

Cluster Creation on Websphere Application Server  
Oracle FLEXCUBE Universal Banking  
Release 14.3.0.0.0  
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# 1. Purpose

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

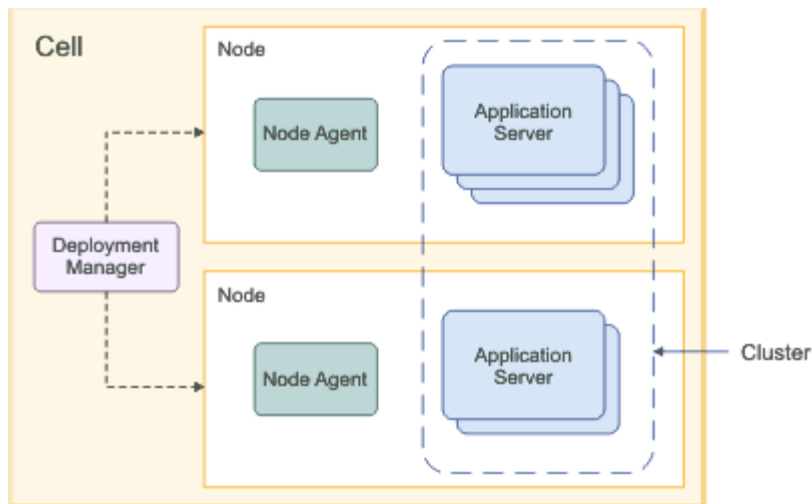
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## 2. Introduction to Websphere

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

Profile



- 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.

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## 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\WEBSHERE\Resource\_Creation\_WAS.doc

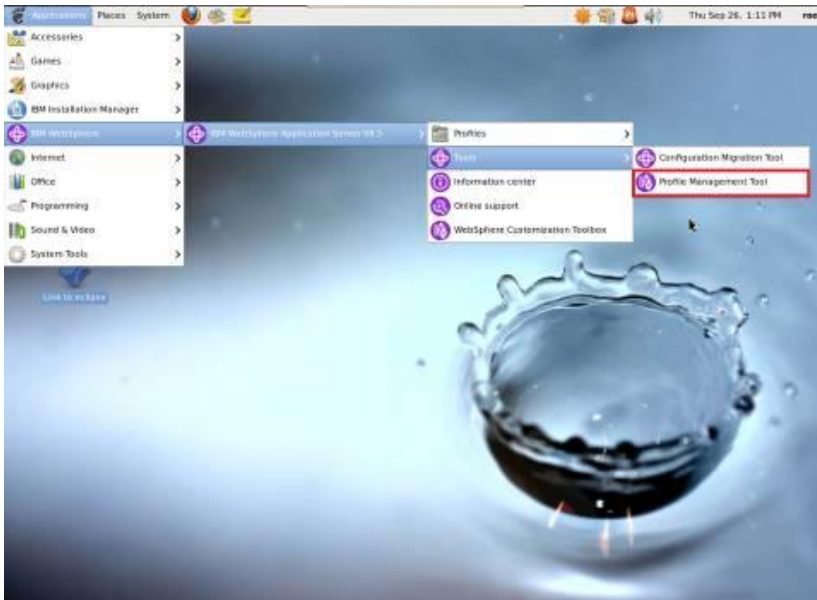
- For SSL configuration in Websphere, refer to the document SSL\_Configuration\_WAS.doc
- For application deployment, refer to document FCUBS\_Application\_WAS.doc
- For deployment of Gateway applications, refer to document GATEWAY\_Applications\_WAS.doc

