Oracle® Database

Configuring Weblogic Server 14c

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Oracle Database Configuring Weblogic Server 14c, Release 14.7.5.0.0

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Contents

1
Preface

1.1 Purpose

This guide is designed to help the user to quickly get acquainted with the Customer Standard Instructions maintenance process.

1.2 Audience

This guide is intended for the central administrator of the Bank who controls the system and application parameters and ensures smooth functionality and flexibility of the banking application.

1.3 Documentation Accessibility

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1.4 Conventions

The following text conventions are used in this document:

Table 1-1 Conventions

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Table 1-1 (Cont.) Conventions

Convention	Meaning
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1.5 Critical Patches

Oracle advises customers to get all their security vulnerability information from the Oracle Critical Patch Update Advisory, which is available at Critical Patches, Security Alerts and Bulletins. All critical patches should be applied in a timely manner to ensure effective security, as strongly recommended by Oracle Software Security Assurance.

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Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1.7 Basic Actions

Table 1-2 Basic Actions

Action	Description
Approve	Used to approve the initiated report. This button is displayed, once the user click **Authorize**.
Audit	Used to view the maker details, checker details, and report status.
Authorize	Used to authorize the report created. A maker of the screen is not allowed to authorize the report. Only a checker can authorize a report, created by a maker.
Close	Used to close a record. This action is available only when a record is created.
Confirm	Used to confirm the performed action.
Cancel	Used to cancel the performed action.
Compare	Used to view the comparison through the field values of old record and the current record. This button is displayed in the widget, once the user click **Authorize**.
Collapse All	Used to hide the details in the sections. This button is displayed, once the user click **Compare**.
Expand All	Used to expand and view all the details in the sections. This button is displayed, once the user click **Compare**.

Table 1-2 (Cont.) Basic Actions

Action	Description
New	Used to add a new record. When the user click **New**, the system displays a new record enabling to specify the required data.
OK	Used to confirm the details in the screen.
Save	Used to save the details entered or selected in the screen.
View	Used to view the report details in a particular modification stage. This button is displayed in the widget, once the user click **Authorize**.
View Difference only	Used to view a comparison through the field element values of old record and the current record, which has undergone changes. This button is displayed, once the user click **Compare**.
Unlock	Used to update the details of an existing record. System displays an existing record in editable mode.

1.8 Screenshot Disclaimer

Personal information used in the interface or documents is dummy and does not exist in the real world. It is only for reference purposes.

2
Introduction

2.1 Purpose of this Document

This topic provides the purpose of **Configuring Weblogic Server 12c** document.

This document explains the steps required for Configuration and applying best practices in cluster mode for:

- FCUBS 14.4
- Weblogic Version 12.2.1.4.0
- JDK 1.8.0_241

2.2 WebLogic Server Overview

This topic provides a brief explanation of the main components involved in the WebLogic server.

Domain

A domain is the basic administration unit for WebLogic Server instances. A domain consists of one or more WebLogic Server instances (and their associated resources) that are managed with a single Administration Server. Multiple domains can be defined based on different system administrators' responsibilities, application boundaries, or geographical locations of servers. Conversely, a single domain can be used to centralize all WebLogic Server administration activities.

Each WebLogic Server domain must have one server instance that acts as the Administration Server. Administration Server can be used via the Administration Console or using the command line for configuring all other server instances and resources in the domain.

Figure 2-1 WebLogic Domain Structure- TBD Redwood

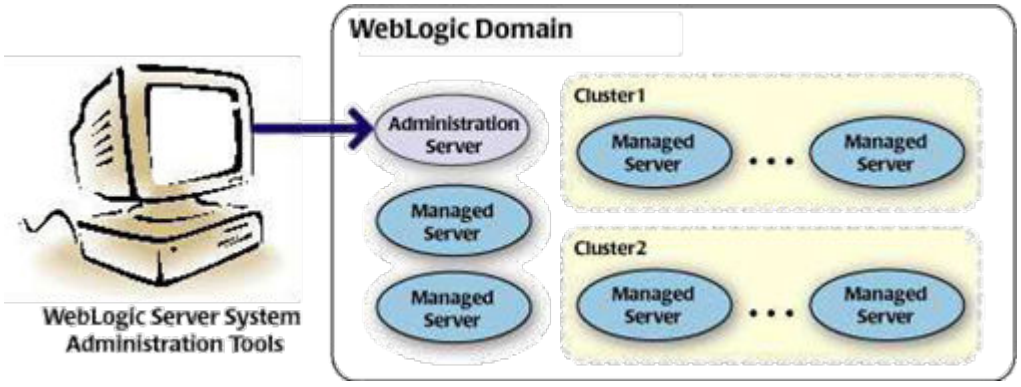
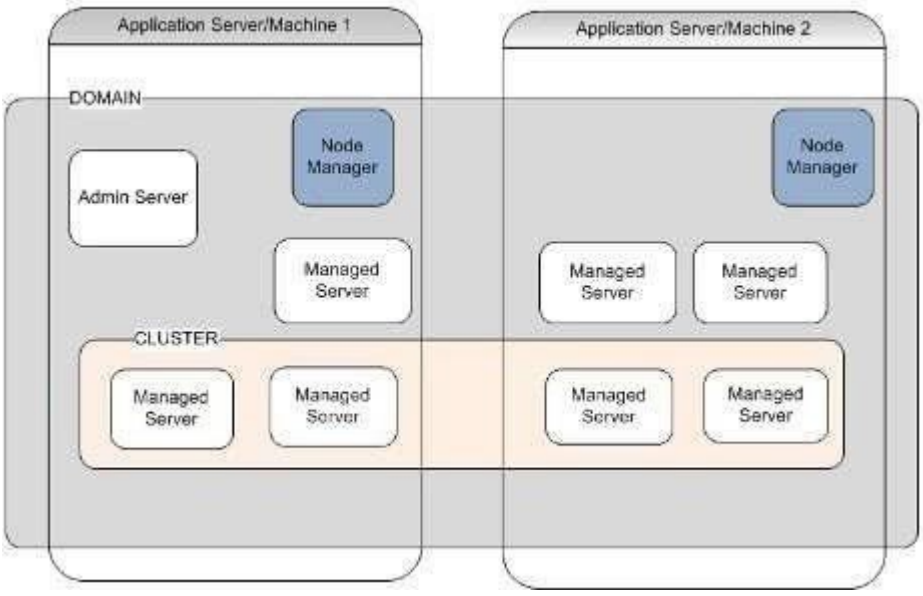


Figure 2-2 Weblogic 12c Domain Overview- TBD Redwood



Administration Server

A domain includes one WebLogic Server instance that is configured as an Administration Server. All changes to configuration and deployment of applications are done through the Administration Server. The Administration Server provides a central point for managing the domain and providing access to the WebLogic Server administration tools.

These tools include the following:

- WebLogic Server Administration Console: Graphical user interface to the Administration Server.
- WebLogic Server Node Manager: A Java program that lets the user start and stop server instances - both Administration Servers and Managed Servers - remotely, and to monitor and automatically restart them after an unexpected failure.

Admin server start mode needs to be configured as Production Mode.

Managed Server

In a domain, server instances other than the Administration Server are referred to as Managed Servers. Managed servers host the components and associated resources that constitute applications—for example, JSPs and EJBs.

When a Managed Server starts up, it connects to the domain's Administration Server to obtain configuration and deployment settings. In a domain with only a single WebLogic Server instance, that single server works as both the administration server and managed server.

Node Manager

The Managed Servers in a production WebLogic Server environment are often distributed across multiple machines and geographic locations.

Node Manager is a Java utility that runs as a separate process from the WebLogic Server and allows the user to perform common operations tasks for a Managed Server, regardless of its location with respect to its Administration Server. While the use of Node Manager is optional, it provides valuable benefits if WebLogic Server environment hosts applications with high availability requirements.

If the user runs Node Manager on a machine that hosts Managed Servers, the user can start and stop the Managed Servers remotely using the Administration Console or from the command line. Node Manager can also automatically restart a Managed Server after an unexpected failure.

Machine

A machine in the Weblogic Serve context is the logical representation of the computer that hosts one or more Weblogic Server instances(servers). The Admin Server uses the machine definitions to start remote servers through the Node Managers that run on those servers. A machine could be a physical or virtual server that hosts an Admin or Managed Server that belongs to a domain.

Managed Server Cluster

Two or more Managed Servers can be configured as a WebLogic Server cluster to increase application scalability and availability. In a WebLogic Server cluster, most resources and services are deployed to each Managed Server (as opposed to a single Managed Server,) enabling failover and load balancing.

The servers within a cluster can either run on the same machine or reside in different machines. To the client, a cluster appears as a single WebLogic Server instance.

Dynamic Cluster

A dynamic cluster is any cluster that contains one or more dynamic servers. Each server in the cluster will be based upon a single shared server template. The server template allows to configure each server the same and ensures that servers do not need to be manually configured before being added to the cluster. This allows the user to easily scale up or down the number of servers in the cluster without the need for setting up each server manually. Changes made to the server template are rolled out to all servers that use that template.

The user cannot configure dynamic servers individually; there are no server instance definitions in the config.xml file when using a dynamic cluster. Therefore, the user cannot override the server template with server-specific attributes or target applications to an individual dynamic server instance.

When configuring a cluster, the user specifies the maximum number of servers expect to need at peak times. The specified number of server instances is then created, each based upon the server template. The user can then start-up however many the user needs and scales up or down over time according to needs. If the user needs additional server instances on top of the number the user originally specified, the user can increase the maximum number of servers instances (dynamic) in the dynamic cluster configuration.

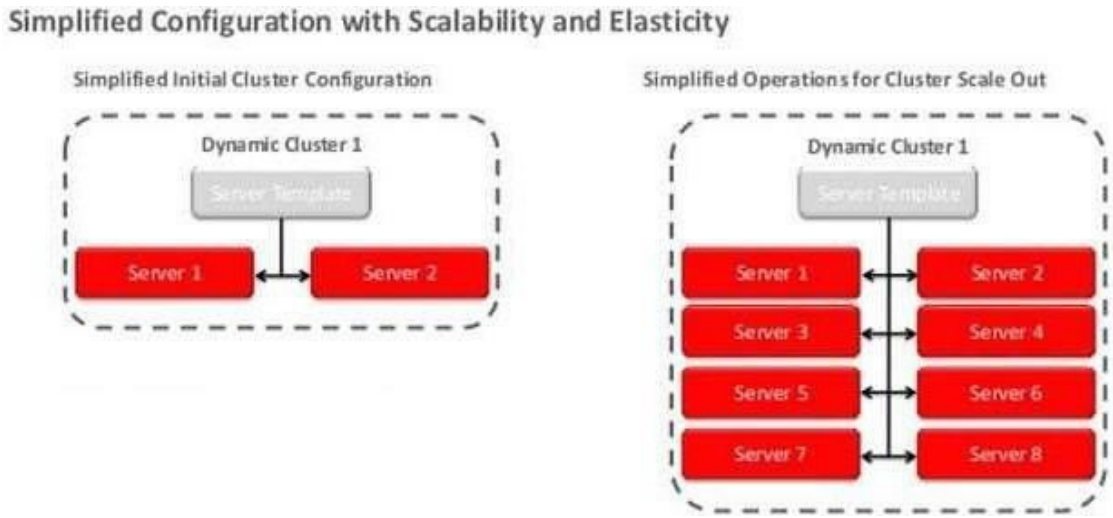
Server Templates

A single server template provides the basis for the creation of dynamic servers. Using this single template provides the possibility of every member being created with the same attributes. Where some of the server-specific attributes like Servername, listen-ports, machines, etc. can be calculated based upon tokens.

