



Oracle Weblogic Server Horizontal Clustering

V 1.0

Table of Contents

1. [Lab Architecture.....](#)
2. [Download Software \(Certified JDK and Weblogic Server from edelivery\).....](#)
3. [Installation of JDK on each Linux Host.....](#)
4. [Installation of Weblogic on Each Linux Host.....](#)
5. [Create Domain](#)
6. [Start and Test Node Manager and Admin Server on Primary Server](#)
7. [Pack Domain on Primary Host.....](#)
8. [Unpack Domain on Secondary Host.....](#)
9. [Start and Test Services](#)

DigiTalk

<https://digitalksystems.com/>

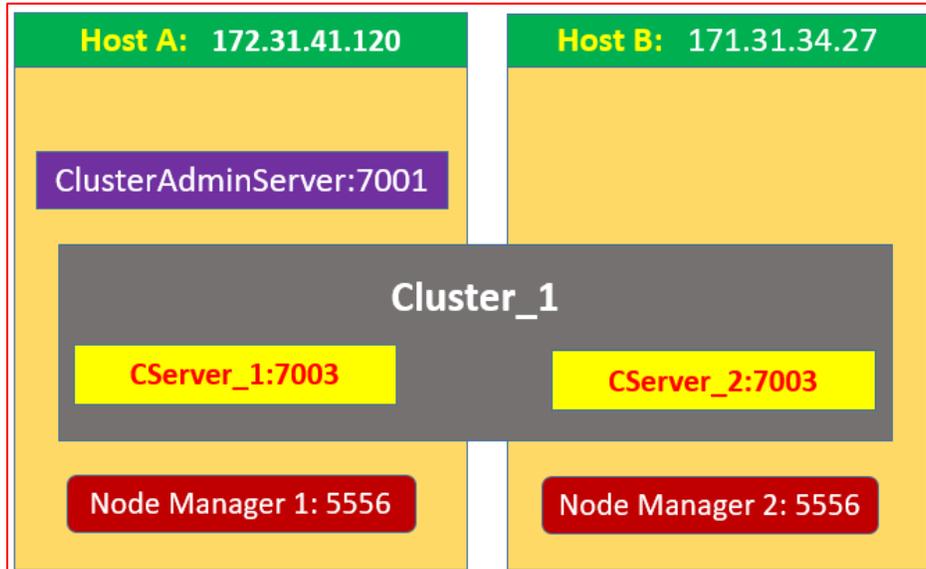
Reach us at digitalk.fmw@gmail.com

DigiTalk Channel: https://www.youtube.com/channel/UCCGTnI9wF_ETMhGUXGdFWw

Weblogic Server Architecture: <https://youtu.be/gNqeIfLjUqw>

Oracle Weblogic Server Horizontal Clustering (Linux)

Lab Architecture:



Host	Hostname/I.P	Cluster	Server Name	Port	Type	Node Manager Port
Host A	172.31.41.120	N/A	ClusterAdminServer	7001	Admin Server	5556
Host A	172.31.41.120	Cluster_1	CServer_1	7003	Managed Server 1	5556
Host B	171.31.34.27	Cluster_1	CServer_2	7003	Managed Server 2	5556

Note: We have second managed server CServer_2 and Node Manager are on different host, hence we are using same port for both managed servers and node manager (7003 & 5556).



Oracle Weblogic Server Horizontal Clustering (Linux)

Download Software (Certified JDK and Weblogic Server from edelivery)

Follow [Weblogic Installation Linux Lab](#) to understand how to download software direct from oracle edelivery on Linux host.

Note - You can download software on NFS (shared directory across each host). If you don't have shared directory then download it on one node, and then copy on each.

Installation of JDK on EACH Linux Host

Follow [Weblogic Installation Linux Lab](#) to understand how to install and create a soft link of JDK folder. (Referred as JAVA_HOME)

Note: Make sure to install on same path on each host

In this Lab we have installed at /u01 and created soft link as /u01/jdk.