## 4. Steps involved for Clustering

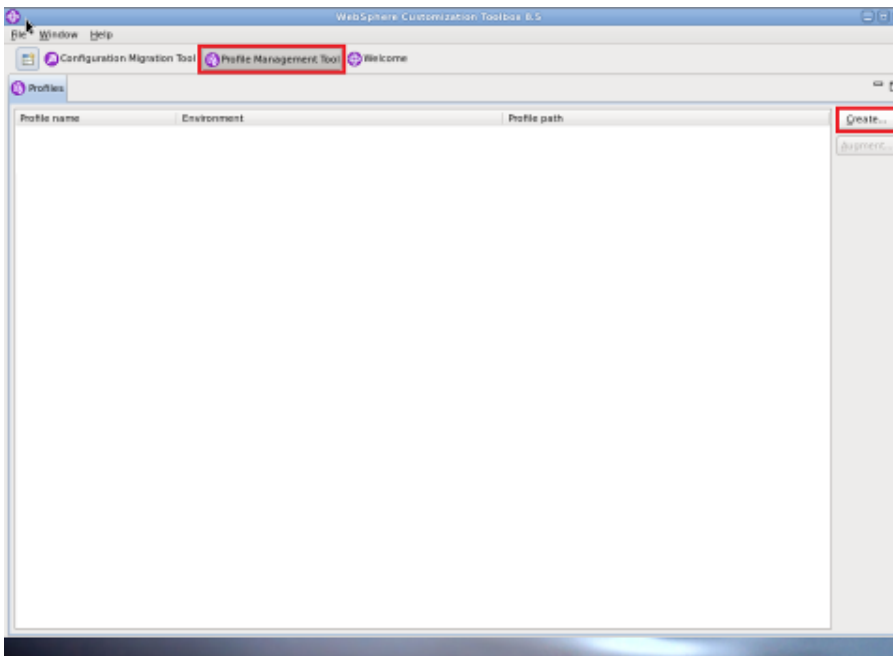
### 4.1 Create Profile

Go to Profile Management Tool

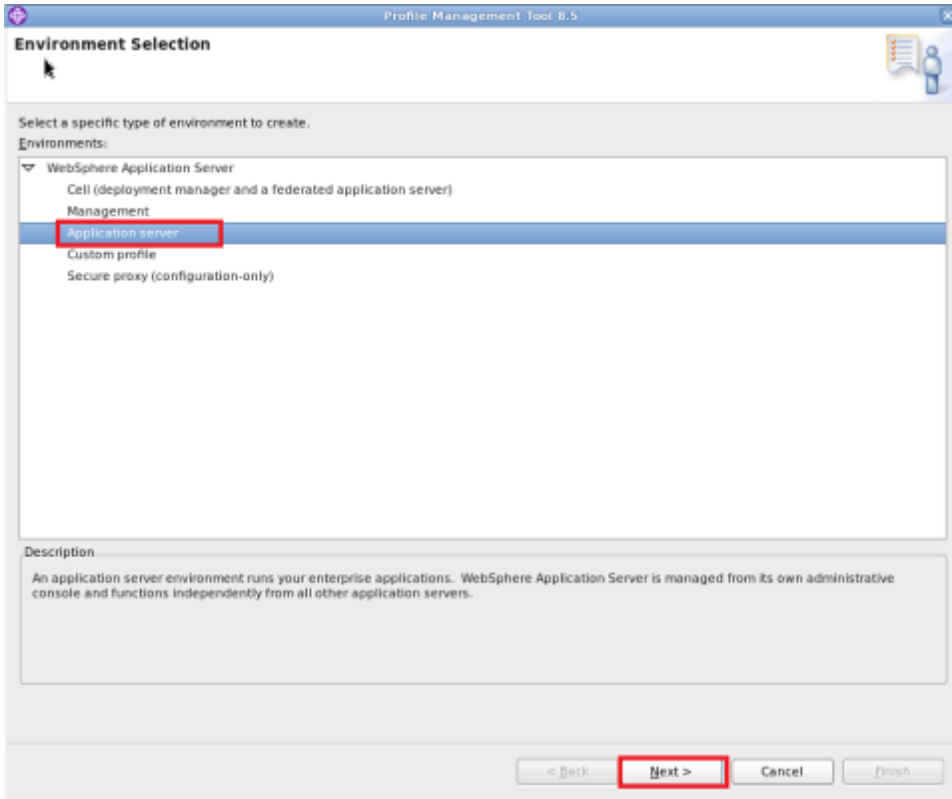
Navigation: IBM WebSphere > IBM WebSphere Application Server V8.5 > Tools > Profile Management Tool



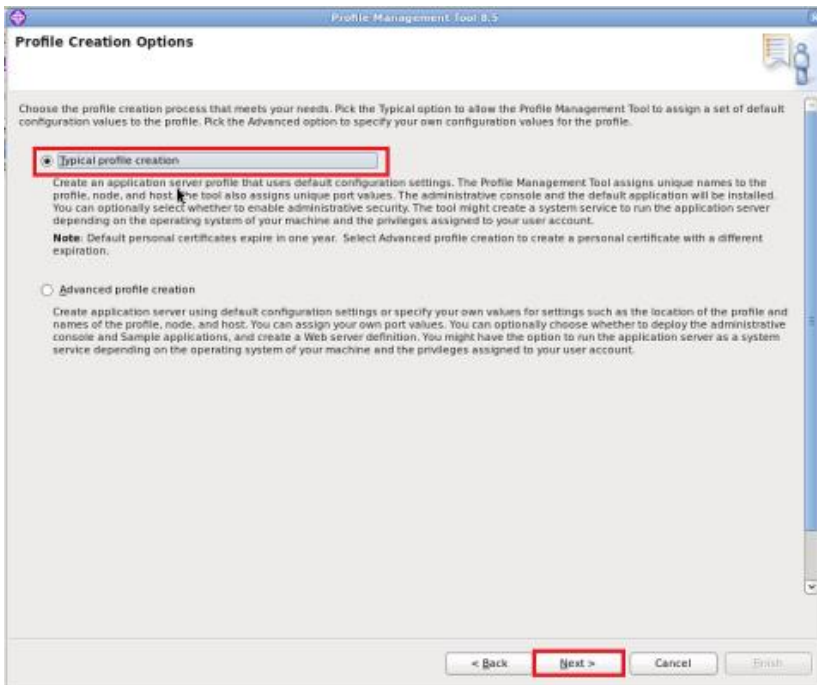
Navigation : Profile Management Tool > Create



**Navigation : Application Server > Next**



**Navigation : Typical profile creation > Next**





**Navigation:** *Enable administrative security > Next*

**Administrative Security**

Choose whether to enable administrative security. To enable security, supply a user name and password for logging into administrative tools. This administrative user is created in a repository within the application server. After profile creation finishes, you can add more users, groups, or external repositories.

