Configuring Weblogic Server 12c Oracle FLEXCUBE Universal Banking Release 14.0.0.0.0 [February] [2018]



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1. Introduction

1.1 Purpose of this Document

The purpose of this document is to explain the steps required for Configuration and applying best practices in cluster mode for

- FCUBS 14
- Weblogic Version 12.2.1.2.0
- JDK 1.8.0_131

1.2 WebLogic Server Overview

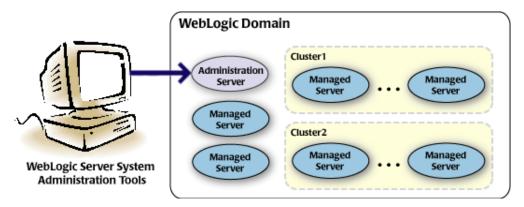
This section of the document provides brief explanation on the main components involved in WebLogic server

Domain

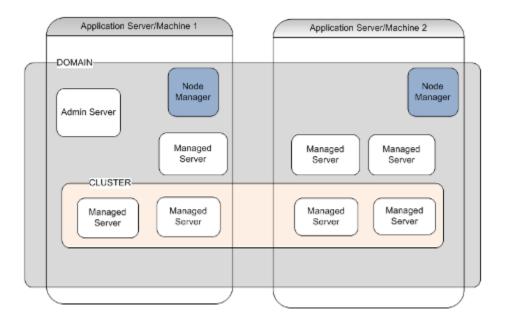
A domain is the basic administration unit for WebLogic Server instances. A domain consists of one or more WebLogic Server instances (and their associated resources) that is managed with a single Administration Server. Multiple domains can be defined based on different system administrators' responsibilities, 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.

WebLogic Domain Structure



Weblogic 12c Domain Overview



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

If you run Node Manager on a machine that hosts Managed Servers, you 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.

<u>Machine</u>

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 you 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 you to easily scale up or down the number of servers in your 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.

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

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

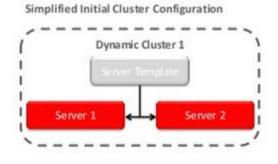
Server Templates

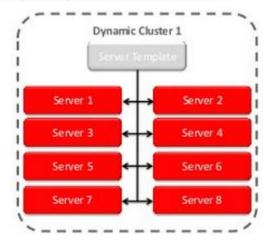
A single server template provides the basis for the creation of the dynamic servers. Using this single template provides the possibility of every member being created with exactly the same attributes. Where some of the server-specific attributes like Servername, listen-ports, machines, etc. can be calculated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

You 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 you provide during Dynamic Cluster creation.

Simplified Configuration with Scalability and Elasticity





Simplified Operations for Cluster Scale Out

1.3 **Pre-Requisites**

In this document, we are 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 Weblogic Server of same version to be installed on both the machines and services

Environment

2 servers where linux is installed, 1 will be primary where admin console will be running along with managed servers and the other where only managed servers will be.

Softwares

- 1) Oracle Weblogic Server 12.2.1.2 installed on both the machines under same folder structure.
- 2) JDK 1.8 Latest available version installed on both the machines. In this document JDK1.8.0_131 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 primary server. Start X-manager (or any similar tool) in windows desktop. Export DISPLAY environment variable to the machine IP where x-manager is running.

Syntax: export DISPLAY=<ip-address>:<port>

Test using xclock

2. Domain Configuration

2.1 **Domain Creation**

Weblogic domain creation and configuration will be done from primary server.

From 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 **Next**.

Configuration Type	
Create Domain Templates Administrator Account Domain Mode and JDK Advanced Configuration Configuration Summary Configuration Progress End Of Configuration	What do you want to do? Create a new <u>domain</u> Update an existing domain Domain Location: /scratch/app/w12c/user_projects/domains/FCUBSDomain Browse
	Create a new domain.
Help	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish Cancel

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

Templates			
Create Domain Templates Administrator Account Domain Mode and JDK Advanced Configuration Configuration Summary Configuration Progress End Of Configuration	Create Domain Using Product Templates: Template Categories: All Templates Available Templates Basic WebLogic Server Domain - 12.1.3.0 [Wserver] * WebLogic Advanced Web Services for JAX-RPC Extension - 12.1.3.0 [oracle_common] WebLogic Advanced Web Services for JAX-WS Extension - 12.1.3.0 [oracle_common] WebLogic Coherence Cluster Extension - 12.1.3.0 [Wserver] WebLogic JAX-WS SOAP/JMS Extension - 12.1.3.0 [oracle_common]		
	Create Domain Using Custom Template: Template location: //scratch/app/wl12c Browse Browse		
Help	< <u>B</u> ack <u>N</u> ext > <u>Finish</u> Cancel		

3) Specify Administrator User Name and Password.

- > The specified credentials are used to access Administration console.
- You 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. Click Next.

Administrator Account				
Treate Domain	:			
Templates				
Administrator Account				
Domain Mode and JDK				
Advanced Configuration				
Configuration Summary				
Configuration Progress				
C End Of Configuration	Name	weblogic		
	Password	•••••		
	Confirm Password	•••••		
	Must be the same a: one number or spec	s the password. Password must co cial character.	ontain at least 8 alphanumeric c	haracters with at least
Help			< Back Next >	<u>Einish</u> Cancel

4) Select Server Startup as **Production Mode** and the available **JDKs**. Click **Next**.

Domain Mode and JDK	
Create Domain <u>Templates</u> Administrator Account Domain Mode and JDK Advanced Configuration Administration Server Node Manager Configuration Summary Configuration Progress End Of Configuration	Domain Mode Development Utilize boot.properties for username and password, and poll for applications to deploy. Production Require the entry of a username and password, and do not poll for applications to deploy. JDK Oracle HotSpot 1.7.0_75 /usr/java/jdk1.7.0_75 Other JDK Location:
Help	Satk Next > Einish Cancel

5) Select the check box adjacent to Administration Server and Node Manager. Click Next.



6) Specify the Administration server Listen address and Listen port.

Administration Server	
Create Domain Templates Administrator Account Domain Mode and JDK Advanced Configuration Administration Server Node Manager Configuration Summary Configuration Progress End Of Configuration	erver Name AdminServer sten Address All Local Addresses sten Port 7001 hable SSL SL Listen Port 7101 Address All Local Addresses and Address All Local Addresses and Addr
Help	< <u>Back</u> <u>N</u> ext > <u>Finish</u> Cancel

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>

The next screen navigates to NodeManager configuration.

7) Configure Node Manager

Select **Per Domain Default Location** option from **Node Manager Type.** And in the **Node Manager Credentials**, provide the username and password for the nodemanager. Click **Next**.

Node Manager		
🐥 Create Domain		
Templates		
dministrator Account		
🖕 Domain Mode and JDK		
Advanced Configuration	Node Manager Type	
Administration Server	Pr <u>D</u> omain Default L	location
🧅 Node Manager	O Per Domain Custom	Location
Configuration Summary	Node Manager Home	: pp/w12c/user_projects/domains/FCUBSDomain/nodemanager Browse
Configuration Progress	🔿 <u>M</u> anual Node Manage	er Setup
ပ် End Of Configuration	Node Manager Credentia	als
	Username:	weblogic
	Password:	
	Confirm Password:	••••••
	one number or special ch	assword. Password must contain at least 8 alphanumeric characters with at least aracter.
Help		< <u>Back</u> Next > Einish Cancel

8) Verify the details and click **Create**. The domain creation process is initiated and the progress of completion is indicated.

R	Create Domain	View. Deployment	Name	Basic WebLogic :	
	Templates	FCUBSDomain (/scratch/app/wl12c/user_projects/	Description Author	 Create a basic WebLogic Server Oracle Corporation /scratch/app/wll2c/wlserver, 	
ģ.	Administrator Account	🖃 🧁 Server	Location		
Ļ.	Domain Mode and JDK	🗋 AdminServer			
	Advanced Configuration				
Ļ	Administration Server				
Ļ	Node Manager				
ļ	Configuration Summary				
þ	Configuration Progress				
6	End Of Configuration				
				20202	·
		Select Create to accept the above options and start create above configuration before starting Domain Creation, gethe left pane, or by using the Back button.	ting and config	juring a new doma	

9) Click Next.