Installation of Weblogic on EACH Linux Host

Follow [Weblogic Installation Linux Lab](#)

Note: Make sure to install on same path on each host (Referred as ORACLE_HOME)

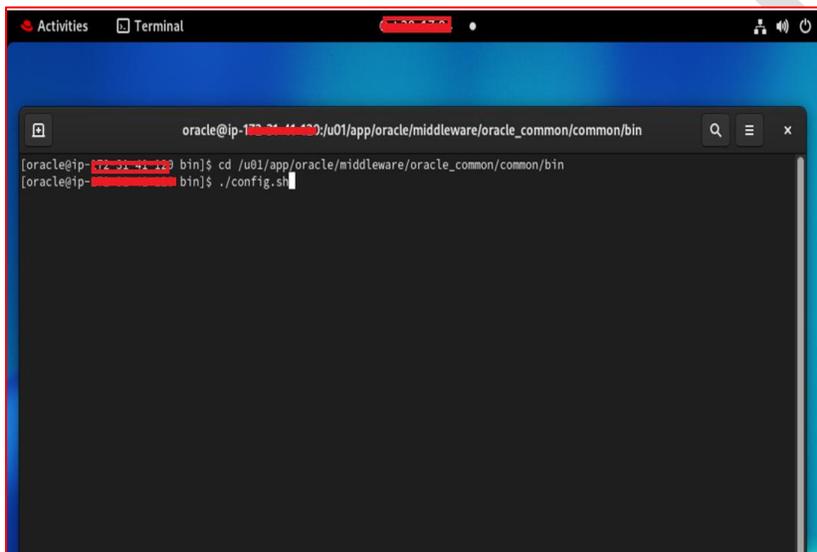
In this Lab we have installed at /u01/app/oracle/middleware

Oracle Weblogic Server Horizontal Clustering (Linux)

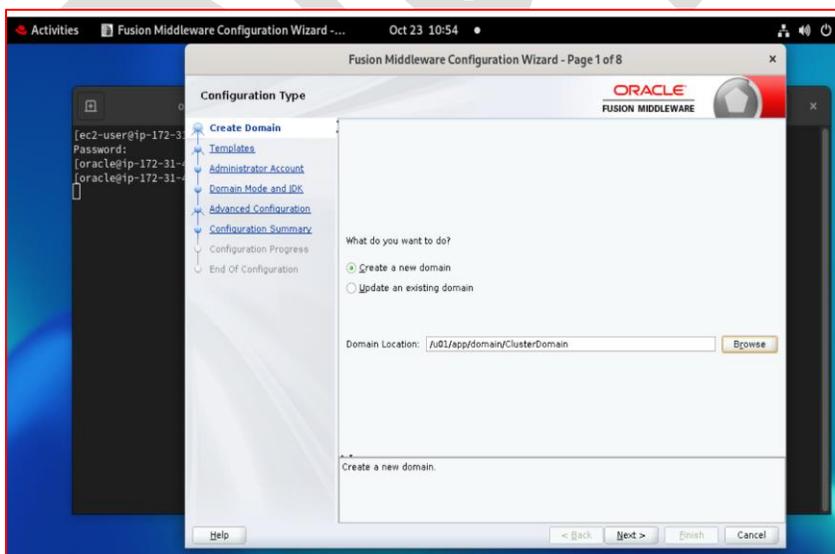
Create Domain

Create vnc session as describe in [Linux VNC Setup Lab](#) to run graphical interface on primary host (where you want to run Admin Server), and run configuration wizard.

```
cd /u01/app/oracle/middleware/oracle_common/common/bin  
./config.sh
```