**Enable administrative security**

User name: websphere

Password: \*\*\*\*\*

Confirm password: \*\*\*\*\*

See the information center for more information about administrative security.  
[View the online information center](#)

< Back **Next >** Cancel Finish

**Navigation :** *Create Summary*

**Profile Creation Summary**

Review the information in the summary for correctness. If the information is correct, click **Create** to start creating a new profile. Click **Back** to change values on the previous panels.

Application server environment to create: Application server  
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

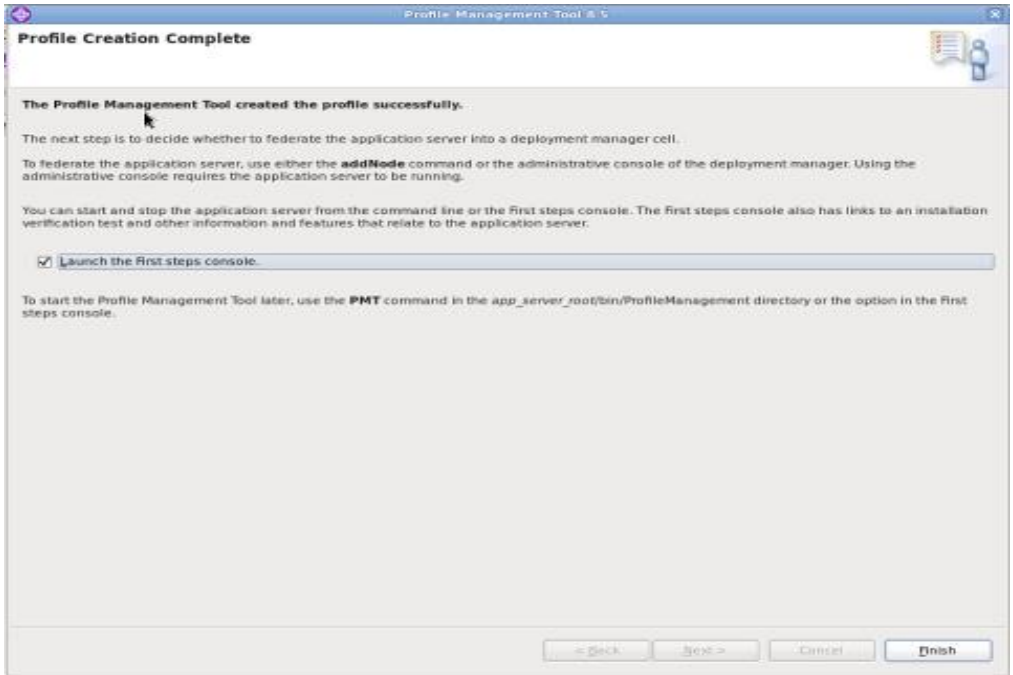
Enable administrative security (recommended): True