10) The **Configuration Success** message will be displayed as follows:

Configuration Success			
📯 Create Domain			
A Templates	Oracle Weblogic Server Configuration Succeeded		
4 Administrator Account	New Domain FCUBSDomain Creation Successful		
Oomain Mode and JDK	Domain Location		
Advanced Configuration	/scratch/app/w12c/user_projects/domains/FCUBSDom	<u>(ain</u>	
↓ Administration Server	Admin Server URL		
↓ Node Manager	http://ofss222565:7001/console		
Configuration Summary			
Configuration Progress			
Configuration Success			
Help	< <u>B</u> ack <u>N</u> ext >	<u> </u>	Cancel

The Admin Server console URL is as indicated below:

http://<IP address>:<admin console port>/console

- <IP address >: Host on which domain was created.
- <admin console port> : Port specified in Administration Server configuration page.

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

2.2 Pack and Unpack Domain

The domain structure is expected to be copied to the second server during domain creation. To copy the same, you can use pack and unpack utility provided under \$WLSHOME/common/bin.

<u>Pack</u>

Pack domain in primary server:

./pack.sh -managed=true -domain=/scratch/app/wl12c/user_projects/domains/FCUBSDomain - template=/tmp/FCUBSDomain.jar -template_name="FCUBSDomain"

<u>Unpack</u>

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

2.3 Start Admin server

Admin server is started on the primary server. Login to primary server and navigate to folder \$DOMAIN_HOME/bin and execute startWeblogic.sh.

2.4 Start Node Manager

Node Manager needs to be started on both the servers. Before starting the node mananger update ListenAddress to the Hostname/IP Address of the machine in nodemanager.properties located in folder \$DOMAIN_HOME/nodemanager

To start the node manager login to the servers and navigate to folder \$DOMAIN_HOME/bin and execute **NodeManager.sh**

3. Cluster Configuration

Dynamic Cluster configuration involves below steps

- 1) Machine Configuration
- 2) Dynamic Cluster Creation: In a normal WebLogic Cluster you define Managed Server and add them to Cluster. In Dynamic Cluster, you select number of Servers you want in Cluster and Server Template you wish to assign to Servers in this WebLogic Dynamic Cluster.
- 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), you modify Server Template that is applicable to Dynamic Cluster. These settings are applicable to all the managed servers.
- 4) Activate Changes which would automatically create the managed servers(as mentioned in the number of servers required parameter).

Calculate Number of Servers Required:

For every 50 logged in FLEXCUBE users require one managed server of size 8GB. i.e. for 300 logged in FLEXCUBE users, it is recommended to have 6 managed servers. Based on the logged in users that needs to be supported decide on the number of the managed servers required. This parameter is required later in the dynamic cluster creation.

3.1 Machines Configuration

 Login into Admin Console and Navigate to FCUBSDomain → Environment → Machine and Click New

ORACLE WebLogic Server Administration Console 12c				
Change Center	🔒 Home Log Out Preferences 🔤 Record Help	Welcome, weblogic Connected to: FCUBSDomain		
View changes and restarts	Home >Summary of Machines			
Click the Lock & Edit button to modify, add or delete items in this domain.	Summary of Machines			
Lock & Edit Release Configuration	A machine is the logical representation of the computer that hosts one or more WebLogic Server instances (servers). server in a cluster to which certain tasks, such as HTTP session replication, are delegated. The Administration Server servers.	WebLogic Server uses configured machine names to determine the optimum uses the machine definition in conjunction with Node Manager to start remote		
Domain Structure	This page displays key information about each machine that has been configured in the current WebLogic Server dom	nain.		
FCUBSDomain Denorment -Servers Coherence Clusters -Chorence Clusters -Machines -Virtual Hosts -Work Managers	Customize this table Machines Click the Lock & Edit button in the Change Center to activate all the buttons on this page. New Clone Delete	Showing 0 to 0 of 0 Previous Next		
Startup and Shutdown Classes Deployments	Name 🗞	Туре		
Services Security Realms	There are no items to display			
-Interoperability -Diagnostics	New Clone Delete	Showing 0 to 0 of 0 Previous Next		
How do I				
 Create and configure machines Assign server instances to machines Clone machines 				

2) Enter the machine name and click Next

ORACLE WebLogic Server A	dministration Console 12c	0
Change Center	🔞 Home Log Out Preferences 🐼 Record Help	Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Hore -Summary of Machines	
No pending changes exist. Click the Release Configuration button to allow others to edit the domain.	Greate a New Machine Bitski (Bitski) (Cancel)	
Release Configuration	Hackine Identity The following properties will be used to identify your new Hackine. * Inducates required fields	
FCUBSDenain FCUBSDenain FCUBSDenain FCUBSDenain FSCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUBSDEN FCUB	What would you life to name your new Hackine? *Name: Machine[Specify the type of machine operating system. Nachine Os: Other * Back Jack: Prenty Learcel	
How do L.		

3) Enter the Listen Address and Listen Port(this is the port mentioned in nodemanager.properties file) and click Finish

WebLogic Server An	ministration Console 120	<u> </u>
Change Center	🔒 Home Log Out Preferences 🚈 Record Help	Welcome, weblogic Connected to: FCUBSDomain
Wew changes and restarts	Hone >Summary of Machines	
No pending changes exist. Click the Release Configuration betton to allow others to edit the domain. Look & Eolt Release Configuration	Create a New Machine Back Time Carcel Node Hanager Properties The following properties will be used to configure the Node Hanager on this machine.	
Domain Structure	What type of Node Hanager is running on this server, and what protocol should be used to communicate with it?	
FCUBSDomain A Brokensent	Type: SSL *	
Coherence Clusters	For a Java based node manager, what address and post is this Jinda Manager configured to listen at?	
Machines Virtual Hests Work Managers	Lieten Address: (Iocathoo)	
Startup and Shutdown Classes Deployments	Listen Port: 5556	
B Services Security Real ins	For a script based node manager, oldriveral properties may be configured.	
B-Disconstins	Node Hanager Home:	
How do I 🖂	Shell Command:	
Create and configure machines		
 Assign server instances to machines 	Debug Enabled	
Delete machines	Back New Finish Cancel	
System Status		
Health of Running Servers		

4) Machine is created

ORACLE WebLogic Server	Administration Console 12c		Q
Change Center	Hene Lag Out. Preferences 🖾 Hourd Help	<u>A</u>	Welcome, weldogic Gamested to: PCUBSDonial
View changes and restarts Click the Lack & Edit button to modify, add or delete iteras in this domain.	Harte - Semmery of Machines Messages # All changes have been activated. No restarts are necessar	ъ	
Lock & Edit	Summary of Hachines		
Domain Structure PCUESCenain PCUESCenain PCUESCenain PCUESCENAI PCUESCENAIT PC	server in a cluster to which certain tasks, such as HTIP sease answers. This page displays lev information about each machine that is Customize this table Hachines Chick the Zook & Zold button in the Change Center to active Rener Context Tooles I Nome On	en replication, are delegated. The Administration Server uses th has been configured in the current WebLagic Server domain. be all the buttore on this page.	ic Server uses configured machine names to determine the optimum enachine definition in cargundhee with Node Hanager to start remate Showing 1 to 1 of 2 Previous Next
How do I_	Name Clene Dolne	Machine	Showing 1 to 1 of 5 Previous Next
Create and configure machines Assign server instances to machines One emachines Delete machines			There are an a second large

5) Similarly create a new machine entry for the other server

Change Center	A Home Log Out: Preferences In Percent Help	R	Welcome, weblogic Connected to: PCUBSDomail
Wew changes and restarts	Hore -Seemary of Machines		
Click the Lock & Edit battan to modify, add or delete items in this domain.	Messages # All changes have been activated. No restarts are recessary.		
Lock & Eok	Summary of Machines		
Related Centlgutation			
Domain Structure CLBSDonan Briveronert Franzes Bridanese Clatter	A machine is the figured representation of the computer that tests nee or server in a distinct to which certain tasks, such as HTTP session realization servers. This page displays key information about each machine that has been com	, are delegated. The Administration Server uses the machine o	
Machinesi Mitual Hests Minik Planagers Statup and Statigues Classes	© Customize this table Machines Click the Zock & ZMF botton in the Change Center to activate all the but	ons on this page.	
Deployments 8- Services	[New Cone Deste		Shoving 1 to 2 of 2 Previous Next
Security Realing B Interoperability B Disconting	Name A	Туре	
	Medinet .	Machine	
	B Padriez	Machine	1
iow do I_	The second		

Verifying machine status

Before starting the managed servers, ensure that the Node manager Status of all the machines are "Reachable".