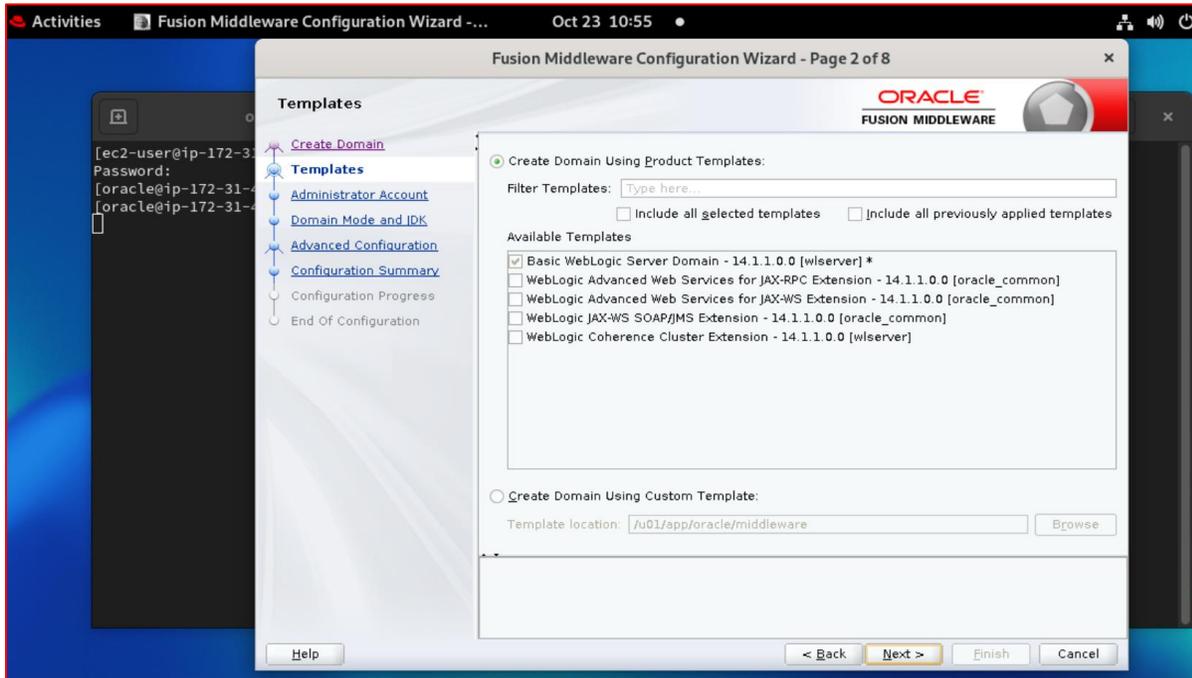


Select “Create a new domain”, and enter location of domain. In this Lab it’s [/u01/app/domain/ClusterDomain](#)