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

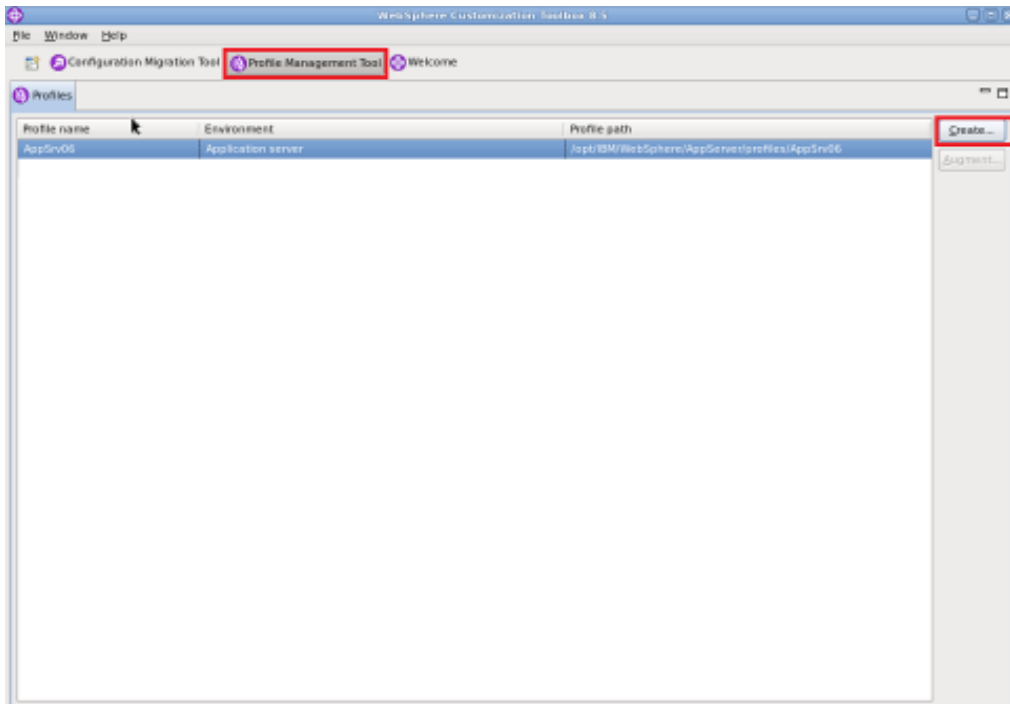
< Back **Create** Cancel Finish

**Navigation :** *Finish*

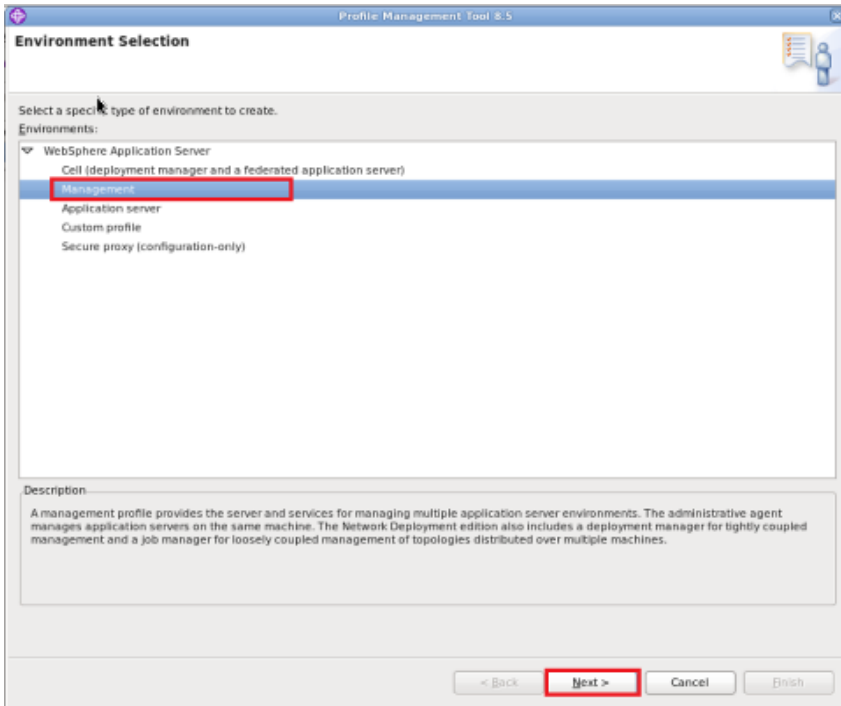


#### 4.1.1 Create Deployment Manager Profile

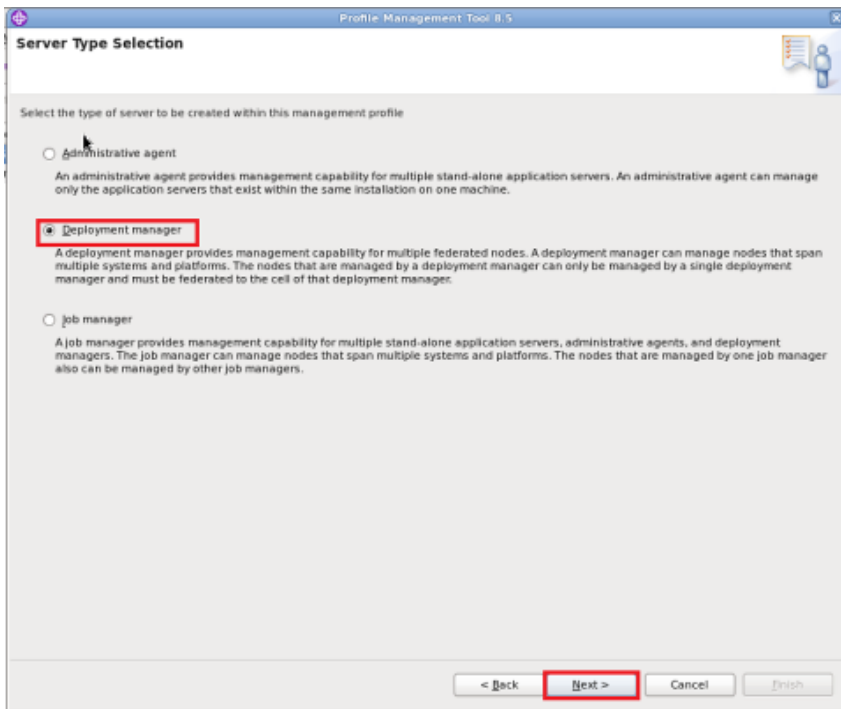
Navigation : *Profile Management Tool* > *Create*



