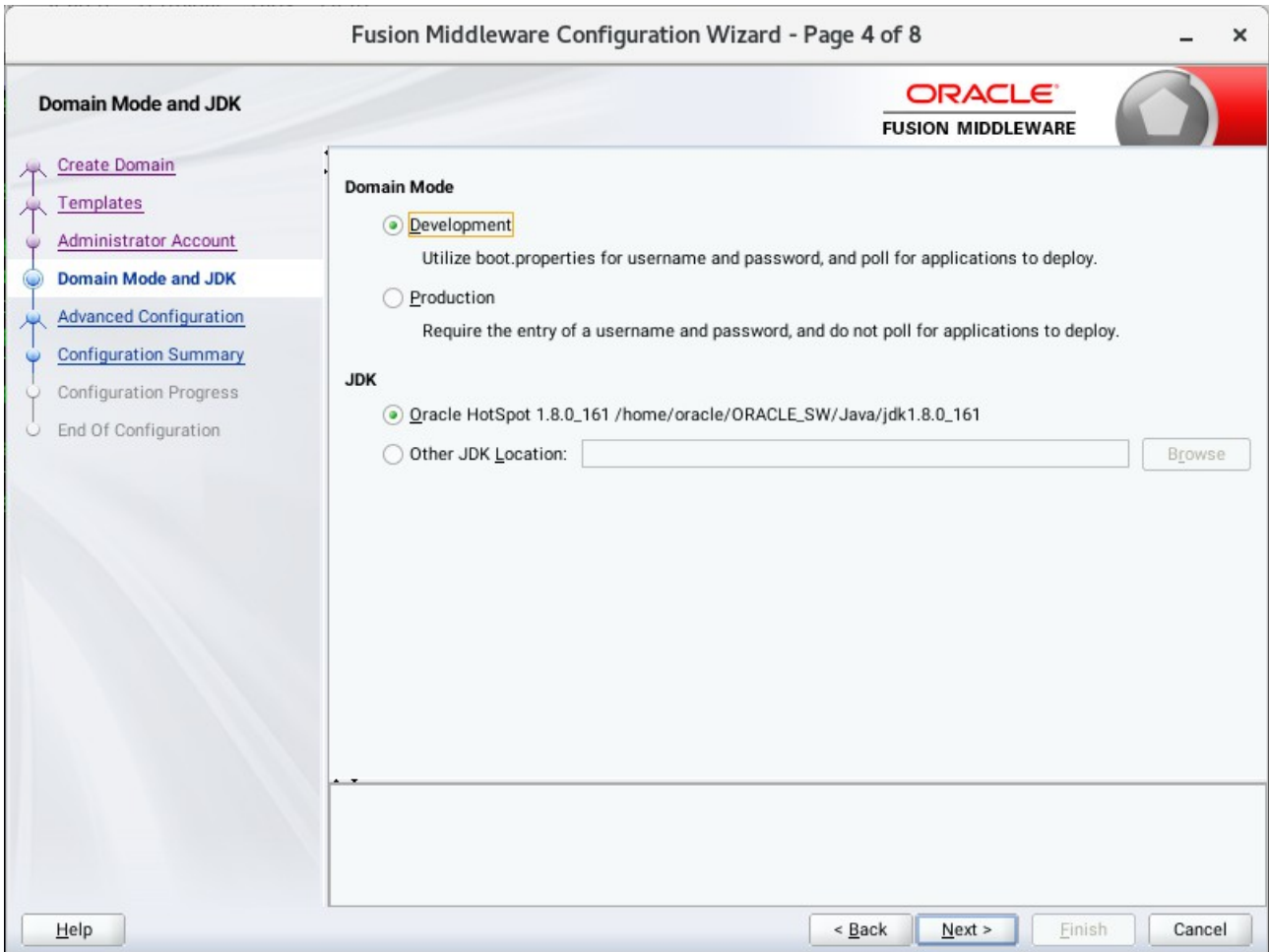
On the Templates screen select "**Basic WebLogic Server Domain (selected by default)**" and "**WebLogic Coherence Cluster Extension**" for configuration, then click **Next** to continue.

