Oracle Fusion Middleware - WebLogic Server 14c (14.1.1.0.0) on SUSE Linux Enterprise Server 15 (SP2) for x86-64

http://www.suse.com

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Introduction

This document provides details on installing Oracle WebLogic Server 14c on SUSE Linux Enterprise Server 15 SP2. Details are provided for Intel(x86-64) versions of both Oracle WebLogic Server 14c and SUSE Linux Enterprise Server 15 SP2. Similar steps apply to other platforms (x86, ia64, System z, etc.).

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 SP2 GM (x86-64)
(https://www.suse.com/download/sles/)

Oracle

• WebLogic Server 14c (14.1.1.0.0) (fmw_14.1.1.0.0_wls_Disk1_1of1.zip)
(https://www.oracle.com/downloads/#category-middleware)

• Java SE Development Kit 8 (jdk-8u221-linux-x64.tar.gz)
(https://www.oracle.com/downloads/#category-java)

Testing Machine Information

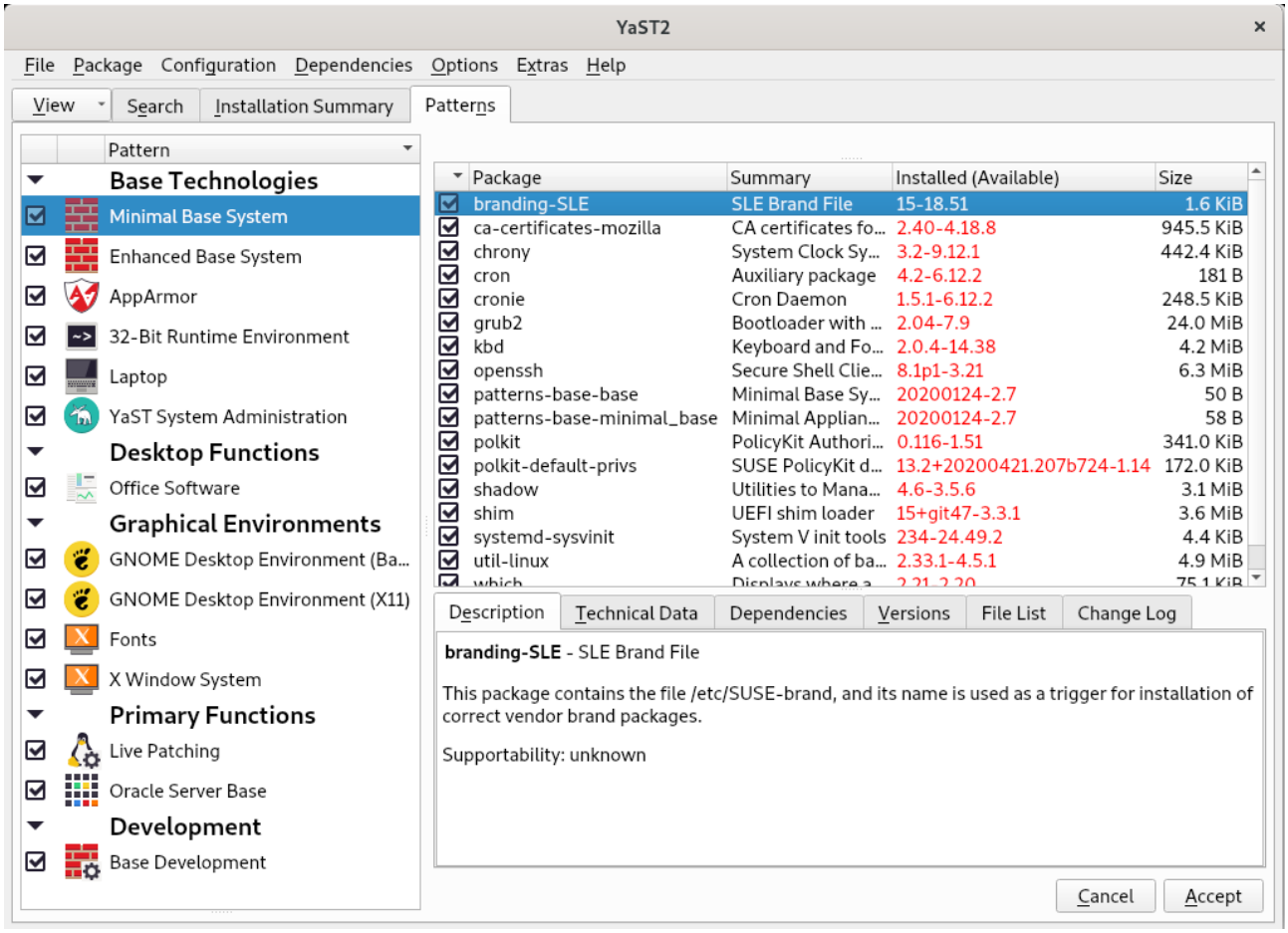
Dell Laptop Precision 5530
CPU: 6 * Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz
RAM: 32 GB
NIC: 2
Local HDD: 1TB + 512GB
OS: SUSE Linux Enterprise Server 15 SP2 GM (x86-64) - Kernel version: 5.3.18-22-default

Prerequisites

1. Installing SUSE Linux Enterprise Server 15 SP2

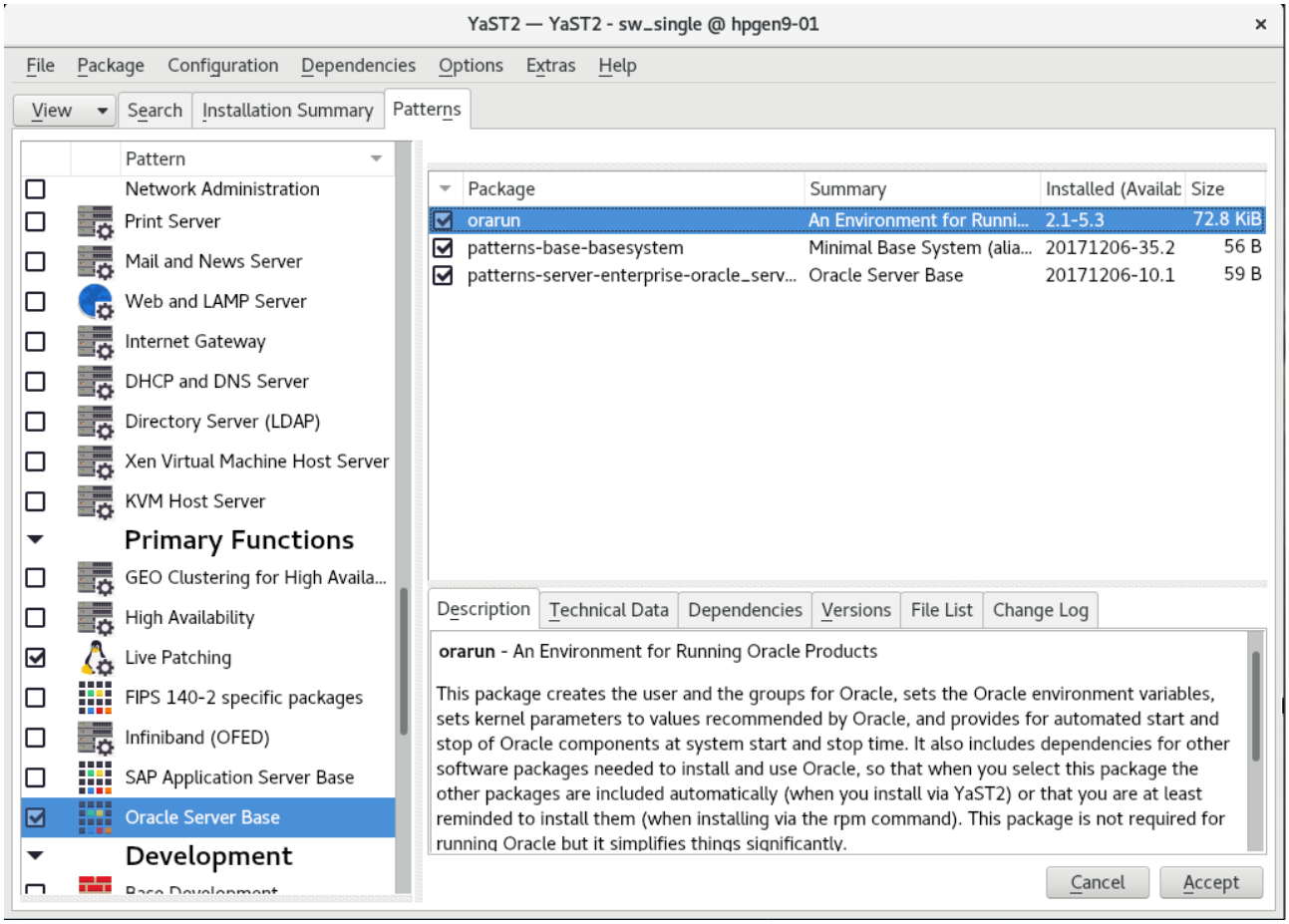
1-1. Install SUSE Linux Enterprise Server 15 SP2 on your testing machine.To do so, follow the instructions in the official SUSE Linux Enterprise Server documentation at https://www.suse.com/documentation/.

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@Dell5530:~> more /etc/os-release
NAME="SLES"
VERSION="15-SP2"
VERSION_ID="15.2"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP2"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp2"
oracle@Dell5530:~> uname -a
Linux Dell5530 5.3.18-22-default #1 SMP Wed Jun 3 12:16:43 UTC 2020 (720aeba/lp-1a956f1) x86_64 x86_64 x86_64 GNU/Linux
oracle@Dell5530:~>
```

1-2. Special Startup Requirements.

1). To set the SHMMAX kernel parameter.

Change the value of SHMMAX to 4294967295 by including the following line in /etc/sysctl.conf:

```
kernel.shmmax = 4294967295
```

Change the value of shmall to 9272480 by including the following line in '/etc/sysctl.conf'

```
kernel.shmall = 9272480
```

Activate the new SHMMAX setting by running the command:

```
/sbin/sysctl -p
```

2). Checking the Open File Limit and Maximum Stack Size.

