DigiTalk

Oracle® Fusion Middleware

WebLogic Server Administration

Lab 6: Horizontal Clustering Setup (Two Node Cluster – Linux)

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Oracle Fusion Middleware: WebLogic Server Administering (12C & 14.1.1)

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Lab Architecture Overview

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**

This lab environment consists of a two-host WebLogic cluster setup with separate Node Managers on each host and a distributed clustered environment for high availability and failover.

Hosts Information

- Host A: 172.31.41.120
- Host B: 171.31.34.27

The environment is distributed across these two physical or virtual machines.

Administration Server

- Admin Server Name: ClusterAdminServer
- Port: 7001
- Location: Host A

WebLogic Cluster

- Cluster Name: Cluster_1

The cluster spans across both hosts and contains two managed servers:

Managed Server	Port	Host
CServer_1	7003	Host A
CServer_2	7003	Host B

Both managed servers are part of Cluster_1. Since the servers run on different hosts, this setup represents a horizontal cluster architecture.

Node Managers

Each host has its own Node Manager:

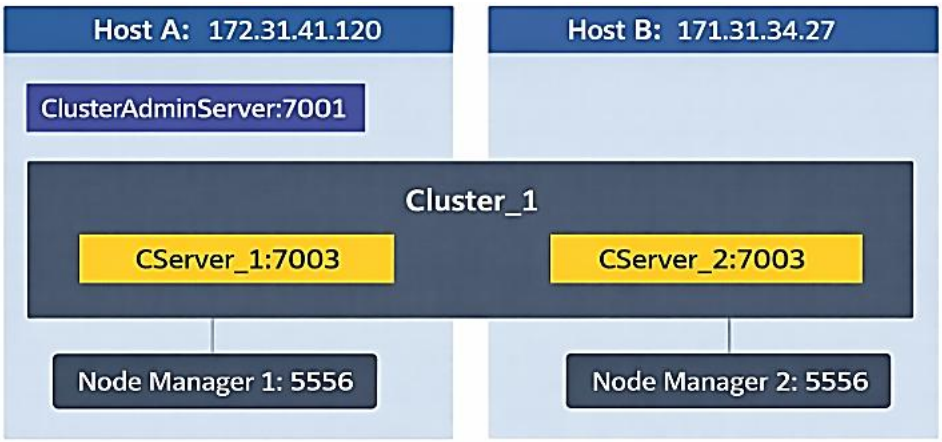
Node Manager	Port	Host
Node Manager 1	5556	Host A
Node Manager 2	5556	Host B

Architecture Summary

This lab demonstrates a two-node horizontal WebLogic cluster where:

- The Admin Server runs on Host A.
- One Managed Server runs on each host.
- Each host has its own Node Manager.
- The cluster (Cluster_1) provides load balancing and failover across both machines.

This architecture simulates a production-like distributed environment suitable for testing clustering, failover, and high availability features in WebLogic Server.



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).

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Download Software (Certified JDK and Weblogic Server from edelivery)

Follow **Lab2** to understand how to download software direct from oracle edelivery portal on Linux host. You don't need to download it in local and then copy to remote server.

Note – You can download software on NFS (shared directory across each host). If you don't have shared directory then download it on each node or you can download it on one node and then copy to other nodes.

Installation of JDK on EACH Linux Host

Follow **Lab2** to understand how to install and create a soft link of JDK folder.

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 **Lab2 & Lab3**

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

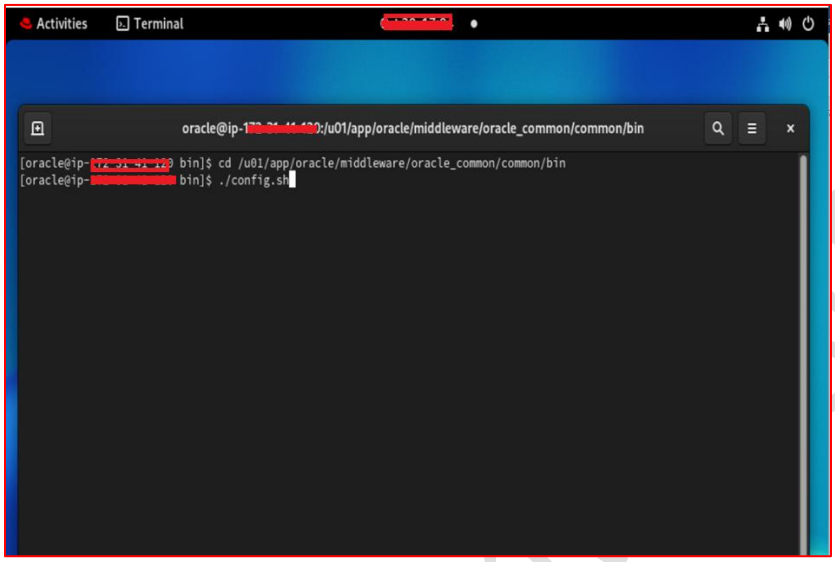
In this Lab we have installed at /u01/app/oracle/middleware

Create Domain

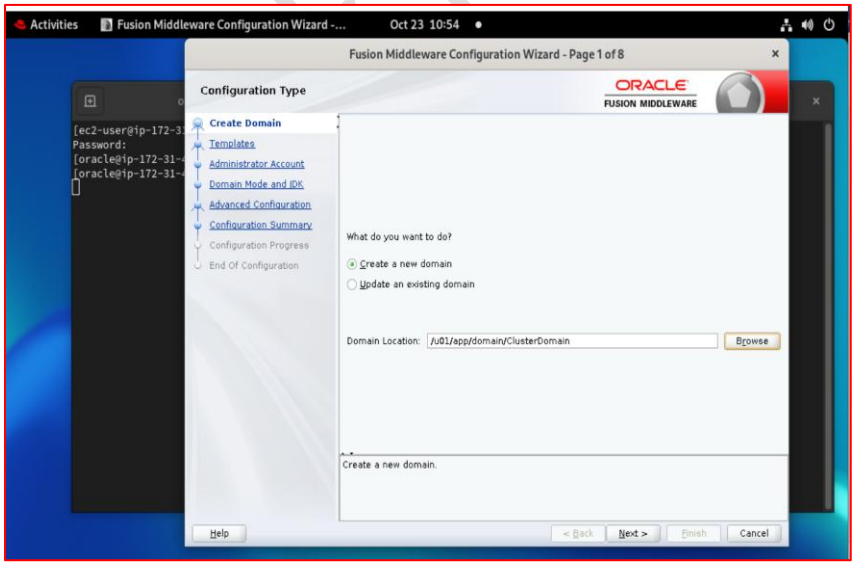
Create the vnc or Xming session on node 1 (primary node where you want your admin server and first managed server) to access the GUI of Linux as demonstrated in Lab1 and Lab1.1

Run configuration wizard.

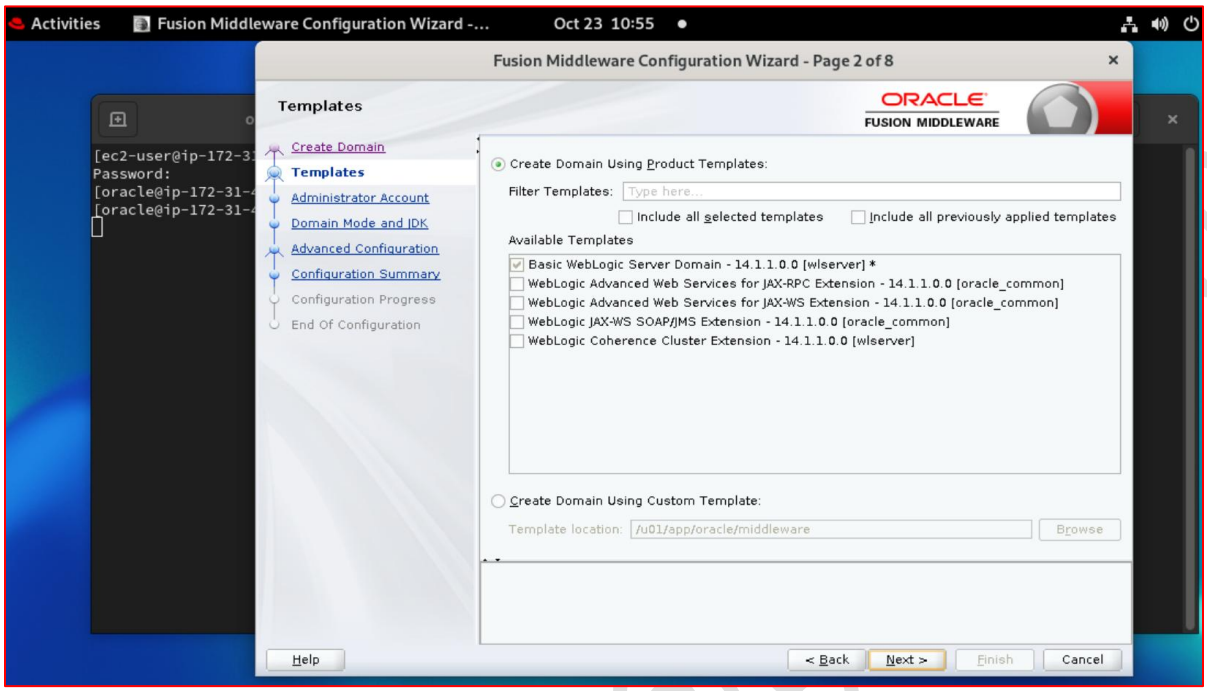
```
cd /u01/app/oracle/middleware/oracle_common/common/bin
./config.sh
```