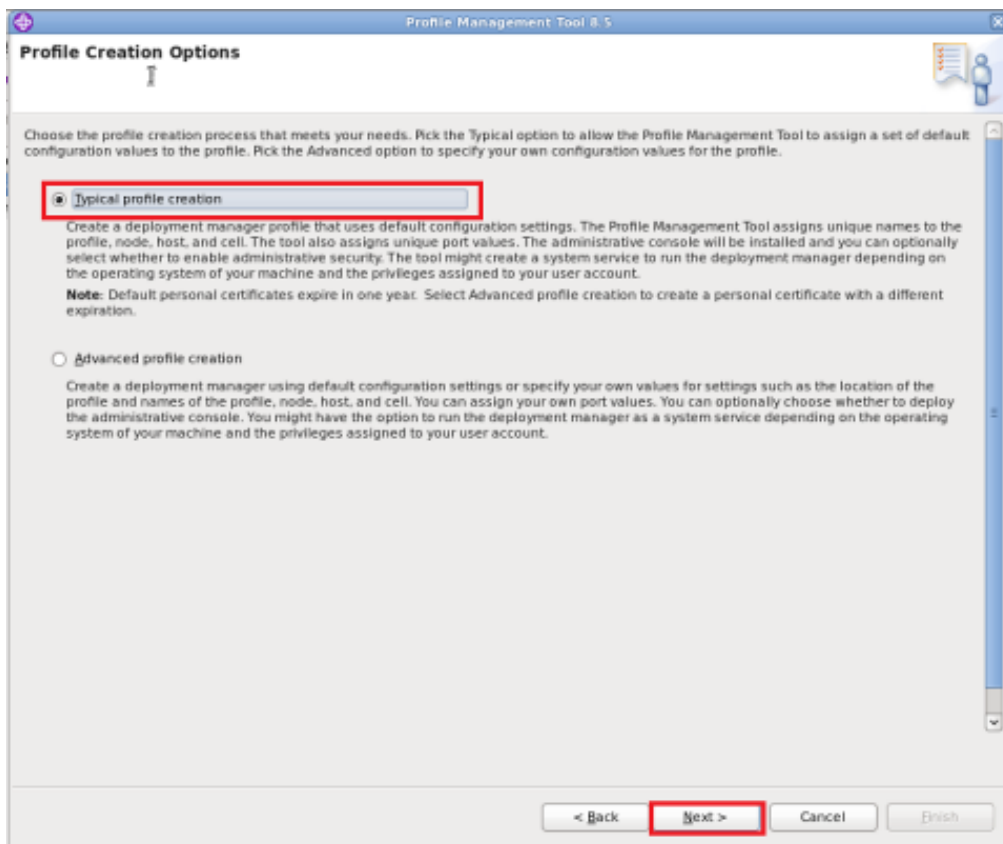
Navigation : *Management* > *Next*



**Navigation :** *Deployment Manager > Next*



**Navigation:** *Typical profile creation > Next*



**Navigation:** *Enable administrative security > Next*

Profile Management Tool 8.5

### Administrative Security

Choose whether to enable administrative security. To enable security, supply a user name and password for logging into administrative tools. This administrative user is created in a repository within the application server. After profile creation finishes, you can add more users, groups, or external repositories.

Enable administrative security

User name:  
admin

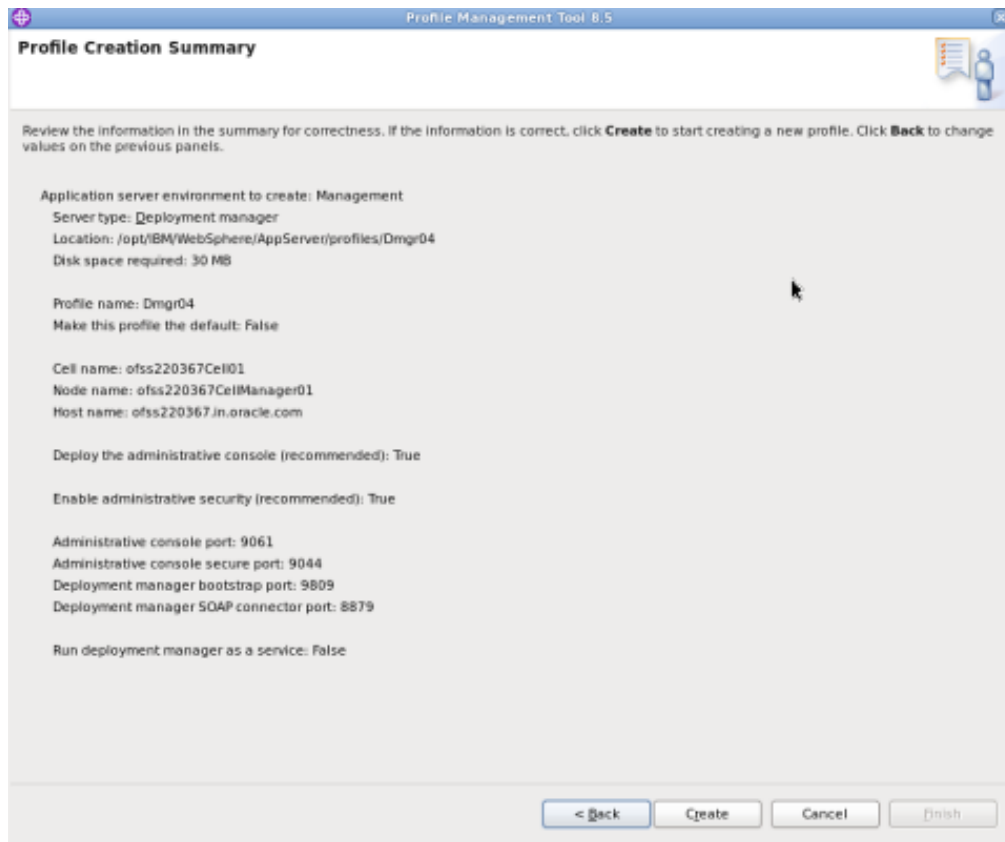
Password:  
\*\*\*\*\*

Confirm password:  
\*\*\*\*\*

See the information center for more information about administrative security.  
[View the online information center](#)

< Back   **Next >**   Cancel   Finish

## Navigation : Create



The screenshot shows a window titled "Profile Management Tool 8.5" with a sub-header "Profile Creation Summary". The window contains a summary of profile creation settings. At the bottom, there are four buttons: "< Back", "Create", "Cancel", and "Finish".