```
ulimit -a
```

To change the open file limits,login as root and edit the /etc/security/limits.conf file. Look for the following lines:

```
* soft  nofile  4096
* hard  nofile  65536
* soft  nproc   2047
* hard  nproc  16384
```

To change the maximum stack size,login as root and edit the /etc/security/limits.conf file. Add the following line:

```
oracle  soft  stack  10240
```

then reboot the machine.

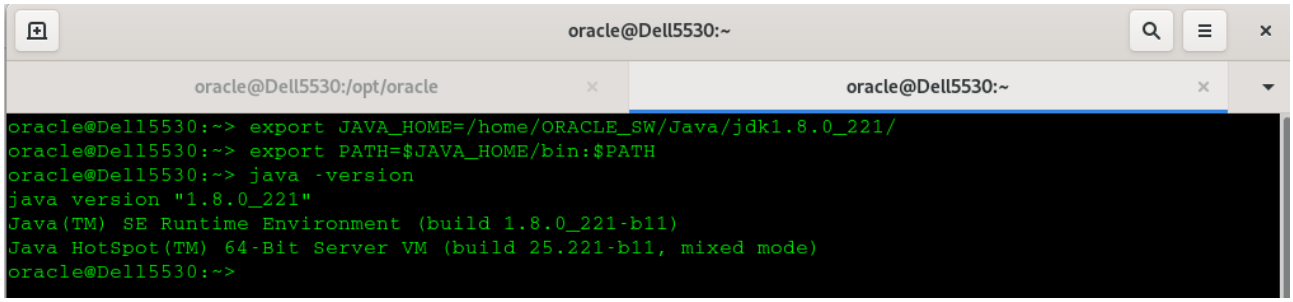
2. Installing Java

2-1. Log in to the target system (SUSE Linux Enterprise Server 15 SP2 64-bit OS) as a non-admin user. Download Java SE Development Kit 8 (jdk-8u221-linux-x64.tar.gz) from https://www.oracle.com/downloads/#category-java.