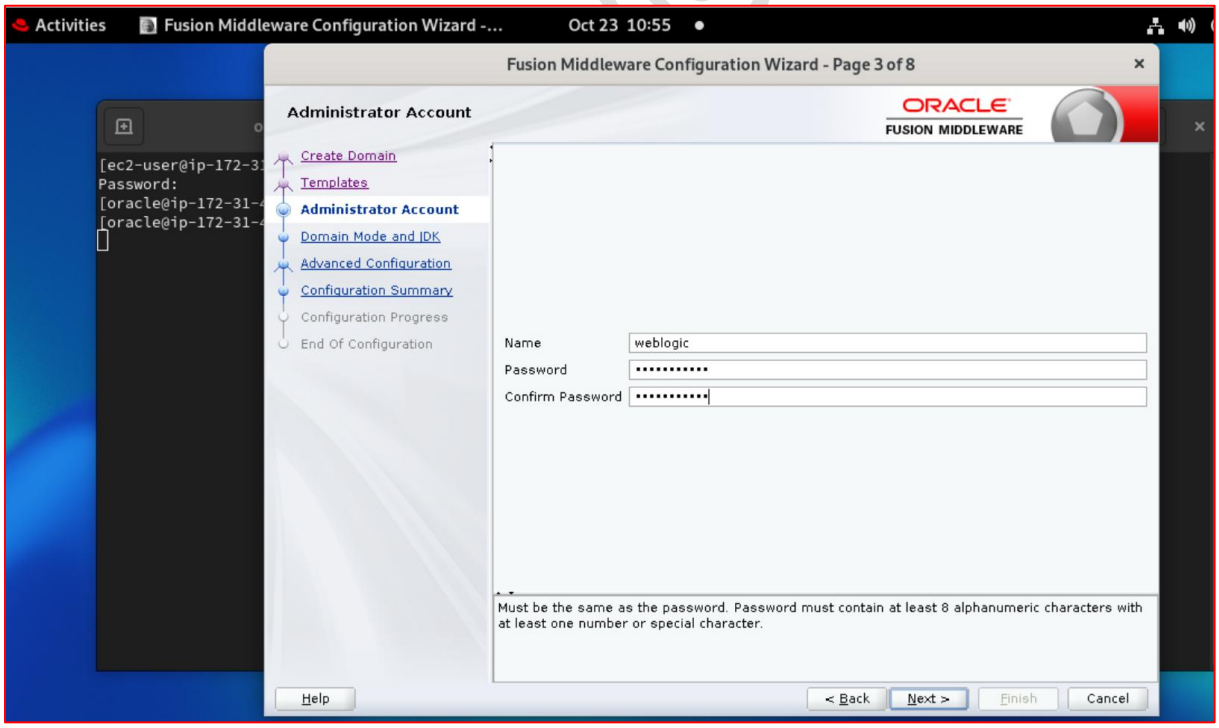
Select “Create a new domain”, and enter location of domain. In this Lab it’s /u01/app/domain/ClusterDomain