In the console, navigate through Domain structure \rightarrow Machines \rightarrow machine1 \rightarrow Monitoring \rightarrow Node Manager Status. Status should be **Reachable.**

ORACLE WebLogic Server A	dministration Console 12c		$\mathbf{\Theta}$
Change Center	🙆 Home Log Dut Preferences 🖾 fincand Help	4	Welcome, weblagic Connected to FCUB5Domain
Wew changes and restarts	Home >Summary of Plachines >Rachine1 >Summary of	of Hachines >Hachine2 >Summery of Hachines >Hach	html.>Gummary of Nachmer.>Nachme2.>Gummary of Machines.>Machines.
Click the Lock & Edit betten to modify, add or	Settings for Machine1		
delete items in this domain.	Configuration Honitoring Notes		
Reliane Cathgoration	Node Manager Status Node Manager Log		
Domein Structure	This page allows you to view current status infor	mation for the Node Manager instance configure	d for this warbone.
B Drwitonment	Status:	Reachable	Context status of this Node Planager. Hore July.
ClustersServer TemplotesYligontable TargetsCoberece ClustersNidonia HeadsWinak HeadsWinak Heads	Version:	12.13	Version string returned from the Node Hankger. Have Infa
Startup and Shutdown Classes			

3.2 **Dynamic Cluster Creation**

1) Login into Admin Console and Navigate to FCUBSDomain → Environment → Clusters → New → select **Dynamic Cluster**

ORACLE WebLogic Server	Administration Console 12c						ē
Change Center	🙆 Here Log Out Preferences 🔛 Re	cord Help	9			Welcome, weblogic Connected	to: FOUBSDomai
View changes and restarts No pening changes solet. Click the Release Configuration button to allow others to edit the domain.	Harne -Harbered -Summery of Harbered - Hessages	Historia - Sammary of Historia	-Hachinić -Surimery d	Servers >Savmary of Hachines >	Hackine2 >Summery of S	ever-Summary of Charlose	
Lock & Edit	Summary of Clusters						
	This page summarizes the clusters that A duster defines groups of WebLagic 1 & Customize this table Clusters (Filtered - Nore Columns (News) Clust (Doore)	erver servers that work togethe				Shewing 3 to 0 eF 0 1	Previous Next
- Coherence Clusters - Hochines	Cluster Dister Address	Ouster Hessaging Mode	Migration Basis	Default Load Algorithm	Replication Type	Cluster Broadcast Channel	Servers
Virtual Hosts Work Planagers	2 Dynamic Guster	cloter restoying rate	1.24	e na items to display	active of the	CRIPICI DIVERSE CIERCO	Servers
Sartup and Stubdown Classes Deployments Sension Sension	Mex v [Clene] [Dable]					Shewing 0 to 0 of 0 3	Previous Next
How do I							
Configure dusters	1						

2) Enter the Cluster Name and Click on Next

ORACLE WebLogic Server Adm	ninistration Console 12c		Q
Change Center	🔒 Home Log Out Preferences 🔤 Record Help		Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Home >Machine2 >Summary of Machines >Machine1 >Summary of Machines >	Machine2 >Summary of Servers >Summary of Machines >Machine2 >Summary	of Servers >Summary of Clusters
No pending changes exist. Click the Release Configuration buton to allow others to edit the domain. Lock & Edit Release Configuration		er and specify how cluster members should communicate with each other	r to coordinate work.
Domain Structure	* Indicates required fields		
FCUBSDomain	What would you like to name your new dynamic cluster?		
	* Name:	FCUBSCluster	
	Clusters use messaging for sharing session, load balancing and failover, simple broadcast technology that enables multiple applications to subscr does not have these requirements. What messaging mode should this clu	ibe to a given IP address and port number and listen for messages, but re	
Work Managers Startup and Shutdown Classes	Messaging Mode:	Unicast 🔻	
DeploymentsServicesSecurity Realms	Unicast Broadcast Channel:		
How do I	Multicast Address:	239.192.0.0	
Create dynamic clusters Configure clusters	Multicast Port:	7001	
Configure server migration in a cluster Configure cross-cluster replication Create server templates	Back Next Finish Cancel		

3) Enter the number of dynamic servers you want to configure, enter the server name prefix and click on Next

ORACLE WebLogic Server Ad	Iministration Console 12c	Q
Change Center	💼 Home Log Out Preferences 🔤 Record Help	Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Home >Machine2 >Summary of Machines >Machine1 >Summary of Machines >Machine2 >Summary of Servers >Summary of Mach	nnes >Machine2 >Summary of Servers >Summary of Clusters
No pending changes exist. Click the Release Configuration button to allow others to edit	Create a New Dynamic Cluster	
the domain.	Back Next Finish Cancel	
Lock & Edit Release Configuration	Specify Dynamic Server Properties	
	The following properties will be used to specify the size and characteristics of your new dynamic cluster.	
Domain Structure	How many dynamic servers will you need at peak load?	
FCUBSDomain Environment Servers	Number of Dynamic Servers:	
Clusters Server Templates	What naming convention would you like to use for new dynamic servers in this cluster?	
	Server Name Prefix: FCUBSMS	
Virtual Hosts Work Managers	Server templates are used to configure the characteristics that are common to all dynamic servers in this cluster. Server new server template will be created to support this new cluster.	templates are unique to a cluster and cannot be shared across clusters, so a
Startup and Shutdown Classes Deployments Services	Back Next Finish Cancel	
Security Realms		
How do I		

4) Select Machines that participate in domain, in this case all machines will be part of the domain, select **Use any machine configured in this domain** and click on **Next**

ORACLE WebLogic Server A	dministration Console 12c		Q.
Change Center	🔒 Home Log Dut Freferences 🖾 Record Help	9	Welcome, weblogic Connected to: FCUBSDonnait
View changes and restarts	Hore «Machinel »Summery of Machines «Machinel, »Sw	news of Plackwas «Plackwas «Surveys of Servers »Surveys of	Plachings +Plaching2 +5 arrenary of Servers >Summary of Clashers
No pending changes exist. Click the Release Configuration bottom to allow others to odd the domain.	Create a New Dynamic Claster		
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Domein Structure	How do you want to distribute dynamic servers across	nuclines?	
PC0555onae	Book Nett Floribi Cancel		
How do L_			
Create dynamic dusters			

5) Select the **listen port for the first server** in the dynamic cluster and then the **SSL listener port** for the first server in the dynamic cluster. The subsequent servers will be assigned with an incremental port number. Click **Next**

Change Center	🙆 Home Log Out: Preferences 💹 Record Help	9	Welcome, weblagic Corrected to: PCUBSDomain
View changes and restarts	Home -Marinez -Summery of Nachman -Marinez -Summery of Place	nes >Plachene2 >Sormery of Servers >Sormery of Placks	ras Michinez -Summery of Servers -Summary of Clusters
No pending changes exist. Click the Refease Cooffganation button to allow others to edit the domain.	Create a New Dynamic Cluster Back Next Front Cancel		
Lock & Edit Release Configuration	Specify Linten Port Bindings Select how these dynamic servers should be bound to listen ports.		
Donate Structure PCUSCensis Custors Custors Custors Custors Sever Tenglates Sever Te	Uster ports for dynamic servers can be specified in a server templat # Assign each dynamic server unique listen ports Linten Port for Pirut Server: SGL Linten Port for Pirut Server: B Assign each dynamic server fixed listen ports Listen Port: SSL Linten Port:	7002	
How do 1_		8100	
Create dynamic clusters Configure clusters	Each Next Frink Cancel		

6) Summary of new Dynamic Cluster configuration is presented. Click Finish to create

ORACLE WebLogic Server A	idministration Console 12c		0
Change Center	🍘 Hame Log Out: Preferences 🖂 Record Help	. Q.	Welcome, weblagic Corrected to: FCUBSDemain
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Domain Structure	Configuration details for new dynamic cluster:	- C - C	
FCUBDensis FCUBDensis FCUBDensis Formus FCUbers Formus FCUbers Formus For	Name of New Dynamic Cluster: Hazimam Namber of Dynamic Servers: Server Name Prefix: Enable Calculated Listen Ports; Enable Calculated Listen Ports; Configuration details for new server template; Name of New Server Template;		PCUBSClaster 4 PCUBSHS true true PCUBSHSTemplate
How do 1	Listen Port:		7002
Create dynamic clusters Configure distors Configure server migration in a duster Configure server migration Create server templates	SSL Listen Port: Back Rent Fresh Cancel		7182

7) The **Summary of Clusters** screens should show the recently created Dynamic Cluster.

