Cluster Creation on Websphere Application Server 8.5 Oracle FLEXCUBE Release 12.4.0.0.0 [May] [2017]



Table of Contents

1.	PURPO	SE	3
2.	INTRO	DUCTION TO WEBSPHERE	3
3.	PRE-RE	QUISITES:	4
4.	STEPS	INVOLVED FOR CLUSTERING	5
2	4.1 Cr	EATE PROFILE	5
	4.1.1	Create Deployment Manager Profile	9
2	4.2 Cre	ATE NODE	14
	4.2.1	Start Node Agents	17
Z	4.3 Cre	ATE CLUSTER	
	4.3.1	Add Cluster Members	
	4.3.2	Start Cluster	
Z	4.4 Cre	ATE PROXY SERVER	22
	4.4.1	Start Proxy Server	
Z	4.5 Cor	IFIGURE VIRTUAL HOST	26
	4.5.1	Virtual Host Setup	27
5.	CREAT	E RESOURCES IN CLUSTER SCOPE	30
6.	DEPLO	Y APPLICATION TO CLUSTER	33
	6.1.1	Test the application	



1. Purpose

This document explains steps to create Cluster on Websphere Application Server 8.5 and also setup the proxy.

2. Introduction to Websphere

IBM websphere application server cluster deployment contains the below key elements

- Cell
- Nodes
 - Deployment Manager Node- "DMGR"
 - Node- "NodeXX"
 - Node Agent- "NAXX"
- Profiles
- Cluster
- Cluster Members
- Data Sources





- Cell: A cell is a grouping of nodes into a single administrative domain. In a Network Deployment environment, a cell can consist of multiple nodes (and node groups), which are all administered from a single point, the deployment manager.
- Node: A node is an administrative grouping of application servers for configuration and operational management within one operating system instance
- Node Agent: In distributed server configurations, each node has a node agent that works with the deployment manager to manage administration processes. A node agent is created automatically when you add (federate) a stand-alone node to a cell.



- Cluster: A cluster is a logical collection of application server processes that provides workload balancing and high availability. Application servers that belong to a cluster are members of that cluster and must all have identical application components deployed on them.
- A profile is a Websphere runtime environment formed by collection of User data and Product files.
 Product Files are shared application binaries for Websphere. User data is set of user customizations for a specific runtime environment.

Prominent profile types are:

- Stand-alone Application Server: An application server environment runs Enterprise Application. Application server is managed from its own administrative console and functions independently from other application server.
- Deployment Manager: A Deployment Manager manages operations for a logical group or cell of other servers. It is the central administration point of a cell that consists of multiple nodes and node groups in a distributed server configuration. The deployment manager uses the node agent to manage the application servers within one node. A deployment manager provides management capability for multiple federated nodes and can manage nodes that span multiple systems and platforms. A node can only be managed by a single deployment manager and must be federated to the cell of that deployment manager.

Note ** Deployment Manager is part of Network Deployment Edition of Websphere.

3. Pre-requisites:

Before proceeding with the cluster setup ensure that the below resources are created

- JDBC Provider
- Datasource
- Queue Connection Factory
- JMS Queue

The instructions for resource creation are available in document <installer>\Docs\WEBSPHERE\Resource_Creation_WAS.doc

- For SSL configuration in Websphere, refer to the document SSL_Configuration_WAS.doc
- For application deployment, refer to document FCUBS_Application_WAS.doc
- For deployment of Gateway applications, refer to document GATEWAY_Applications_WAS.doc



4. Steps involved for Clustering

4.1 Create Profile

Go to Profile Management Tool

Navigation: IBM WebSphere > IBM WebSphere Application Server V8.5 > Tools > Profile Management Tool





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	WebSp	ere Customization Toolbox 8.5	080
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Navigation : Application Server > Next

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WebSphere Application Server Cell (deployment manager and a federated application server) Management	
Application server Custom profile Secure proxy (configuration-only)	
Description	
An application server environment runs your enterprise applications. WebSphere Application Server is managed from its own administrations console and functions independently from all other application servers.	lve
< Back Next > Cancel	finish