3). Administrator Account.

The screenshot shows the 'Administrator Account' configuration step in the Fusion Middleware Configuration Wizard. The window title is 'Fusion Middleware Configuration Wizard - Page 3 of 8'. The Oracle logo and 'FUSION MIDDLEWARE' text are visible in the top right corner. On the left, a navigation pane lists the following steps: 'Create Domain', 'Templates', 'Administrator Account' (highlighted), 'Domain Mode and JDK', 'Advanced Configuration', 'Configuration Summary', 'Configuration Progress', and 'End Of Configuration'. The main area contains three input fields: 'Name' with the value 'weblogic', 'Password' with masked characters '.....', and 'Confirm Password' with masked characters '.....'. Below the fields is a validation message: 'Must be the same as the password. Password must contain at least 8 alphanumeric characters with at least one number or special character.' At the bottom, there are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

Specify the user name and password for the default WebLogic Administrator account for the domain, then click **Next** to continue.

4). Domain Mode and JDK.



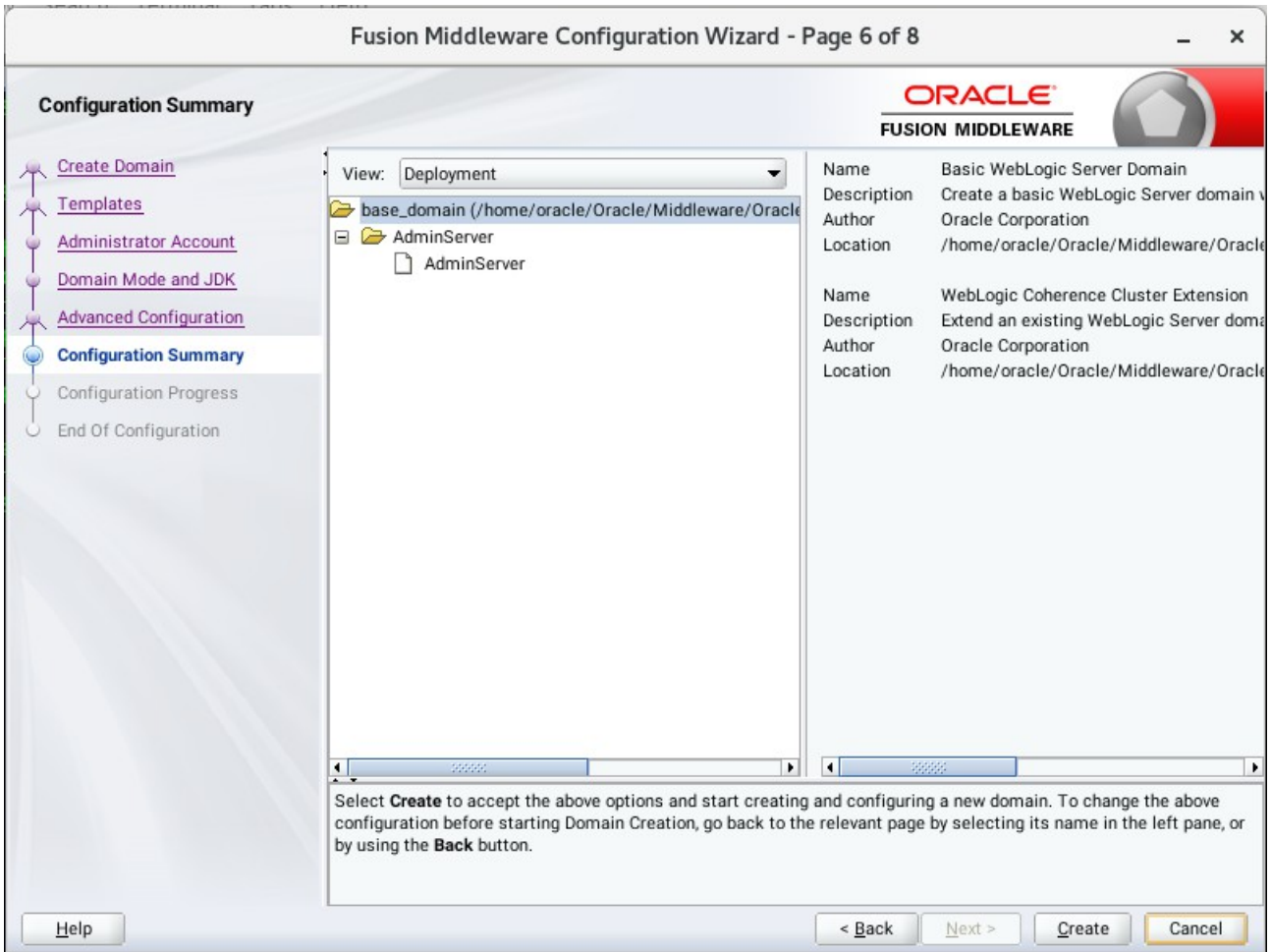
Select "**Development**" in the Domain Mode field, select the "**Oracle HotSpot**" in the JDK field. Then click **Next** to continue.