Proceed with default basic weblogic server template

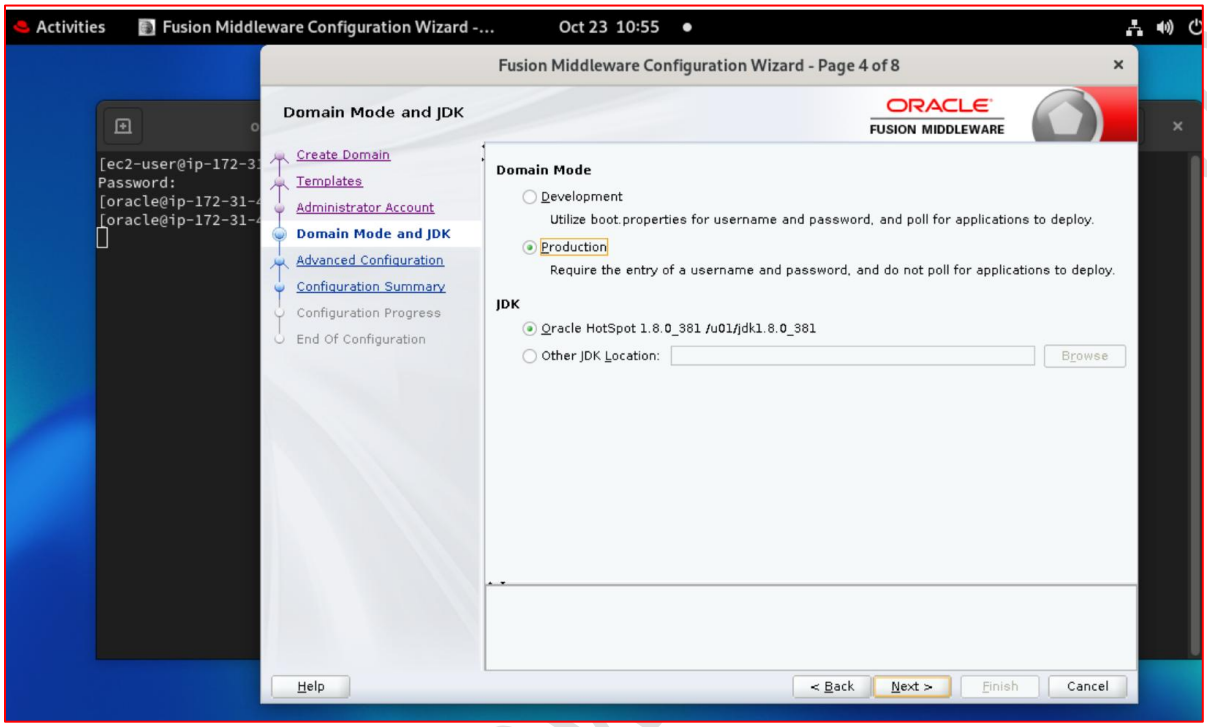


Enter administrator username and password form admin console

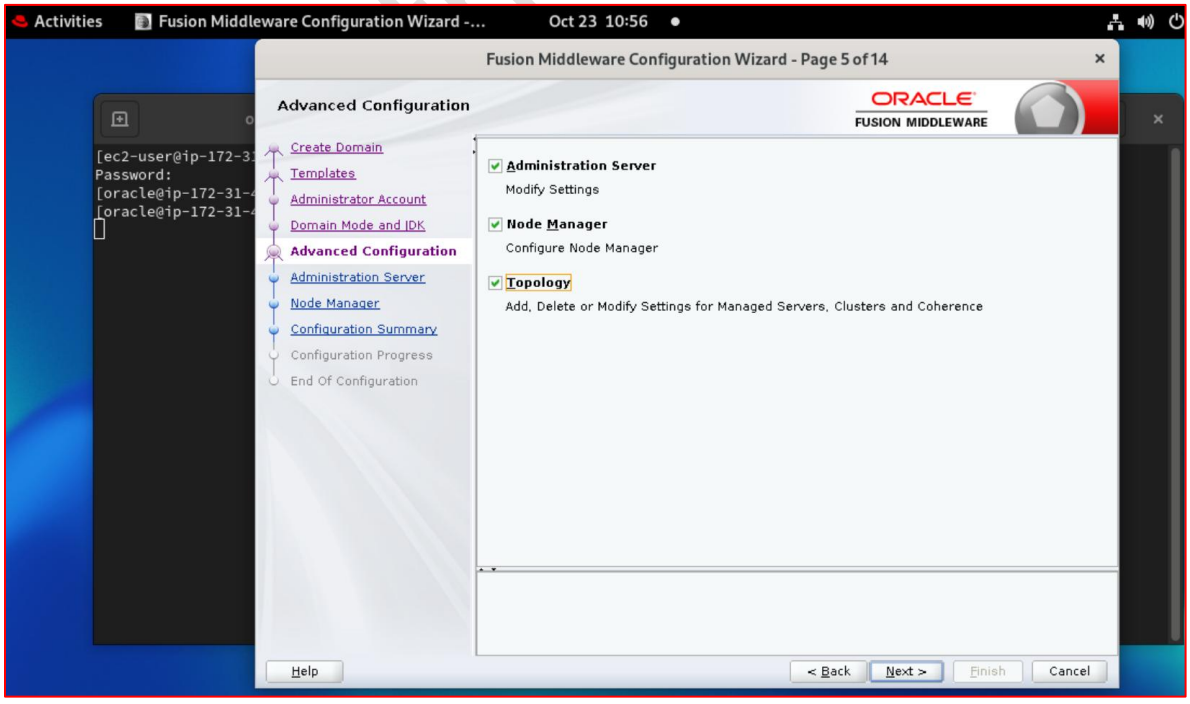


Select mode of domain (production) and desired JDK.

Note – You can opt for Other JDK Location and select /u01/jdk here

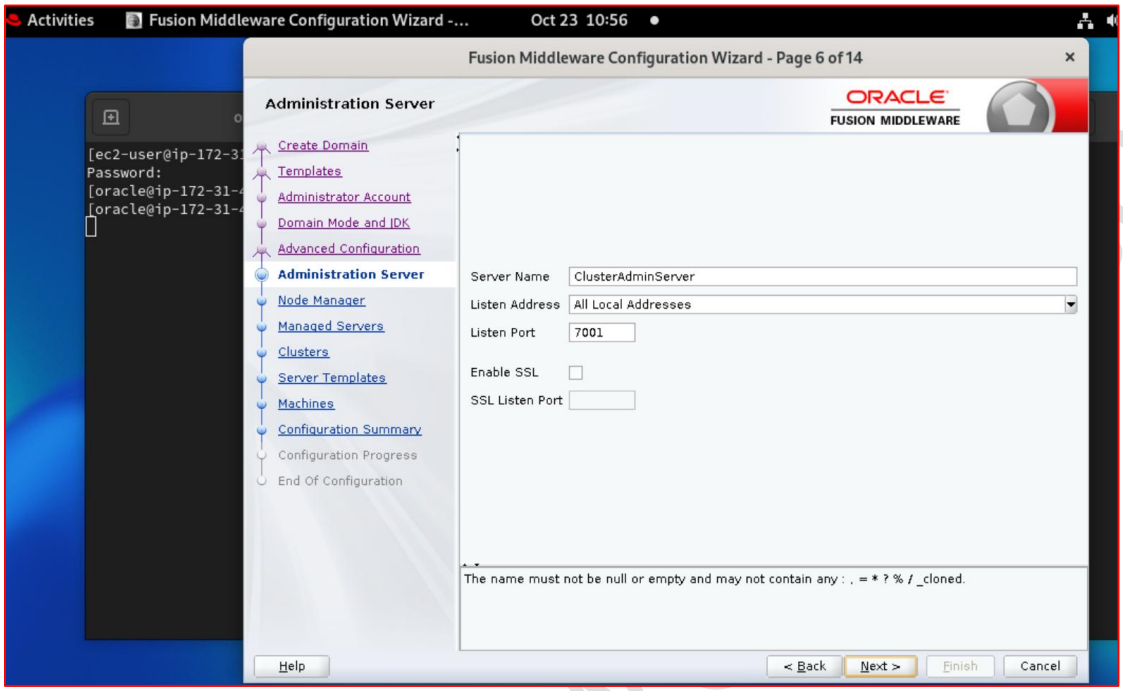


Select all advance configurations for the configuration.

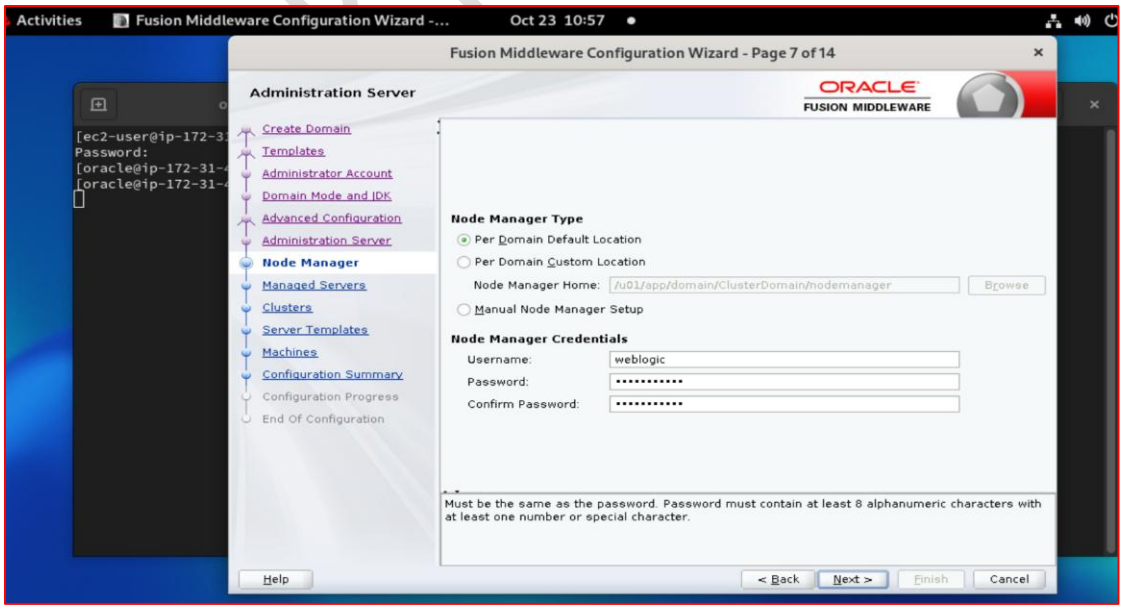


Enter name of admin server, listen address and port for admin server.

Note - In Listen address, specify the Ip/DNS of primary server instead of default All Local Address.

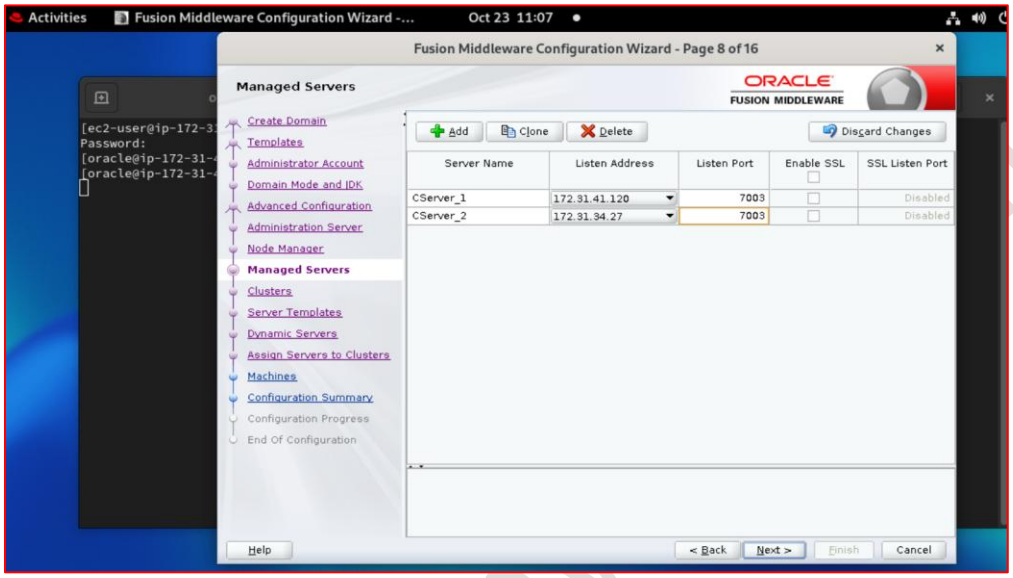


For Node Manager select default option “Per Domain Default Location”, and then enter username and password for Node Manager. As a best practice use same username and password which you have used for admin console.

