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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>1-GHz CPU</td>
</tr>
<tr>
<td>Physical Memory</td>
<td>4 GB</td>
</tr>
<tr>
<td>Swap space</td>
<td>Approx. twice the size of RAM</td>
</tr>
<tr>
<td>Disk space in /tmp</td>
<td>2 GB</td>
</tr>
<tr>
<td>Disk space for software files</td>
<td>2 GB</td>
</tr>
</tbody>
</table>

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
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
Oracle WebLogic Server 12cR2 Installation

1. Installing Oracle WebLogic Server software


(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.
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.

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**

```
<Jul 4, 2018 11:55:41 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-00936> <Server state changed to STANDBY.>
<Jul 4, 2018 11:55:41 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-00936> <Server state changed to STARTING.>
<Jul 4, 2018 11:55:41 AM GMT+08:00> <Notice> <Log Management> <BEA-170836> <The Logging monitoring service timer has started to check for logged message counts every 30 seconds.>
<Jul 4, 2018 11:55:41.757 AM GMT+08:00> <Notice> <Log Management> <BEA-170827> <The server has successfully established a connection with the Domain Level Diagnostic Service.>
<Jul 4, 2018 11:55:45.290 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-00936> <Server state changed to ADMIN.>
<Jul 4, 2018 11:55:45.384 AM GMT+08:00> <Notice> <WebLogicServer> <BEA-00936> <Server state changed to RESUMING.>
<Jul 4, 2018 11:55:45.430 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 11:55:45.440 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 127.0.0.1:7001 for protocols: llp, t3, ldap, ssn, http.>
<Jul 4, 2018 11:55:45.440 AM GMT+08:00> <Notice> <Server> <BEA-002513> <Channel "Default[1]" is now listening on 0:0:0:0:0:0:0:1:7001 for protocols: llp, t3, ldap, ssn, http.>
<Jul 4, 2018 11:55:45.441 AM GMT+08:00> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on 147.2.297.96:7001 for protocols: llp, t3, ldap, ssn, http.>
<Jul 4, 2018 11:55:45.450 AM GMT+08:00> <Notice> <Server> <BEA-00936> <Server state changed to RUNNING.>
```

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

```
oracle@hpgen9-01:~$ netstat -tuln | grep 7001
    tcp    LISTEN    0    128  [::ffff:147.2.297.96]:7001    *:*    users:(("java",pid=9713,fid=730))
    tcp    LISTEN    0    128  [::ffff:147.2.297.96]:7001    *:*    users:(("java",pid=9713,fid=730))
    tcp    LISTEN    0    128  [::1]:7001    *:*    users:(("java",pid=725,fid=725))
    tcp    LISTEN    0    128  [::1]:7001    *:*    users:(("java",pid=725,fid=725))
```
3-2. Access to Oracle WebLogic Server Administration Console.

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

![Oracle WebLogic Server Administration Console](image1)

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

![Oracle WebLogic Server Administration Console](image2)
**Figure 3-2-3** Viewing WebLogic Server Admin Console - Summary of Servers

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Cluster</th>
<th>Machine</th>
<th>State</th>
<th>Health</th>
<th>Listen Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdminServer admin</td>
<td>Configured</td>
<td></td>
<td></td>
<td>RUNNING</td>
<td>OK</td>
<td>7001</td>
</tr>
</tbody>
</table>

A server is an instance of WebLogic Server that runs in its own Java Virtual Machine (JVM) and has its own configuration. This page summarizes each server that has been configured in the current WebLogic Server domain.
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