Change Center	Huma Ling Out Pr	references 🐼 Recor	t Help	9		W	relcome, weblogic Connected to	FOIB5Done
New changes and restarts Pending changes exist. They must be activated to take effect. gP Activate Changes	Hessages	e samed PCUBINITe	third) - Summary of Hachman JH.				vers - Seemary of Chattern	
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Hachings	New Care	Detete					Showing 1 to 1 of 1 Pr	evicus Next
- Machines - Virtual Hoots	Contractor Contractor				No. 20 March 2010 Col.	Replication Type	Cluster Broadcast Channel	100000
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Virtual Hoots Work Manapers Startup and Shutdown Classes Deployments	B Name		Contraction of the second	Contraction of the local sector		and the second se	Showing 1 to 1 of 1 Pr	

8) Upon Activate Changes would automatically create 4 managed servers.

Change Center	Plane Log Dut P	tofermon 🔛 i	-1 Help	4			Welcome, weblaght Com	ented to: FCMISDumat
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Club the Lock 5 Edit button to modify, add or delete items in this domain.	Summary of Ouster	•						
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Halease Configuration			ver servers that work together					
Domain Structure								
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	(Henry Clara)	(inter-					Showing 1 to 1	d1 Previous Ned
- Plachares	Nameria	Chaster Address	Chaster Hessaging Hode	Migration Basis	Default Load Algorithm	Replication Type	Cluster Broadcast Channel	Servers
			Uncall	Detabase	Round Robert	(None)		POURSPEL, POURSPEL

9) Navigate to FCUBSDomain → Environment → Servers tab and 4 new servers are created

Change-Center	Rene Log Out Preferences	Ber Freizell Parky	9			Welcome, wel	Hogic Connected to: PCGR5Doora	
West changes and restarts	Here sPEARINSTemplete sciumere	ry of Server Templates (PDJ807	ETensiele -Summary of Ou	ters charactery of Ser				
Chik the Lock & Edit buttor to modify, add or	Summary of Servers							
delete items in this durain. Lock & Eolt	Configuration Control							
Remains Carrigueation	A server is an instance of thebu	igic Server that runs in its inv	Java Virtual Machine (317	G and has its own cont	location.			
Domain Mnuchare	This page summarizes each ser-	er that has been configured in	the current linebLogic Ser	wr donwin.				
PCUBIDuman	-							
8 Entranent Servers	0							
Clusters Server Templates Templates Templates Coherence Clusters Hackines Visual results	P Contensize this table Servers (Filtered - Hure Cal Oct the Lock & Add Sutton of	A STATISTICS OF STATISTICS	e all the ballions on this pr	qe.				
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- Copionents R: Services - Services Here de L	Administration(admin)	Configured	POIBSOuter POIBSOuter	Hadstes Hedstes				
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- Ceptoments IR-Services	Administration(admin) Pousites Pousites Pousites	Configured Dynamic Dynamic	POIBSOuter	Hechine2	SHITDOWN SHITDOWN	Nat reschable Nat reachable	7982 7884	

3.3 Managed Server Template configuration

The server template created is modified to apply the below parameters

3.3.1 Logging

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

Update below parameters by in Logging Screen

Minimum Severity to log	Warning
Log file Severity level	Warning
Standard Out Severity level	Critical
Domain broadcaster Severity level	Critical

1) Navigate to FCUBSDomain \rightarrow Environment \rightarrow Clusters

WebLogic Server Ad	ministration Console 120					– – –
Change Center	🙆 Home Log Out Preferences 🔤 Record H	Help		We	lcome, weblogic	Connected to: FCUBSDomain
View changes and restarts	Home >Machine2 >Summary of Servers >Summar Templates	y of Machines >Machine2 >Summary of	Servers >Summary of Clusters >Summ	nary of Servers >Summary of Server Te	mplates >FCUBSMSTen	plate >Summary of Server
Pending changes exist. They must be activated to take effect.	Summary of Server Templates					
Activate Changes Undo All Changes Domain Structure	This page summarizes each server template l A server template contains common, non-def manage configuration for a group of server ir	ault attributes that you can apply to	-	en inherit the template configuratio	n. Server templates e	nable you to easily
FCUBSDomain	Customize this table Server Templates New, Clonel Delete				Showing 1	to 1 of 1 Previous Next
Coherence Clusters Machines	□ Name ↔	Cluster	Machine	Listen Port	Listen Address	
Virtual Hosts Work Managers	FCUBSMSTemplate	FCUBSCluster		7002		
	New Clone Delete				Showing 1 t	to 1 of 1 Previous Next
How do I						

2) Select FCUBSTemplate and naviage to Logging \rightarrow General

A Home Log Out Prefe	rences 🐼 Re	ecord Help		Q	Welcome, weblogic Connected to: FCUBSDom
Home >POURSMSTemplate	>Summary of S	lerver Templ	das >FCUB5PE		
ettings for FCUBSMST	emplate				
Configuration Protoco	ls Logging	Debug	Notes		
General HTTP Da	ta Source D	iagnostic Im	ages		
Save					
Use this page to define	the general lo	gging settin	gs for this ser	ver.	
🕂 Log file name:	l.	ogs/FCUE	SMSTempl	ate log	The name of the file that stores current log messages. Usually it is a computed value based on the name of the parent of this MBean. For example, for a server log, it isSERVER_VAME.log. Hore Info
Rotation	_				
D Datables have	- 12		-		And the formation of the second s

— 🖓 Advanced —		
👸 Date Format Pattern:	MMM d, yyyy h:mm:ss a z	The date format pattern used for rendering dates in the log. The DateFormatPattern string conforms to the specification of thejava.text.SimpleDateFormat class. More Info
Minimum severity to log:	Warning 🔻	The minimum severity of log messages going to all log destinations. By default all messages are published. More Info
街 Logger severity propertie	*5:	The configuration of the different logger severities keyed by name. The values are one of the predefined Severity strings namely Emergency, Alert, Critical, Error, Warning, Notice, Info, Debug, Trace. More Info
Log file :		
Severity level:	Warning 🔻	The minimum severity of log messages going to the server log file. By default all messages go to the log file. More Info
Filter:	None •	The filter configuration for the server log file. More Info
🏀 Log File Buffer:	8	Gets the underlying log buffer size in kilobytes More Info
Standard out :		
Severity level:	Critical	The minimum severity of log messages going to the standard out. Messages with a lower severity than the specified value will not be published to standard out. More Info
Filter:	None •	The filter configuration for log events being sent to the standard out. More Info
Domain log broadcaster :		
Severity level:	Critical	The minimum severity of log messages going to the domain log from this server's log broadcaster. Messages with a lower severity than the specified value will not be published to the domain log. More Info
Filter:	None •	The filter configuration for \log events being sent to the domain \log . More $Info$
Buffer Size:	10	Broadcasts log messages to the domain log in batch mode. More Info
Stack Traces to stdout		Specifies whether to dump stack traces to the console when included in logged message. More Info
stdout Stack Trace Depth:	5	Determines the no of stacktrace frames to display on standard out. All frames are displayed in the log file. * -1 means all frames are displayed. More Info
街 stdout Format:	standard	The output format to use when logging to the console. More Info
Save		

3) Under Advanced Tab, update the below parameters and Click on Save

3.3.2 HTTP Logging

1) FCUBSDomain → Environment → Clusters → FCUBSTemplate → Logging → HTTP → Uncheck the Access Logs Flag

Home >PCUESMS	Template :	-Summary o	fServer Te	nplate	s >FCUBSMSTemplate	
ettings for FCU	BSMSTe	mplate				
Configuration	Protocol	Loggie	g Debu	0	Notes	
General HTT	P Data	Source	Diagnostic	Imag	pes	
Save						
				e sen	ver. By default, HTTP logging is	led and the server saves HTTP requests in a separate log file; it does not store HTTP requests in the
Use this page t server log file o				e sen	ver. By default, HTTP logging is	led and the server saves HTTP requests in a separate log file; it does not store HTTP requests in the
	or the don	ain log file		e sen	ver. By default, HTTP logging is	Indicates whether this server logs HTTP requests. (The remaining fields o
server log file o	or the don	ain log file		e sen	ver. By default, HTTP logging is	
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server log file o	or the don ss log file me: ype:	ain log file		e sen	logs/access.log	Indicates whether this server logs HTTP requests. (The remaining fields o this page are relevant only if you select this check box.) More Info The name of the log file. More Info