Navigation: Enable administrative security > Next

₽	Profile Management Tool 8.5	
Administrative Security	,	۹.
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websphere		
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Confirm password:		
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Navigation : Create Summary

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Location: /opt/IBM/WebSphere/AppServer/profiles/AppSrv06	
Disk space required: 200 MB	
Profile name: AppSrv06	
Make this profile the default: True	
Performance tuning setting: Standard	
Node name: ofss220367Node01	
Server name: server1	
Host name: ofss220367.in.oracle.com	
Deploy the administrative console (recommended): True	
Deploy the default application: True	
Enable administrative security (recommended): True	
Administrative console port: 9060	
Administrative console secure port: 9043	
HTTP transport port: 9080	
HTTPS transport port: 9443	
Bootstrap port: 2809	
SOAP connector port: 8880	
Run application server as a service: False	v
	c gack Create Cancel Brish

Navigation : Finish

>	Profile Management Tool & 5	
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he next step is to deci	de whether to federate the application server into a deployment manager cell.	
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ou can start and stop t erification test and oth	he application server from the command line or the first steps console. The first steps co er information and features that relate to the application server.	onsole also has links to an installation
Z Launch the Rist st	teps console.	



4.1.1 Create Deployment Manager Profile

Navigation : *Profile Management Tool > Create*

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User Manual



Start Deployment Manager & Open Administrative Console

Navigation : IBM WebSphere > IBM WebSphere Application Server V8.5 > Profiles > Dmgr[i]>Start the deployment *manager* > *Administrative console*





Log into Deployment Manger Console



Navigation : System administration > Nodes > Add Node

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4.2 Create Node

WebSphere. software View: All tasks . Close page Guided Activities Use this page to add either a managed or an unmanaged node. Servers Managed node
 Spectras the treaston of a managed node. A managed node contains an application server process that runs within the deployment manager cell.
 The managed node is associated with a node agent process that maintains the configuration for the node and controls its operation. Choosing this
 option results in running the add node utility to federate an existing stand-alone application server. Applications Jobs
 ★ Services Specifies the creation of an unmanaged node. An unmanaged node represents a node in the topology that does not have an application server process or a node agent process. Unmanaged nodes are for other server processes, such as web servers that exist on their own node in the topology. Security
 Operational policies Recover an existing node Spacifies to replace a damaged node in the cell. First, create a new profile to replace the damaged node and give it the same profile and node names. Then use this option to replace the damaged node in the cell with the new node. Environment System administration System Administration
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 Castellade Datallation Data Service
 Castella Genetity
 Users and Groups Next Cancel Users and Groups Monitoring and Tuning Troubleshooting Service integration IDDU

Navigation : System administration > Nodes > Add Node



Provide the following field information and Click 'OK'

Host	: Host Machine with running Application Server
JMX Connector type	: SOAP
JMX Connector Port	: SOAP_CONNECTOR_ADDRESS of Application Server
Application server user name	: Application server user id
Application server password	: Application server password
Deployment manager user name	: Deployment manager user id
Deployment manager password	: Deployment manager password

WebSphere. software	Welcome admin				
View: All tasks	Nodes			cl	ose page
Velone Velone Velone Velone Activities Applications Applications Service Service Resource Resource Security Velone Velon	Add Managed Node Use this page to identify a stand-alone application server process that is running. Start the application server, if necessary, or add the node from the command line by running the additode command from the bin directory of the stopped application server profile. Node connection • Indet for the command line by running the additode command from the bin directory of the stopped application server profile. • Indet for the command line by running the additode command from the bin directory of the stopped application server profile. • Indet for the command line by running the additode command from the bin directory of the stopped application server profile. • JMX connector to prot • JMX connector port • JMX connector port	7 =	Help Field help For field he select a fie marker wh cursor is di Page help More inforr this page	lp inform d label en the h splayed. nation a	mation, or list elp
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Applications	ADMU0506t Server name: server1			
ti John	ADMU2010t Stopping all server processes for node afss220367Node01			
+ Devices	ADMU0510t Server server1 is now STOPPED			
k Resources	ADMU00241: Deleting the old backup directory.			
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e Applications	this ce	II. The first node is the deployn	nent manager. Add new no	des to the o	ell and to this list by cl	icking Add	when
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Create necessary number of nodes following same instructions above:





4.2.1 Start Node Agents

MobSphere, software Welcome admin Close page ± Joks E terrices 7 - Help A Resources Field help Node agents For field help information, selec field label or list n when the help cu displayed. • Plumine Operations Use this page to manage node agents and application servers on the node that a node agent manages. The node agent process serves as an intermediary between the application servers on the node and the deployment manager. The node agent process runs on every node and is specialized to perform node-specific administration functions, such as server process monitoring, configuration synchronization, the transfer, and request routing. A becurity • Operational policies * Environment System administration Page help gystem adversation
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 Task Management
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 job scheduler
 Voual lostor Date Service
 Cansale Identity Total 2 A Users and Groups (a) Monitoring and Tuning Troubleshooting A Service Integration E UDDI

Navigation : System administration> Node agents>Restart



4.3 Create Cluster

Navigation: Servers>Clusters> WebSphere application server clusters > New

enacle.com https://ofss220267.in.onacle.com/9044/ibm/console/login.do?action=secure		: · · · 28 👌 🖓 · Co	ogle 🛛 🇌 🚔	
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L Services				
I Resources				
Runtime Operations				
± Security				
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it Environment				
± System administration				
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Navigation : Uncheck [Prefer Local] > Next

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Server S	Step 1: Enter basic duster information Step 2: Create first duster member Step 3: Create additional duster members Step 4: Summary Itest Cancel	Enter basic cluster information CLUSTER_: CLUSTER_: Preferioat: Specifies whether enterprise bean requests will be routed to the node on which the client raides when possible. Configure HTTP session memory-to-memory replication	P M tt	ilect a field Ibel larker when the Israor is displayed age help are information : Is page	l or list help i. <u>about</u>
) Applications					
Services					
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Runtime Operations	E				
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4.3.1 Add Cluster Members



Add required number of cluster members

Navigation : *Add Member* > *Next*

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4.3.2 Start Cluster







4.4 Create Proxy Server

Navigation : Servers > Server Types > WebSphere proxy servers > New



Navigation : [Select appropriate Node] > Next

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4.4.1 Start Proxy Server

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4.5 Configure Virtual Host

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Navigation : Environment>Virtual hosts>proxy_host

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5. Create Resources in Cluster Scope

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Create Message Listeners for individual Servers in Cluster

Navigation : *Middleware servers* > *MS*_1 > *Message listener service* > *Listener Ports*

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Navigation : *Middleware* servers > *MS*_2 > *Message listener* service > *Listener Ports*

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6. Deploy Application to Cluster

MobSphere, software View: All tasks options for installing enterprise · Guided Activities and module ± Servers Map modules to servers Applications Specify targets such as application servers or clusters of application servers where you want to install the modules. All applications
 New Application
 Install New Mid opency might address and the installed on the same application server or dispersed among serveral application specify the Web servers as targets that serve as routers for requests to this application. The plug-in configuration file each Web server is generated, based on the applications that are routed through. 2: Map utes to se Application Types WebSphere enterprise appl
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While deploying ensure the application is installed to Cluster





6.1.1 Test the application

Make a note of the ports *PROXY_HTTPS_ADDRESS/PROXY_HTTP_ADDRESS* to access the application.

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Navigation : Servers > Server Types > WebSphere proxy servers > [proxy_server_1] > Ports

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URL : http://<host>:<PROXY_HTTP_ADDRESS>/FCJNeoWeb or https://<host>:<PROXY_HTTPS_ADDRESS>/FCJNeoWeb



ORACLE

FCUBS_Cluster_Creation_WAS8.5 [May] [2017] Version 12.4.0.0.0

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