The user can pre-create server templates and let Weblogic clone one when a Dynamic Cluster is created.

When none is available a server template is created with the Dynamic Cluster. The name and the listen ports are the only server template attributes that the user provides during Dynamic Cluster creation.

Figure 2-3 Simplified Configuration with Scalability and Elasticity- TBD Redwood



2.3 Pre-requisites

This topic provides pre-requisites for configuring the Weblogic server.

The user is going to create a domain with two managed servers. The managed servers are going to be created on two different physical servers (nodes). Note that, this document has been prepared based on a test conducted in Linux servers. This requires a Weblogic Server of the same version to be installed on both the machines and services.

- **Environment**
  2 servers where Linux is installed, 1 will be primary where the admin console will be running along with managed servers, and the other where only managed servers will be.
- **Softwares**
  1. Oracle Weblogic Server 12.2.1.4 was installed on both machines under the same folder structure.

2. JDK 1.8 Latest available version installed on both machines. In this document, the JDK1.8.0_241 version is used.

- **Clock Synchronization**
  The clocks of both the servers participating in the cluster must be synchronized to within one-second difference to enable proper functioning of jobs otherwise it will lead to session timeouts.
- **Enable Graphical User Interface (GUI)**
  Establish a telnet or SSH connection to the primary server. Start X-manager (or any similar tool) on windows desktop. Export DISPLAY environment variable to the machine IP where x-manager is running. Syntax: **export DISPLAY=<ip-address>:<port>**

  Test using xclock

3
Domain Configuration

3.1 Domain Creation

This topic provides systematic instructions for Domain creation.

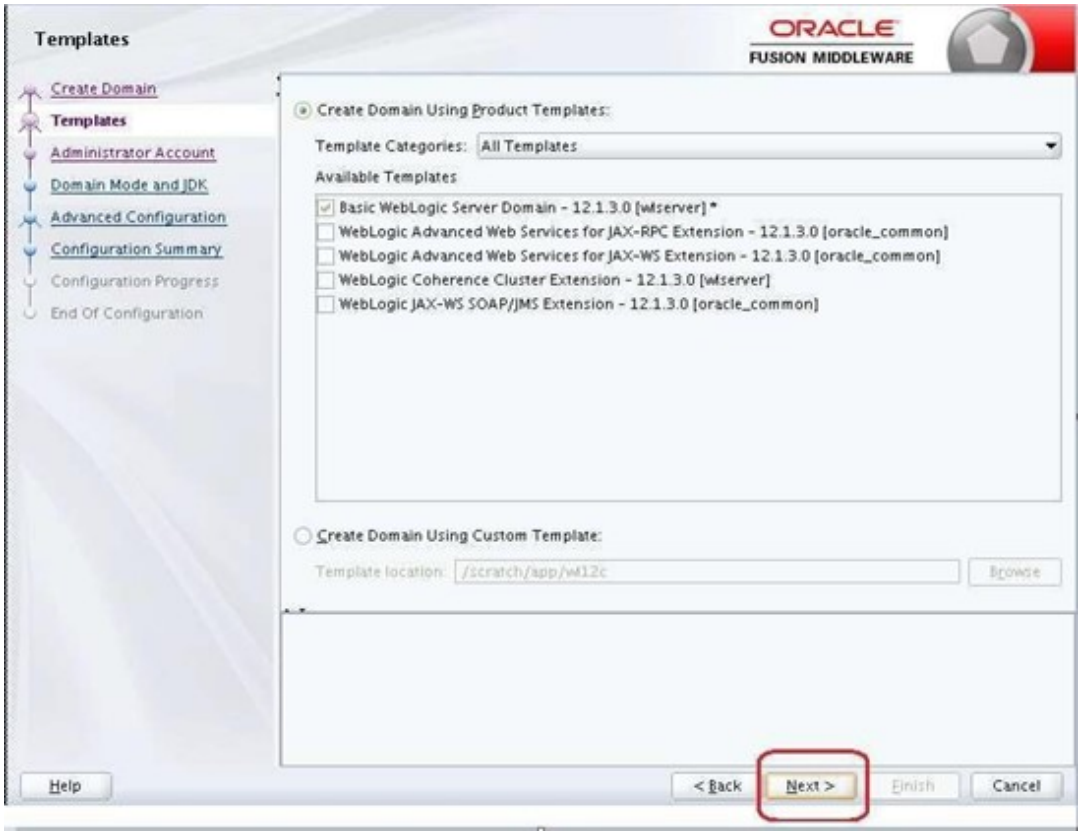
Weblogic domain creation and configuration will be done from the primary server. From the primary server, launch the fusion Middleware configuration wizard using the command **config.sh** available under **$WLS_HOME/common/bin** directory.

1. In the Welcome screen, select **Create a new domain** option. Enter the domain name and click on the **Next** button.

Figure 3-1 Configuration Type- TBD Redwood

Templates screen displays.

Figure 3-2 Templates- TBD Redwood



2. Select the required templates from **Available Templates** and click on the **Next** button.

   Administrator Account screen displays.

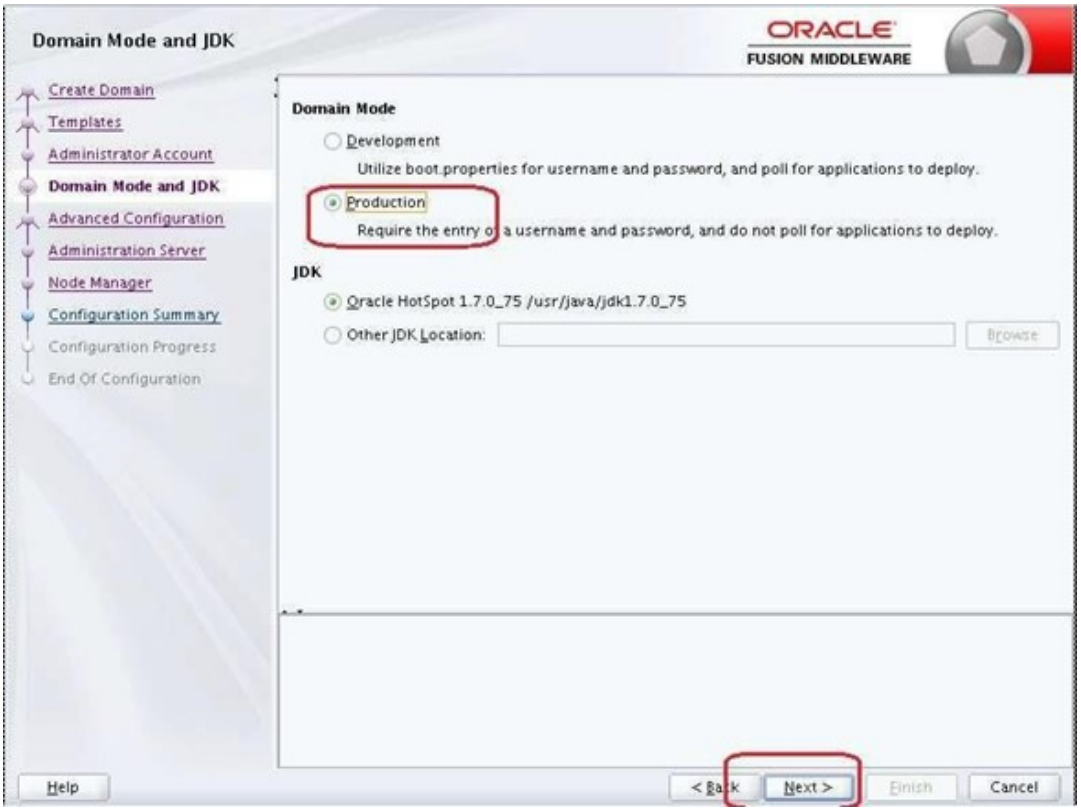
Figure 3-3 Administrator Account- TBD Redwood

3. Specify the **Name**, **Password** and **Confirm Password** fields for administrator user and then click on the **Next** button.

   - The specified credentials are used to access the Administration console.
   - The user can use this screen to define the default WebLogic Administrator account for the domain. This account is used to boot and connect to the domain's Administration Server.

   Domain Mode and JDK screen displays.

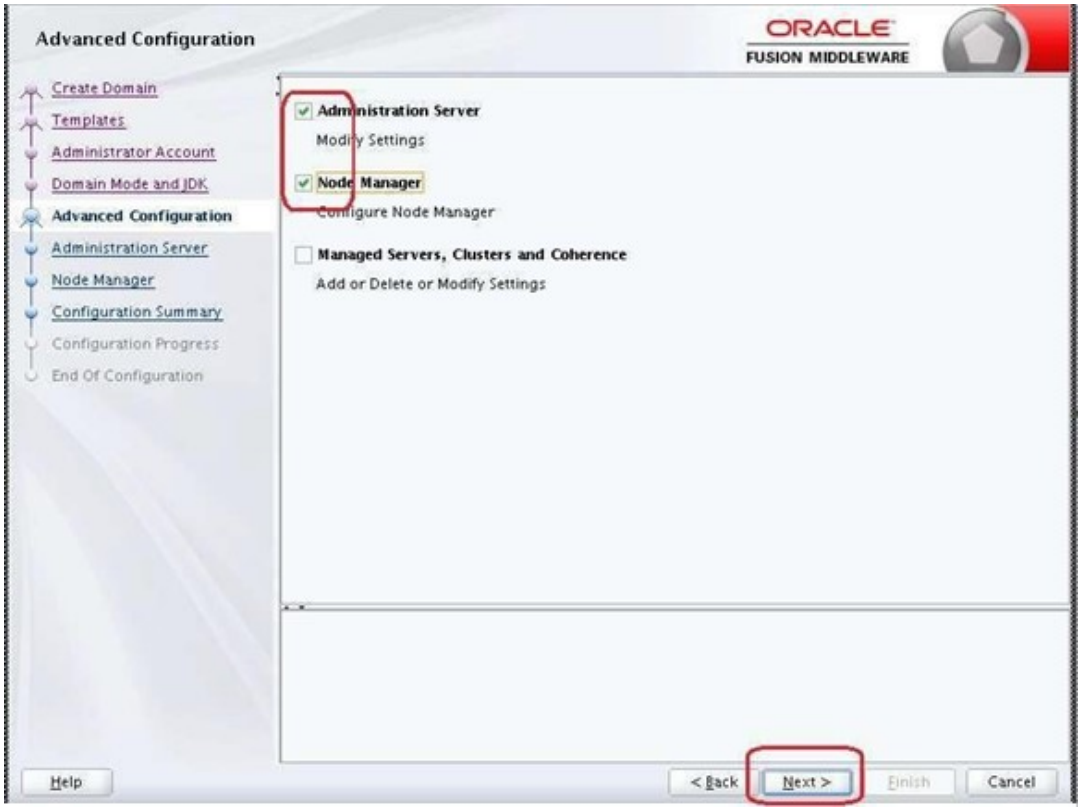
Figure 3-4 Domain Mode and JDK- TBD Redwood



4. Select server startup as **Production** mode and the available **JDK** and click on the **Next** button.

   Advanced Configuration screen displays.