Profile Management Tool 8.5

### Profile Creation Summary

Review the information in the summary for correctness. If the information is correct, click **Create** to start creating a new profile. Click **Back** to change values on the previous panels.

Application server environment to create: Management  
Server type: Deployment manager  
Location: /opt/IBM/WebSphere/AppServer/profiles/Dmgr04  
Disk space required: 30 MB

Profile name: Dmgr04  
Make this profile the default: False

Cell name: ofss220367Cell01  
Node name: ofss220367CellManager01  
Host name: ofss220367.in.oracle.com

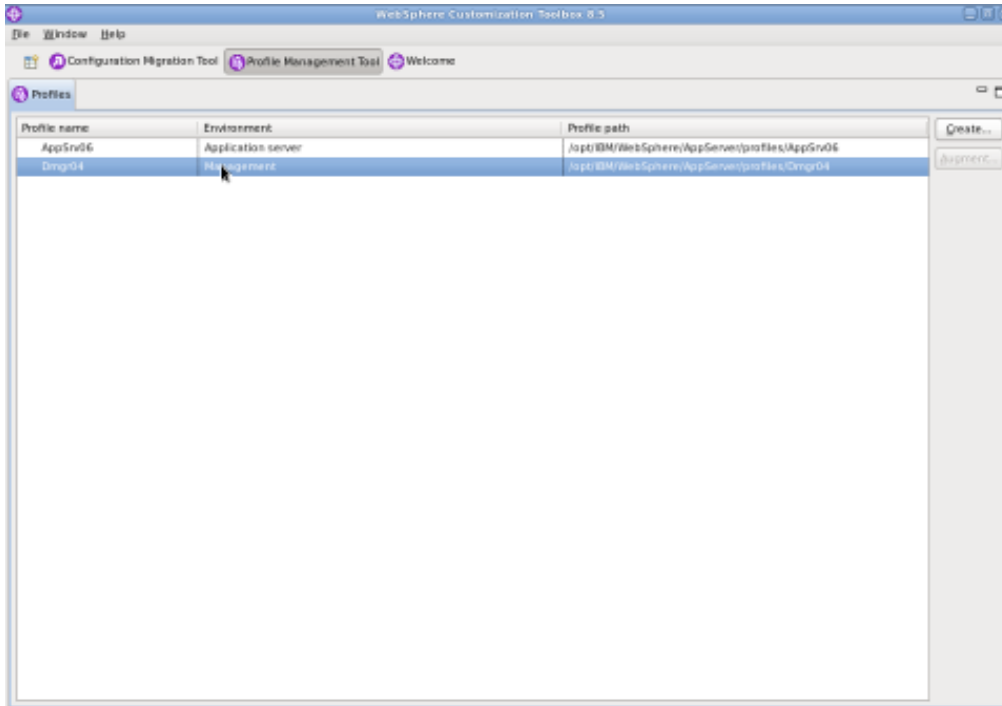
Deploy the administrative console (recommended): True

Enable administrative security (recommended): True

Administrative console port: 9061  
Administrative console secure port: 9044  
Deployment manager bootstrap port: 9809  
Deployment manager SOAP connector port: 8879

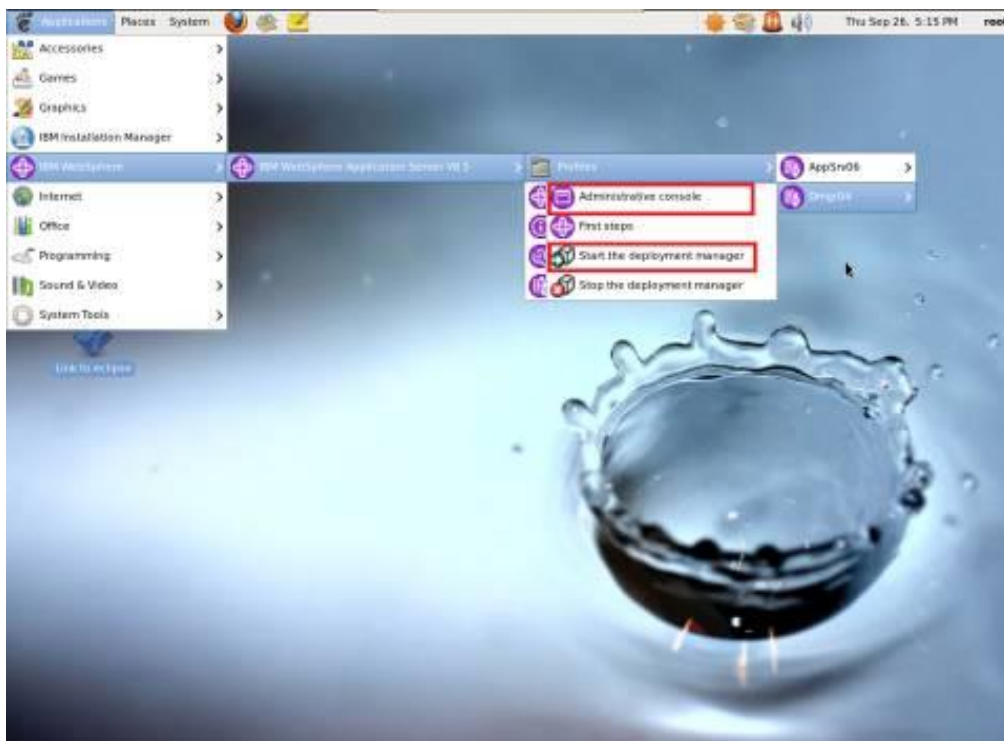
Run deployment manager as a service: False