5). Advanced Configuration.



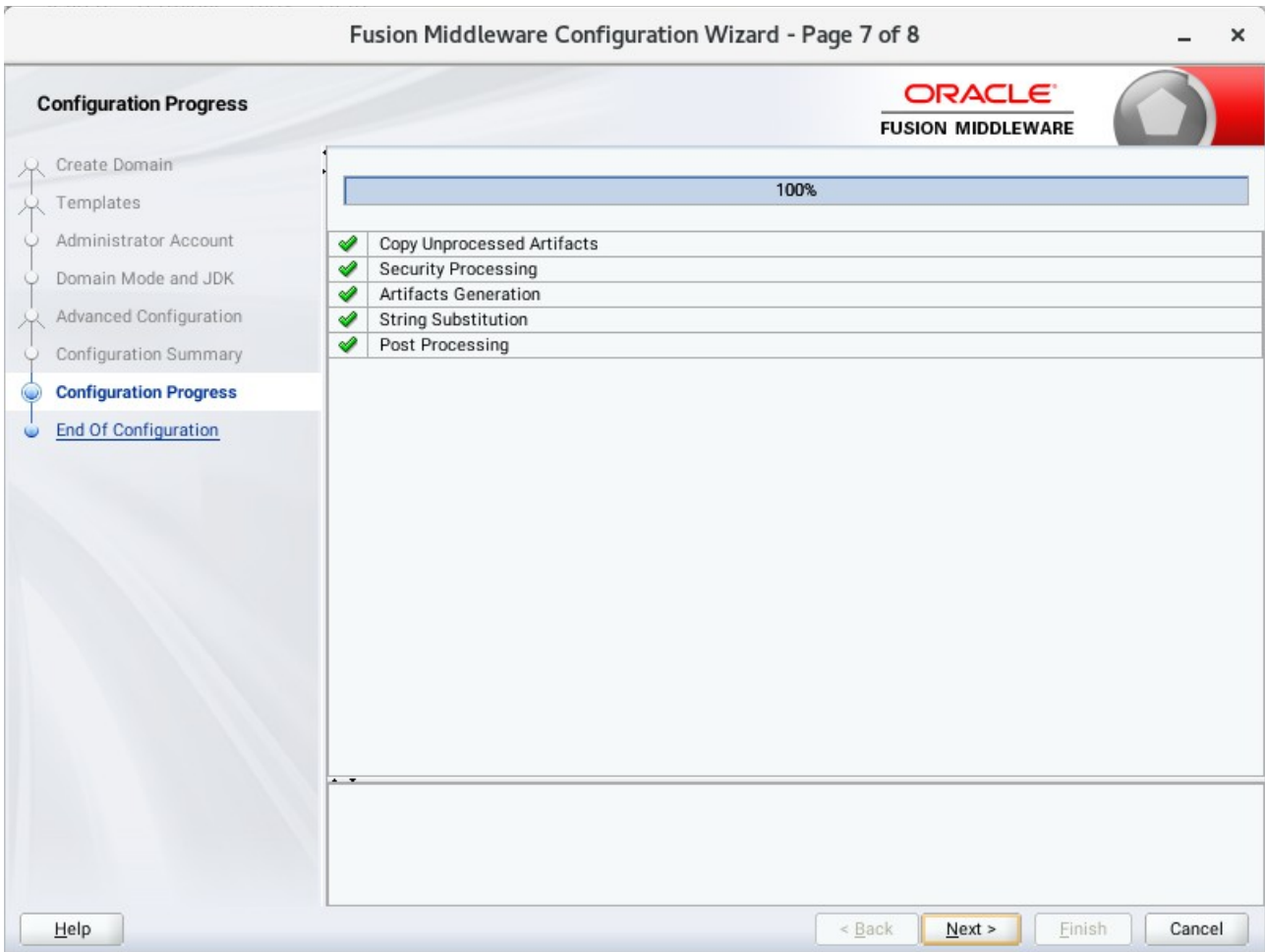
According to your requirements, select the desired options on the Advanced Configuration screen. Then click **Next** to continue.