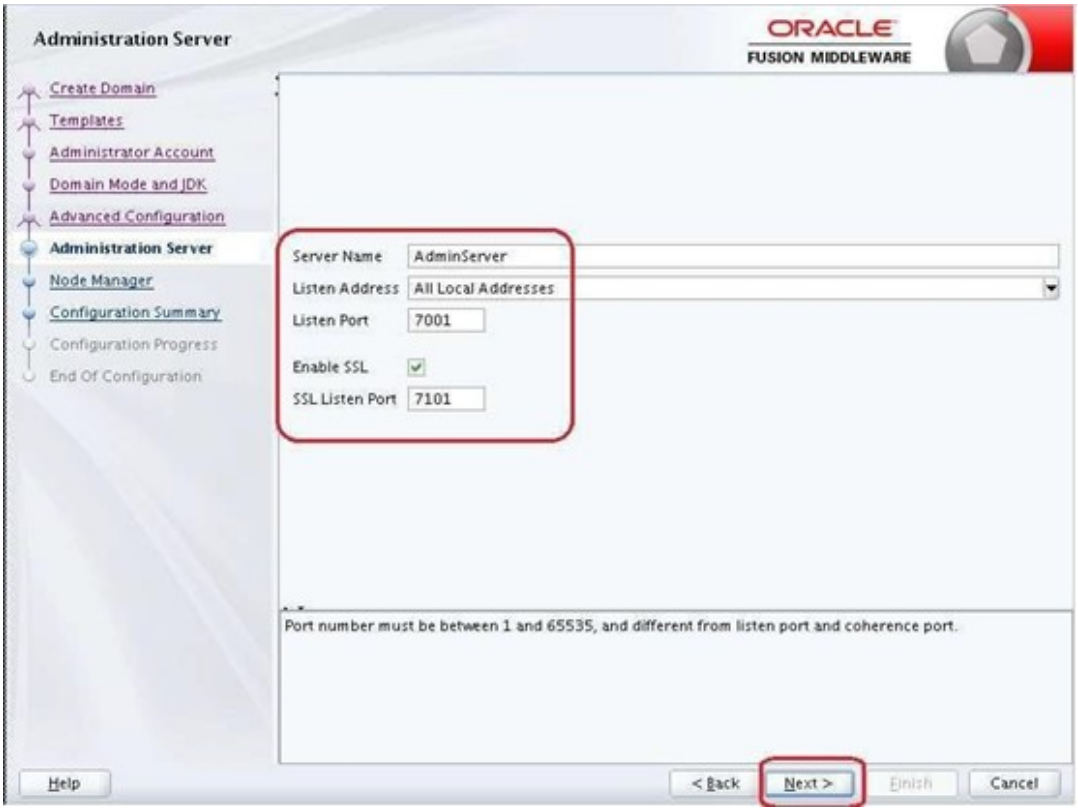
Figure 3-5 Advanced Configuration- TBD Redwood



5. Select the check box adjacent to **Administration Server** and **Node Manager** options and click on the **Next** button.

   Administration Server screen displays.

Figure 3-6 Administration Server- TBD Redwood



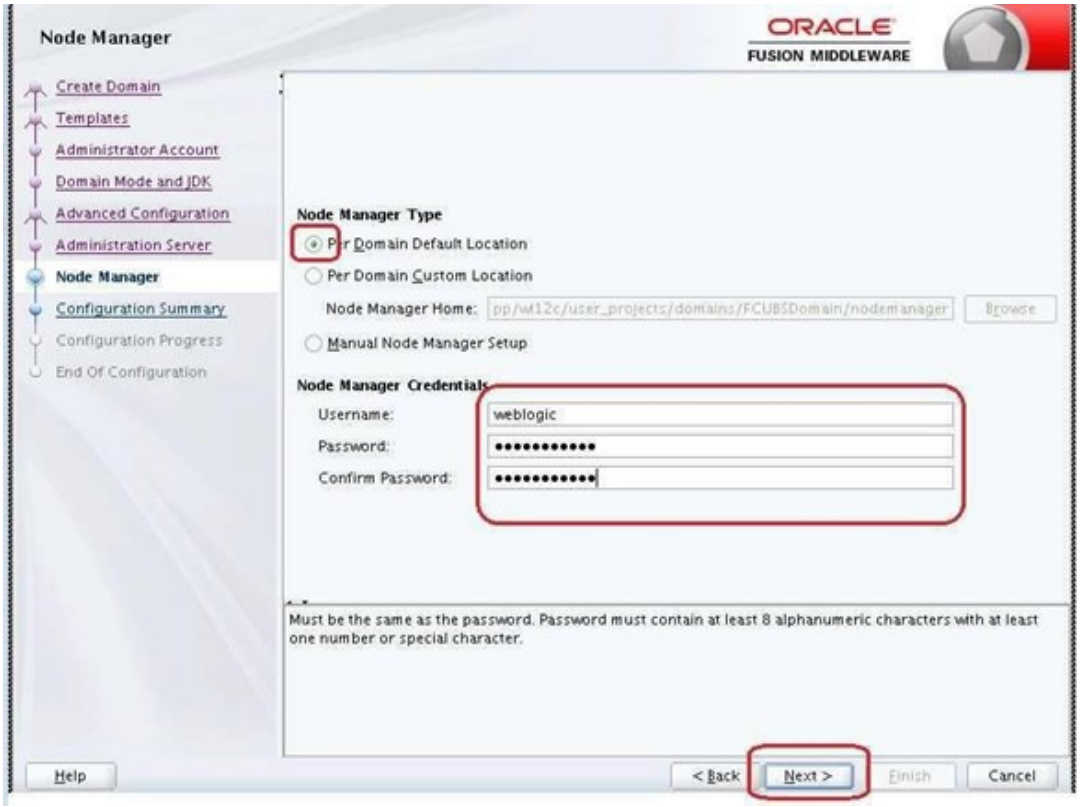
6. Specify the **Listen Address** and **Listen Port** for administration server.

> **Note:**
>
> The default Listen port is 7001 and SSL port is 7101. This could be changed to any other available port. Ensure to make a note, of this port since the same is required for launching the Admin console, post domain creation.

> **Note:**
>
> Check for the port availability using the command - **netstat -anp |grep <Port no>**

Node Manager screen displays.

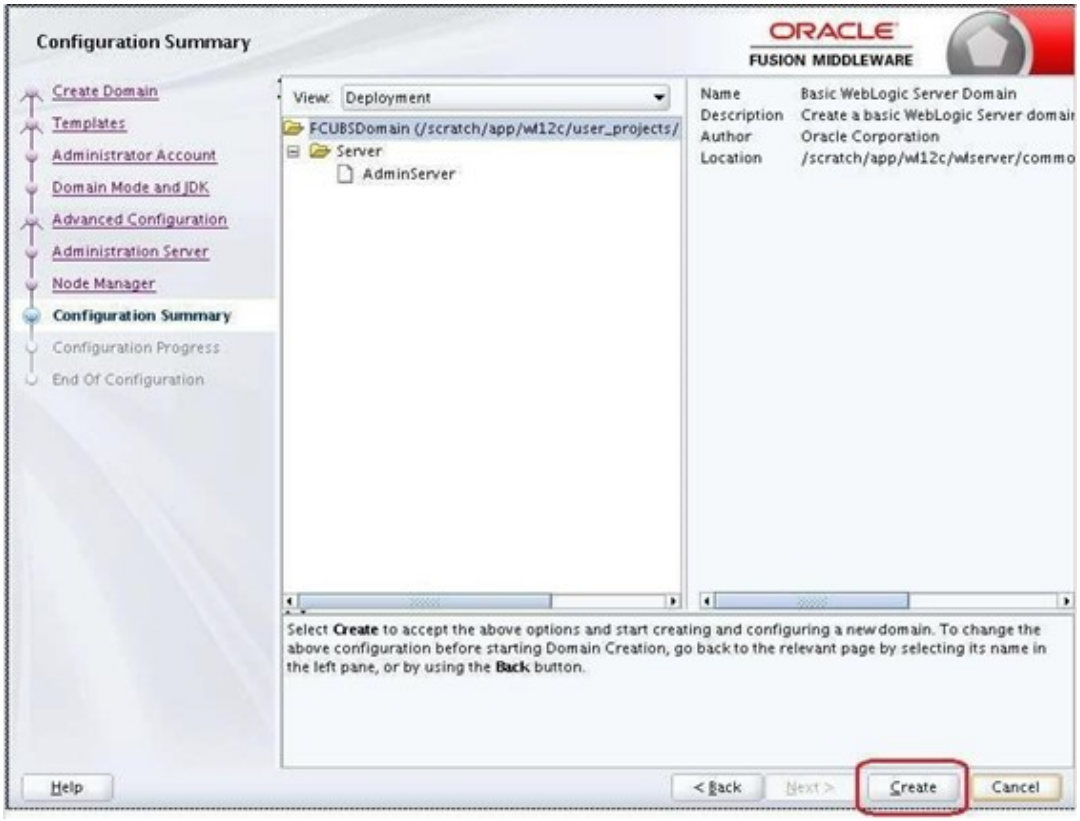
Figure 3-7 Node Manager- TBD Redwood



7. Under **Node Manager Type**, select **Per Domain Default Location** option.
8. Under **Node Manager Credentials**, specify the**Username**, **Password** and **Confirm Password** and click on the **Next** button.

   Configuration Summary screen displays.

Figure 3-8 Configuration Summary- TBD Redwood



9. Verify the details and click on the **Create** button.

   The domain creation process is initiated and the progress of completion is indicated in the **Configuration Progress** screen.

Figure 3-9 Configuration Progress- TBD Redwood

10. Click on the **Next** button.

    The Admin Server console URL: **http://<IP address>:<admin console port>/console**

    a. <IP address >: Host on which domain was created.

    b. <admin console port> : Port specified in Administration Server configuration page.

    In this case the Admin Console URL is: **https://<server1hostname>:7101/console**

    The Configuration success message displays in the **Configuration Success** screen.

Figure 3-10 Configuration Success- TBD Redwood

3.2 Pack and Unpack Domain

This topic provides information on the Pack and Unpack utility.

The domain structure is to be copied to the second server during domain creation. To copy the same, the user can use the Pack and Unpack utility provided under **$WLSHOME/common/bin**.

Table 3-1 Pack and Unpack Domain

Domain	Description
Pack	Pack domain in primary server: **./pack.sh -managed=true -domain=/scratch/app/wl12c/user_projects/domains/FCUBSDomain -template=/tmp/FCUBSDomain.jar -template_name="FCUBSDomain"**
Unpack	Unpack FTP **FCBUSDomain.jar** in binary mode to secondary server under /tmp area and unpack the domain using unpack utility provided under **$WLSHOME/common/bin**. **./unpack.sh -domain=/scratch/app/wl12c/user_projects/domains/FCUBSDomain -template=/tmp/FCUBSDomain.jar**

3.3 Start Admin server

This topic provides systematic instructions to start the Admin server.