< Back   Create   Cancel   Finish



Start Deployment Manager & Open Administrative Console

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

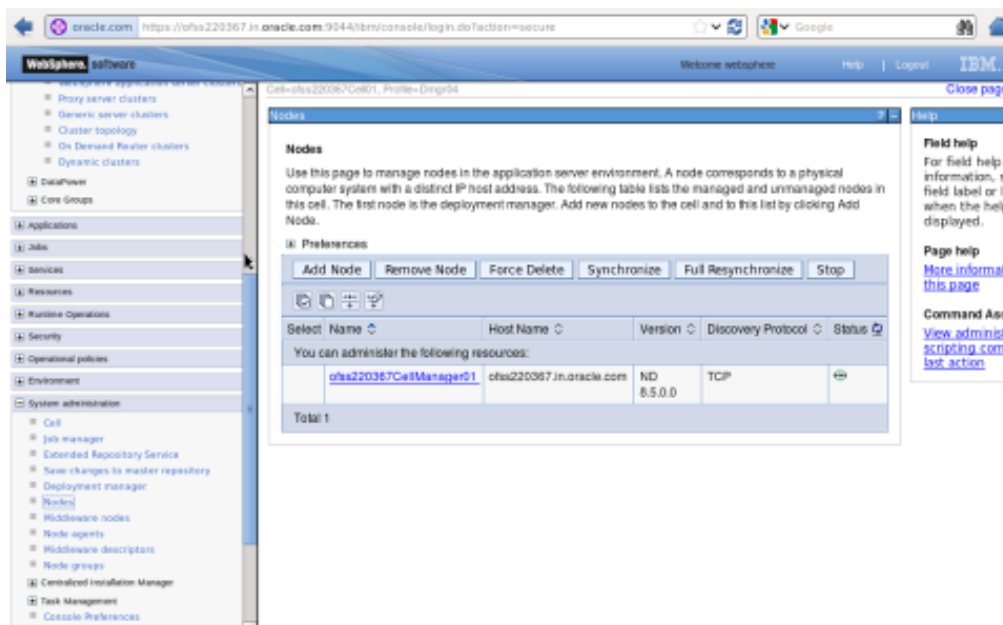




## Log into Deployment Manger Console

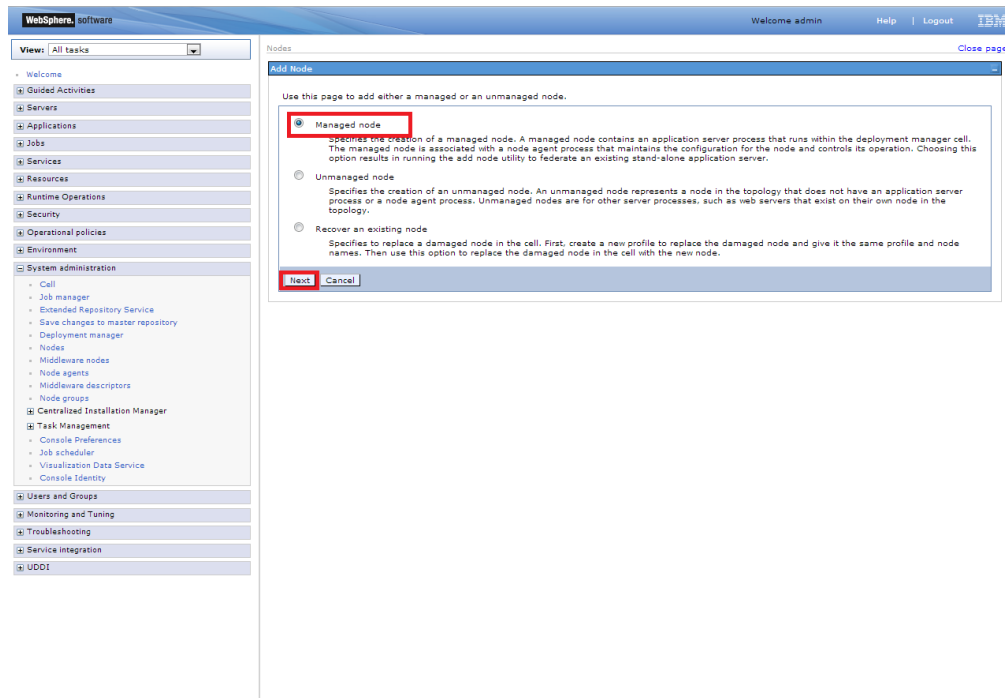