(Note: The classes in com.oracle.weblogic.management.tools.migration.jar are built with JDK8 and must be run with JDK8. For 14c(14.1.1.0.0), the certified JDK was jdk1.8.0_191 and later.)

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



Oracle WebLogic Server 14c Installation

1. Installing Oracle WebLogic Server software

1-1. Log in to the target system (SUSE Linux Enterprise Server 15 SP2 64-bit OS) as a non-admin user. Download the Oracle WebLogic Server 14c (14.1.1.0.0) from https://www.oracle.com/downloads/#category-middleware.

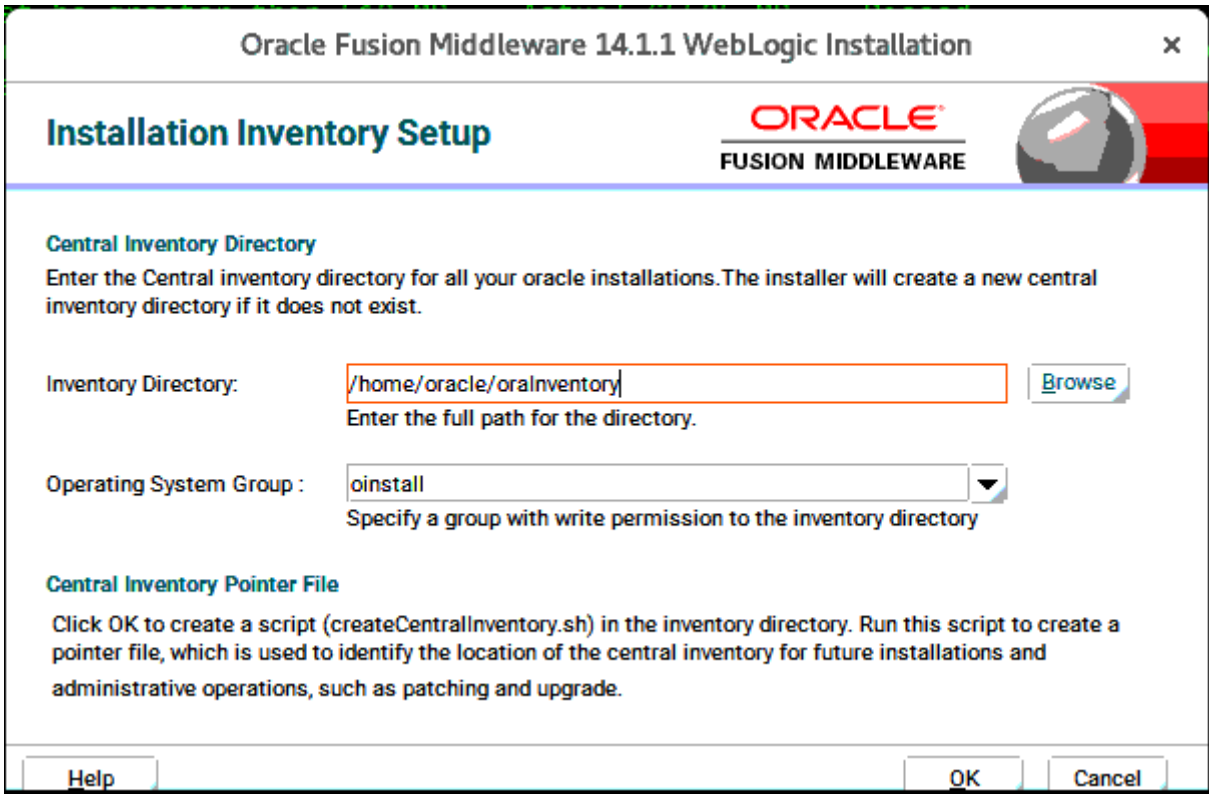
(**Note:** Please ensure the installation user has the proper permissions to install and configure the software.)