Admin server is started on the primary server.

1. To start the admin server, log in to the primary server.
2. Navigate to the folder **$DOMAIN_HOME/bin** and execute **startWeblogic.sh**.

3.4 Start Node Manager

This topic provides systematic instructions to start the Node Manager.

Node Manager needs to be started on both servers.

1. Before starting the Node Manager, update **Listen Address** to the Hostname/IP Address of the machine in **nodemanager.properties** located in the folder **$DOMAIN_HOME/nodemanager**.
2. To start the Node Manager, log in to the servers.
3. Navigate to the folder **$DOMAIN_HOME/bin** and execute **NodeManager.sh**.

4
Cluster Configuration

This topic provides information on the steps involved in the cluster configuration.

Dynamic Cluster configuration involves below steps:

1. **Machine Configuration**
2. **Dynamic Cluster Creation**: In a normal WebLogic Cluster, the user defines Managed Server and adds them to the Cluster. In Dynamic Cluster, the user selects the number of servers required in the cluster and the Server Template that can be assigned to servers in this WebLogic Dynamic Cluster.
3. **Server template modification**: Servers (or Managed Server) that are part of WebLogic Dynamic Cluster will have properties taken from Server Template. Modify server template for best practices parameters for Dynamic Servers (part of Dynamic Cluster), the user can modify Server Template that applies to Dynamic Cluster. These settings apply to all the managed servers.
4. Activate Changes that would automatically create the managed servers (as mentioned in the number of servers required parameter).

4.1 Machines Configuration

This topic provides systematic instructions to configure the machine.

1. Log in to Admin Console and navigate to **FCUBSDomain** left panel.
2. Click on the **Environment** drop-down option and then click on the **Machines**.

   Summary of Machines screen displays.

Figure 4-1 Summary of Machines- TBD Redwood

3. Click on the **New** button.

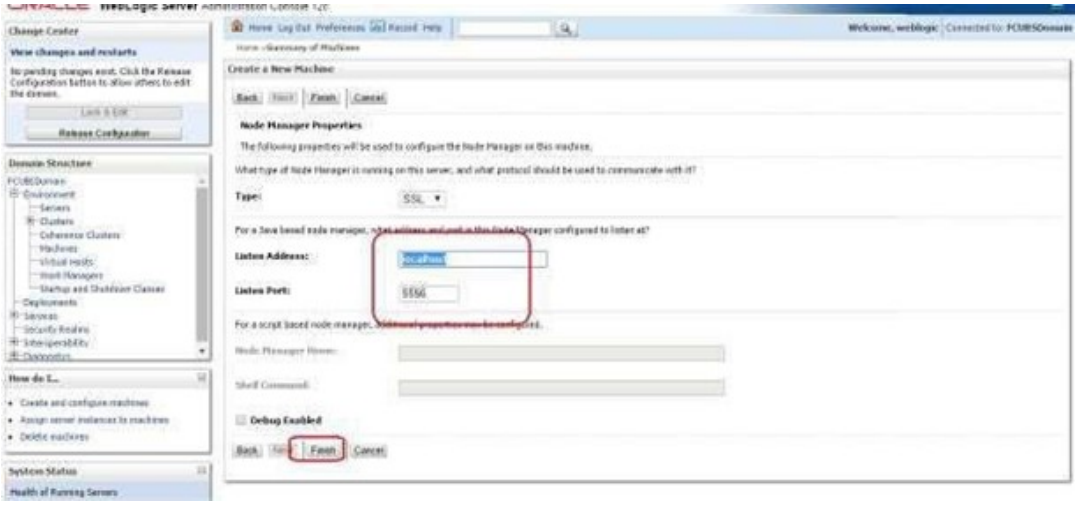
   Create a New Machine- Machine Identity screen displays.

Figure 4-2 Create a New Machine- Machine Identity (TBD Redwood)

4. Enter the **Name** field for the machine and click on the **Next** button.

   Create a New Machine- Node Manager Properties screen displays.

Figure 4-3 Create a New Machine- Node Manager Properties (TBD Redwood)



5. Enter the **Listen Address** and **Listen Port** and click on the **Finish** button.

   Listen Port is the port mentioned in **nodemanager.properties** file.

   The Machine is created and **Summary of Machines** screen displays.

Figure 4-4 Summary of Machines- TBD Redwood

6. Similarly, create a new machine entry for the other server.
7. Before starting the managed servers, ensure that the **Node manager Status** of all the machines is **Reachable**.
   a. In the Admin console, navigate through the **Domain Structure** left panel to **Environment** drop-down option and then click on the **Machines**.

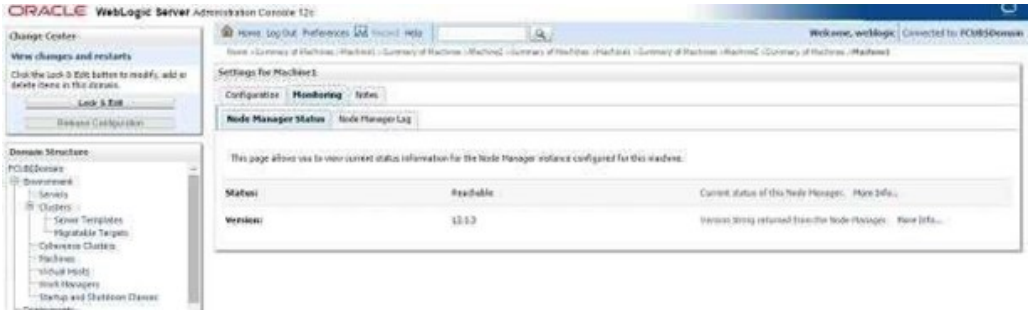
      Summary of Machines screen displays.

Figure 4-5 Summary of Machines- TBD Redwood

   b. Go to newly created **Machine1**.

      Settings for Machine1 screen displays.

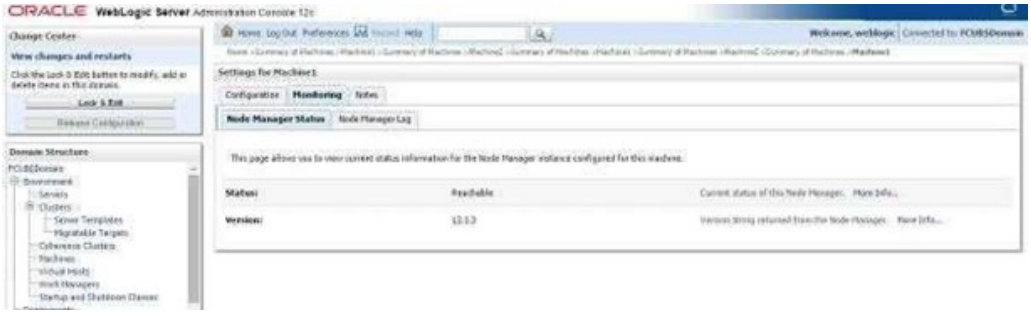
Figure 4-6 Settings for Machine1- TBD Redwood



c. Click on the **Monitoring** tab and then click on the **Node Manager Status**.

Status of **Machine1** displays.

Figure 4-7 Settings for Machine1- TBD Redwood



Machine Status should be **Reachable**.

4.2 Dynamic Cluster Creation

This topic provides systematic instructions for Dynamic Cluster creation.

1. Log in to Admin Console and navigate to **FCUBSDomain** left panel.
2. Click on the **Environment** drop-down option and then click on the **Clusters**.

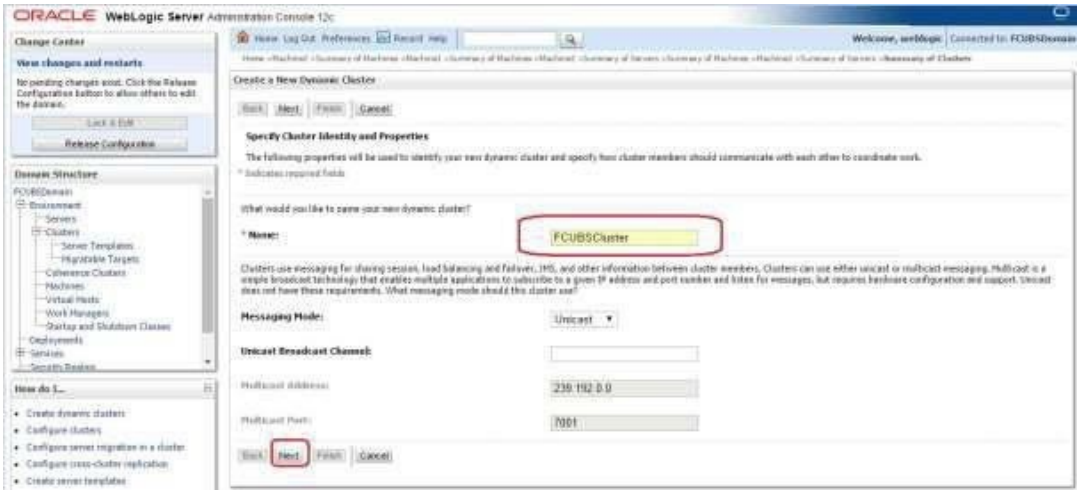
Summary of Clusters screen displays.

Figure 4-8 Summary of Clusters- TBD Redwood

3. Navigate to the **New** drop-down button and select the **Dynamic Cluster** option.

   Create a New Dynamic Cluster- Cluster Identity and Properties screen displays.

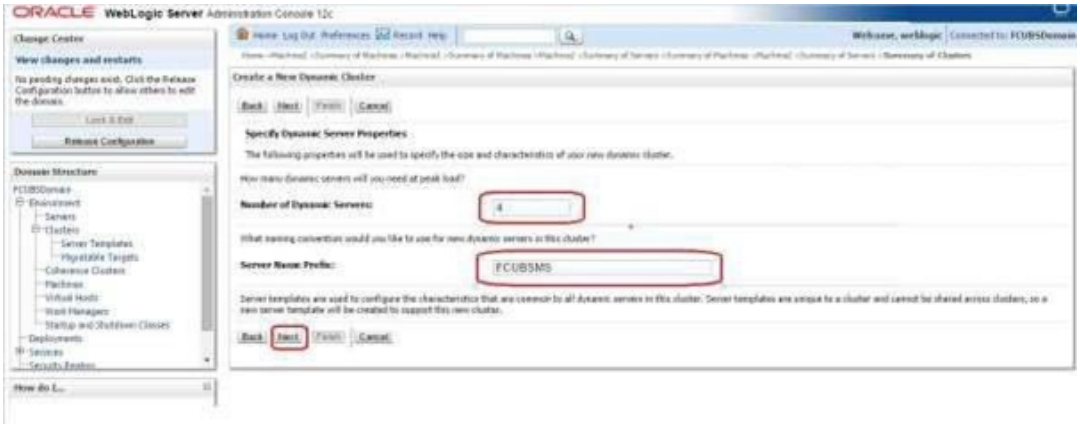
Figure 4-9 Create a New Dynamic Cluster- Cluster Identity and Properties (TBD Redwood)



4. Enter the **Name** field for the cluster and click on the **Next** button.

   Create a New Dynamic Cluster- Dynamic Server Properties screen displays.