3.3.3 Stuck Tread Max Time

1) FCUBSDomain → Environment → Clusters → FCUBSTemplate → Tuning, update the stuck thread max time to **18000** and Click on **Save**

Hone >FCUBSMSTemplate >Summary of Server Template Configuration Protocols Logging Debug General HTTP Data Source Diagnostic Im Save	Notes	
Configuration Protocols Logging Debug General HTTP Data Source Diagnostic Im		
General HTTP Data Source Diagnostic Im		
	ages	
Save		
Use this page to configure HTTP logging for the s	erver. By default, HTTP logging is enabled and t	he server saves HTTP requests in a separate log file; it does not store HTTP requests in the
server log file or the domain log file.		
HTTP access log file enabled		Indicates whether this server logs HTTP requests. (The remaining fields on
		this page are relevant only if you select this check box.) More Info
🖞 Log file name:	logs/access.log	The name of the log file. More Info
Rotation		
Rotation type:	Du chia e	Criteria for moving old log messages to a separate file. More Info
	By Size •	entering on our meaning and our our meaning of a method of the state of the
C restances they		

4. Tuning

4.1 **General Parameters**

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

4.2 JVM Tuning

This section of the document provides JVM optimization for Oracle FLEXCUBE Universal Banking Solution.

Basically the JAVA minimum and maximum heap size needs to be reset for 32 and 64 bit environments. Both the minimum and maximum heap size is set to 1.5GB and 4GB in 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 where as 32bit throws an error.

How to modify the JVM heap parameters?

To change the JVM heap parameters modify setDomainEnv.sh under domain FCUBSCL in both servers. This file is located at "**\$WL_HOME/user_projects/domains/\$WLS_DOMAIN/bin**" in both the servers.

Use below USER_MEM_ARGS variable 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.parser
s.XML11Configuration -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 the same.

5. Start Managed Servers

Starting using scripts

Managed Servers can be started by executing startManagedWebLogic.sh script present in folder **\$DOMAIN_HOME/bin**

Usage: ./startManagedWebLogic.sh SERVER_NAME {ADMIN_URL}

Eg: ./startManagedWeblogic.sh FCUBSMS1 https://<hostname1>/console

Starting using console

Alternatively, login to admin console, navigate to FCUBSDoamin \rightarrow Environment \rightarrow Servers \rightarrow Control, select the managed servers to be started and click on **Start**

Change Center	R Hume Lag Out Proferences 🐼 Namet Help	9		Welcome, weblog	ic Connected to: PCUBSDoew
Wese changes and restarts	Hare HOUBINSTemplate -Summary of Server Templa	tes xPCL/EDHSTemplate xSummary i	d Outes - Sammary of Servers		
Click the Lock & Edit button to modify, add or delete items in this domain.	Summary of Servers				
Lack & Evilt	Configuration Control				
Release Configuration	Use this page to change the state of the servers in mode requires the domain-sold administration pr		nttol operations on Managed Serv	ers require starting the Node Manager. Starting He	naged Servers in Standby
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	0				
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Upon successful startup, the status of Managed servers is changed to "RUNNING".

ORACLE WebLogic Server Administration Console 12c

Change Center	😰 Home Log Out Preferences 🛃 Tim	coli Help	.9.			Welcome, weblog	ic Connected to: FCU85Dom
New changes and restarts	mma iPCUBIPETempleta -Summary of Sa	river Templates >PCUSSPECTar	gilate - Gummary of Clusters - d	Sammary of Servers			
Click the Lock & Edit button to modify, add or beliete items in this domain.	Summary of Servers						
Lock & Edit	Configuration Control						
Restance Configuration	A server is an instance of WebLogic Ser	ver that runs in its own Jaw	Vitual Hachine (JVH) and	has its own configuration			
onain Structure	This page summarizes each server that	has been configured in the	oirrent WebLogic Server dor	nain.			
UBSDomain -							
Environment	C Last Refreshed: Jun 11, 2015 2	157139 PM					
Clusters - Server Templates - Regutable Targets - Coherence Clusters - Mutal Heats - 'Virtual Heats - 'Virtual Heats	© Contronice this table Servers (Filtered - Hore Columns I Olich the Lock # Edit button in the Ol [New] [Dawn] [Delm]	Contraction of the second second second	the buttoms on this page,			Showing	1 to 5 of 5 Previous Next
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ew do L_	POUBSP51	Dynamic	FCUBSCluster	Plachine1	PLIVADVG	₩ OK	2003
	CU65H52	Dynamic	PCUB/Custer	Hechine2	RUNADING	or or	7004
Create Planaged Servers Close servers	POLIESHS3	Dynamic	FCUBSCluster	Hachine1	RUNADIG	or ⊲	7005
Delete Managed Servers	S POUBSHS4	Dynamic	FCUBSCluster	Hachine2	PLINADIG	I OK	7006
Delete the Administration Server	New Chris Datele	district of the		- Marine Co		Showing	1 to 5 of 5 Previous Next

6. Data Source creation and JDBC Configuration

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

- jdbc/fcjdevDS This datasource is used by FLEXCUBE online screen excluding branch screens.
- jdbc/fcjdevDSBranch This datasource is used by Branch screens.
- jdbc/fcjSchedulerDS This datasource is used by Quartz scheduler.

Note:

- jdbc/fcjdevDS should be NonXA and make use of OCI driver.
- jdbc/fcjdevDSBranch and jdbc/fcjSchedulerDS should be XA

6.1 Setup Required for OCI Driver

Data sources are created with OCI enabled. For this, Oracle Instant Client is required, below steps needs to be followed

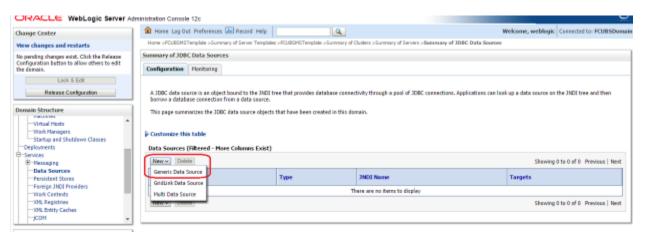
Download Oracle Instant Client corresponding to the used Oracle DB and java (x64 or x32):

http://www.oracle.com/technetwork/database/features/instant-client/index-097480.html

- Set {ORACLE_HOME} in the environment variable.
- Update the environment variable LD_LIBRARY_PATH as {ORACLE_HOME}/lib. This is to load all the .so files.
- Ensure that the ojdbc*.jar file in {WL_HOME}/server/lib/ojdbc*.jar is the same as the file {ORACLE_HOME}/jdbc/lib/ojdbc*.jar. This is to ensure compatibility.
- Update LD_LIBRARY_PATH in StartWebLogic.sh or in setDomainEnv.sh. This must be the path of directory where Oracle Instant Client is installed.
- If you are still not able to load the .so files, then you need to update the EXTRA_JAVA_PROPERTIES by setting Djava.library.path as {ORACLE_HOME}/lib in StartWebLogic.sh or in setDomainEnv.sh.