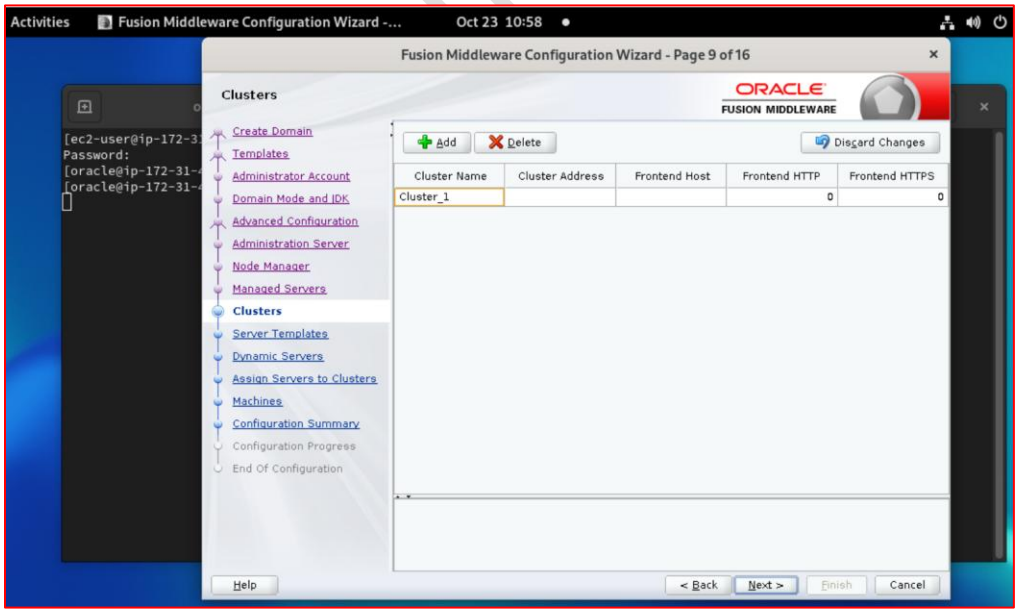


Click on Add and specify name, listen address and port for each managed server.

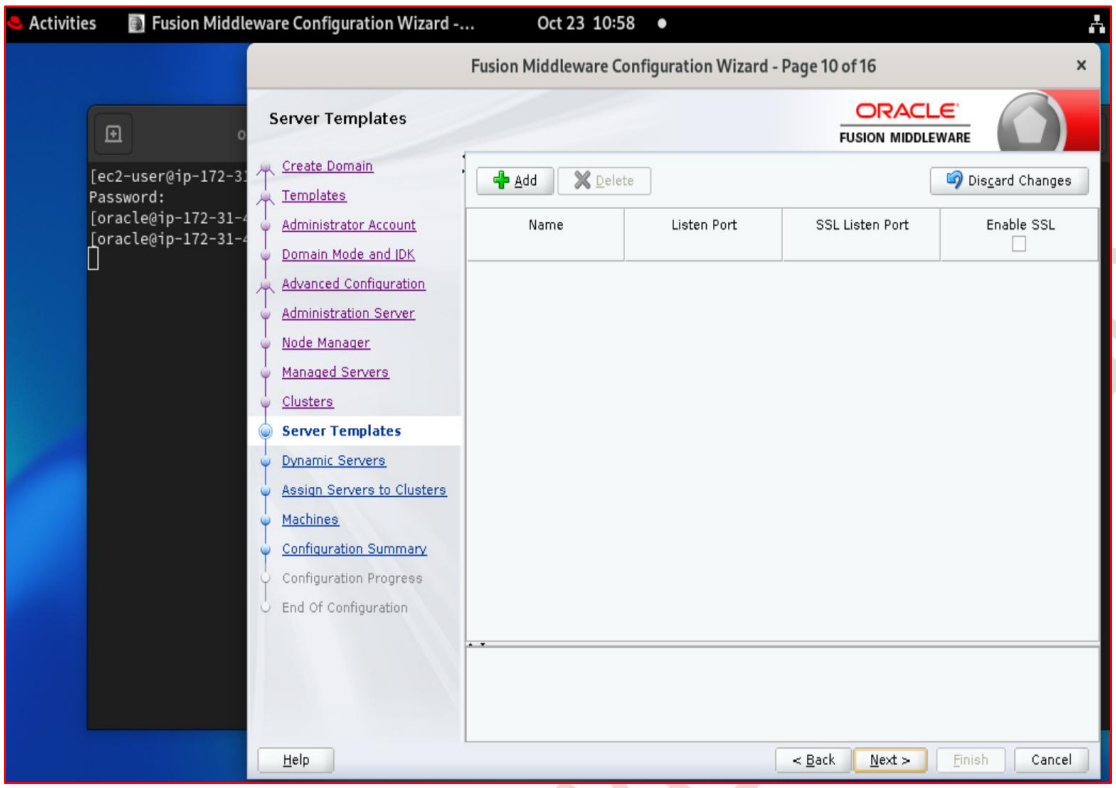
Make sure to specify the listen address according to the host in which you want to run the managed sever. In this Lab, first managed server CServer_1 will run on Host A and second managed server CServer_2 will run on host B, so we have specified the I.P address of corresponding host. Since both managed server will run on different host so we have given same port for both. You can specify hostname instead of I.P address.



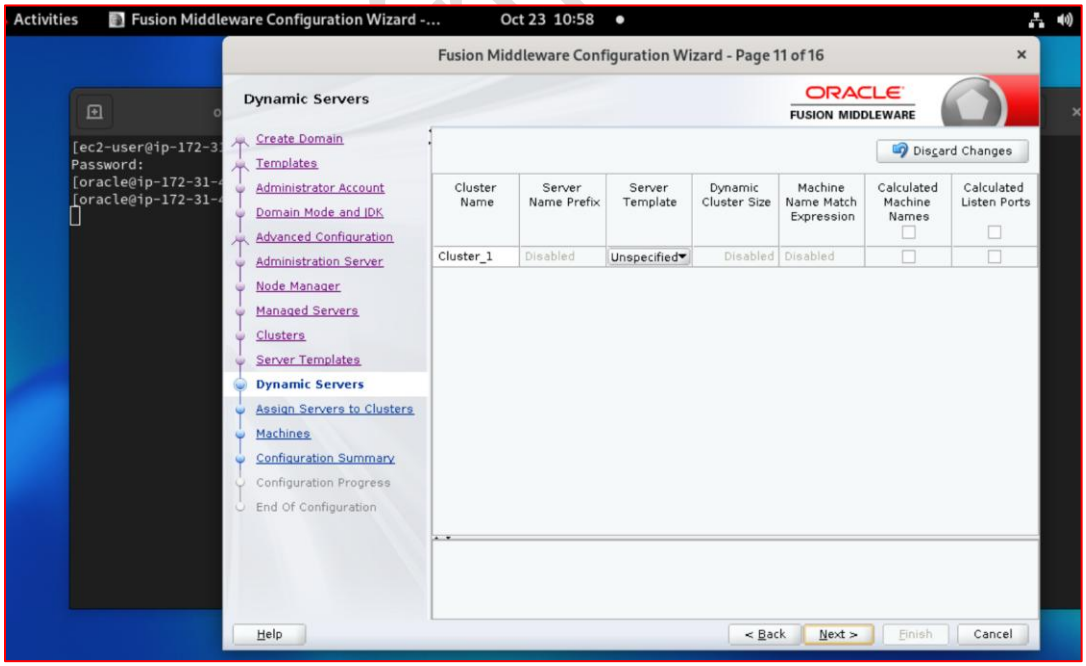
Click on Add to add a Cluster and specify a suitable name.