Figure 4-10 Create a New Dynamic Cluster- Dynamic Server Properties (TBD Redwood)



5. Enter the **Number of Dynamic Servers** the user wants to configure.
6. Enter the **Server Name Prefix** and click on the **Next** button.

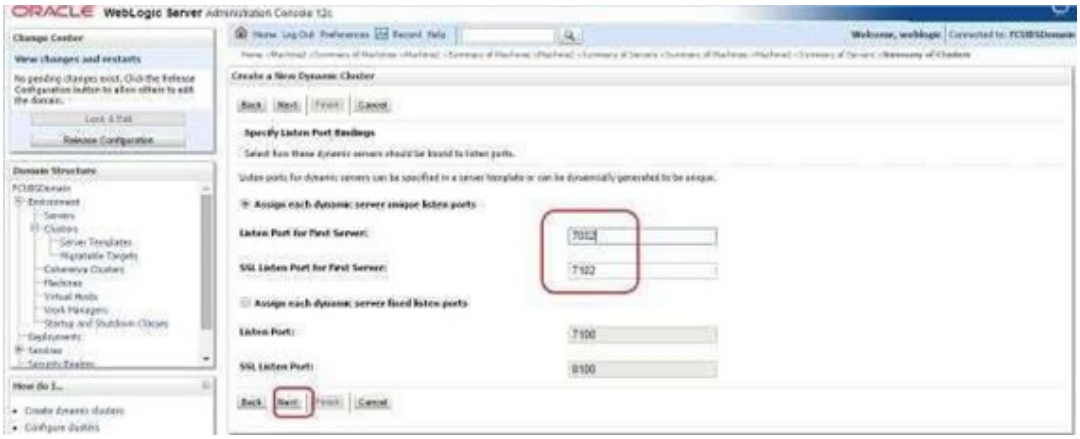
   Create a New Dynamic Cluster- Machine Bindings screen displays.

Figure 4-11 Create a New Dynamic Cluster- Machine Bindings (TBD Redwood)

7. Select machines that participate in the domain. In this case, all machines will be part of the domain, select **Use any machine configured in this domain** option and click on the **Next** button.

   Create a New Dynamic Cluster- Listen Port Bindings screen displays.

Figure 4-12 Create a New Dynamic Cluster- Listen Port Bindings (TBD Redwood)



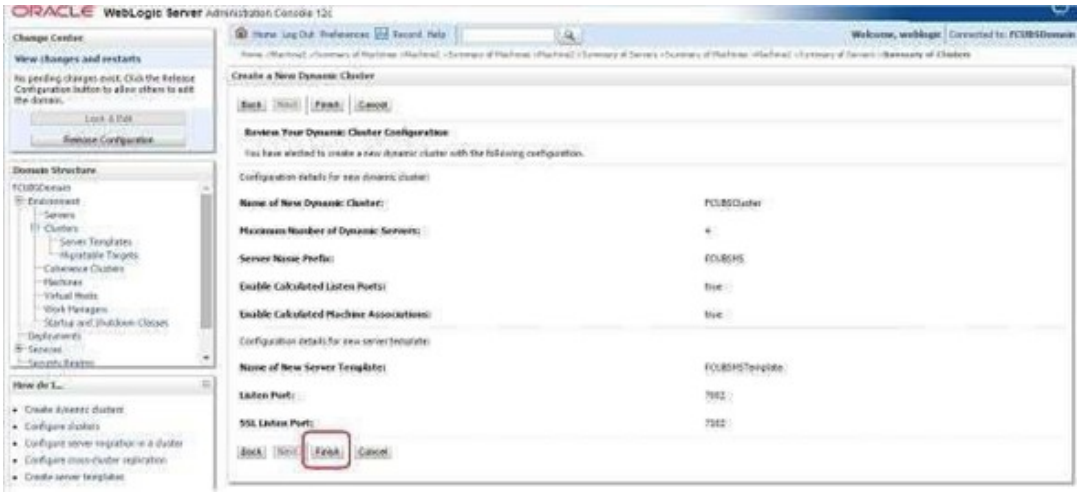
8. Select **Assign each dynamic server unique listen ports** option and specify the **Listen Port for First Server** and **SSL Listen Port for First Server**.

   The subsequent servers will be assigned with an incremental port number.

9. Click on the **Next** button.

   A summary of the new Dynamic Cluster Configuration is displayed in the **Create a New Dynamic Cluster- Dynamic Cluster Configuration** screen.

Figure 4-13 Create a New Dynamic Cluster- Dynamic Cluster Configuration (TBD Redwood)



10. Click on the **Finish** button to create Dynamic Cluster.

    Summary of Clusters screen displays and shows the recently created Dynamic Cluster.

Figure 4-14 Summary of Clusters- TBD Redwood

11. Navigate to **Change Center** and click on **Activate Changes** to automatically create 4 managed servers.

    Summary of Clusters screen displays and shows the recently created 4 managed servers.

Figure 4-15 Summary of Clusters- TBD Redwood

12. Navigate to **FCUBSDomain** left panel, click on the **Environment** drop-down option and then click on the **Servers**.

    Summary of Servers screen displays with list of 4 new servers.

Figure 4-16 Summary of Servers- TBD Redwood

4.3 Managed Server Template configuration

This topic provides a list of parameters that modifies managed server template.

The created server template is modified to apply the below parameters:

- #unique_34
- #unique_35
- #unique_36
- Logging
  This topic provides systematic instructions to update the parameters on the logging screen.
- HTTP Logging
  This topic provides systematic instructions for HTTP Logging.
- Stuck Tread Max Time
  This topic provides systematic instructions to update stuck thread max time.

4.3.1 Logging

This topic provides systematic instructions to update the parameters on the logging screen.

The process of log file writing in a Weblogic server can impact the performance. Hence, the user needs to keep the logging to a minimum in a production environment.

Update below parameters by in Logging Screen:

Table 4-1 Logging Parameters

Parameter	Description
Minimum Severity to log	Warning

Table 4-1 (Cont.) Logging Parameters

Parameter	Description
Log file Severity level	Warning
Standard Out Severity level	Critical
Domain broadcaster Severity level	Critical

1. Navigate to the **FCUBSDomain** left panel and then click on the **Environment** option.
2. Click on the **Clusters** and then click on **Server Templates**.

   Summary of Server Templates screen displays.

Figure 4-17 Summary of Server Templates- TBD Redwood

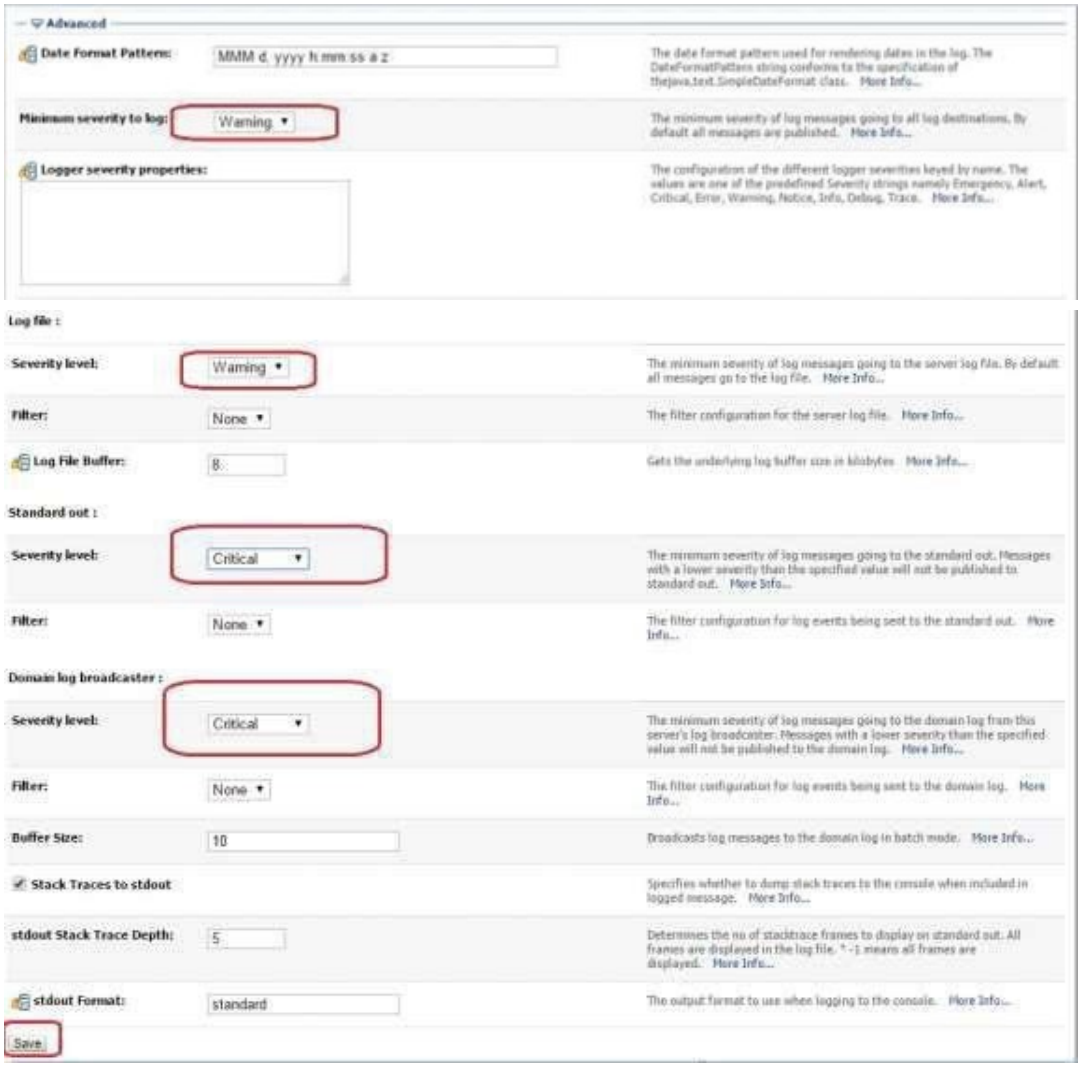
3. Select **FCUBSMSTemplate** and navigate to **Logging** tab and then to **General**.

   Settings for FCUBSMSTemplate screen displays.

Figure 4-18 Settings for FCUBSMSTemplate- TBD Redwood

4. Under **Advanced** tab, update the below parameters and click on the **Save** button.

Figure 4-19 Advanced tab details- TBD Redwood



4.3.2 HTTP Logging

This topic provides systematic instructions for HTTP Logging.

1. Navigate to the **FCUBSDomain** left panel and click on the **Environment** drop-down option.
2. Click on the **Clusters** and then click on the **FCUBSTemplate**.

   Settings for FCUBSTemplate screen displays.

Figure 4-20 Settings for FCUBSTemplate- TBD Redwood

3. Click on the **Logging** tab and then on the **HTTP** tab.
4. Uncheck the **HTTP access log file enabled** option.

4.3.3 Stuck Tread Max Time

This topic provides systematic instructions to update stuck thread max time.

1. Navigate to the **FCUBSDomain** left panel and click on the **Environment** drop-down option.
2. Click on the **Clusters** and then click on the **FCUBSTemplate**.
3. Click on the **Tuning** option.
4. Update the stuck thread max time to 18000, and click on the **Save** button.