6.2 Data source creation: non XA

1) Navigate to FCUBSDomain → Services → Data Sources → select New > Generic data source



2) Enter the Name and JNDI Name and Click on Next

ORACLE WebLogic Server A	dministration Console 12c		0
Change Center	🙆 Hame Lag Out Preferences 🖾 Record Help	Q.	Wekome, weblogic Carrected to: FOUBSDomain
View changes and restarts	Horse >PCUBGHSTemplate >Summary of Server Templates >POURDRS	Senglide >Summery of Clutters >Summery of Servect >6	iammany of JDBC Data Sources
No pending charges exist. Click the Release Configuration button to allow others to edit the domain.	Create a New JOBC Data Source		
Release Configuration	3DBC Data Source Properties		
Domain Structure	The following properties will be used to identify your new JDBC + * Tridicates required Fields	Jata source.	
FC095Denain FC095Denain Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuberes Cuber	What would you like to name your new 3060 (sits source?	feerte ²	
How do I	1		
Create 100C generic data sources Create LLR-enabled 100C data sources	What database type would you like to select? Database Type: Cracle	•	
System Status 8 Health of Ranning Servers	Tail Next Faith Gancel		
Failed (0)			

3) Select the Driver as "Oracle's Driver(thin) for Instance connection: Versions: Any" and Click on Next

ORACLE WebLogic Server	Administration Console 12c			
Change Geeter	A Horse Log Out Prefe	rinances 🐼 Record Help	9	Welcome, weblogic Connected to: PCUESDome
Wew changes and restarts	Home >PSU83MSTamplate	s Summary of Server Tamplates >PCU85	18 Template > Summary of Clusters > Summary of Serve	ts >Senetury of 30BC Data Seates
No pending changes exist. Click the Release Configuration batton to allow others to edit the domain.	Create a New JDBC Date			
Lock & Edil	second second laboration	. Leases		
Release Configuration	JDBC Data Source Pr The following propertie	roperties a will be used to identify your new 100	C data source.	
Domain Structure				
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L-Startup and Shutdown Oasses Deployments B-Servicen B-Marris	-			

4) Uncheck the "Supports Global Transactions" and click on Next

ORACLE WebLogic Server Ad	ministration Console 12c			Š
Change Center	🏠 Home Log Out Preferences 🔤 Record Help	Q	Welcome, weblogic	Connected to: FCUBSDomain
View changes and restarts	Home >FCUBSMSTemplate >Summary of Server Template	s >FCUBSMSTemplate >Summary of Clusters >Summary	of Servers >Summary of JDBC Data Sources	
No pending changes exist. Click the Release Configuration button to allow others to edit the domain. Lock & Edit Release Configuration	Create a New JDBC Data Source Back Next Finish Cancel Transaction Options You have selected non-XA JDBC driver to create data	sbase connection in your new data source.		
Domain Structure	Does this data source support global transactions? If	ves, please choose the transaction protocol for this	data source.	
FCUBSOmain FCUSComain FcNutonment Servers Custers Forver Templates Forver	Recommended in place of Emulate Two-Phase Commi	it.	lobal transactions using the <i>Logging Last Resource</i> (LLR) transactio pation in global transactions using JTA. Select this option only if yo	
Deployments	Emulate Two-Phase Commit			
E-Services	Select this option if you want to enable non-XA JDBC other resources can participate in the global transact		lobal transactions using the one-phase commit transaction processi	ing. With this option, no
How do I		ion.		
Create JDBC generic data sources Create LLR-enabled JDBC data sources	One-Phase Commit Back Next Finish Cancel			
System Status 😑				

5) Enter the Database Name, Host Name, Port, User Name, Password, Confirm Password and Click on **Next**

hange Center	😰 Home Log Out Preferences 🐼 Record Help	9.	Welcome, weblogic Connected to: FCUBSDonial
New changes and restarts	Harm POIRSHSTemplate -Survey of Server Templates -POIRSHITTemplate -Survey of Outers -Survey of Servers -Sanssary of 2000 Data Sources		
io pending changes exist. Click the Release carrigutation batter to allow others to add the domain. Lock & Edd Rolease Configuration	Create a New 308C Data Scores Base. Press Cases Connection Properties Connection Properties		
ionain Structure	What is the name of the database you would like to connect to?		
Epstrament Servers	Database Name:	L.	1
El Clusters Server Templates Highridalia Targata Coherence Clasters Hiddines	What is the name or IP address of the database server? Host Names		I
Wirtwal Hosts Work Managerd	What is the port on the database server used to connect to the database	8264.5 BY 12	
	Port:	1521	
P Services +	What database account user name do you want to use to create a	latabase connections?	
low do L	Database User Name:		I
Create JDBC generic data sources Create LLR-enabled JDBC data sources	What is the database account password to use to create database	e connections?	
	Password:		I
insteam Status 🛛 🔅	Confirm Password:		
Failed (0) Critical (0)	Additional Connection Properties:		
Overlanded (2) Werning (0)	oracle.jdbc.DRCPConnectionClass:		

6) Replace the JDBC URL in the below format and click on Next

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

Change the default URL to:

jdbc:oracle:oci:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOS T=xxxxxx.com)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=fcubs)))

Where,

Scan IP = xxxxxx.com

Service Name = fcubs

Port = 1521

Make sure that in URL, we make the changes to reflect oci.

Then Click on Test Configuration. The connection test should be successful.

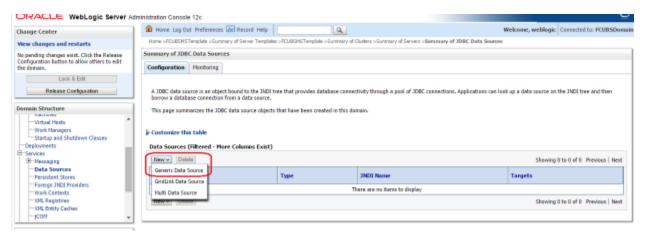
ORACLE WebLogic Server Adv	ninistration Console 12c		<u>ŏ</u>
Change Center	🙆 Home Lag Out Preferences 🔤 Recard Help	a	Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Home >FCURSHSTemplate >Summary of Server Templates >FC	URSHSTemplate >Summary of Cluders >Summary of Servers >S	Summary of 3DBC Data Sources
Na pending changes exist. Click the Release Caefiguration button to allow others to edit the familie. Look & Edit Rolease Configuration	Create a New JDBC Data Source Text Configuration Back Next Finith Cance Text Database Connection Text the database availably and the connection property Text the database Text the database	-	
Domain Structure	What is the full package name of JDBC driver class used to	create database connections in the connection worl?	
FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDomain FCUBSDoma	(Note that this driver class must be in the classpath of any		
G-Clusters Server Templates Higratable Targets	Driver Class Name:	oracle.jdbc.OracleDriver	
Coherence Clusters	What is the URL of the database to connect to? The format	of the URL varies by JOBC driver.	
Wirtual Hosts Work Managers	URL:	idbc:oracle.oc/@DESCRIP	
Startup and Shutdown Classes Deployments	What database account user name do you want to use to o	eate database connections?	
E-Services	Database User Name:	FCUBS121DB	
Now do L	What is the database account password to use to create d	tabase connections?	
Create 3DBC generic data sources Create LLR-enabled 3DBC data sources	(Note: for secure password management, enter the passw	nd in the Password field instead of the Propertie. Field be	low)
System Status 🖂	Password:		
Health of Running Servers	Confirm Password:		
Patied (0) Critical (0) Overloaded (0) Warring (0) OK (5)	What are the properties to pass to the 2080 driver when on Fourties: USER* <u>FOURS123USER</u>	reading clafabate connections?	

7) Select Target as FCUBSCluster and click on Finish

ORACLE WebLogic Server A	dministration Console 12c		9
Change Center	🔞 Hene Log Out. Preferences 🔤 Record Help	Q.	Welcome, weblogic Connected to: FOUBSDomail
View changes and restarts	Rane >PCUBSPISTemplate >Summary of Server Templates >PCUBSMSTemp	lide >Sermary of Clusters >Summary of Servers	-Summary of IDBC Data Sources
No pending changes exist. Click the Release Canfiguration button to allow others to edit the domain. Lock & Edit Retrose Configuration	Create a New JDBC Data Source Back Next Parate Cancel Select Targets Cancel Ca		
Donuale Structure	You can select one or more targets to deploy your new JDBC data so later time.	arce. If you don't select a target, the data cas	are will be created but not deployed. You will need to deploy the data course at a
COSConsolin Constraint Cons	Servers AdminServer Chaters Chaters Chaters Chater AdminSchater AdminSchater Admin Finik Cancel		

6.3 XA Datasource

 Navigate to FCUBSDomain → Services → Data Sources → select New > Generic data source



2) Enter the Name and JNDI Name and Click on Next

ORACLE WebLogic Server A	ministration Console 12c	9
Change Center	Harre Lag Out Preferences Ged Record Help	Welcome, weblogic Connected to: FOUBSDomail
View changes and restarts	Hane >FCU85HSTemplate >Summary of Server Template >FCU85HSTemplate >Summary of Clusters >Summary	of Server: -Summary of JDBC Data Sources
Pending changes exist. They must be activated to take effect.	Greate a New JDBC Data Source	
🛷 Activate Changes	Each Next Finith Cancel	
Undo All Changes	3DBC Data Source Properties	
Domain Structure FCU85Demain FCU85Demain Forwars Forward Forwars Forward Forwars Forward Forw	The following properties will be used to identify your new JDBC data source. * Industry required fields What usuald you like to name your new JDBC data counce? de * Nome: FCUBSBranchDS What JNCE name would you like to assign to your new JDBC Data Source? de JNDD Name: Jdbc/fcjdev05Branch	
H-Hestapion .		
How do L		
Create IDBC generic data sources Create LIR-enabled JDBC data sources	What database type would you like to select? Database Type: Oracle	
System Status 🛛	Sam Past Frenh Garcel	
Health of Ramping Servers	and Country second barrents	
Failed (0)		