6). Configuration Summary.



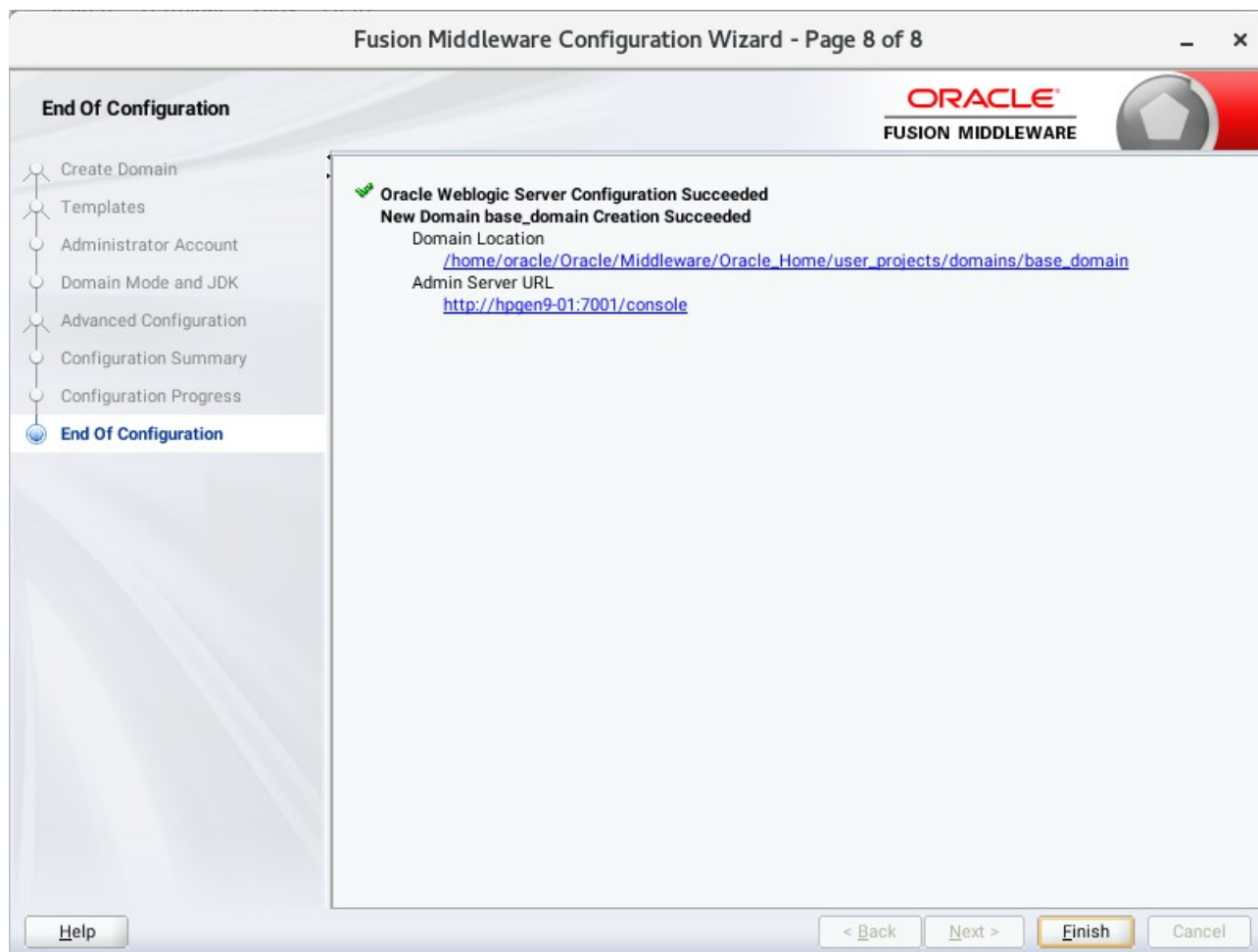
Review this screen to verify the information is correct, then click **Create** to continue.