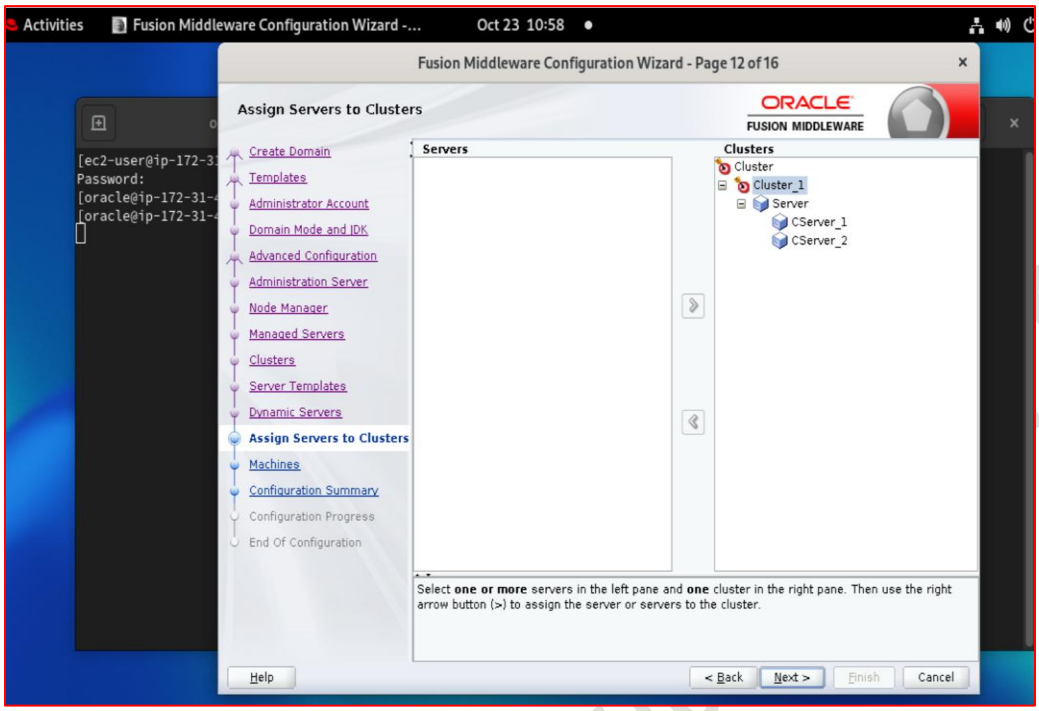
Click Next on Server Template screen



Click Next on Dynamic Cluster screen

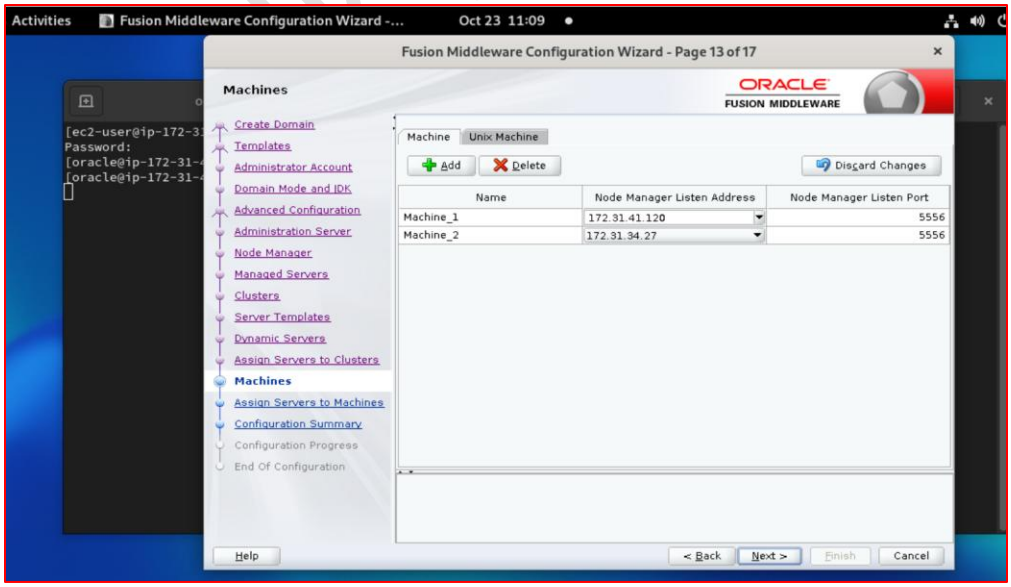


Assign all managed servers to the cluster. First click on Cluster (Cluster_1 here), then click on each managed server one by one and click on right arrow to assign to cluster.

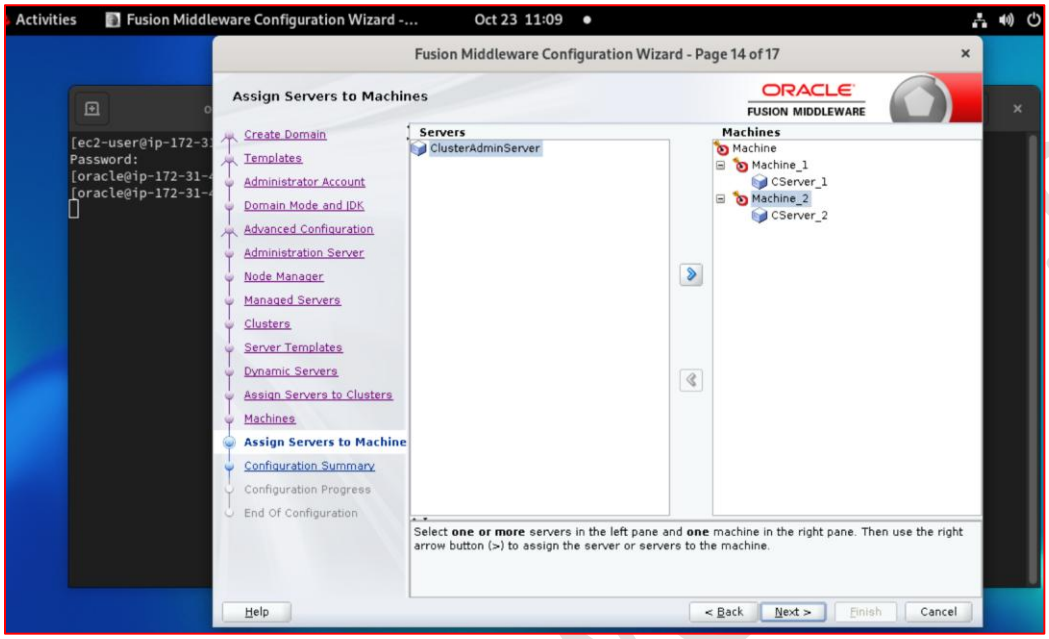


Click on Add to add machines for each host, and specify a name accordingly.

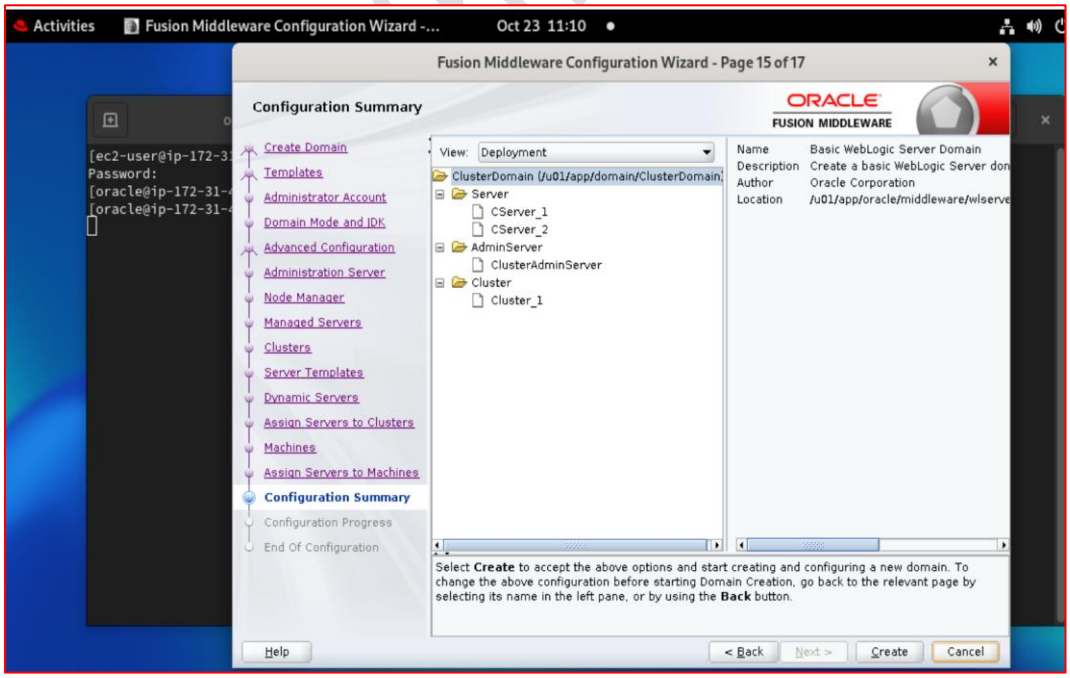
Make sure to specify the Listen Address of corresponding host for each. We have two host in the Lab so we have added two machines and specified the corresponding host I.P address for each. You can specify hostname as well instead of i.p.