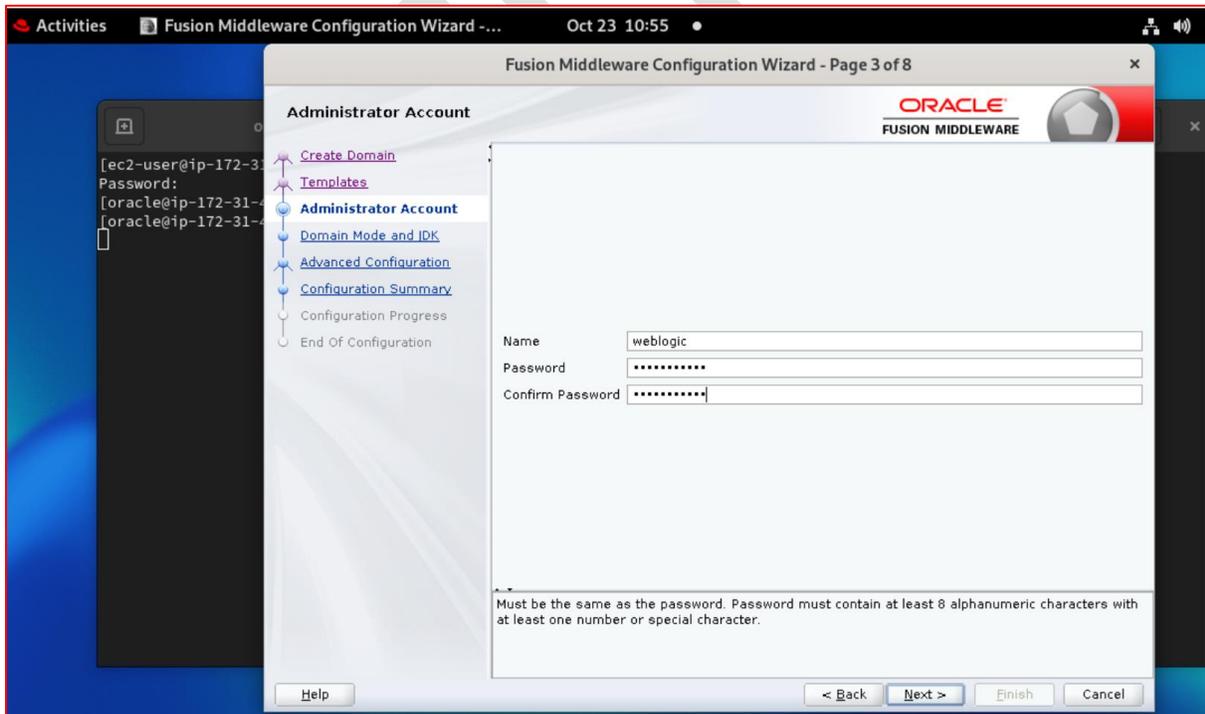


Oracle Weblogic Server Horizontal Clustering (Linux)

Proceed with default basic weblogic server template



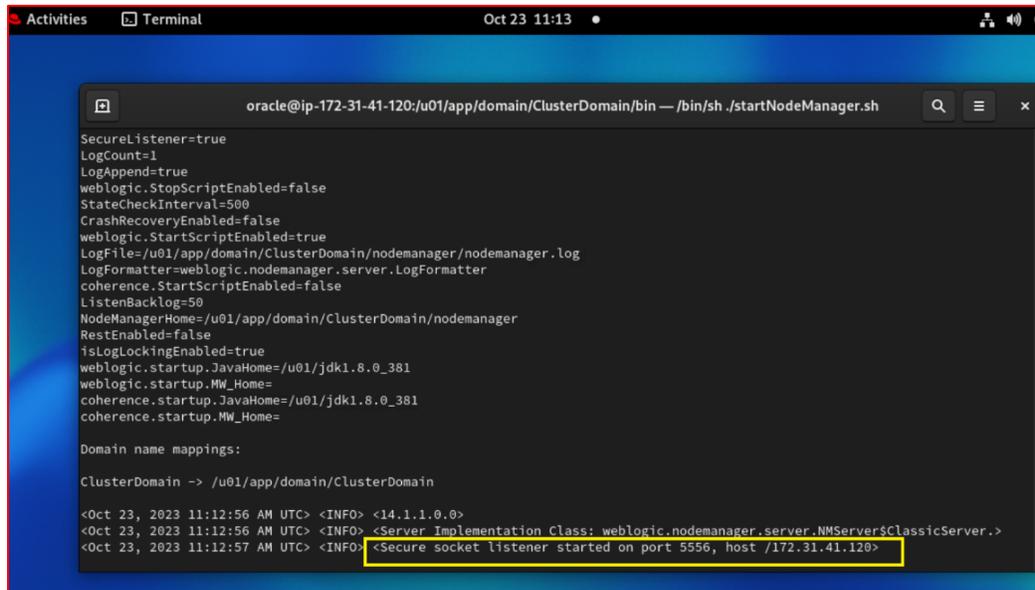
Enter administrator username and password from admin console



Oracle Weblogic Server Horizontal Clustering (Linux)