1-2. Go to the directory where you downloaded the installation program. Extract the contents of this .zip (fmw_14.1.1.0.0_wls_Disk1_1of1.zip) file and launch the installation program by running **'java -jar fmw_14.1.1.0.0_wls.jar'**

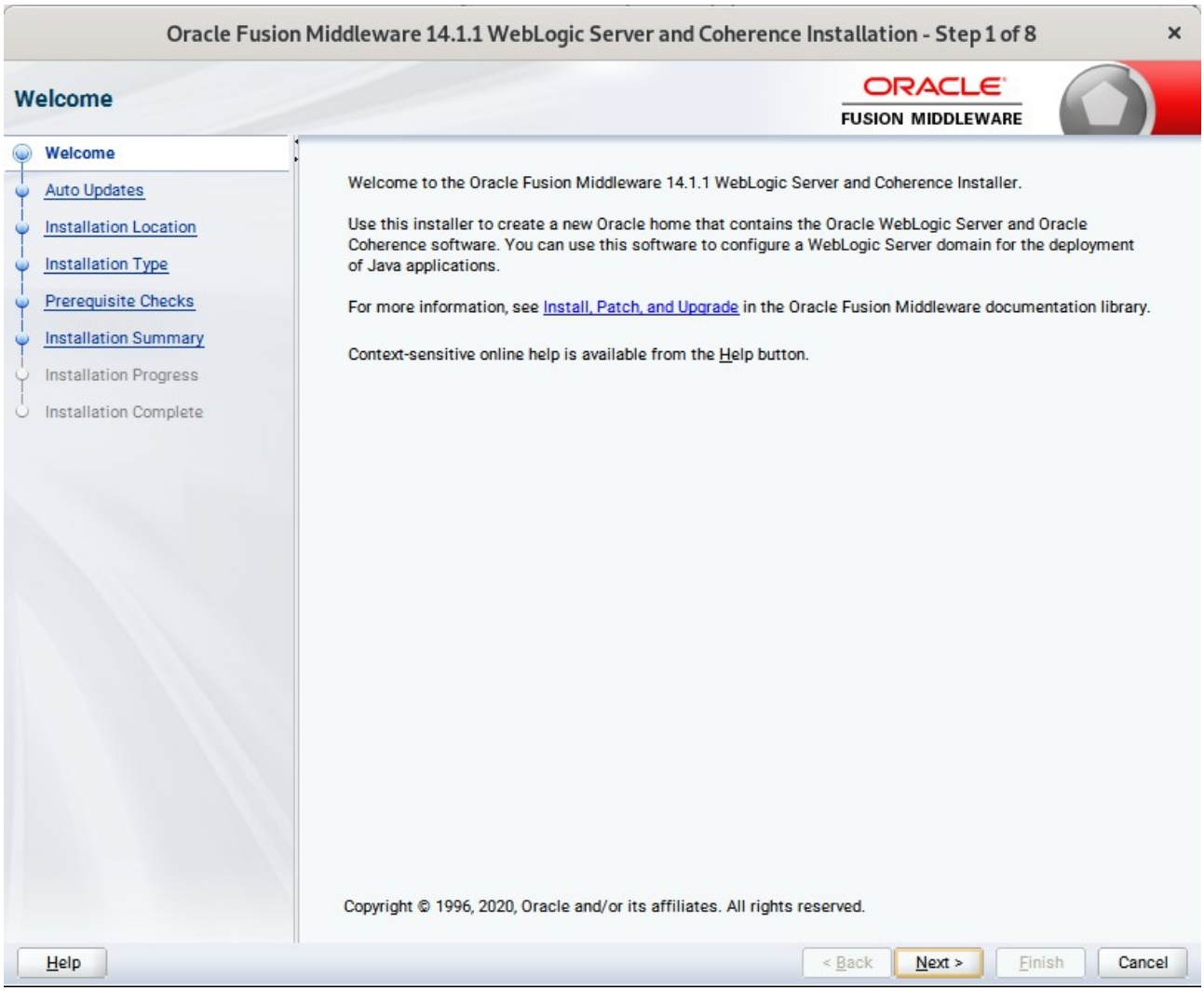
Install Flow:

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.

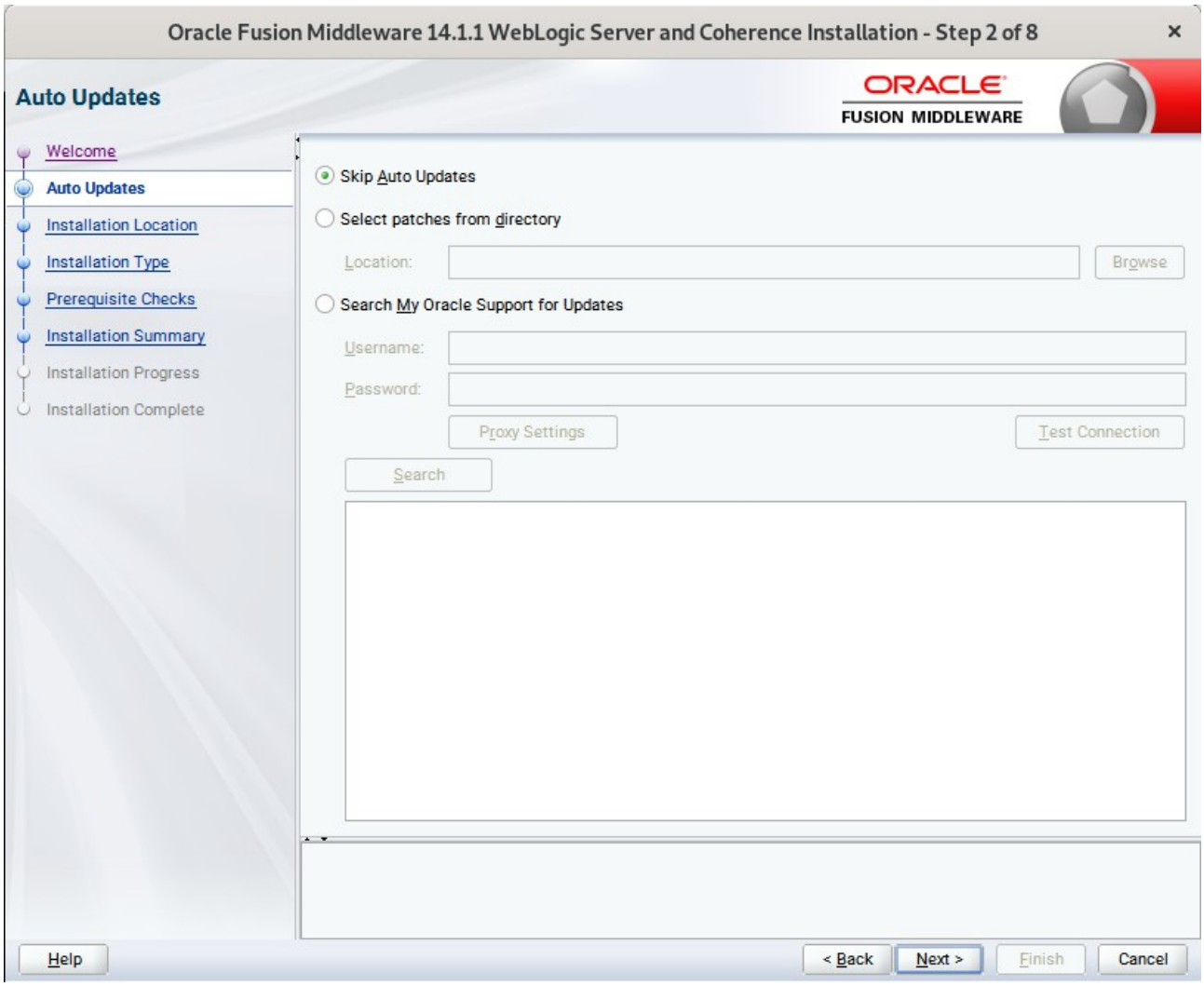


2). Welcome.



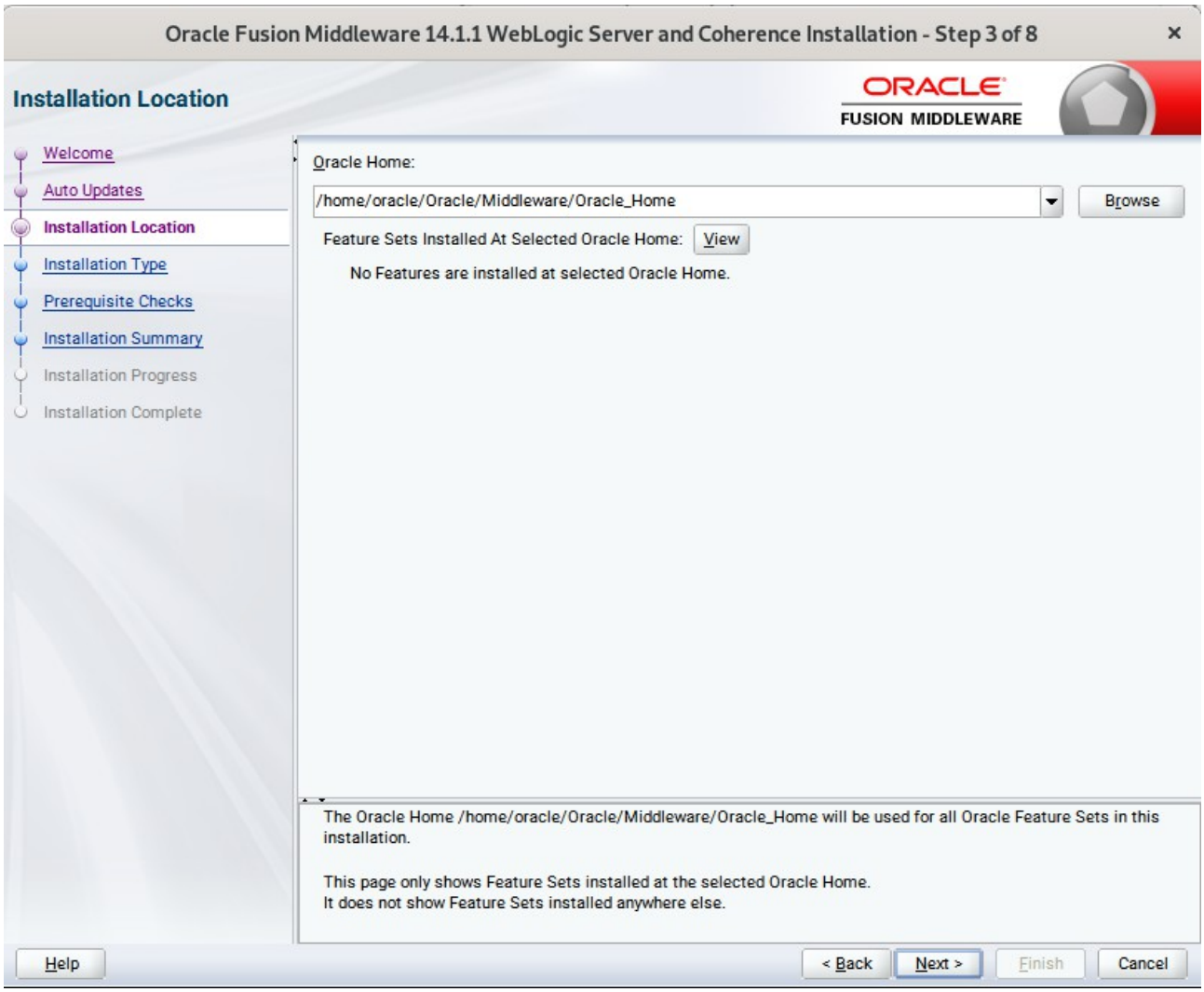
Review the information on this screen carefully to be sure you have performed all the necessary prerequisites, then click **Next** to continue.

3). Auto Updates.



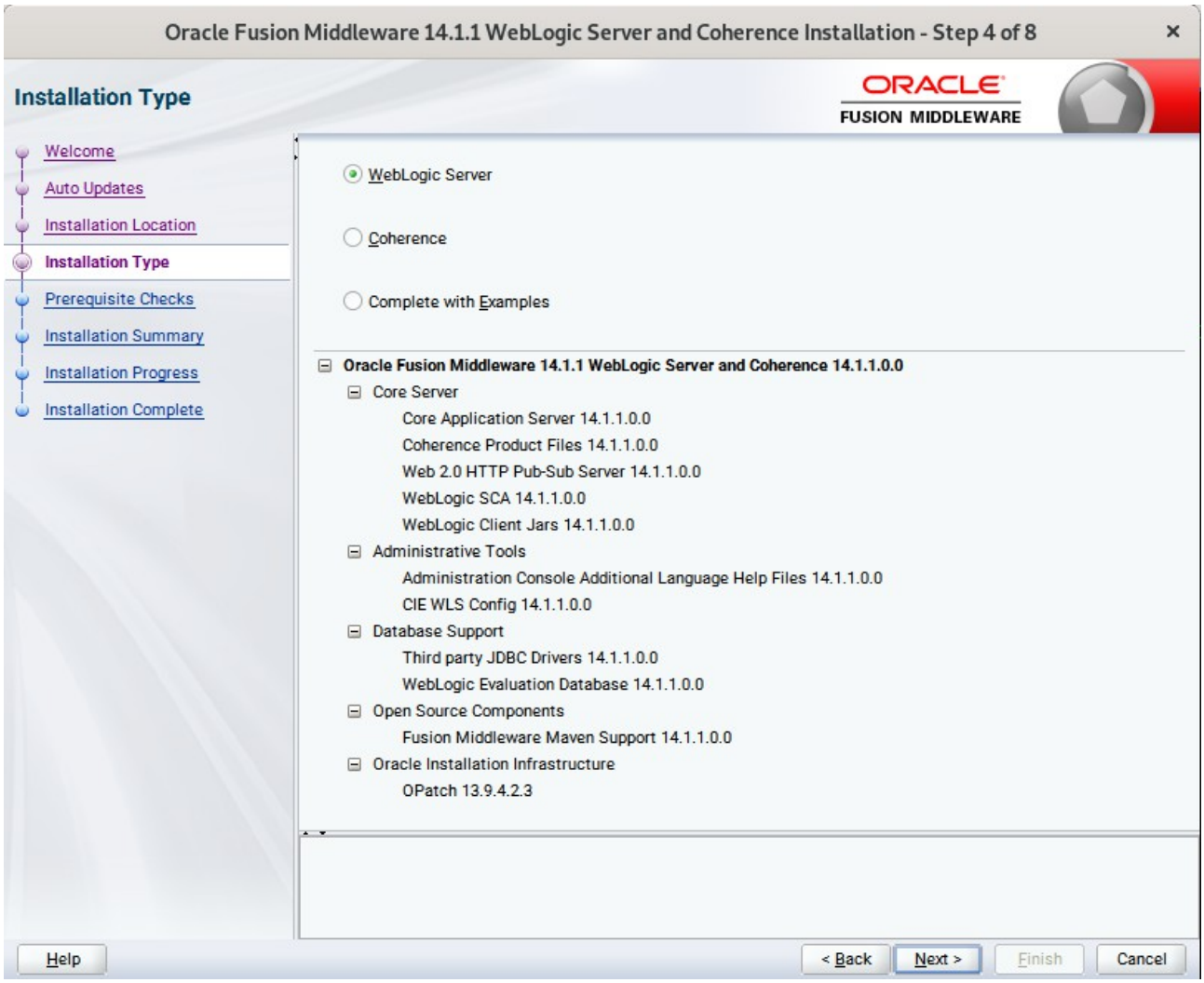
Select option "**Skip Auto Updates**" to skip this screen, then click **Next** to continue.

4). Installation Location.



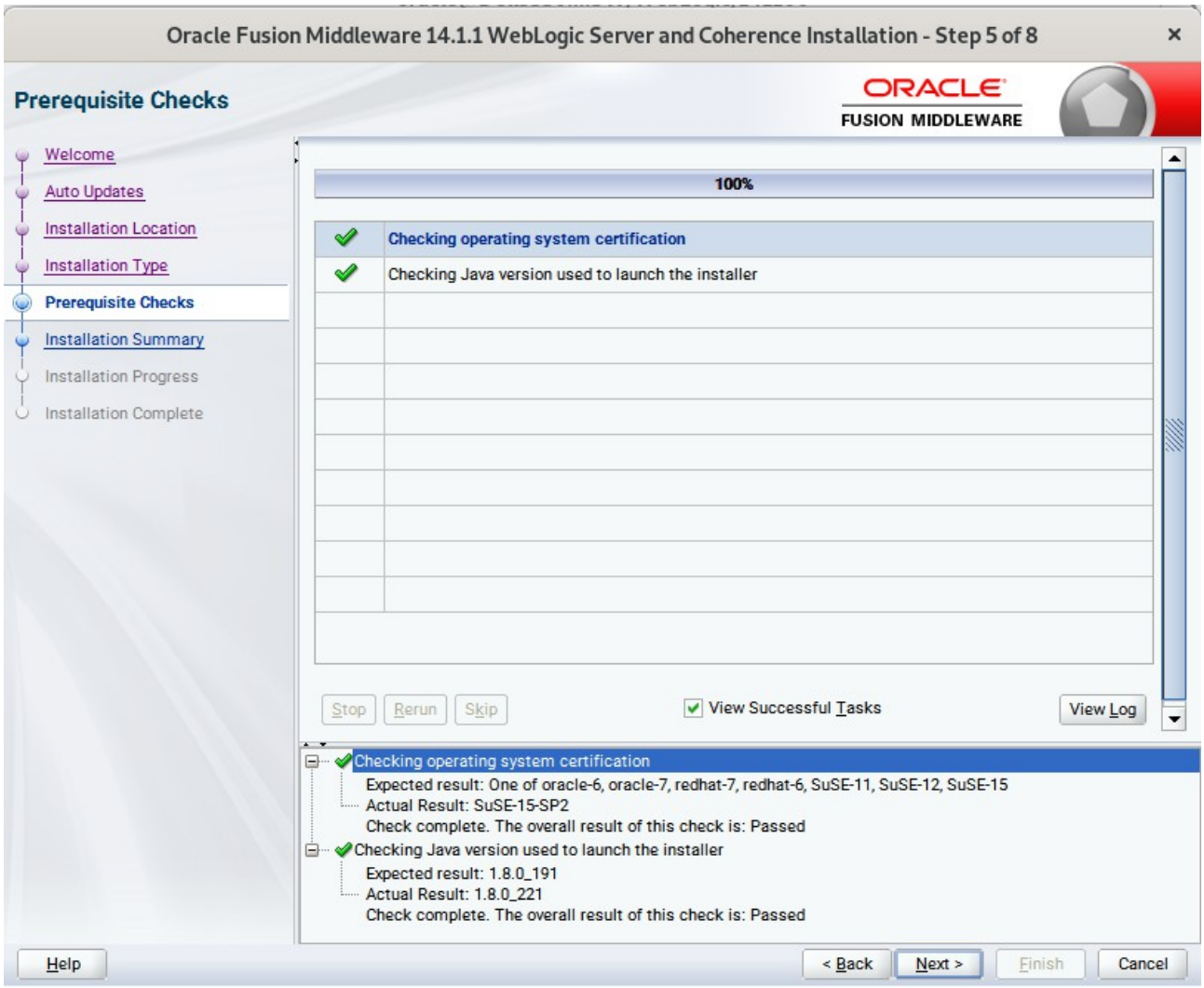