4.4 Quartz Properties

This topic provides the information on properties of quartz.

1. org.quartz.scheduler.instanceId = AUTO
2. org.quartz.jobStore.isClustered = true
3. org.quartz.jobStore.clusterCheckinInterval = 20000

5
Tuning

5.1 General Parameters

This topic provides information on the general parameters

Table 5-1 General Parameters

PARAMETER	VALUE	Navigate To
JTA Time out seconds	18000	• Log in to the Weblogic Server console. • Click on the domain name (ex: FCUBSDomain) which is under **Domain Structure**. • Go to **Configuration** and then **JTA**, parameter and values are found on the right-side panel of the console.
Session Timeout	900	• Log in to the Weblogic Server console. • Click on the **Deployments** which is under **Domain Structure**. • Click on the deployed FCJ application from the right side panel. • Click on FCJNeoWeb from **Modules and components**. • Go to **Configuration**tab and then click on the **General**, the parameter values can be found here.

5.2 JVM Tuning

This topic provides JVM optimization for Oracle FLEXCUBE Universal Banking Solution.

The JAVA minimum and maximum heap size need to be reset for 32 and 64-bit environments. Both the minimum and maximum heap sizes are set to 1.5GB and 4GB in the case of 32-bit and 64-bit environments respectively.

How to find whether the JVM is 32bit or 64bit?

Go to **$JAVA_HOME/bin** directory. Check java version using command **./java –d64 –version** 64 bit JVM shows the version details whereas 32bit throws an error.

How to modify the JVM heap parameters?

To change the JVM heap parameters create a file **setUserOverrides.sh** under domain FCUBSCL in both servers. This file should be created in **$WL_HOME/user_projects/domains/$WLS_DOMAIN/bin** in both the servers. Paste below the contents of the **USER_MEM_ARGS** variable accordingly to override the standard memory arguments passed to java for SUN JDK.

32 bit JDK

```
USER_MEM_ARGS="-
Dorg.apache.xml.dtm.DTMManager=org.apache.xml.dtm.ref.DTMManagerDefault -
Dorg.apache.xerces.xni.parser.XMLParserConfiguration=org.apache.xerces.parsers
.XML11Configuration -Dweblogic.threadpool.MinPoolSize=100 -
Dweblogic.threadpool.MaxPoolSize=100 -Xms1536M -Xmx1536M -XX:MaxPermSize=256m
-server -XX:+UseParallelOldGC -XX:ParallelGCThreads=4"
export USER_MEM_ARGS
```

64 bit JDK

```
USER_MEM_ARGS="-
Dorg.apache.xml.dtm.DTMManager=org.apache.xml.dtm.ref.DTMManagerDefault -
Dorg.a
pache.xerces.xni.parser.XMLParserConfiguration=org.apache.xerces.parsers.XML11
Configuration -Dweblogic.threadpool.MinPoolSize=100 -
Dweblogic.threadpool.MaxPoolSize=100 -Xms8g -Xmx8g -Xmn4g -server -
XX:+UseParallelOldGC -XX:ParallelGCThreads=4"
export USER_MEM_ARGS
```

> **Note:**
>
> Take a backup of the files before modifying them same.

6

Start Managed Servers

This topic provides instructions to start Managed servers by using Script and Console.

1. To start Managed Servers using scripts, execute **startManagedWebLogic.sh** script present in the folder **$DOMAIN_HOME/bin**.

   Usage: **./startManagedWebLogic.sh SERVER_NAME {ADMIN_URL}**

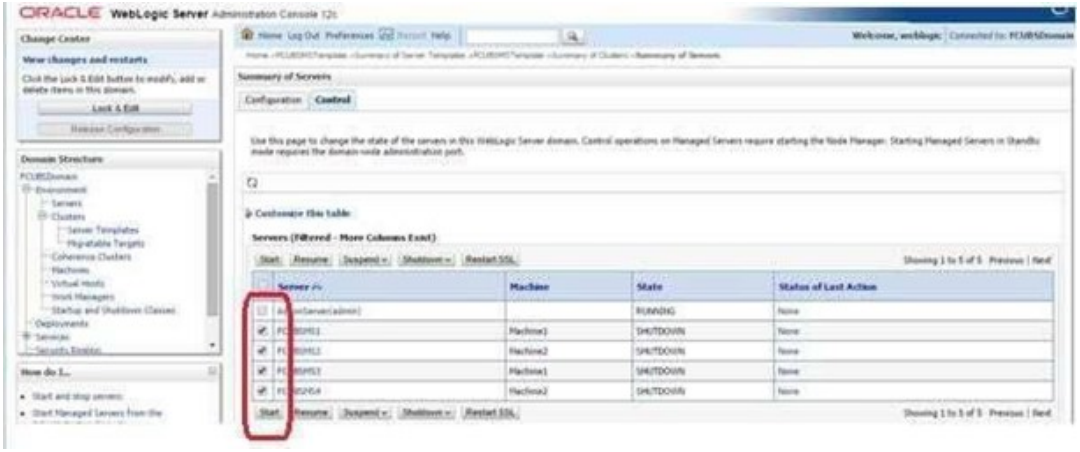
   For Example: **./startManagedWeblogic.sh FCUBSMS1 https://<hostname1>/console**

2. To start Managed Servers using the console, log in to the admin console and navigate to the **FCUBSDomain**.

3. Click on the **Environment** drop-down option and then click on the **Servers**.

   Summary of Servers screen displays.

Figure 6-1 Summary of Servers- TBD Redwood



4. Click on the **Control** tab, select the managed servers to be started and then click on the **Start** button.

   Upon successful startup, the status of Managed servers is changed to **RUNNING**.

7

Data Source creation and JDBC Configuration

This topic provides information on data sources used by the FLEXCUBE application.

Following are the JNDI names of those data sources used by the FLEXCUBE application.

jdbc/fcjdevDS - This data source is used by FLEXCUBE online screen excluding branch screens.

- **jdbc/fcjdevDSBranch** - This data source is used by Branch screens.
- **jdbc/fcjSchedulerDS** - This data source is used by Quartz scheduler.

> **Note:**
>
> - **jdbc/fcjdevDS** should be NonXA.
> - **jdbc/fcjdevDSBranch** and **jdbc/fcjSchedulerDS** should be XA

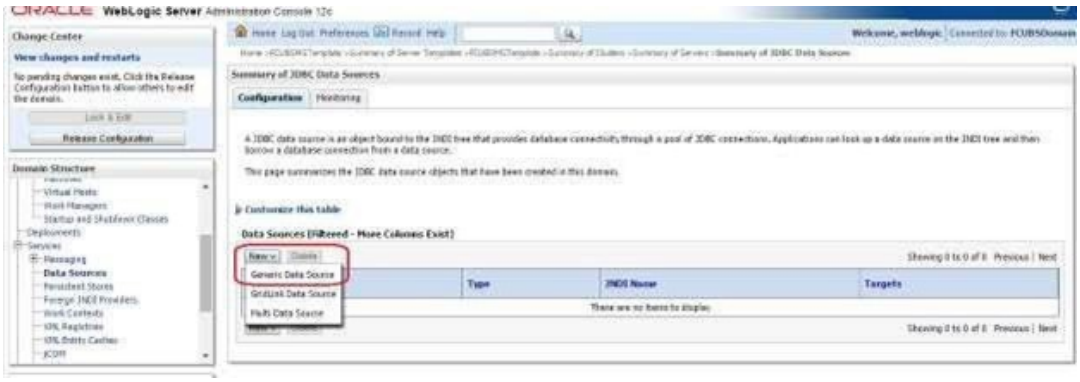
7.1 Data source creation: non XA

This topic provides systematic instructions for Data source creation.

1. Navigate to **FCUBSDomain** left panel.
2. Click on the **Services** drop-down option and then click on the **Data Sources**.

   Summary of JDBC Data Sources screen displays.

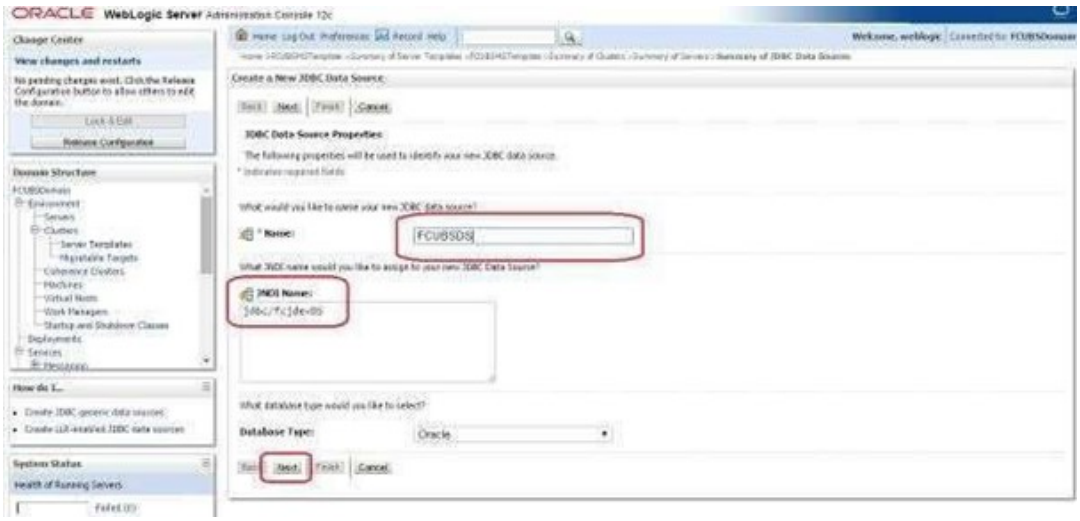
Figure 7-1 Summary of JDBC Data Sources- TBD Redwood



3. Navigate to the **New** drop down button and select **Generic Data Source** option.

   Create a New JDBC Data Source- JDBC Data Source Properties screen displays.

Figure 7-2 Create a New JDBC Data Source- JDBC Data Source Properties (TBD Redwood)



4. Enter the **Name** and **JNDI Name** fields and click on the **Next** button.

   Create a New JDBC Data Source- JDBC Data Source Properties screen displays.

Figure 7-3 Create a New JDBC Data Source- JDBC Data Source Properties (TBD Redwood)

5. Select the **Database Driver** as **Oracle's Driver (Thin) for Instance connections: Versions: Any** and click on the **Next** button.