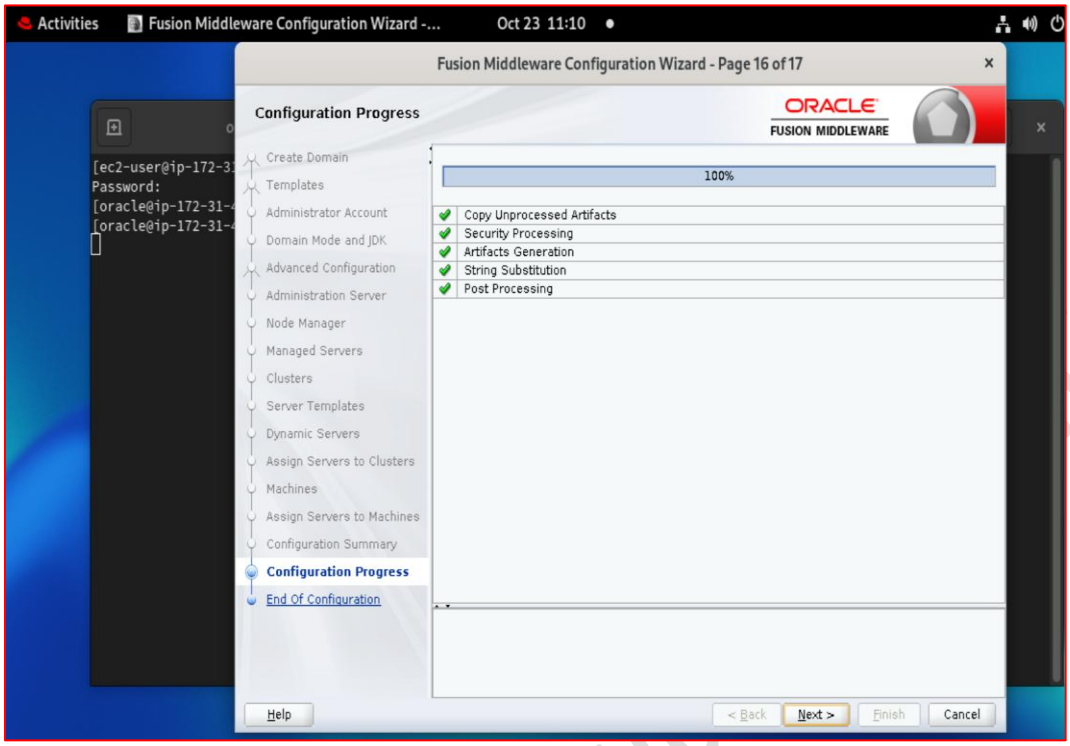
Assign each managed server to corresponding machine. In this Lab CServer_1 will run on Host A and CServer_2 will run on Host B, so we have assigned each to Machine_1 and Machine_2. To assign, just like assigning managed servers to cluster, click on Machine, then click on managed server, and then click on right arrow to assign to machine.



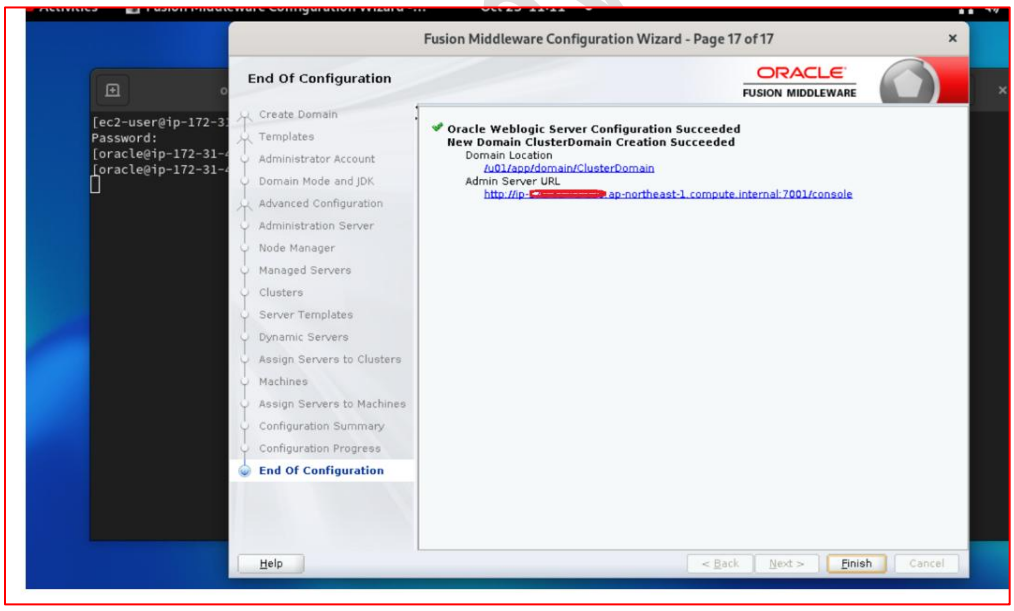
Review the domain summary and click on create.



It will take some time to create domain. Once finished t will show 100%. Click on Next.

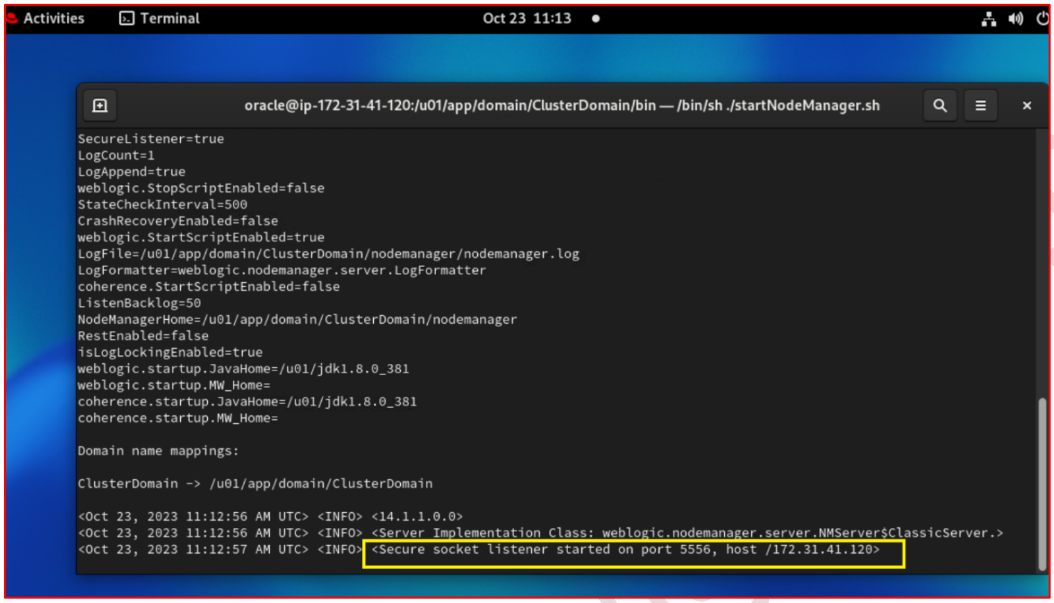


On last screen it will show the domain location and admin URL. Click on finish.