Type the full path of the directory in the Oracle Home field, then click **Next** to continue.

5). Installation Type.



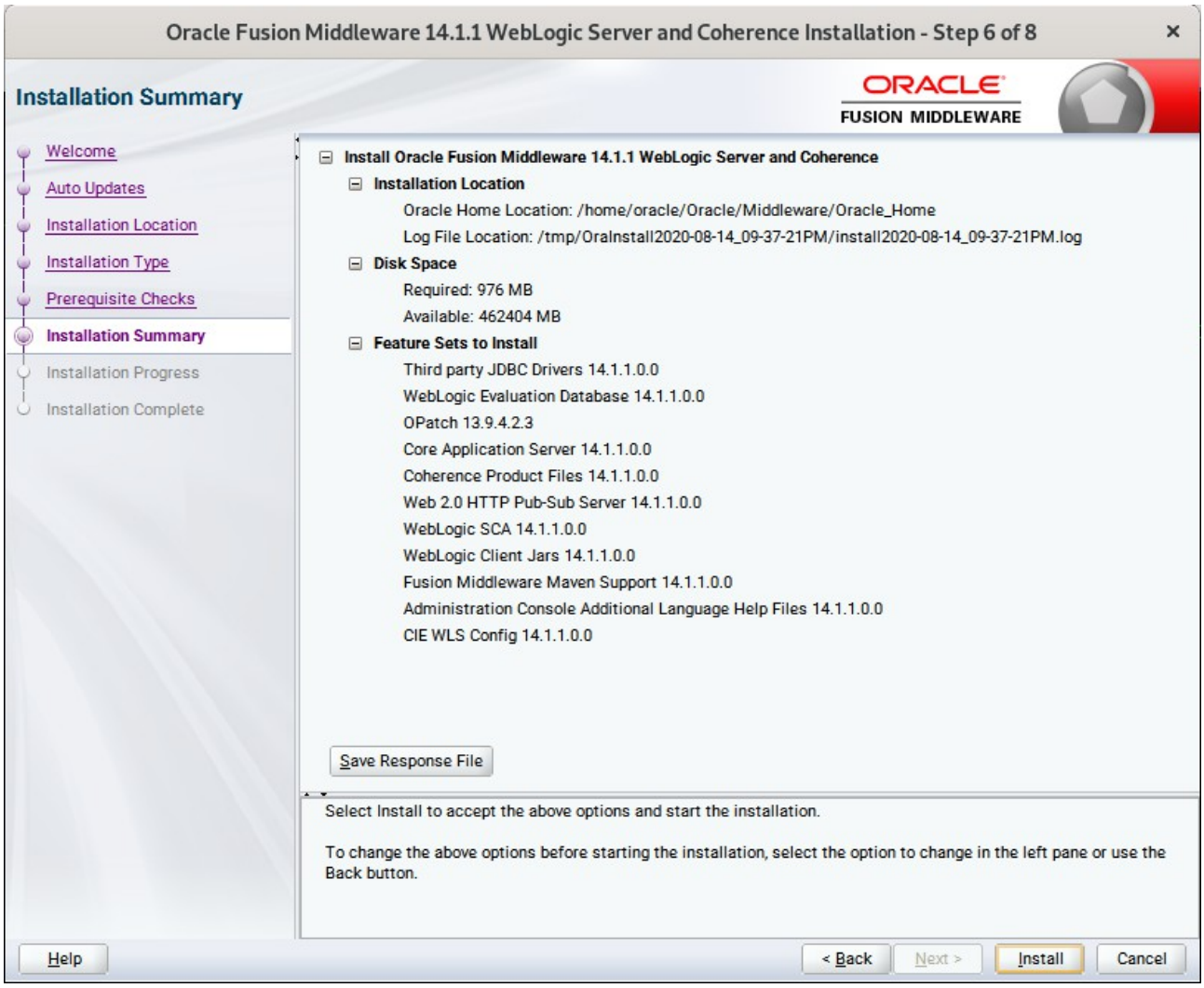
Use this screen to determine the type of installation you want to perform, then click **Next** to continue.

6). Prerequisite Checks.



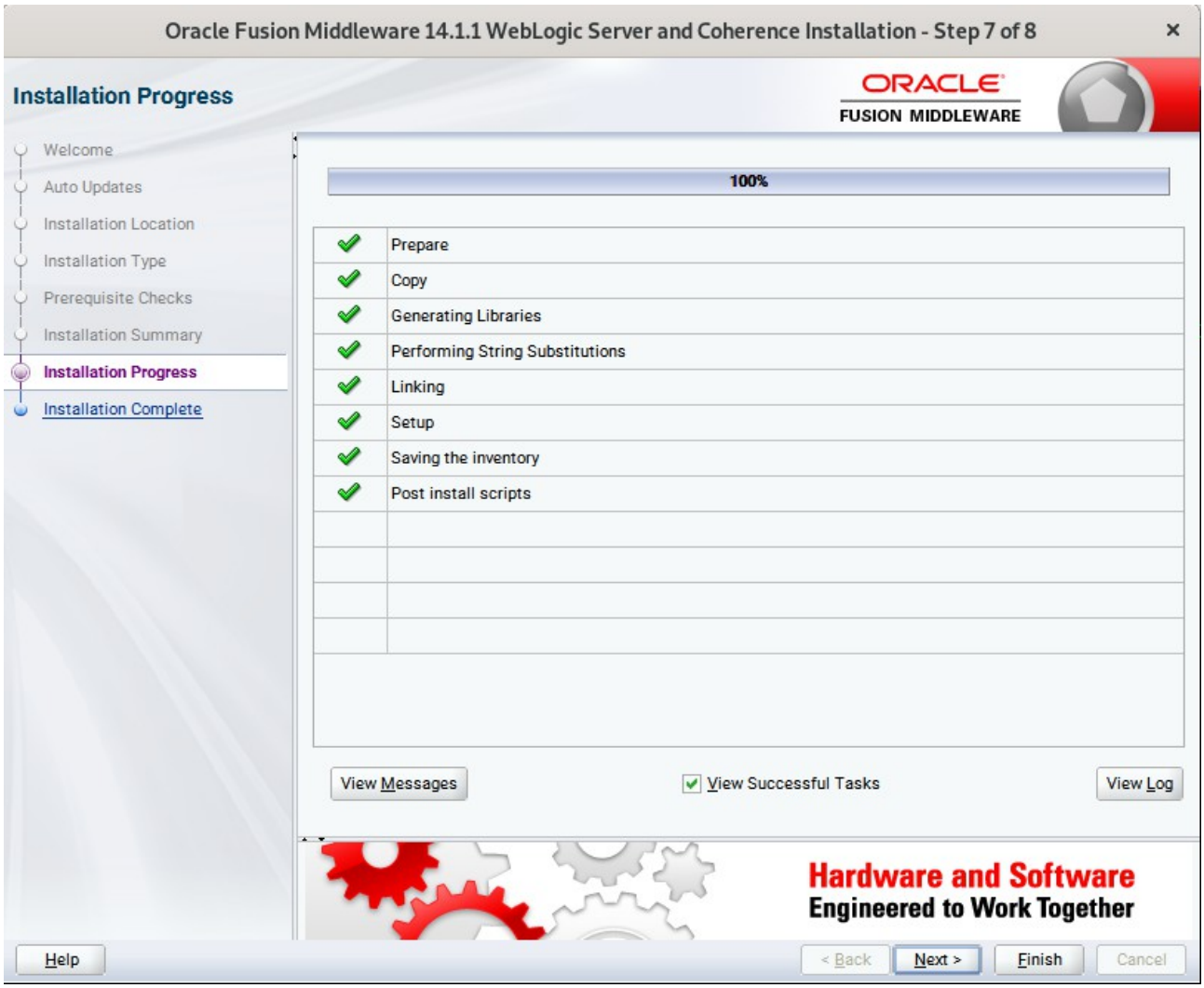
Prerequisite Checks results will be shown as above, Oracle Fusion Middleware 14c is certified on SLES 15(+), click **Next** to continue.

7). Installation Summary.



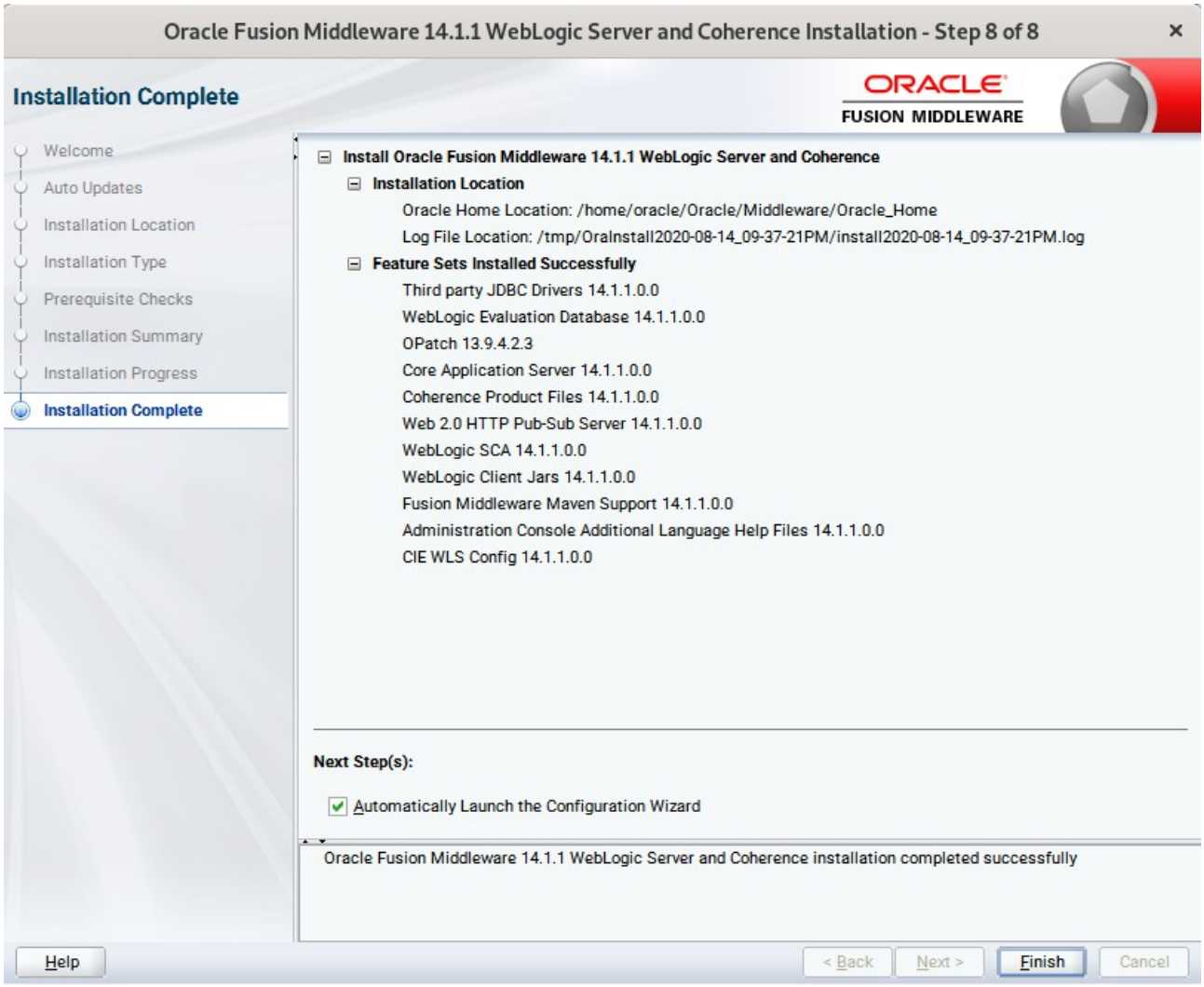
This screen contains a list of the feature sets you selected for installation, along with the approximate amount of disk space to be used by the feature sets once installation is complete. Check the information, then click **Install** to continue.