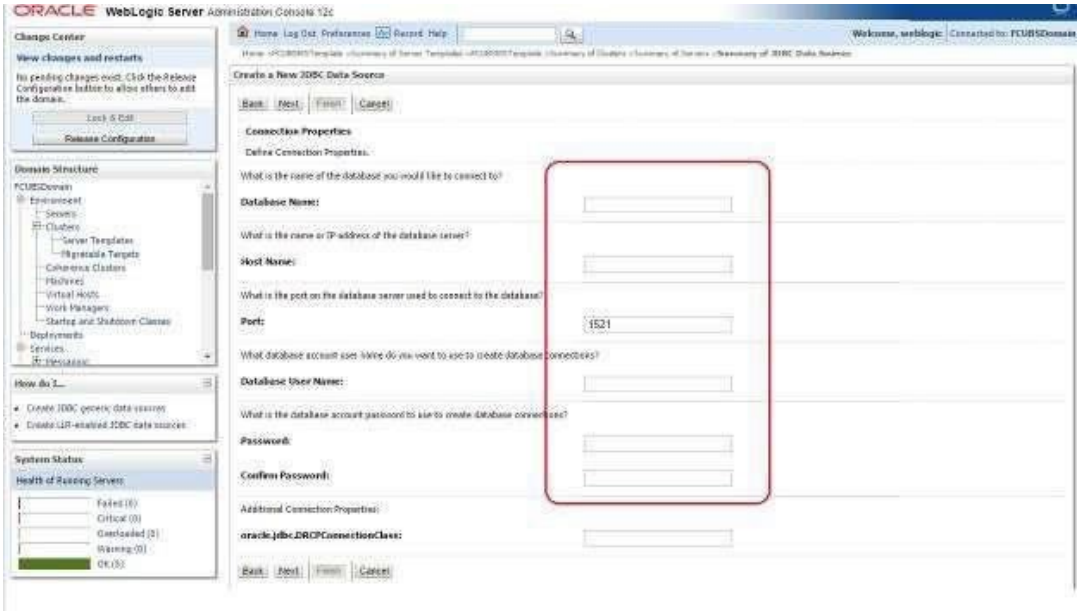
   Create a New JDBC Data Source- Transaction Options screen displays.

Figure 7-4 Create a New JDBC Data Source- Transaction Options (TBD Redwood)

6. Uncheck the **Supports Global Transactions** option and click on the **Next** button.

   Create a New JDBC Data Source- Connection Properties screen displays.

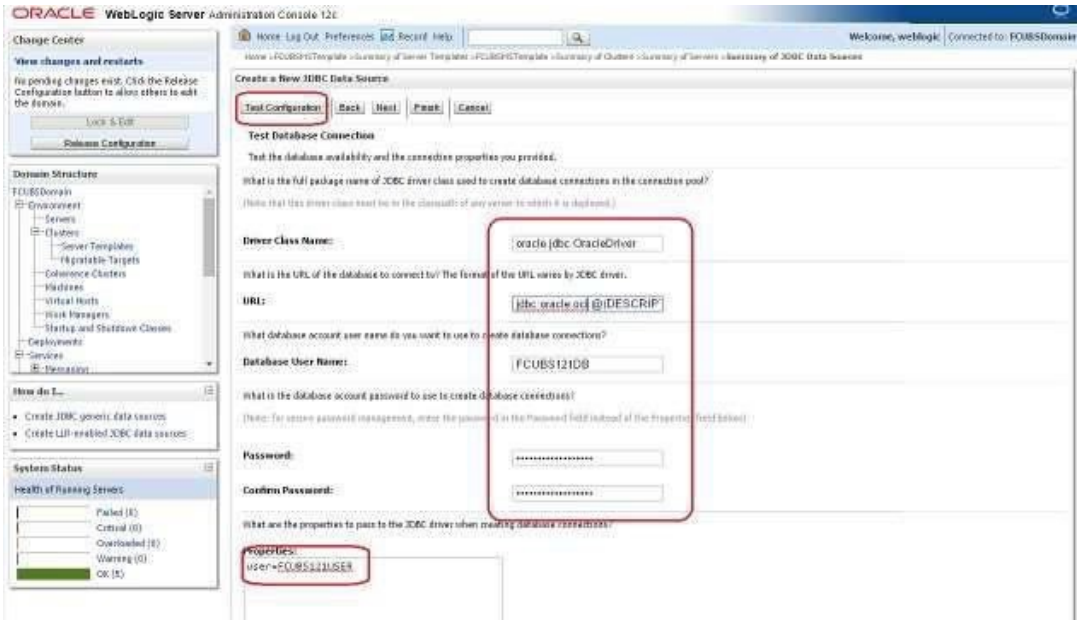
Figure 7-5 Create a New JDBC Data Source- Connection Properties (TBD Redwood)



7. Enter the **Database Name**, **Host Name**, **Port**, **Database User Name**, **Password**, and **Confirm Password** fields and then click on the **Next** button.

   Create a New JDBC Data Source- Test Database Connection screen displays.

Figure 7-6 Create a New JDBC Data Source- Test Database Connection (TBD Redwood)



8. Replace the JDBC **URL** field in the below format and click on the **Next** button.

   Default URL: *jdbc:oracle:thin:@<IP_Adress>:<Port>:<INSTANCE_NAME>*.

   Change the default URL to:
   jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=xxxxxx.com)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=fcubs))

   Where, **Scan IP** = *xxxxxx.com*, **Service Name** = *fcubs*, **Port** = *1521*

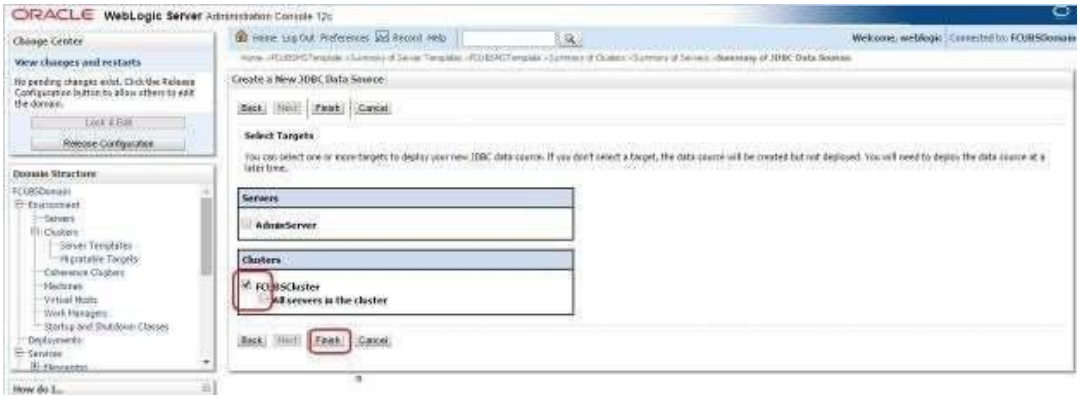
   The user should make the necessary changes to the URL.

9. Click on the **Test Configuration**.

   The connection test should be successful.

   Create a New JDBC Data Source- Targets screen displays.

Figure 7-7 Create a New JDBC Data Source- Targets (TBD Redwood)



10. Select Target as **FCUBSCluster** and click on the **Finish** button.

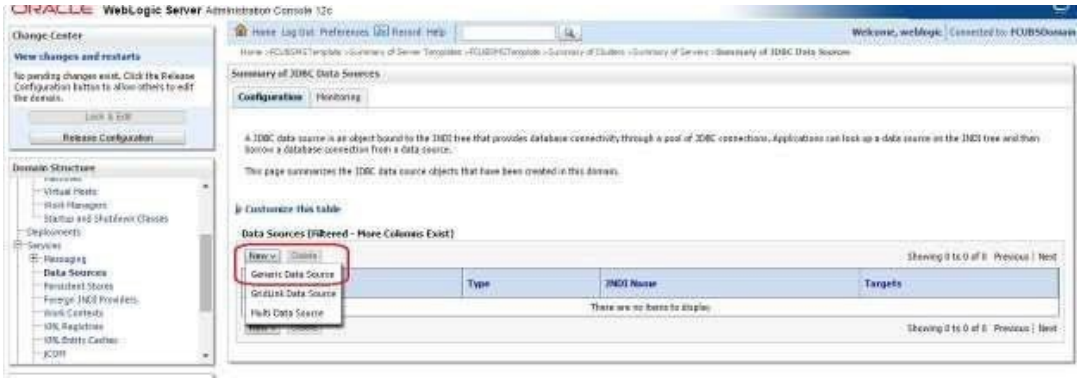
7.2 XA Data source

This topic provides systematic instructions for Data source creation.

1. Navigate to **FCUBSDomain** left panel.
2. Click on the **Services** drop-down option and then click on the **Data Sources**.

   Summary of JDBC Data Sources screen displays.

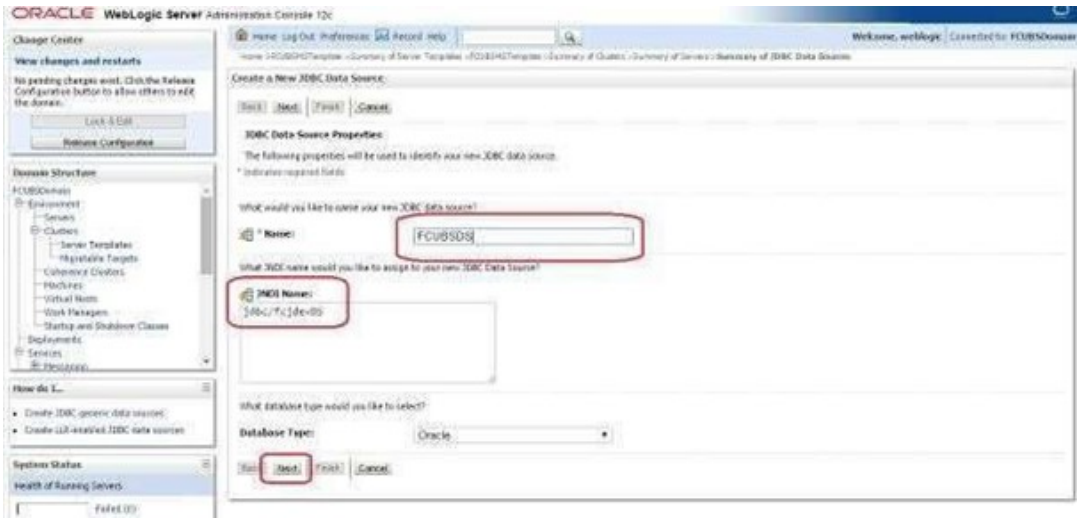
Figure 7-8 Summary of JDBC Data Sources- TBD Redwood



3. Navigate to the **New** drop down button and select **Generic Data Source** option.

   Create a New JDBC Data Source- JDBC Data Source Properties screen displays.

Figure 7-9 Create a New JDBC Data Source- JDBC Data Source Properties (TBD Redwood)



4. Enter the **Name** and **JNDI Name** fields and click on the **Next** button.

   Create a New JDBC Data Source- JDBC Data Source Properties screen displays.

Figure 7-10 Create a New JDBC Data Source- JDBC Data Source Properties (TBD Redwood)

5. Select the **Database Driver** as **Oracle's Driver (Thin XA) for Instance connections: Versions: Any** and click on the **Next** button.