Start and Test Node Manager & Admin Server on primary host (Host A in Lab)

```
# Test if Node Manager is coming up
cd /u01/app/domain/ClusterDomain
./startNodeManager.sh
```



```
oracle@ip-172-31-41-120:/u01/app/domain/ClusterDomain/bin — /bin/sh ./startNodeManager.sh
SecureListener=true
LogCount=1
LogAppend=true
weblogic.StopScriptEnabled=false
StateCheckInterval=500
CrashRecoveryEnabled=false
weblogic.StartScriptEnabled=true
LogFile=/u01/app/domain/ClusterDomain/nodemanager/nodemanager.log
LogFormatter=weblogic.nodemanager.server.LogFormatter
coherence.StartScriptEnabled=false
ListenBackLog=50
NodeManagerHome=/u01/app/domain/ClusterDomain/nodemanager
RestEnabled=false
IsLogLockingEnabled=true
weblogic.startup.JavaHome=/u01/jdk1.8.0_381
weblogic.startup.MW_Home=
coherence.startup.JavaHome=/u01/jdk1.8.0_381
coherence.startup.MW_Home=

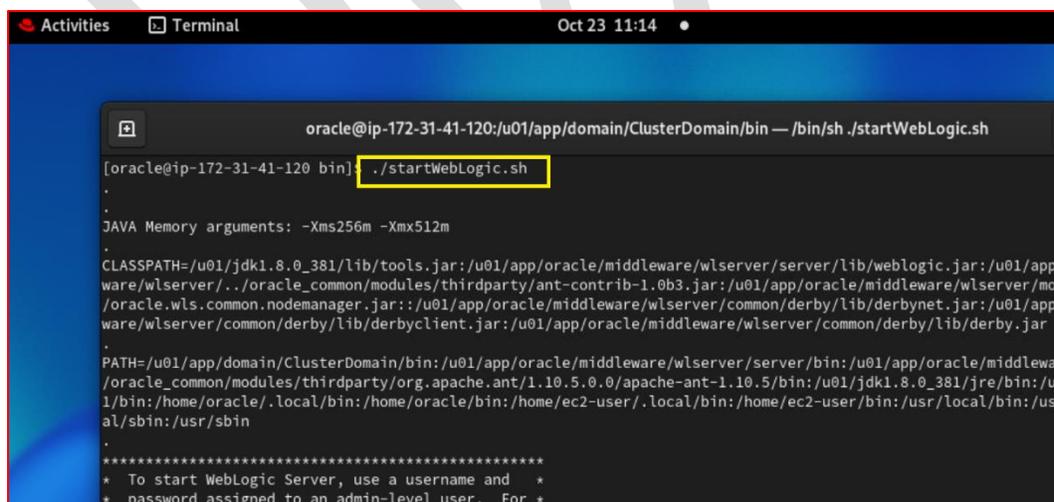
Domain name mappings:

ClusterDomain -> /u01/app/domain/ClusterDomain

<Oct 23, 2023 11:12:56 AM UTC> <INFO> <14.1.1.0.0>
<Oct 23, 2023 11:12:56 AM UTC> <INFO> <Server Implementation Class: weblogic.nodemanager.server.NMServer$ClassicServer.>
<Oct 23, 2023 11:12:57 AM UTC> <INFO> <Secure socket listener started on port 5556, host /172.31.41.120>
```

```
# Test if Admin Server is coming up
cd /u01/app/domain/ClusterDomain
./startWeblogic.sh → We have domain in production mode so it will prompt you for username and password until we create boot.properties file manually (will do it in later step in this LAB)
```

Start Admin Server



```
oracle@ip-172-31-41-120:/u01/app/domain/ClusterDomain/bin — /bin/sh ./startWebLogic.sh
[oracle@ip-172-31-41-120 bin]: ./startWebLogic.sh
.
.
JAVA Memory arguments: -Xms256m -Xmx512m
.
CLASSPATH=/u01/jdk1.8.0_381/lib/tools.jar:/u01/app/oracle/middleware/wlserver/server/lib/weblogic.jar:/u01/app/ware/wlserver/./oracle_common/modules/thirdparty/ant-contrib-1.0b3.jar:/u01/app/oracle/middleware/wlserver/mod/oracle.wls.common.nodemanager.jar:/u01/app/oracle/middleware/wlserver/common/derby/lib/derbynet.jar:/u01/app/ware/wlserver/common/derby/lib/derbyclient.jar:/u01/app/oracle/middleware/wlserver/common/derby/lib/derby.jar
.
PATH=/u01/app/domain/ClusterDomain/bin:/u01/app/oracle/middleware/wlserver/server/bin:/u01/app/oracle/middleware/oracle_common/modules/thirdparty/org.apache.ant/1.10.5.0/apache-ant-1.10.5/bin:/u01/jdk1.8.0_381/jre/bin:/u01/app/oracle/bin:/home/oracle/.local/bin:/home/oracle/bin:/home/ec2-user/.local/bin:/home/ec2-user/bin:/usr/local/bin:/usr/sbin:/usr/sbin
.
*****
* To start WebLogic Server, use a username and *
* password assigned to an admin-level user. For *
```



Oracle Weblogic Server Horizontal Clustering (Linux)