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.



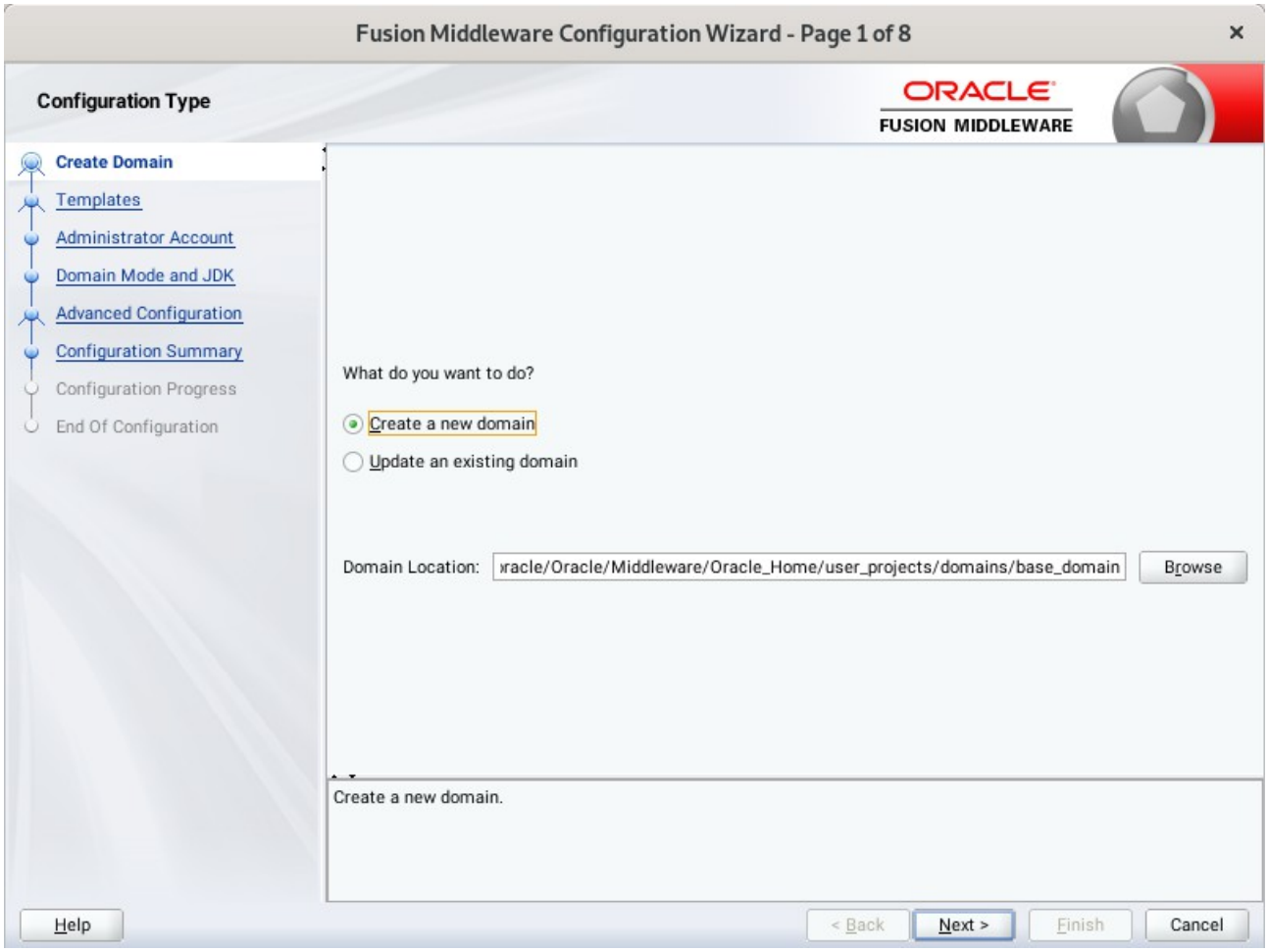
This screen appears at the conclusion of the installation. Select option "**Automatically Launch the Configuration Wizard**", then click **Finish** to dismiss the installer.

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**'.

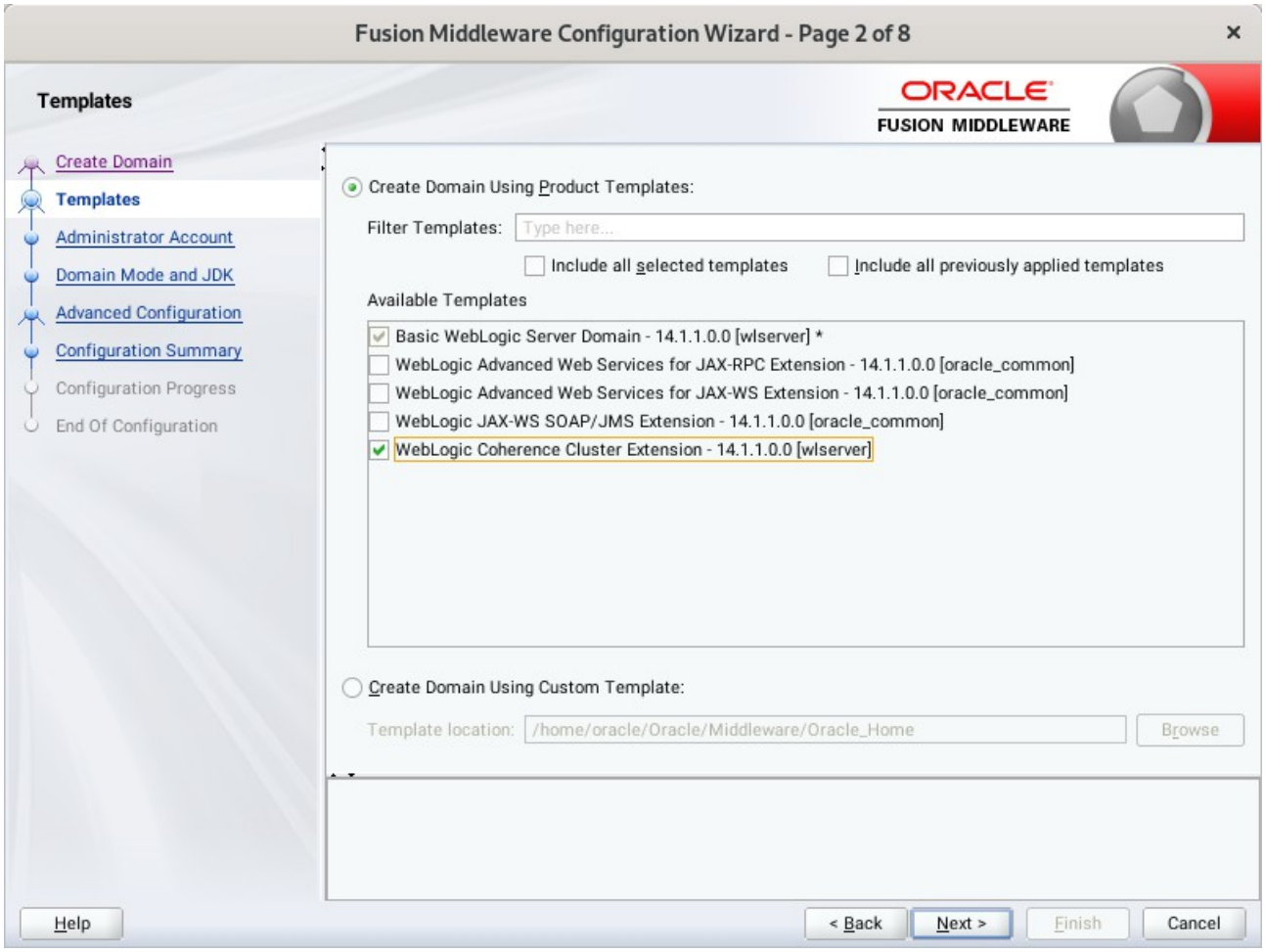
Starting configuration:

1). Configuration Type.



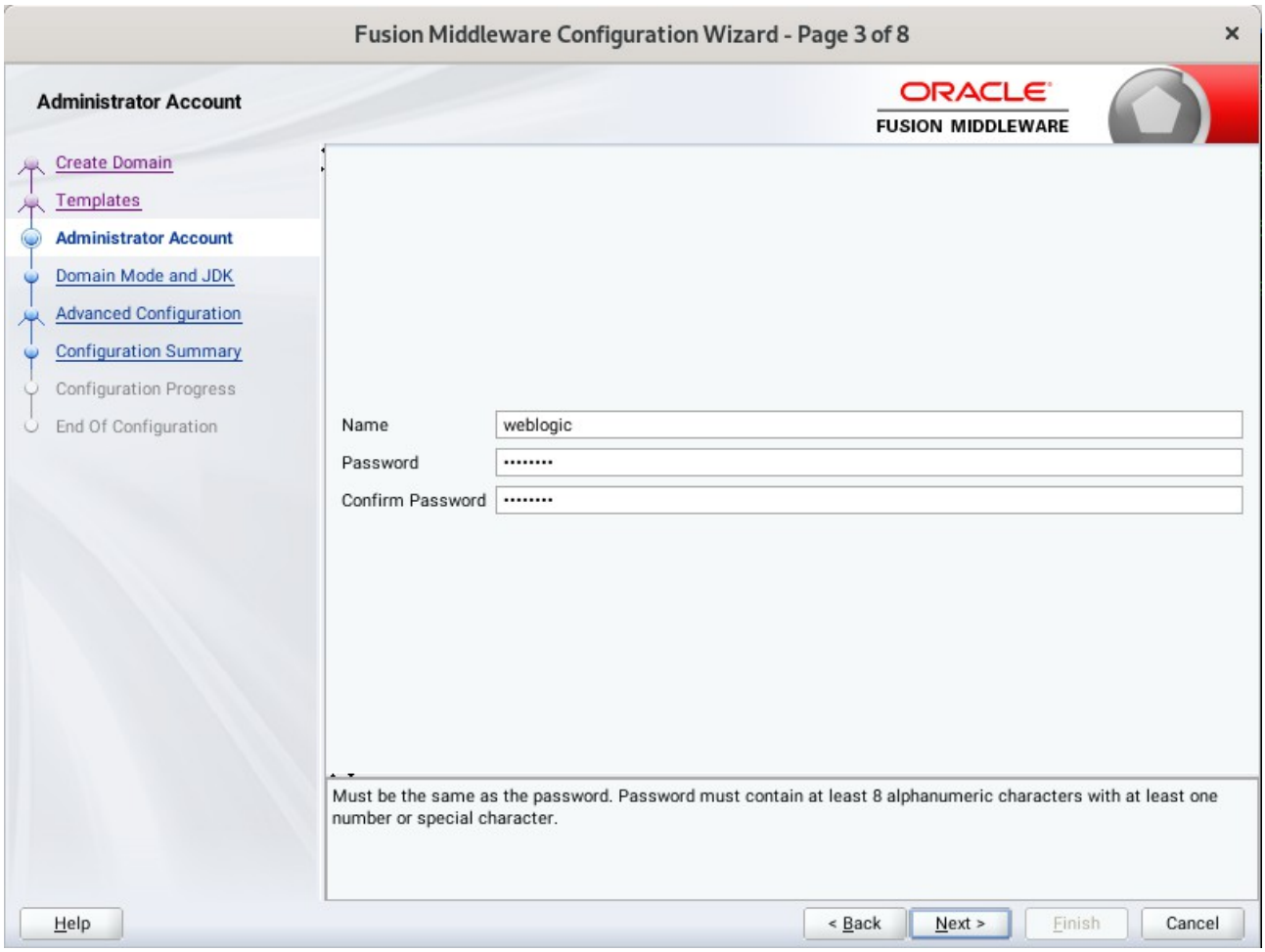
Select option "**Create a New Domain**" and specify the Domain home directory in the "**Domain Location**" field, then click **Next** to continue.

2). Templates.



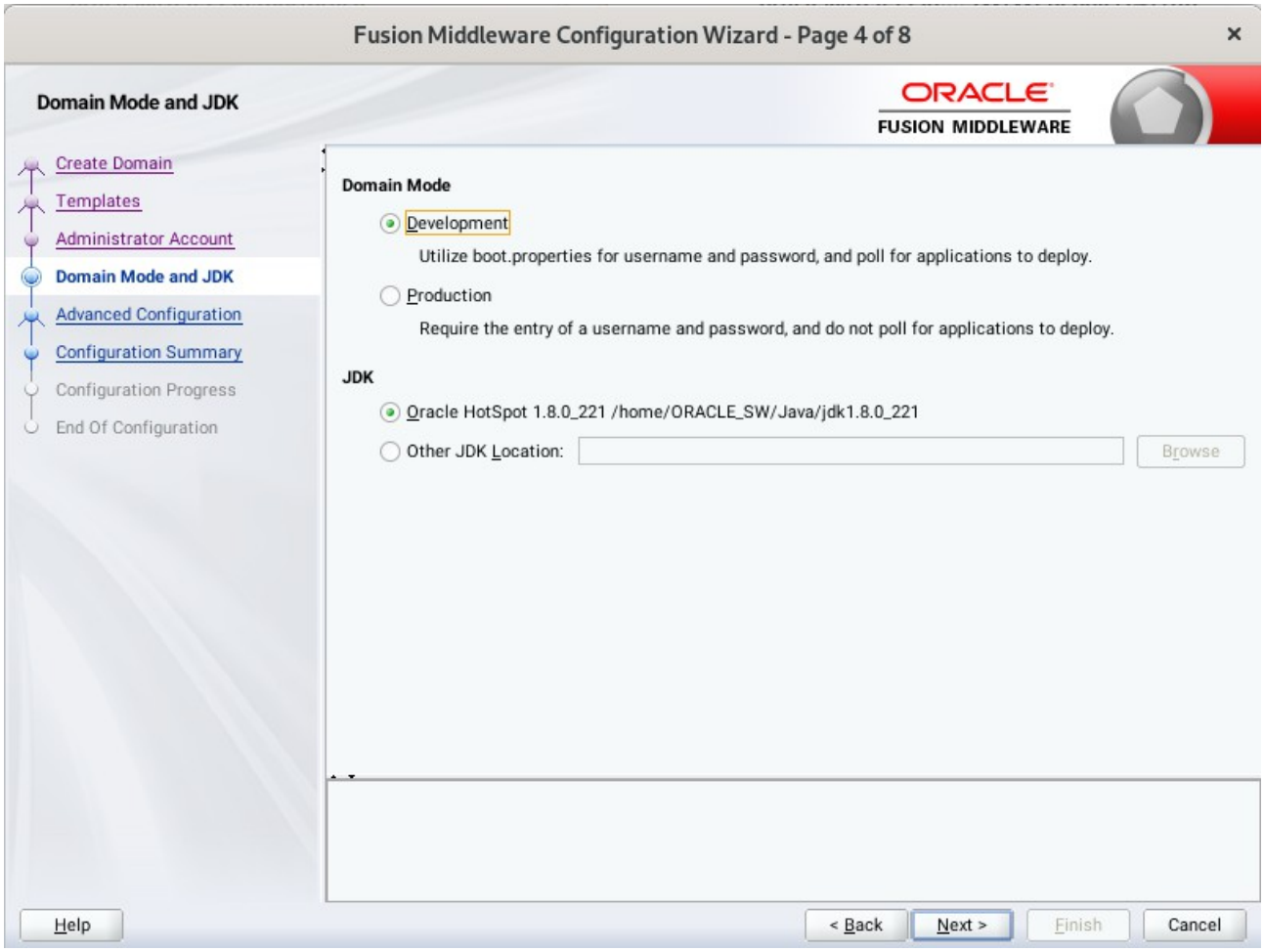