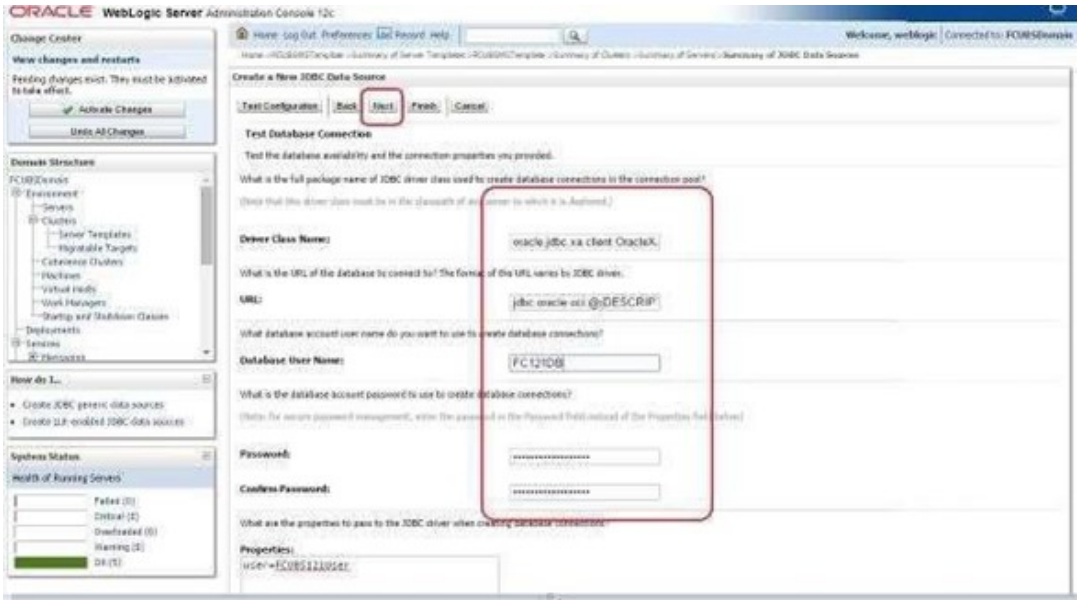
   Create a New JDBC Data Source- Transaction Options screen displays.

Figure 7-11 Create a New JDBC Data Source- Transaction Options (TBD Redwood)

6. Click on the **Next** button.

   Create a New JDBC Data Source- Connection Properties screen displays.

Figure 7-12 Create a New JDBC Data Source- Connection Properties (TBD Redwood)



7. Enter the **Database Name**, **Host Name**, **Port**, **Database User Name**, **Password**, and **Confirm Password** fields and then click on the **Next** button.

   Create a New JDBC Data Source- Test Database Connection screen displays.

Figure 7-13 Create a New JDBC Data Source- Test Database Connection (TBD Redwood)

8. Replace the JDBC **URL** field in the below format and click on the **Next** button.

   Default URL: *jdbc:oracle:thin:@<IP_Adress>:<Port>:<INSTANCE_NAME>*.

   Change the default URL to:
   jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=xxxxxx.com)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=fcubs))

   Where, **Scan IP** = *xxxxxx.com*, **Service Name** = *fcubs*, **Port** = *1521*

   The user should make the necessary changes to the URL.

9. Click on the **Test Configuration**.

   The connection test should be successful.

   Create a New JDBC Data Source- Targets screen displays.

Figure 7-14 Create a New JDBC Data Source- Targets (TBD Redwood)

10. Select Target as **FCUBSCluster** and click on the **Finish** button.
11. Navigate to the **Change Center** left panel and click on the **Activate Changes**.

    The newly created XA Data source is displayed in the **Summary of JDBC Data Sources** screen.

Figure 7-15 Summary of JDBC Data Sources- TBD Redwood

12. Similarly, create all the other Data Sources required for the FCUBS Application and Gateway Deployments.

7.3 JDBC Parameters Tuning

This topic provides information on JDBC Parameters.

Table 7-1 JDBC Parameters

PARAMETER	VALUE	Navigate To
Connection Reserve time out	30	Connection Pool->Advance
Test Frequency	60	Connection Pool->Advance
Inactive connection time out	30	Connection Pool->Advance

Table 7-1 (Cont.) JDBC Parameters

PARAMETER	VALUE	Navigate To
Initial Capacity	1	Connection Pool
Max capacity	Based on Site Requirement	Connection Pool
Capacity Increment	5	Connection Pool
Shrink Frequency	900	Connection Pool->Advance
Test Connection on Reserve	Checked	Connection Pool->Advance
Statement Cache Size	50	Connection Pool

8

JMS Resource Creation

This topic provides an overview of JMS resource creation.

JMS Resource Creation involves various steps:

- Persistence Store Creation
- JMS Server Creation
- JMS Module Creation
- Resource Creation: Connection Factory and Queue's

Refer to the **Configuring JMS on Weblogic Server** for further details on JMS setup.

9

Oracle WebLogic Load Balancing

This topic provides information on weblogic load balancing.

For Weblogic Load balancing, use:

1. Oracle HTTP Server: Refer to Configuration for Oracle HTTP Server for setup.
2. Apache: Refer to Configuration for Apache for setup.

10
Frequently Asked Questions

10.1 Machine status is Unreachable

This topic provides systematic instructions to change the machine's status.

If the machine's status shows Unreachable means the machine is not reachable and the user cannot start/stop the managed servers from the console.

1. In the console, navigate to **Domain structure** left panel.
2. Click on the **Machines** and then click on **Machine1**.

   Settings for Machine1 screen displays.

   Figure 10-1 Settings for Machine1- TBD Redwood
3. Click on the **Monitoring** tab and then click on the **Node Manager Status**.

   The **Status** will be **Unreachable** in the **Settings for Machine1** screen.
4. To change the status, start the **Node Manager** on that server.

   Refer to the #unique_55 section on steps to start the Node Manager.

10.2 How to restart node manager?

This topic provides systematic instructions to restart the node manager.

1. Locate node manager PID using **ps -ef|grep weblogic.nodemanager.javaHome**.
2. Change directory to **$DOMAIN_HOME/bin**.
3. Kill the Unix process using **kill -9 <pid>**.
4. Verify that the node manager is killed by **tail –f nohup.out**.
5. Start node manager using **nohup ./startNodeManager.sh**.
6. Verify that node manager is started using **tail –f nohup.out**.

10.3 Scaling Up Dynamic Cluster

This topic provides systematic instructions to scale up dynamic cluster capacity.

To scale up the insufficient capacity of the dynamic cluster, the user can add dynamic servers on demand.

1. Navigate to the **FCUBSDomain** left panel.
2. Click on the **Environment** drop down option and then click on the **Clusters**.

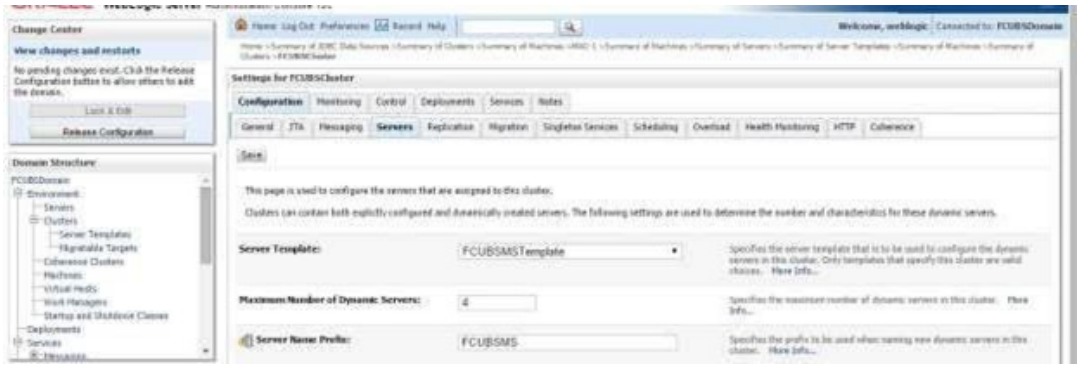
   Summary of Clusters screen displays.

Figure 10-2 Summary of Clusters- TBD Redwood

3. Click on the **FCUBSCluster**.

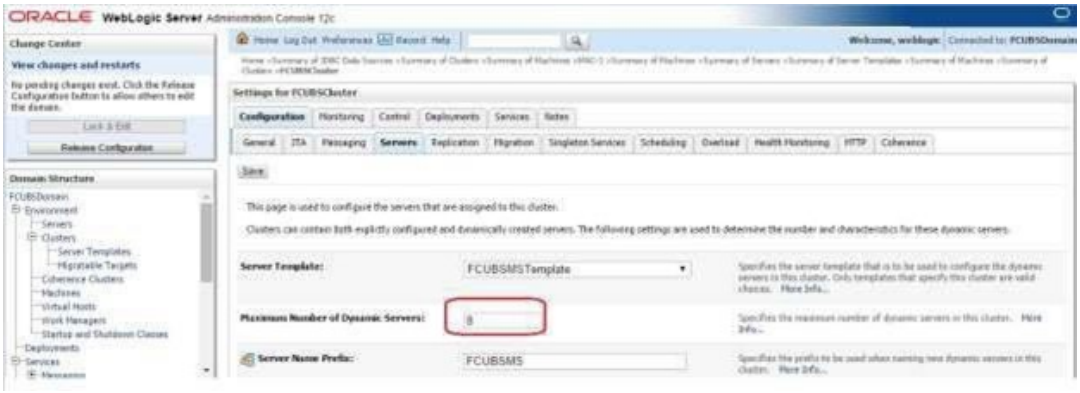
   Settings for FCUBSCluster screen displays.

Figure 10-3 Settings for FCUBSCluster- TBD Redwood



4. Click on the **Configuration** tab and then click on the **Servers** tab.
5. Change the **Maximum Number of Dynamic Servers** to 8 and then click on the **Save** button.

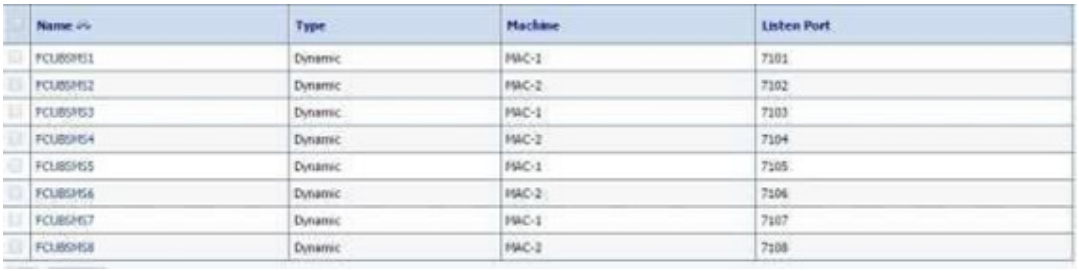
Figure 10-4 Summary of Dynamic Clusters



6. Navigate to the **Change Center** left panel and click on the **Activate changes**.

   After activation, 4 new Dynamic Servers are added to the Dynamic Cluster.

Figure 10-5 Summary of Dynamic Clusters - Change Center



Name	Type	Machine	Listen Port
FCUBSMS1	Dynamic	MAC-1	7101
FCUBSMS2	Dynamic	MAC-2	7102
FCUBSMS3	Dynamic	MAC-1	7103
FCUBSMS4	Dynamic	MAC-2	7104
FCUBSMS5	Dynamic	MAC-1	7105
FCUBSMS6	Dynamic	MAC-2	7106
FCUBSMS7	Dynamic	MAC-1	7107
FCUBSMS8	Dynamic	MAC-2	7108

7. Start the 4 new Dynamic Servers and it doubles the capacity of the dynamic cluster.

10.4 Session Timeout

This topic describes steps to verify session timeout conditions.

Session timeouts occur intermittently during load condition.

- Verify the following:
  1. **Clock Synchronization**: Time across the nodes/machines is the same.
  2. **Session Stickiness in the load balancer**: Persistence Type in load balancer should be set to **SOURCE IP** and should not be the cookie.