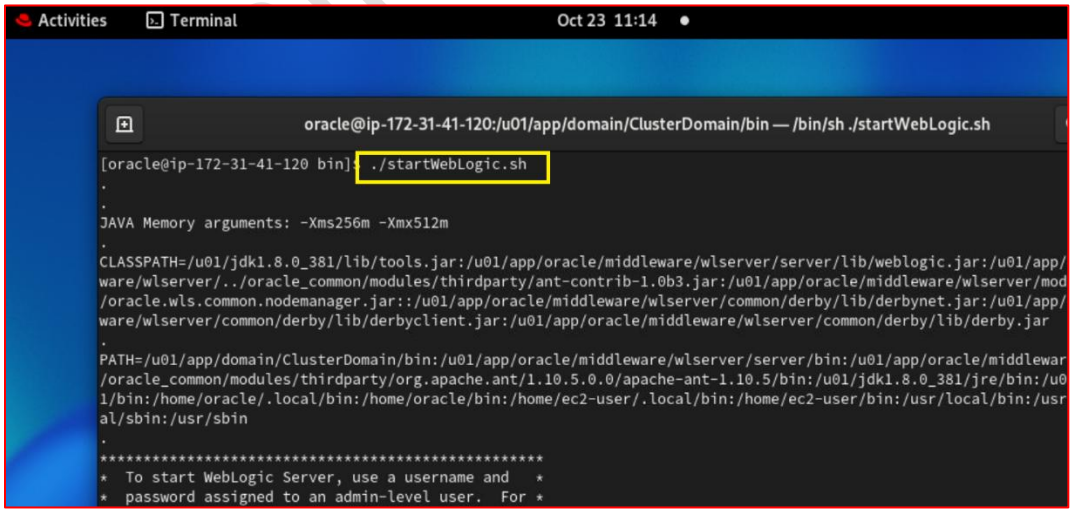
Start and Test Node Manager & Admin Server on primary host (Host A in Lab)

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

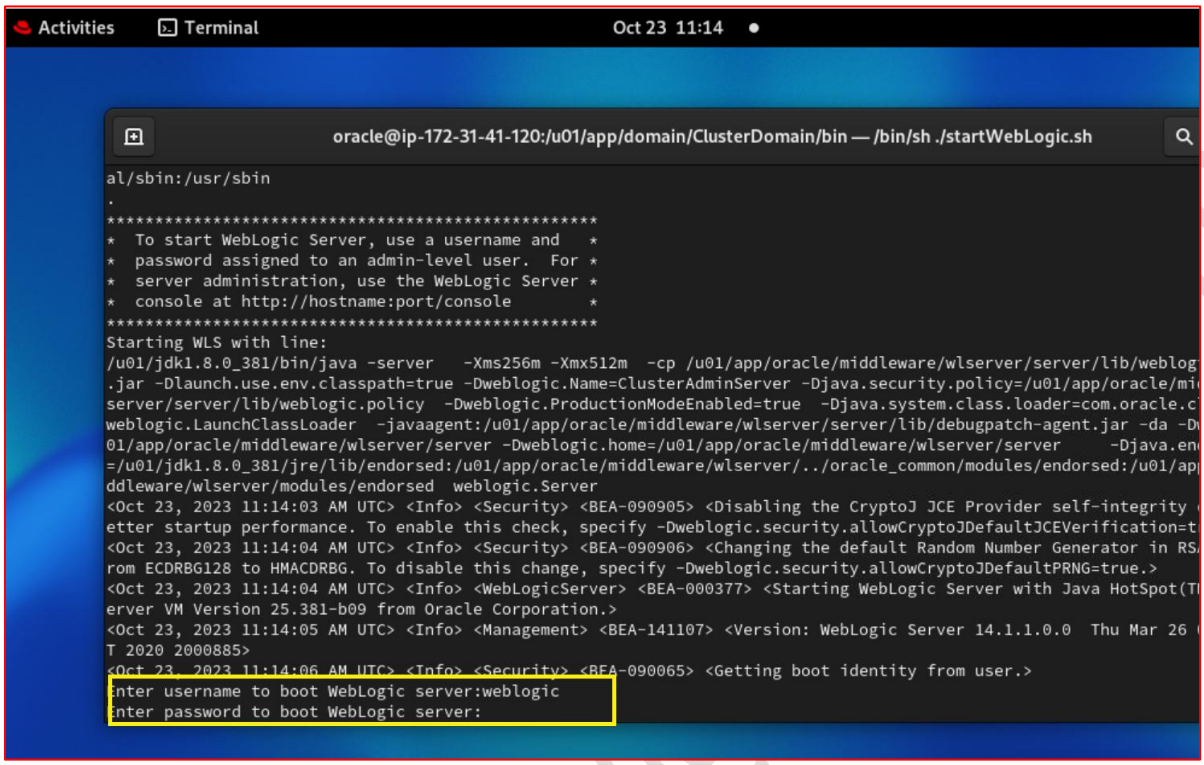


Test if Admin Server is coming up
cd /u01/app/domain/ClusterDomain
./startWeblogic.sh → We have domain in production mode so it will prompt you for username and password until we create boot.properties file manually (will do it in later step in this LAB, also we have covered in the Lab5)