On the Templates screen select "**Basic WebLogic Server Domain (selected by default)**" and "**WebLogic Coherence Cluster Extension**" for configuration, then click **Next** to continue.

3). Administrator Account.



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.

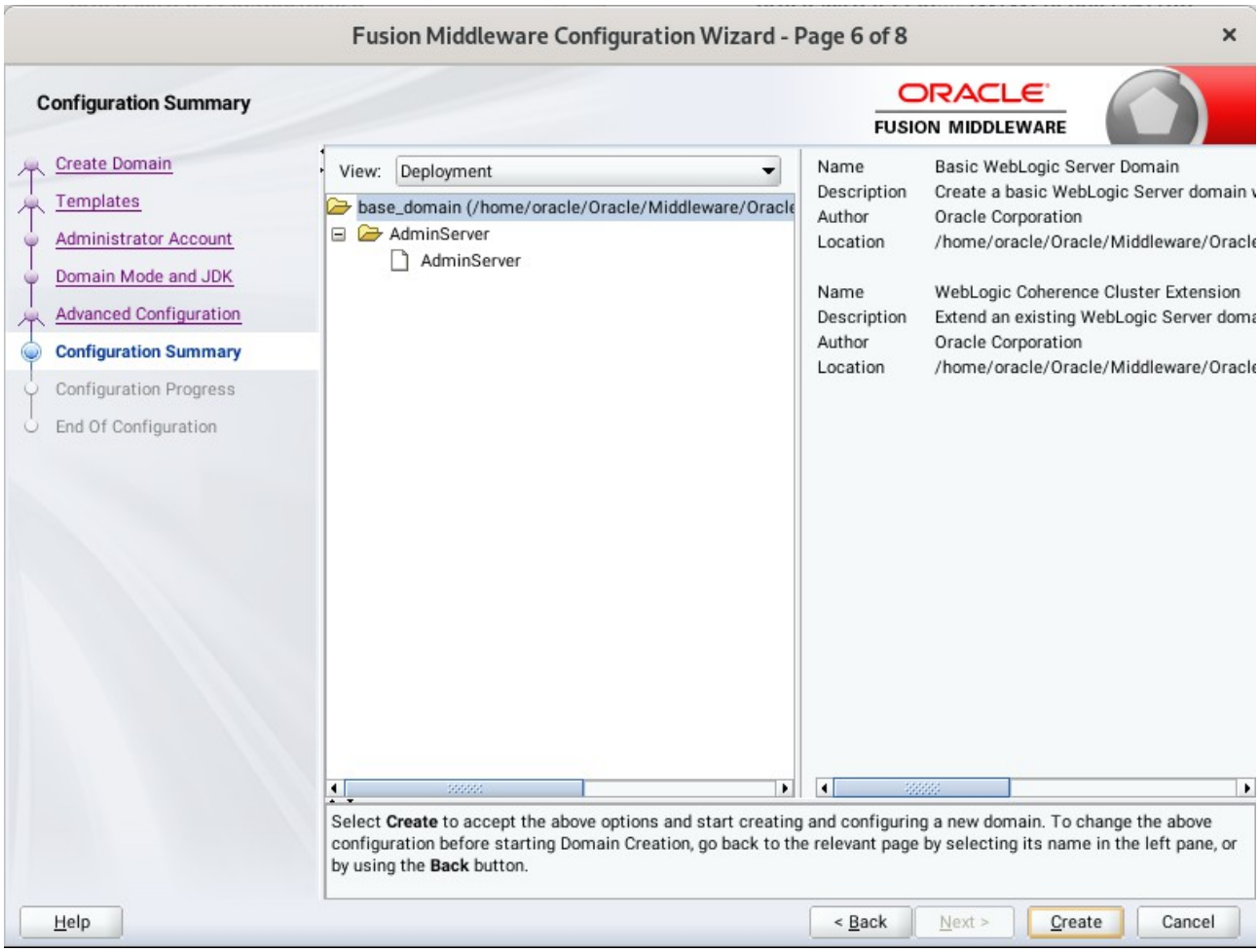


Select "**Development**" in the Domain Mode field, select the "**Oracle HotSpot**" in the JDK field. Then click **Next** to continue.

5). Advanced Configuration.

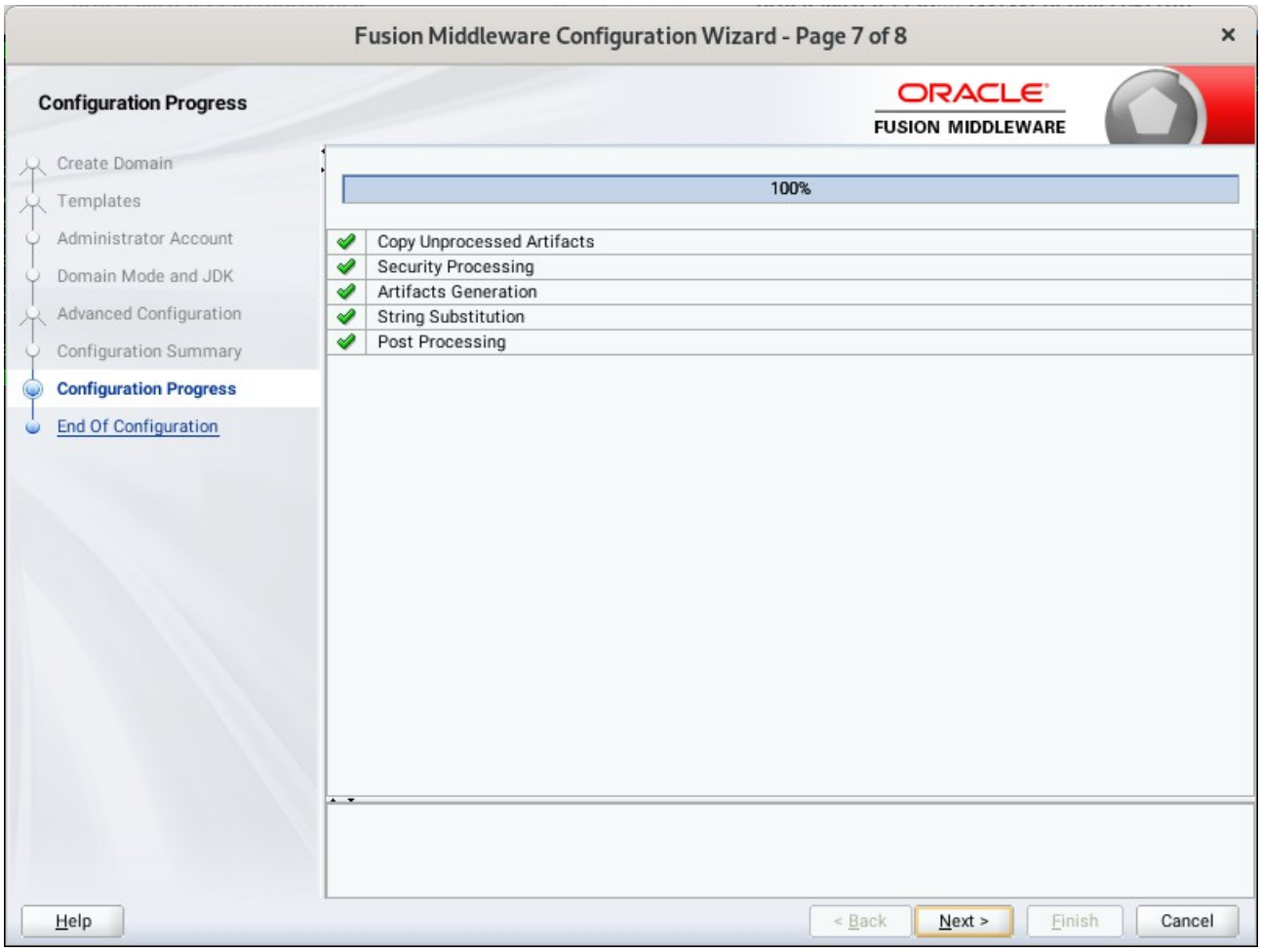
According to your requirements, select the desired options on the Advanced Configuration screen.Then click **Next** to continue.

6). Configuration Summary.



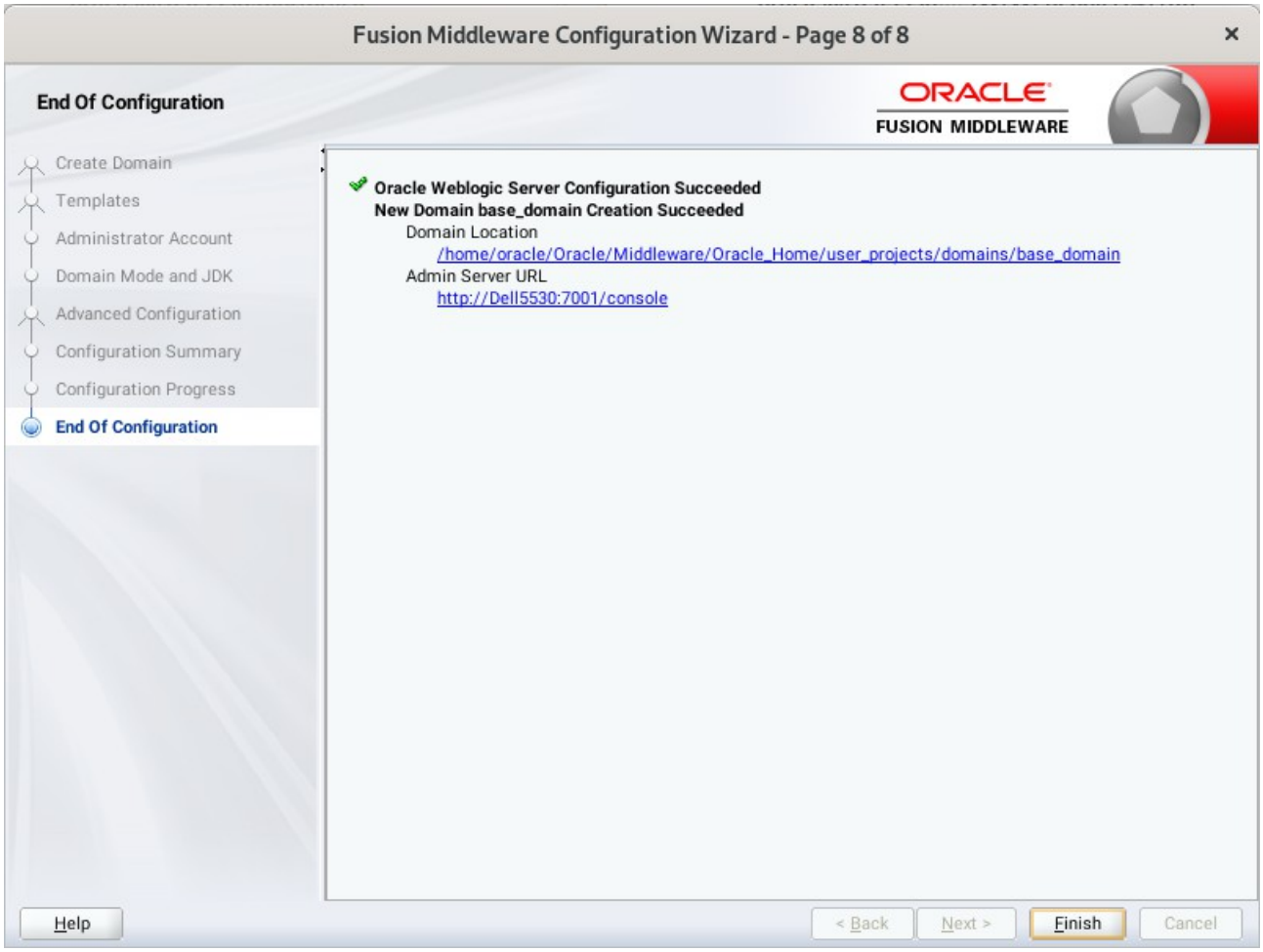