Prompt for Username & Password

```
oracle@ip-172-31-41-120:/u01/app/domain/ClusterDomain/bin — /bin/sh ./startWebLogic.sh
al/sbin:/usr/sbin
.
*****
* To start WebLogic Server, use a username and *
* password assigned to an admin-level user. For *
* server administration, use the WebLogic Server *
* console at http://hostname:port/console *
*****
Starting WLS with line:
/u01/jdk1.8.0_381/bin/java -server -Xms256m -Xmx512m -cp /u01/app/oracle/middleware/wlserver/server/lib/weblog
.jar -Dlaunch.use.env.classpath=true -Dweblogic.Name=ClusterAdminServer -Djava.security.policy=/u01/app/oracle/mi
server/server/lib/weblogic.policy -Dweblogic.ProductionModeEnabled=true -Djava.system.class.loader=com.oracle.c
weblogic.LaunchClassLoader -javaagent:/u01/app/oracle/middleware/wlserver/server/lib/debugpatch-agent.jar -da -D
01/app/oracle/middleware/wlserver/server -Dweblogic.home=/u01/app/oracle/middleware/wlserver/server -Djava.en
=/u01/jdk1.8.0_381/jre/lib/endorsed:/u01/app/oracle/middleware/wlserver/./oracle_common/modules/endorsed:/u01/ap
ddleware/wlserver/modules/endorsed weblogic.Server
<Oct 23, 2023 11:14:03 AM UTC> <Info> <Security> <BEA-090905> <Disabling the CryptoJ JCE Provider self-integrity
etter startup performance. To enable this check, specify -Dweblogic.security.allowCryptoJDefaultJCEVerification=t
<Oct 23, 2023 11:14:04 AM UTC> <Info> <Security> <BEA-090906> <Changing the default Random Number Generator in RS
rom ECDRBG128 to HMACDRBG. To disable this change, specify -Dweblogic.security.allowCryptoJDefaultPRNG=true.>
<Oct 23, 2023 11:14:04 AM UTC> <Info> <WebLogicServer> <BEA-000377> <Starting WebLogic Server with Java HotSpot(T
erver VM Version 25.381-b09 from Oracle Corporation.>
<Oct 23, 2023 11:14:05 AM UTC> <Info> <Management> <BEA-141107> <Version: WebLogic Server 14.1.1.0.0 Thu Mar 26
T 2020 2000885>
<Oct 23, 2023 11:14:06 AM UTC> <Info> <Security> <BEA-090065> <Getting boot identity from user.>
Enter username to boot WebLogic server:weblogic
Enter password to boot WebLogic server:
```

Once admin server started you will see RUNNING mode status in logs.

```
oracle@ip-172-31-41-120:/u01/app/domain/ClusterDomain/bin — /bin/sh ./startWebLogic.sh
<Oct 23, 2023 11:15:25,617 AM UTC> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to STANDBY.>
<Oct 23, 2023 11:15:25,617 AM UTC> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to STARTING.>
<Oct 23, 2023 11:15:25,687 AM UTC> <Notice> <Log Management> <BEA-170036> <The Logging monitoring service timer has starte
to check for logged message counts every 30 seconds.>
<Oct 23, 2023 11:15:29,098 AM UTC> <Notice> <Log Management> <BEA-170027> <The server has successfully established a connec
ion with the Domain level Diagnostic Service.>
<Oct 23, 2023 11:15:30,213 AM UTC> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to ADMIN.>
<Oct 23, 2023 11:15:30,319 AM UTC> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RESUMING.>
<Oct 23, 2023 11:15:30,386 AM UTC> <Warning> <Server> <BEA-002611> <The hostname "localhost", maps to multiple IP address:
127.0.0.1, 0:0:0:0:0:0:1.>
<Oct 23, 2023 11:15:30,388 AM UTC> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 127.0.0.1:7001
or protocols iiop, t3, ldap, snmp, http.>
<Oct 23, 2023 11:15:30,390 AM UTC> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 172.31.41.120:700
for protocols iiop, t3, ldap, snmp, http.>
<Oct 23, 2023 11:15:30,391 AM UTC> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on 0:0:0:0:0:0:
lo:7001 for protocols iiop, t3, ldap, snmp, http.>
<Oct 23, 2023 11:15:30,391 AM UTC> <Notice> <WebLogicServer> <BEA-000329> <Started the WebLogic Server Administration Serv
"ClusterAdminServer" for domain "ClusterDomain" running in production mode.>
<Oct 23, 2023 11:15:30,391 AM UTC> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 127.0.0.1:7001
or protocols iiop, t3, ldap, snmp, http.>
<Oct 23, 2023 11:15:30,396 AM UTC> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 172.31.41.120:700
for protocols iiop, t3, ldap, snmp, http.>
<Oct 23, 2023 11:15:30,397 AM UTC> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on 0:0:0:0:0:0:
lo:7001 for protocols iiop, t3, ldap, snmp, http.>
<Oct 23, 2023 11:15:30,438 AM UTC> <Notice> <WebLogicServer> <BEA-000360> <The server started in RUNNING mode.>
<Oct 23, 2023 11:15:30,463 AM UTC> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RUNNING.>
```