3) Select the Driver as "Oracle's Driver(thin XA) for Instance connection: Versions: Any" and Click on Next

ORACLE WebLogic Server Ad	ministration Console 12c		0
Change Center	🏦 Horne Lag Out: Preferences 🖾 Record Help	9	Welcome, weblogic Connected to: FCUBSDomain
Wew changes and restarts	Home >PCUESHSTIEmplate >Summery of Server Templatee >PCU	J2SHSTemplete -Summary of Clusters -Summary of Servers	-Summary of JDBC Data Sources
Pending changes exist. They must be activated to take effect.	Greate a New JDBC Data Source		
🛷 Activate Charges	Back Rent Pinish Cancel		
Undo All Changes	308C Data Source Properties		
Domain Structure	The following properties will be used to identify your new	JDBC data seurce.	
FOBBonan	Database Type: Oracle What database driver would you like to use to create datab Database Driver: Oracle's Driver (Thin XA Back Reet Finist) Cancel	ase connections? Note: * indicates that the driver is equilated on the second of the s	viicitly supported by Oracle WebLogic Server.

4) Click on Next

ORACLE WebLogic Server Ad	ministration Console 12c	<u>ŏ</u>
Change Center	🏦 Home Log Out Preferences 🔛 Record Help	Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Home >POUBSMSTemplate >Summary of Server Templates >POUBSMSTemplate >Summary of Clusters >Summary of Servers >Se	mmary of 300C Data Sources
Pending changes exist. They must be activated to take effect.	Create a New JOBC Data Source	
Activate Changes	Back Next Frinh Cancel	
Undo All Changes	Transaction Options	
Domain Structure	You have selected an XA JDBC driver to use to create database connection in your new data source. The data source v transaction protocol. No other transaction configuration options are available.	vill support global transactions and use the 'Two-Phase Commit' global
PCUBSDomain A B-Environment D-Ousters B-Ousters Server Templates	Back Red Print Cancel	
- Handakes - Rapstable Targets - Coherence Clusters - Wirtwal Hosts - Wirtwal Hosts - Wirtwal Hosts		

5) From this step to target setting step follow as mentioned in non-xa

	ministration Console 12c		9
Change Center	🏚 Home Log Out Preferences 🔛 Record Help	Q.	Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Home >PCUBSHSTemplate >Summary of Server Templa	tes >POUBSHSTemplate >Summary of Clusters >Summary of Servers >	Summary of JDBC Data Sources
Pending changes exist. They must be activated to take effect.	Create a New JDBC Data Source		
🖌 Activate Changes	Back Next Finish Cancel		
Undo All Changes	Connection Properties		
Domain Structure	Define Connection Properties.		
FCUBSDemain	What is the name of the database you would like to	connect to?	
D-Environment Servers D-Clusters	Database Name:		
Sever Templates	What is the name or 3P address of the database ser	ver?	
Coherence Clusters	Host Name:		
Virtual Hosts Work Managers	What is the port on the database server used to con	nect to the database?	
Startup and Shutdown Classes	Port:	1621	
B-Services		1021	
B-Nessacing	What database account user name do you want to u	se to create database connections?	
How do I 🖯	Database User Name:		
Create JDBC generic data sources Create LLR-enabled JDBC data sources	What is the database account password to use to cr	eate database connections?	
	Pasaword:		
System Status 🛛			
Health of Running Servers	Confirm Password:		
Failed (0) Critical (0)	Additional Connection Properties:		
Overloaded (0)	oracle.jdbc.DRCPConnectionClass:		
Warning (0) OK (5)	oracie gabezower connection cass:		
ORACLE WebLogic Server A Change Center	1 Hame Log Out Preferences In Record He		Welcome, weblogic Connected for FOURSDomain
Vew changes and restarts	Hane >RCUBSHSTemplate >Summary of Server Tem	plates >PCuBSHSTemplate >Summary of Clusters >Summary of Serv	net >Summary of 300C Data Sources
Pending dranges exist. They must be activated to take effect.	Create a New JDBC Data Source		
Activate Changes	Test Configuration Back Next Finish	Cancel	
Undo All Changes	Test Eutabase Connection		
Domain Structure	Test the database availability and the connects	in properties you provided.	
PCUBSDaniale -	What is the full package name of JDBC driver cla	is used to create database connections in the connection pool	7
B:Entrannert Servers	Otots that this showr class must be in the classp	efts of any conver to which it is deployed.)	
El-Clusters	The second s		
Server Templates 	Driver Class Name:	oracle jdbc xa client OracleX.	
Hachines Virtual Herds	What is the URL of the database to connect to? ?	he format of the URL varies by 306C driver.	
-Work Hanagers Starbup and Shubdown Classes	URL:	jebc anacle aci @(DESCRIP)	
Deployments B- Services	What database account user name do you want t	to use to areate database connections?	
B-Herovina *	Database User Name:	FC12108	
How do I		Contraction of the second s	
Create JOBC generic data sources	What is the database account password to use to		a second a s
Create LUC-enabled 3DBC data sources	(Hatz: for secure possword suragement, ester I	the passwand in the Passwand field institual of the Properties for	chi telovi)
System Status 🛛	Password:		
Health of Running Servers			
	Confirm Password		
Faled (0)	Confirm Password:		
Pailed (0) Critical (0) Overloaded (0)	Confirm Password: What are the properties to pass to the JDBC ship		J
Critical (0)			J

ORACLE WebLogic Server Ad	ministration Console 12c		
Change Center	🙆 Home Log Out Preferences 🐼 Record Help		Welcome, weblogic Connected to: FCUBSDomain
Vew changes and restarts	Home >POUBSHSTemplate > Summery of Server Templates >POUBSHSTemplate > Summer	ary of Octors - Summary of Surveys - Summary of 30BC Data Se	namian .
Pending changes exist. They must be activated to take effect.	Create a New JDBC Data Source		
Activate Changes	(Back) (Tref) (Fresh) (Carcel)		
Unde All Charges	Select Targets		
Donaio Structure	You can select one or more targets to deploy your new 3DBC data source. If you later time,	don't select a target, the data source will be created but not d	leployed. You will need to deploy the data source at a
PCUBSDemain + IB toveronment	Servers		
B-Custers Server Templates	AdminServer		
Higratable Targets	Clesters		
Victual Hests Disk Managers	PCUSSChaster		
Startup and Shutdown Classes		l .	
Deployments El Services	Back Frent Frent, Cancel		

6) Upon Activate Changes would create the XA Datasource

Change Center	A Home Log Out Avelanences In Inc.	and state 1	(Q)	Welcome, weblogic Contexted to: FO08SDoma
Change Center		Control Martin	Chepring	
View changes and restarts	Hare secults/HSTangible starmary of ter	rver Terreplates xHS1/80HS7erreplate x	Laterary of Chatters Sourceway of Servers (Suntrary of	2000 Data Science: +PC/8005 inflammary of 300C Data Seames
Click the Lock & Edit button to modify, add or	Summary of JDBC Data Sources			
delete items in this domain. Lock & Edl	Configuration Hostoring			
Release Configuration	A 308C data source is an object bound to borrow a database connection from a d		case connectivity through a pool of JDBC cannection	ns. Applications can look up a data source on the JNES tree and then
Donaio Structure				
- Virtual Heats	This page summarizes the 30BC data so	urce objects that have been create	d in this domain.	
Work Hanagers				
Startup and Shutdown Classes	ir Costonize this table			
Deployments				
T Services	Data Sources (Filtered - More Colum	nes Exist)		
E Hessaging Easta Sources	Click the Lock & Edit button in the Cha	nge Center to activate all the butt	ins on this page.	
Persistent Stores Shawing 1to 2 of 2 Pro-				
-Work Contexts 308, Registries	Barne 🗠	Туре	JNDE Nome	Targets
10%, Entity Caches	E POUBSBranchOS	Genetic	plbc/fcdex058ranch	PCUBSCluster
- JCOH -	FOUBSDS	Generic	386cH36nD5	FCUBSCluster
How do L	frame + Children			Showing 1 to 2 of 2 Previous Next