Review this screen to verify the information is correct, then click **Create** to continue.

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

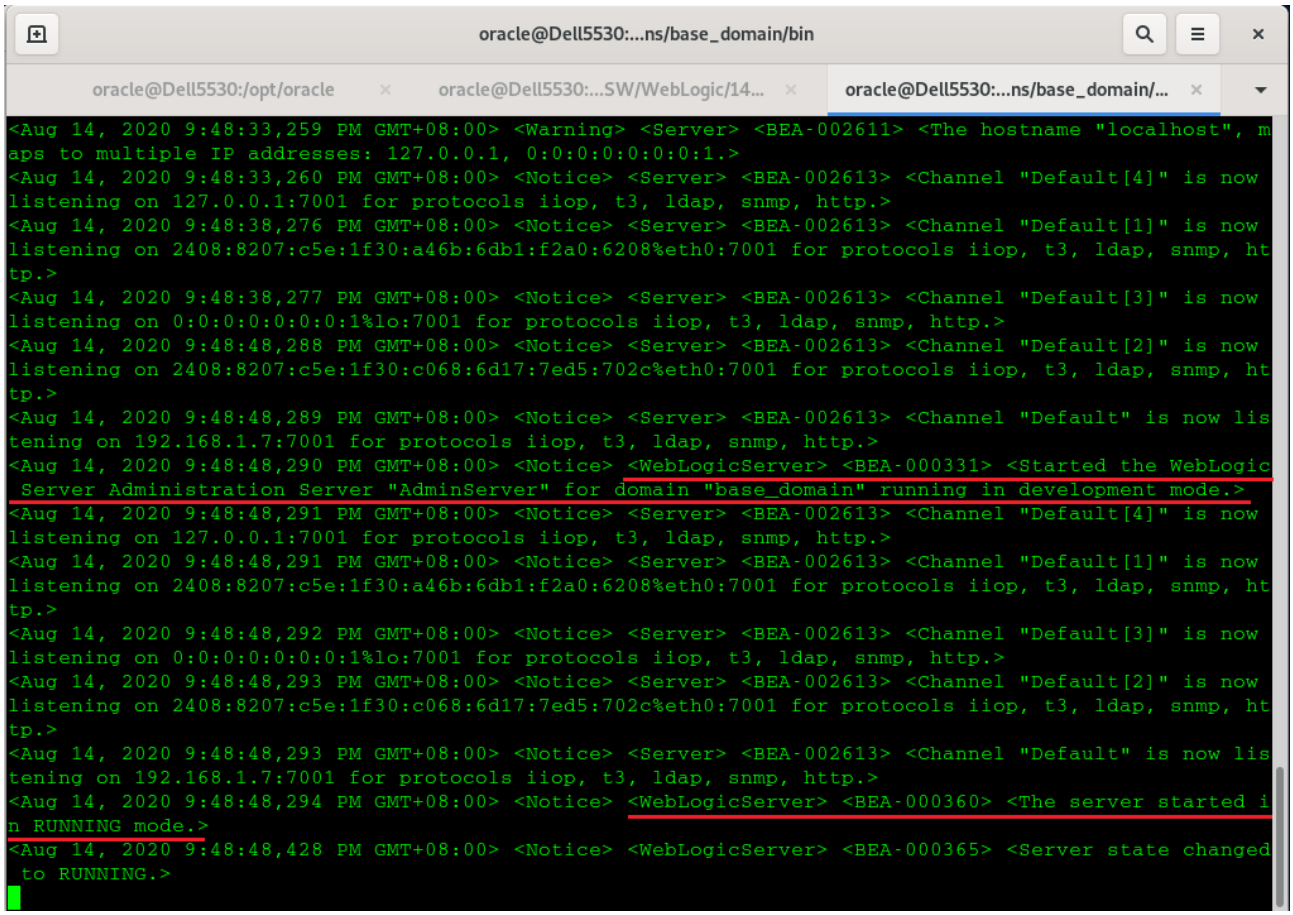
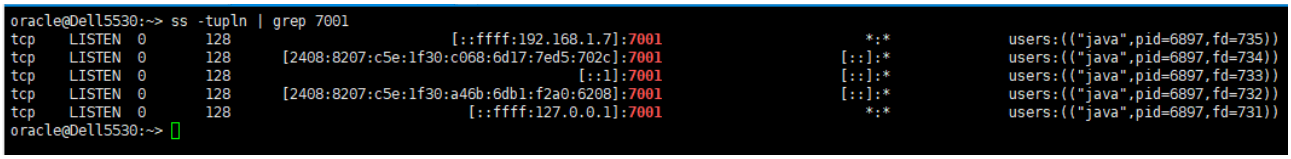


Figure 3-1-2 Checking the listening port(7001)



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

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

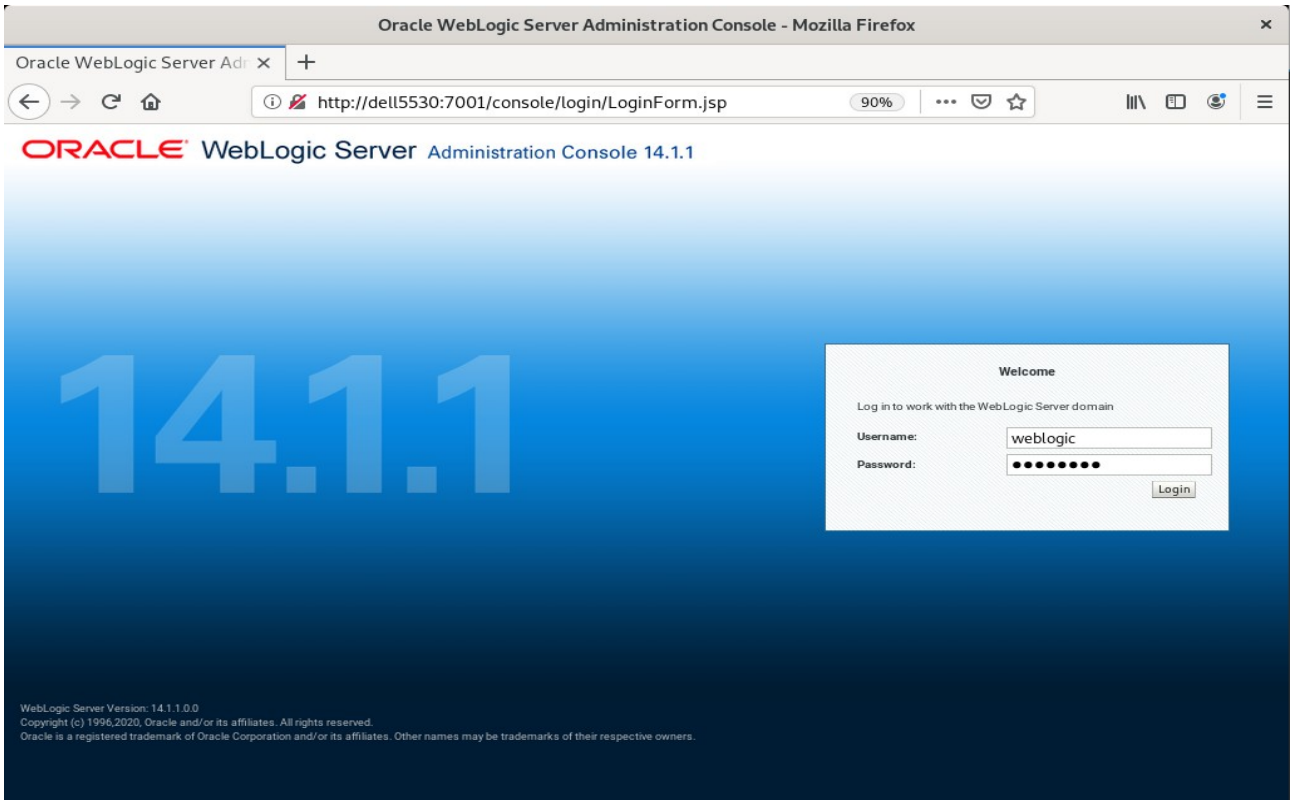


Figure 3-2-2 Viewing WebLogic Server Admin Console - Home page

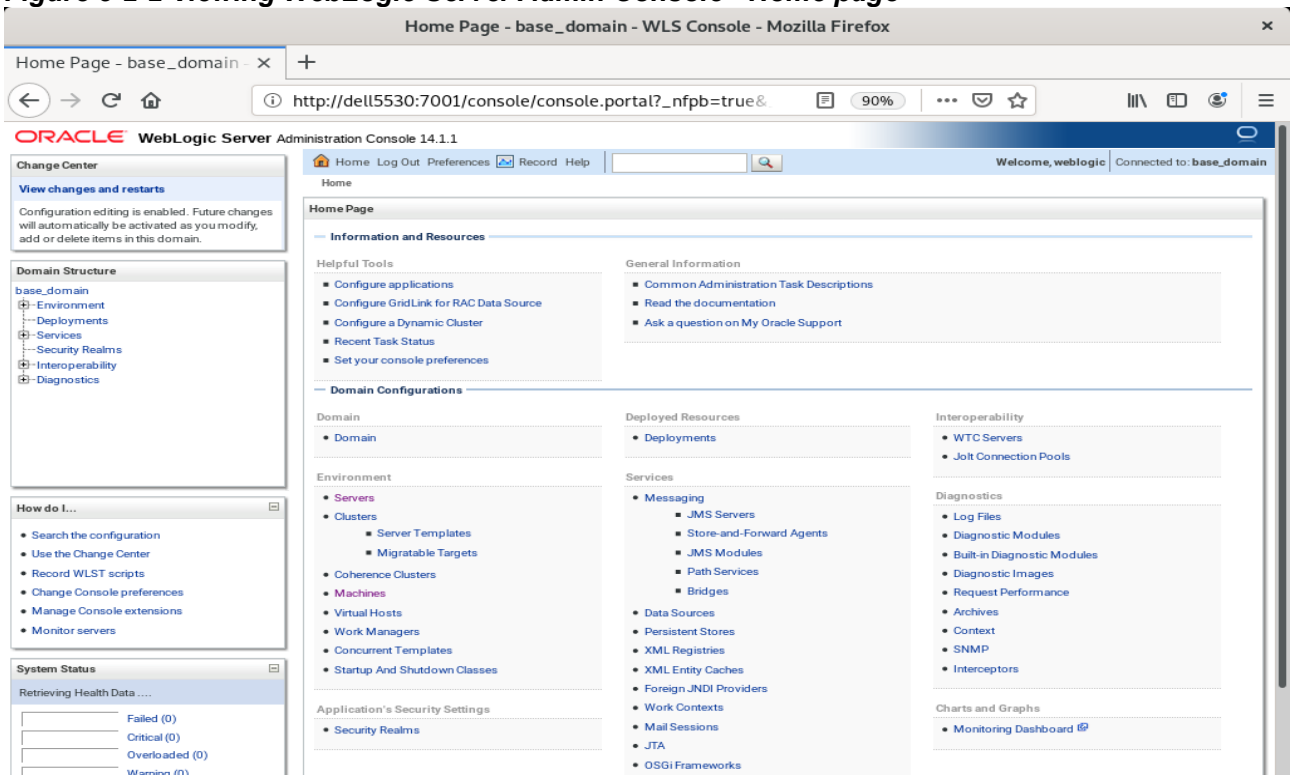
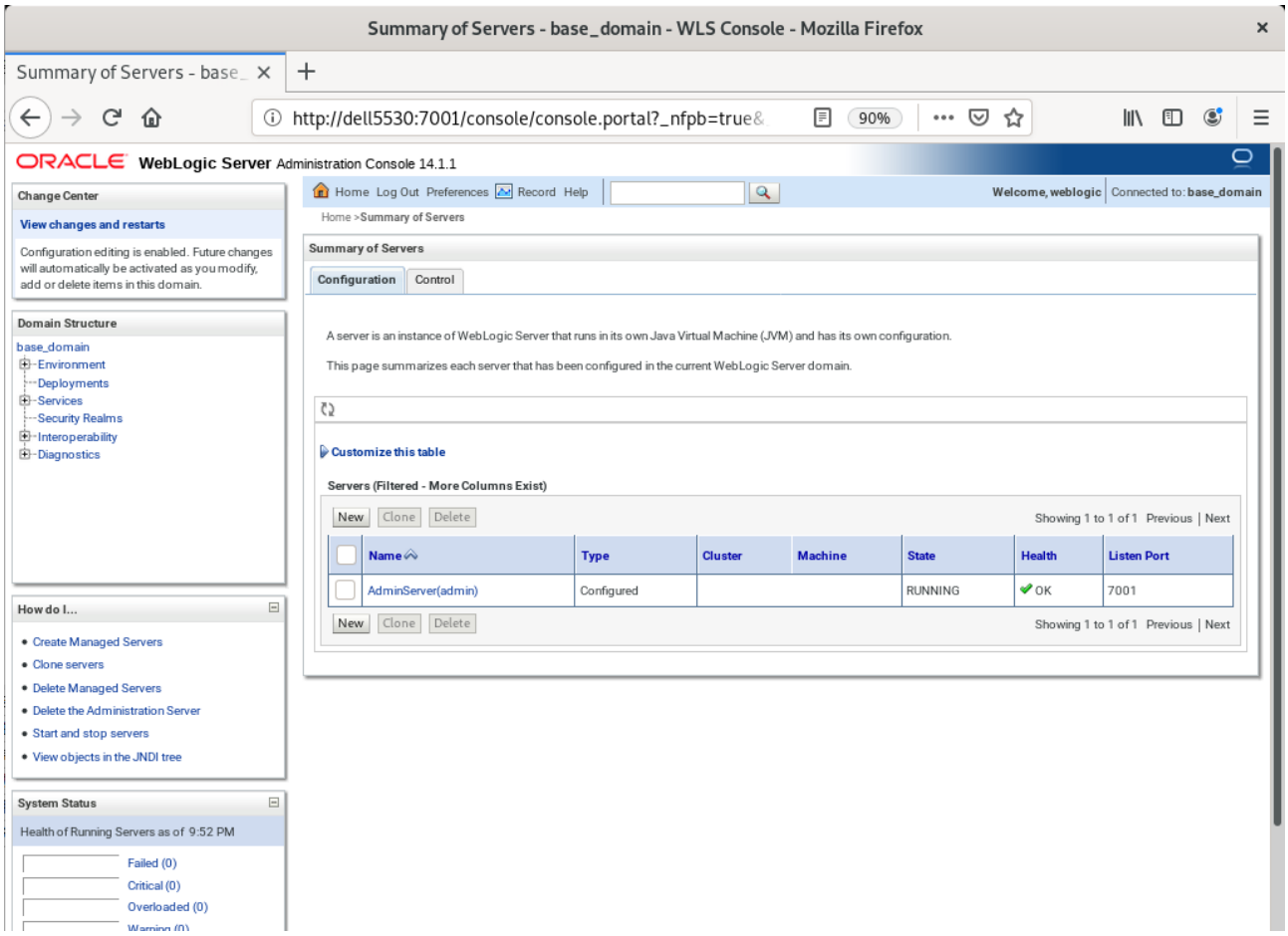


Figure 3-2-3 Viewing WebLogic Server Admin Console - Summary of Servers



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
Aug 14th, 2020
https://www.suse.com