Oracle Weblogic Server Horizontal Clustering (Linux)

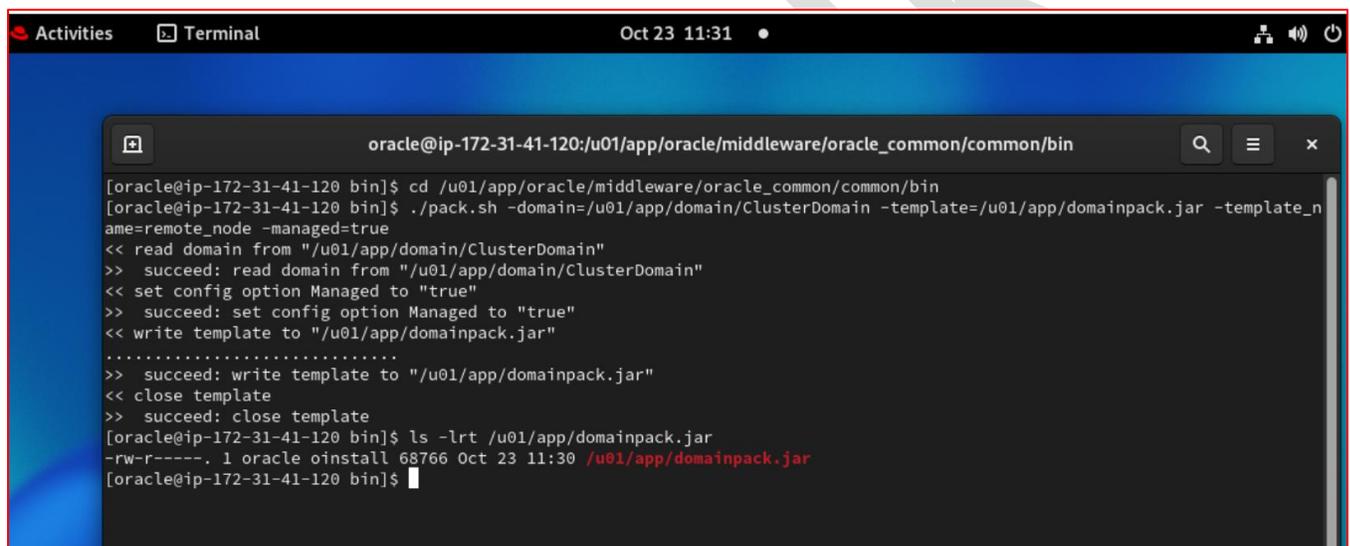
Pack Domain on Primary Node

Login to primary host, go inside \$ORACLE_HOME/oracle_common/common/bin and run pack command

```
cd /u01/app/oracle/middleware/oracle_common/common/bin
```

```
./pack.sh -domain=/u01/app/domain/ClusterDomain -template=/u01/app/domainpack.jar -template_name=remote_node -managed=true
```

Above command will create domainpack.jar template file inside =/u01/app



```

oracle@ip-172-31-41-120:/u01/app/oracle/middleware/oracle_common/common/bin
[oracle@ip-172-31-41-120 bin]$ cd /u01/app/oracle/middleware/oracle_common/common/bin
[oracle@ip-172-31-41-120 bin]$ ./pack.sh -domain=/u01/app/domain/ClusterDomain -template=/u01/app/domainpack.jar -template_name=remote_node -managed=true
<< read domain from "/u01/app/domain/ClusterDomain"
>> succeed: read domain from "/u01/app/domain/ClusterDomain"
<< set config option Managed to "true"
>> succeed: set config option Managed to "true"
<< write template to "/u01/app/domainpack.jar"
.....
>> succeed: write template to "/u01/app/domainpack.jar"
<< close template
>> succeed: close template
[oracle@ip-172-31-41-120 bin]$ ls -lrt /u01/app/domainpack.jar
-rw-r-----. 1 oracle oinstall 68766 Oct 23 11:30 /u01/app/domainpack.jar
[oracle@ip-172-31-41-120 bin]$