7) Similarly create all the other Datasource required for the FCUBS Application and Gateway Deployments

ORACLE WebLogic Server Admit	nistration Console	12c			<u> </u>
Change Center	🏦 Home Log Ou	t Preferences 🔝 Record Help	Q		Welcome, weblogic Connected to: FCUBSDomain
View changes and restarts	Home >FOUESMS1 Sources >FOUESE	Template >Summary of Clusters >Summ ranchOS >Semmary of 3DBC Data S	ary of Servers >Summary of 3DBC Da loanses	ta Sources >POJBSDS >Summary of XDBC Data	Sources >FCUBSDomain >Summary of 3DBC Data
Click the Lock & Edit buttoe to modify, add or delete items in this domain.	Messages				
Lock & Edit	All changes t	ave been activated. No restarts are	necessary.		
Release Configuration	Summary of JDB	C Data Sources			
	Configuration	Honitoring			
Demain Structure	Image: Second				Shewing 1 to 6 of 6 Previous Next
How do L_	Name 🗠		Туре	JNDI Name	Targets
	FCUBSBran	ich05	Generic	jdbc/fcjdevDSBranch	FCUBSCluster
Create 3DBC generic data sources	FCUBSDS		Generic	jdbc/fcjdevD5	FCUBSCluster
Create 3DBC GridLink data sources Create 3DBC multi data sources	POUBSDS_	ASYNC	Generic	jdbc/fcjdevDS_ASYNC	PCU85Chaster
Create JDBC multi-data sources Delete JDBC data sources	PCUBSDS_	ха	Generic	jdbc/fcjdevD5_XA	FCUBSCluster
Delete JDBC data sources Delete JDBC multi data sources	E PCUBSSION	edule:05	Generic	ktbc/fcjSchedulerDS	FCUBSCluster
- server and their cars special	B PLEATEST.		Generic	FLEXTEST.WORLD	FCUBSCluster
System Status 🖂	New Deter				

6.4 JDBC Parameters Tuning

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

7. 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.

8. Oracle 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.

9. Frequently Asked Questions

9.1 Machine status is Unreachable.

If the machine status is unreachable, means that machine is not reachable and from console you cannot start/stop the managed servers.

In the console, navigate through Domain structure \rightarrow Machines \rightarrow machine1 \rightarrow Monitoring \rightarrow Node Manager Status will be **Unreachable**

To change the status, you need to start the nodemanager on that server. Refer to start nodemanager section on steps to start the nodemanager.

9.2 How to restart 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 nodemanager is started using *tail f nohup.out*

9.3 Scaling Up Dynamic Cluster

When the capacity is insufficient and you need to scale-up, you can add dynamic servers on demand. It requires only a few clicks.

1) Navigate to FCUBSDomain → Environment → Clusters

UTCALLE WebLogic Server A	dministration Console	12c						-							
Change Center	Hume Log Ov	t Preferences 🔚 Pro-	wit Help.	9			Welcome, weblogic Com	rented to: FCUBSDumain							
View changes and restarts	Hane +PO200HS1	anglate >Surrowary of Sar	ver Templetes >FCU8SHSTemplet	s >Semmety of Cha	Barin .										
Click the Lock S Edit button to modify, add or delete items in this domain.	Summary of Clusters														
Lock & Edit	This same turns	This page summarizes the clusters that have been configured in the current Weblagic Server domain.													
Release Configuration	110000000000000000000000000000000000000		over servers that work together												
Domain Structure	1														
B Environment Servers B Chesters Server Templates Higratable Tergets	hospitosite	ed - More Columns E Eddf button in the Cha E [Donne]		Showing 1 to 1	L of 1 . Previous Next										
- Coherence Clusters Machines	Name A	Chuster Address	Cluster Messaging Hode	Migration Basis	Default Load Algorithm	Replication Type	Cluster Broadcast Channel	Servers							
- Virtual Hests - Werk Manapers - Startup and Shutdown Classes - Deployments	PCUBSOW	ter	Uniced	Database	Round Robin	(None)		POUBSHISI, POUBSHISI, POUBSHISI, POUBSHISI							
H Services	New + Oto	e Deinte	St	<u>.</u>	1		Showing 1 to 1	1 of 1 Previous Next							
How do L. II															

2) Click FCUBSCluster \rightarrow Configuration \rightarrow Servers tab

hange Center	Home Log C		; 🔤 Recor	d Help		Q					Welco	ome, weblog	ic Connected to: FCUBSDomain
/iew changes and restarts	-	of JDBC Data So			Summary of I		-	mary of Machines	s >Summary o	of Servers >Summary of S			ary of Machines >Summary of
to pending changes exist. Click the Release Configuration button to allow others to edit	Settings for FCUBSCluster												
Lock & Edit	Configuration	Monitoring	Control	Deployments	Services	Notes							
Release Configuration	General JTA	Messaging	Servers	Replication	Migration	Singleto	n Services	Scheduling	Overload	Health Monitoring	HTTP	Coherence	
omain Structure	Save												
Environment Servers Clusters		ed to configure ontain both exp		-			he following	g settings are u	sed to deter	mine the number and	characte	ristics for thes	e dynamic servers.
Server Templates Migratable Targets Coherence Clusters Machines	Server Templa	ite:	FC	FCUBSMSTemplate •			se	Specifies the server template that is to be used to configure the dynamic servers in this cluster. Only templates that specify this cluster are valid choices. More Info					
Machines													
Machines Virtual Hosts Work Managers Startup and Shutdown Classes	Maximum Nur	nber of Dynan	nic Servers	: 4]				pecifies the maximum fo	number	of dynamic ser	vers in this cluster. More

3) Change the Maximum Number of Dynamic Servers to: 8 and Click Save

ORACLE WebLogic Server Administration Console 12c										õ			
Change Center	Home Log Ou	t Preferences	; 📐 Recor	rd Help		Q				Welc	ome, weblog	gic Connected to: FCUBSDo	main
View changes and restarts	Home >Summary of JDBC Data Sources >Summary of Clusters >Summary of Machines >MAC-1 >Summary of Machines >Summary of Servers >Summary of Server Templates >Summary of Machines >Summary of Clusters >FCUBSCluster												
No pending changes exist. Click the Release Configuration button to allow others to edit	Settings for FCUBSCluster												
the domain.	Configuration	Monitoring	Control	Deployments	Services	Notes							
Release Configuration	General JTA	Messaging	Servers	Replication	Migration	Singleton Services	Scheduling	Overload	Health Monitoring	нттр	Coherence		
Domain Structure	Save												
FCUBSDomain - Environment - Servers 타그Clusters	This page is use Clusters can co	-		-		ster. servers. The following	g settings are u	used to deter	mine the number and	characte	ristics for the	se dynamic servers.	
Server TemplatesMigratable TargetsCoherence ClustersMachinesMachines	Server Templa	te:		FC	JBSMSTer	se	Specifies the server template that is to be used to configure the dynamic servers in this cluster. Only templates that specify this cluster are valid choices. More Info						
Virtual Hosts Work Managers Startup and Shutdown Classes	Maximum Number of Dynamic Servers:						Specifies the maximum number of dynamic servers in this cluster. More Info						
	👍 Server Nan	e Prefix:		FC	JBSMS				pecifies the prefix to b uster. More Info	oe used v	vhen naming r	ew dynamic servers in this	

Activate changes in the Change Center of the Weblogic Console. After activation 4 new Dynamic Servers are added to the Dynamic Cluster

Name 🔅	Туре	Machine	Listen Port
FCUBSMS1	Dynamic	MAC-1	7101
FCUBSM52	Dynamic	MAC-2	7102
FCUBSM53	Dynamic	MAC-1	7103
FCUBSM54	Dynamic	MAC-2	7104
FCUBSMS5	Dynamic	MAC-1	7105
FCUBSMS6	Dynamic	MAC-2	7106
FCUBSMS7	Dynamic	MAC-1	7107
FCUBSMS8	Dynamic	MAC-2	7108

5) Start the 4 new Dynamic Servers and you have doubled you capacity.

9.4 Session Timeout

Session timeouts occur intermittently during load condition. Verify the following

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



FCUBS Weblogic 12c Middleware Practices [February] [2018] Version 14.0.0.0

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