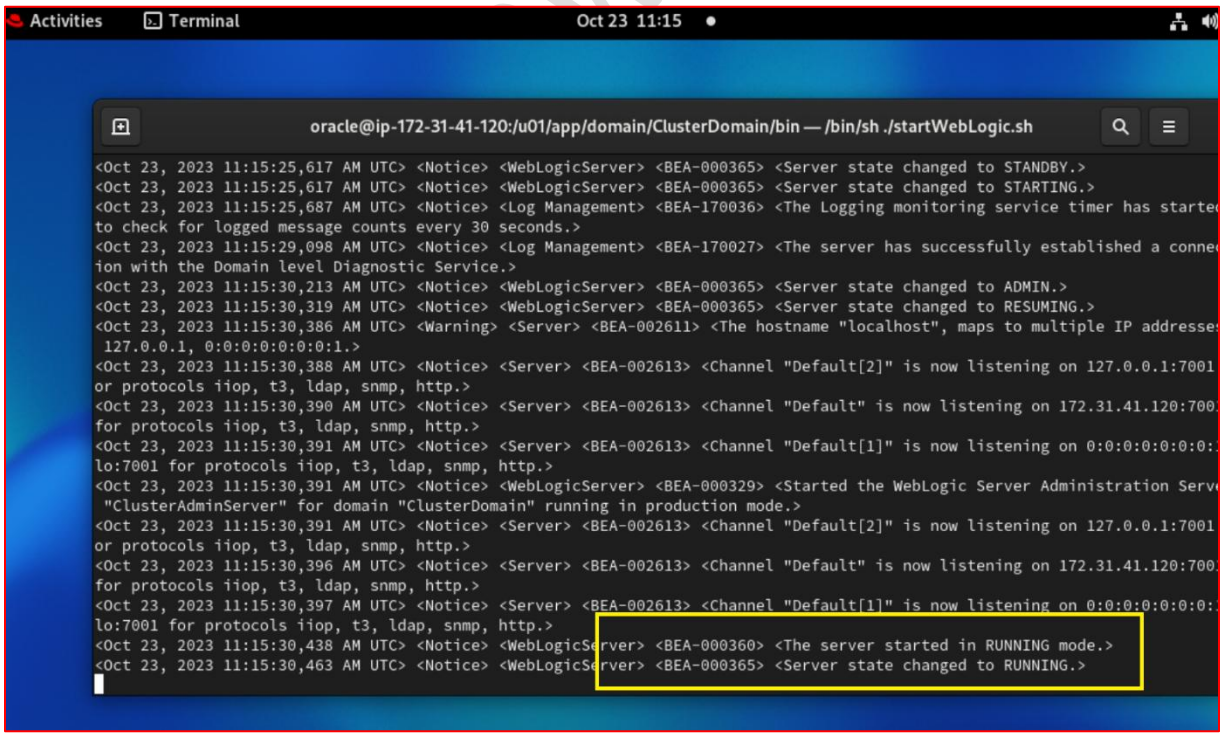
Start Admin Server



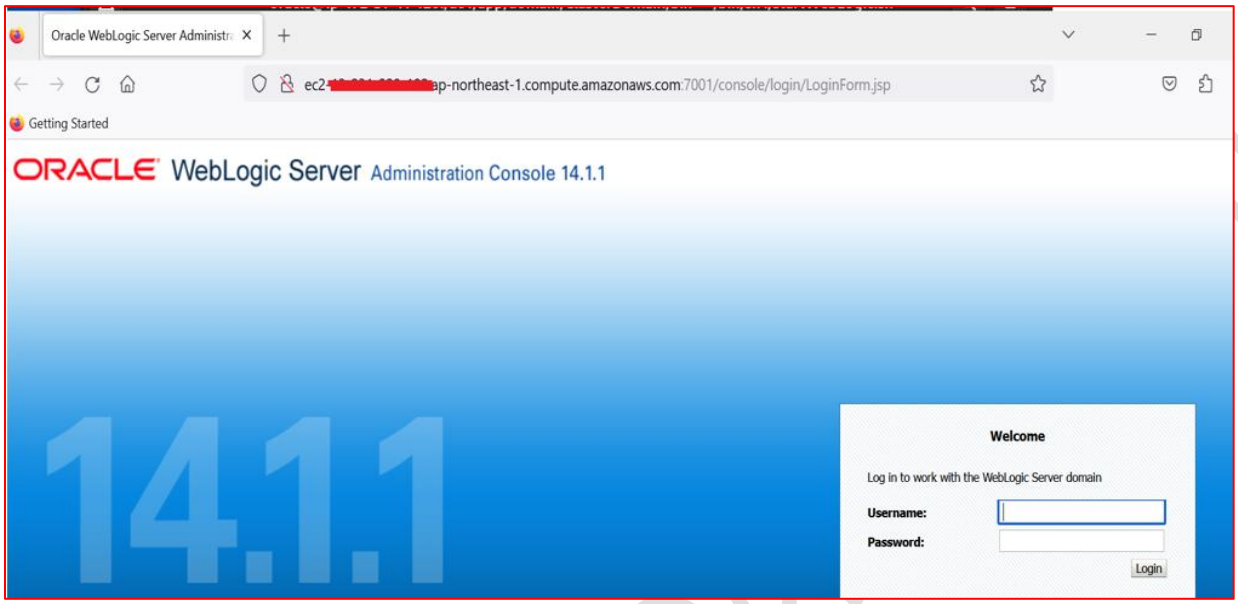
Prompt for Username & Password



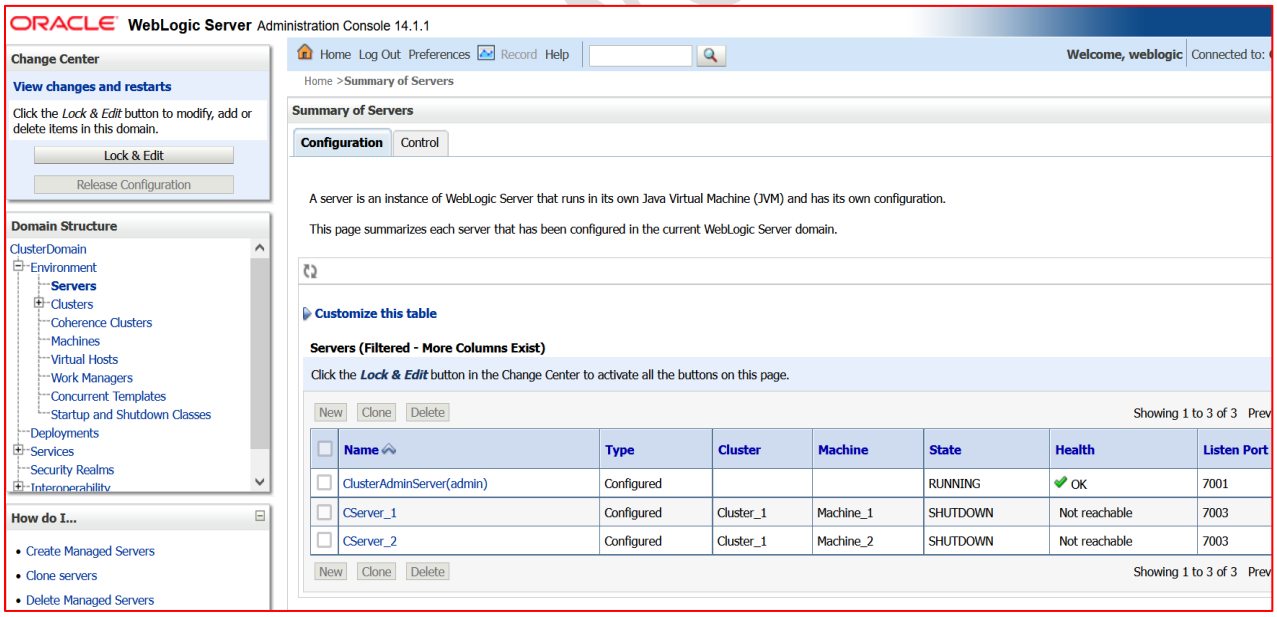
Once admin server started you will see RUNNING mode status in logs.



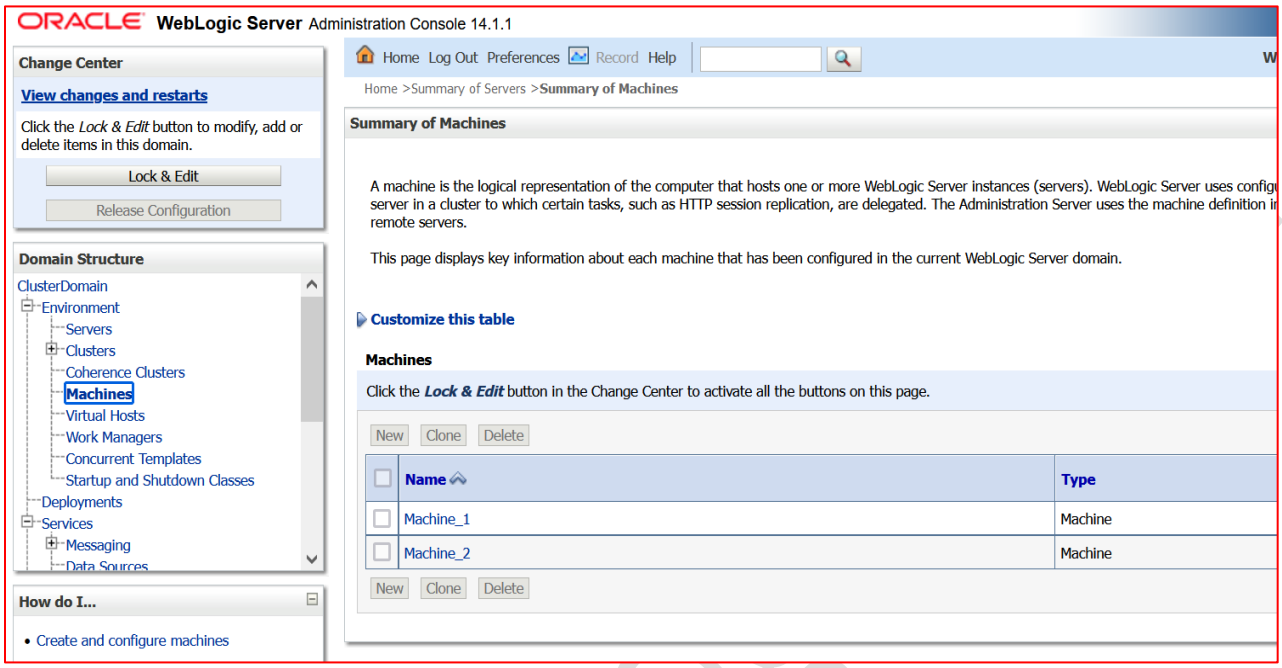
Check Admin Console:
http://primary_host:7001/console



Check Servers



Check Machines



Stop Node Manager & Admin Server
Press CTRL+C on the screen where you have started Node Manager & Admin Server.

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Pack Domain on Primary Node

Sample Doc **********