```

Copy this template jar on second node

Login to primary node, got the location where you have created template jar file and run scp command to copy.

```
cd /u01/app/
```

```
scp domainpack.jar oracle@172.31.34.27:/u01/app/domain
```

above command will copy_domainpack.jar template file to /u01/app/domain directory on node 2, 172.31.34.27 in this Lab



Oracle Weblogic Server Horizontal Clustering (Linux)

```
^C[oracle@ip-172-31-41-120 app]$ scp domainpack.jar oracle@172.31.34.27:/u01/app/domain
oracle@172.31.34.27's password:
domainpack.jar
[oracle@ip-172-31-41-120 app]$ █ 100% 67KB 32.3MB/s 00:00
```

```
[ec2-user@ip-172-31-41-120 ~]$ cd /u01/app/
[ec2-user@ip-172-31-41-120 app]$ ls -lrt
total 68
drwxrwx---. 6 oracle oinstall 64 Oct 17 10:20 oraInventory
drwxr-xr-x. 6 oracle oinstall 106 Oct 17 10:29 oracle
drwxr-xr-x. 2 oracle oinstall 27 Oct 20 14:34 scripts
drwxr-x---. 4 oracle oinstall 45 Oct 23 10:53 domain
-rw-r-----. 1 oracle oinstall 68766 Oct 23 11:30 domainpack.jar
```

Unpack Domain on Secondary Node

Check domain template jar file copied on node 2 inside /u01/app/domain

```
-dash: pwd: command not found
[oracle@ip-172-31-34-27 domain]$ pwd
/u01/app/domain
[oracle@ip-172-31-34-27 domain]$ ls -lrt
total 68
-rwxr-xr-x. 1 oracle oinstall 68766 Oct 23 11:46 domainpack.jar
[oracle@ip-172-31-34-27 domain]$ █
```



Oracle Weblogic Server Horizontal Clustering (Linux)

Disclaimer and Consent

This document is being provided by DigiTalk as part of its effort to assist users in understanding and working with Oracle WebLogic Server. The Company wishes to emphasize that this document is not affiliated with Oracle Corporation ("Oracle") in any way, and the content contained herein is based solely on publicly available product documentation provided by Oracle.

While every effort has been made to ensure the accuracy and reliability of the information presented in this document, there is a possibility of typographical errors or inaccuracies. DigiTalk does not guarantee the correctness or completeness of the content provided in this document.

Users of this document are encouraged to cross-reference the information presented here with Oracle's official documentation available on their website or other authoritative sources. Any discrepancies or inaccuracies found in this document should be reported to us at digitalk.fmw@gmail.com.

We would like to make it clear that the code snippets and examples used in this document are sourced from publicly available Oracle demo applications, provided by Oracle Corporation for educational and learning purposes. These materials are subject to Oracle's copyright and licensing terms.

We would like to emphasize that our charges are solely for the efforts and resources invested in preparing the lab documents and explanations to enhance the learning experience. DigiTalk is not charging for the usage of Oracle's copyrighted material.

By using or accessing these documents, you acknowledge and agree that the Oracle code snippets and examples are the intellectual property of Oracle Corporation. We do not claim ownership of the Oracle code, and any trademarks or copyrights associated with Oracle remain the property of Oracle Corporation.

By using this document, you acknowledge and consent to the following:

This document is not officially endorsed or verified by Oracle.

The Company makes no claims or guarantees about the accuracy or suitability of the information contained in this document.

Users are responsible for verifying and validating any information presented here for their specific use case.

DigiTalk disclaims any liability for any errors, omissions, or damages that may result from the use of this document.

If you discover any inaccuracies or errors in this document, please report them to digitalk.fmw@gmail.com, and the Company will endeavor to correct them as necessary.

This consent statement is provided to ensure transparency and understanding of the limitations of the information contained in this document. By using this document, you agree to abide by the terms and conditions outlined herein.