7). Configuration Progress.



The Configuration Progress screen as shown above, once you see: "Domain Created successfully", click **Next** to continue.

8). End Of Configuration.



Once you see: "Oracle Weblogic Server Configuration Succeeded", record the "**Domain Location**" and "**Admin Server URL**", then click **Finish** to dismiss the Configuration Wizard.

3. Starting the Administration Server and verifying the Configuration

3-1. To start the Administration Server through a terminal, go to the DOMAIN_HOME/bin directory and run the command `./startWebLogic.sh`.

Figure 3-1-1 Starting the Administration Server through a terminal

```

oracle@hpgen9-01:/home/oracle/Oracle/Middleware/Oracle_Home/user_projects/domains/base_domain/bin
File Edit View Search Terminal Tabs Help
oracle@hpgen9-01:/home/oracle/ORACLE_SW/WebLogic/... x oracle@hpgen9-01:/home/oracle/Oracle/Middleware/Oracl... x
<Jul 4, 2018 11:56:41,209 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to STANDBY.>
>
<Jul 4, 2018 11:56:41,211 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to STARTING.>
>
<Jul 4, 2018 11:56:41,269 AM GMT+08:00> <Notice> <Log Management> <BEA-170036> <The Logging monitoring service timer has started to check for logged message counts every 30 seconds.>
<Jul 4, 2018 11:56:41,757 AM GMT+08:00> <Notice> <Log Management> <BEA-170027> <The server has successfully established a connection with the Domain level Diagnostic Service.>
<Jul 4, 2018 11:56:45,299 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to ADMIN.>
<Jul 4, 2018 11:56:45,384 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RESUMING.>
>
<Jul 4, 2018 11:56:45,439 AM GMT+08:00> <Warning> <Server> <BEA-002611> <The hostname "localhost", maps to multiple IP addresses: 127.0.0.1, 0:0:0:0:0:0:0:1.>
<Jul 4, 2018 11:56:45,440 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 127.0.0.1:7001 for protocols iiop, t3, ldap, snmp, http.>
<Jul 4, 2018 11:56:45,440 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on 0:0:0:0:0:0:0:1%lo:7001 for protocols iiop, t3, ldap, snmp, http.>
<Jul 4, 2018 11:56:45,440 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000331> <Started the WebLogic Server Administration Server "AdminServer" for domain "base domain" running in development mode.>
<Jul 4, 2018 11:56:45,441 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 147.2.207.96:7001 for protocols iiop, t3, ldap, snmp, http.>
<Jul 4, 2018 11:56:45,442 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 127.0.0.1:7001 for protocols iiop, t3, ldap, snmp, http.>
<Jul 4, 2018 11:56:45,443 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on 0:0:0:0:0:0:0:1%lo:7001 for protocols iiop, t3, ldap, snmp, http.>
<Jul 4, 2018 11:56:45,444 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 147.2.207.96:7001 for protocols iiop, t3, ldap, snmp, http.>
<Jul 4, 2018 11:56:45,450 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000360> <The server started in RUNNING mode.>
<Jul 4, 2018 11:56:45,463 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RUNNING.>
>

```

Figure 3-1-2 Checking the listening port(7001)

```

oracle@hpgen9-01:/home/oracle/Oracle> ss -tupln | grep 7001
tcp LISTEN 0 128 [::ffff:147.2.207.96]:7001 *:* users:(("java",pid=9713,fd=730))
tcp LISTEN 0 128 [::1]:7001 [::]:* users:(("java",pid=9713,fd=729))
tcp LISTEN 0 128 [::ffff:127.0.0.1]:7001 *:* users:(("java",pid=9713,fd=728))
oracle@hpgen9-01:/home/oracle/Oracle> █

```


3-2. Access to Oracle WebLogic Server Administration Console.

Figure 3-2-1 Access to WebLogic Server Admin Console - Login page

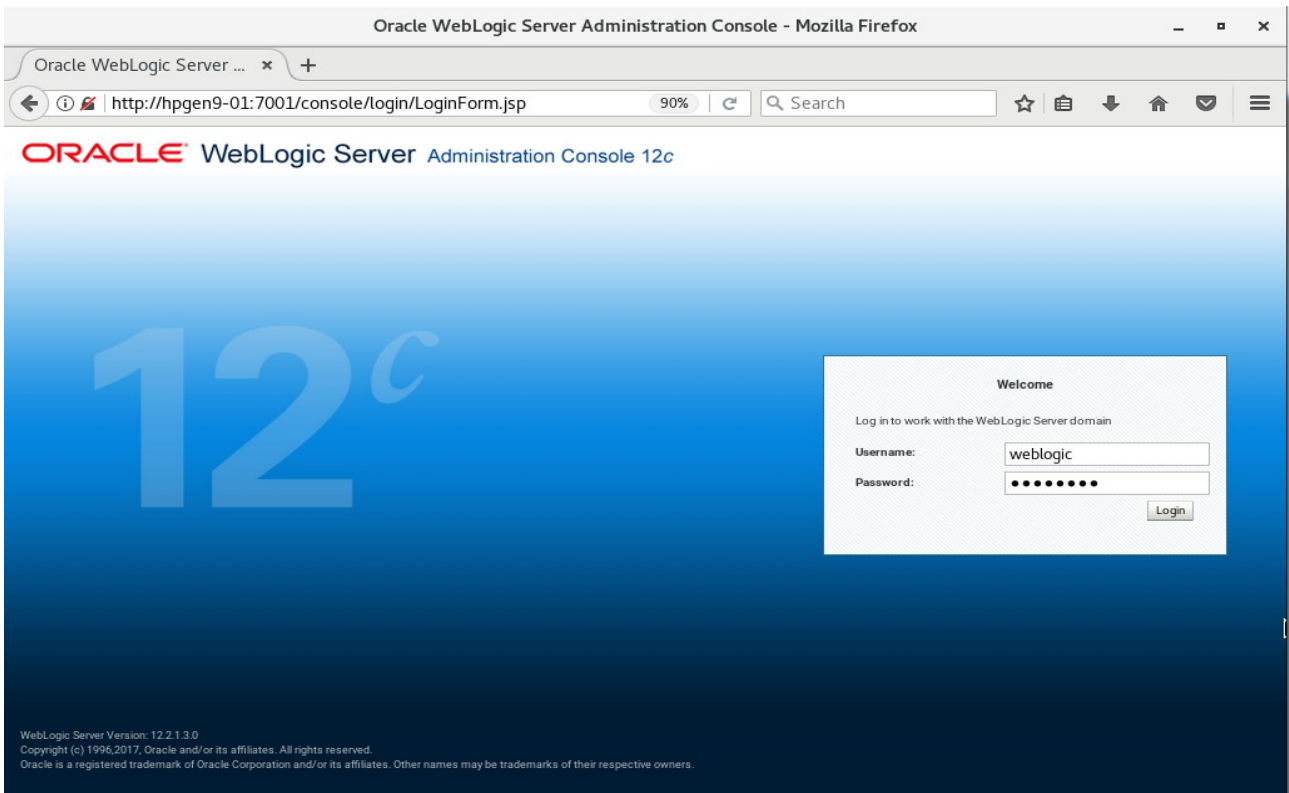


Figure 3-2-2 Viewing WebLogic Server Admin Console - Home page

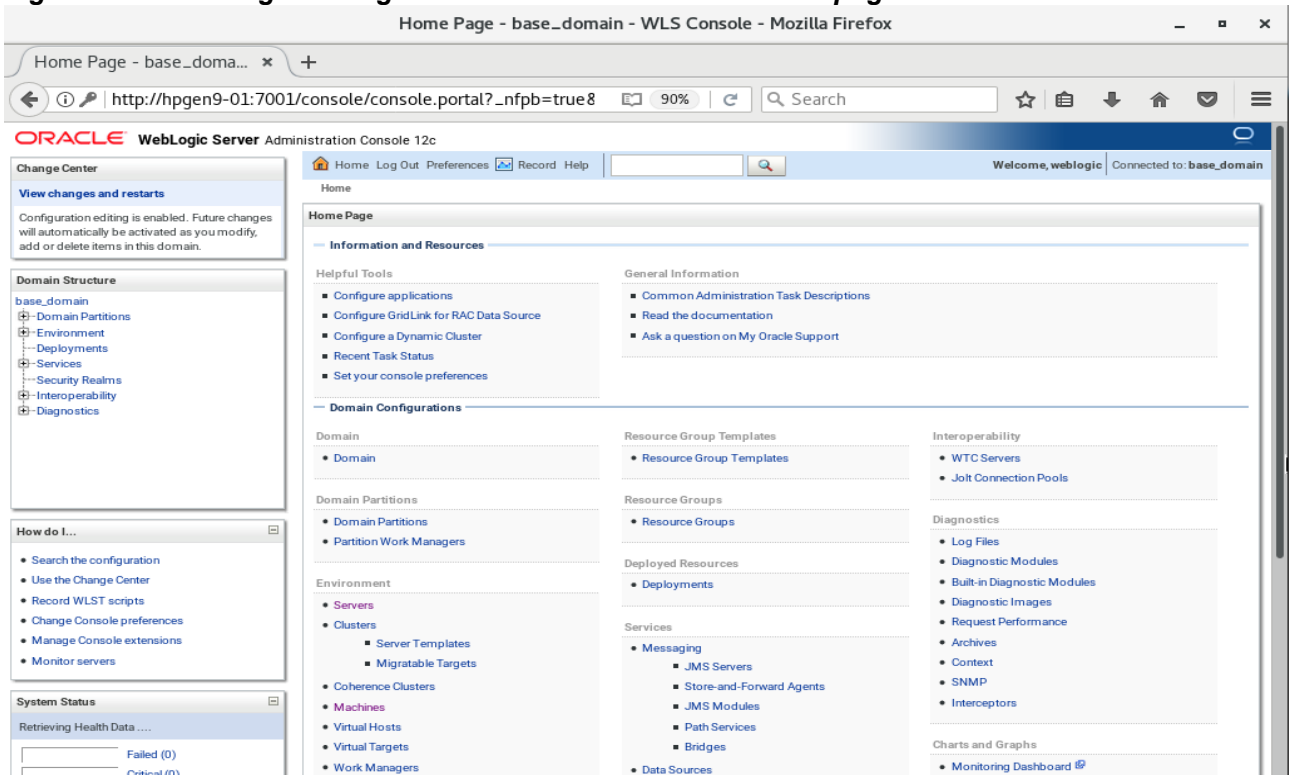


Figure 3-2-3 Viewing WebLogic Server Admin Console - Summary of Servers

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main content area is titled "Summary of Servers" and includes a "Configuration" tab. Below the tab, there is a table of servers. The table has columns for Name, Type, Cluster, Machine, State, Health, and Listen Port. One server is listed: AdminServer(admin) with a Type of Configured, State of RUNNING, Health of OK, and Listen Port of 7001. The left sidebar contains navigation menus for "Change Center", "Domain Structure", "How do I...", and "System Status".

Name	Type	Cluster	Machine	State	Health	Listen Port
AdminServer(admin)	Configured			RUNNING	OK	7001

Additional Comments

This document shows how to create a standard installation topology for Oracle WebLogic Server. You can extend this topology to make it highly available and secure so it is suitable for a production system.

Thank you !
SUSE ISV Engineering Team
July 6th, 2018

<https://www.suse.com>