## Navigation : *System administration > Nodes > Add Node*



## 4.2 Create Node

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

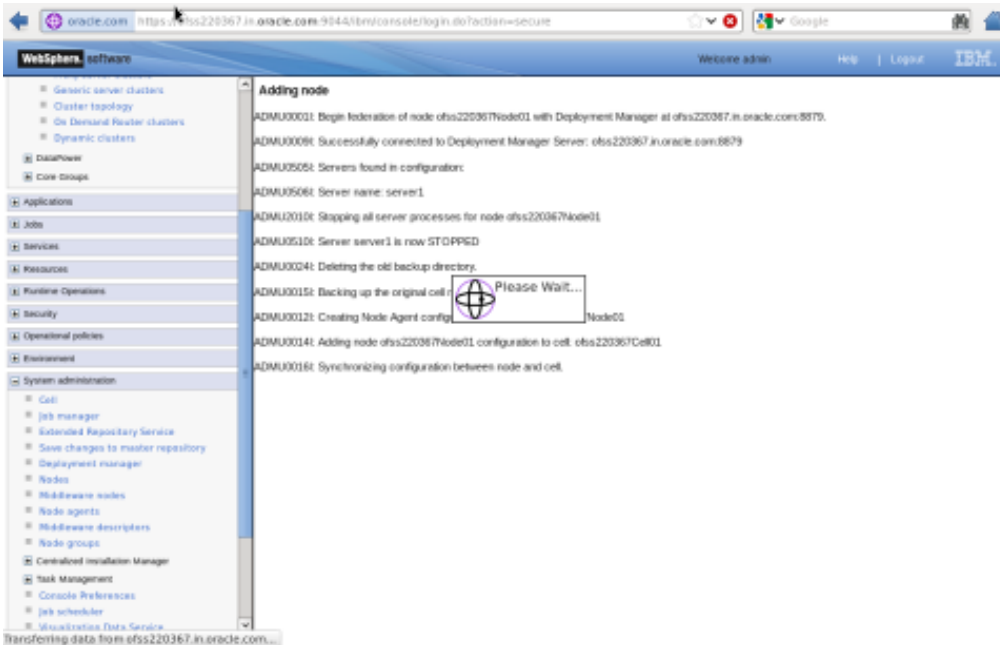
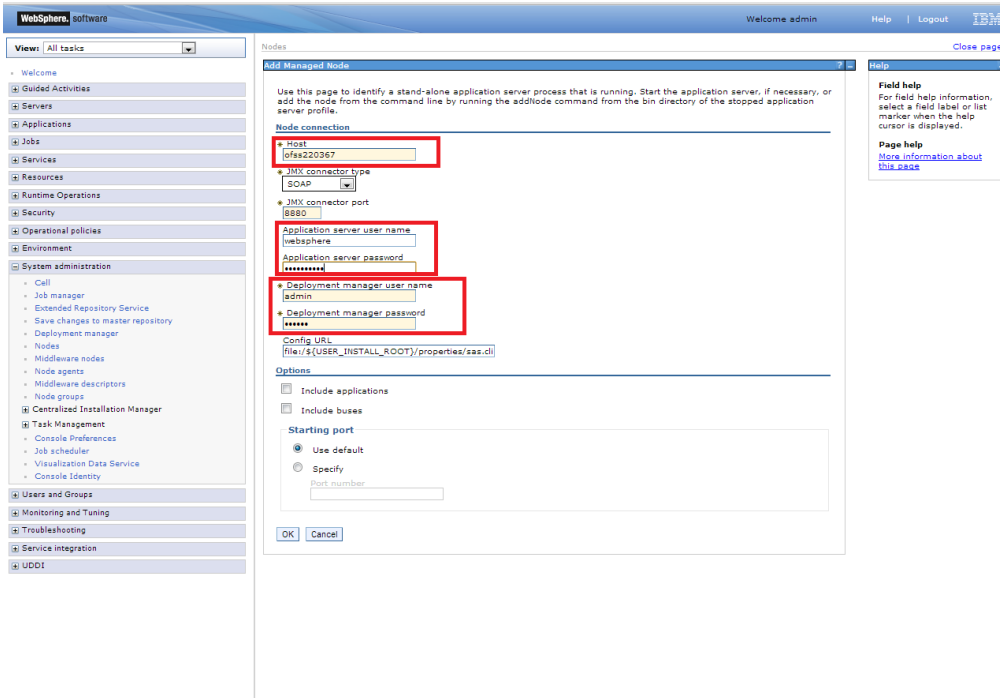
JMX Connector Port : SOAP\_CONNECTOR\_ADDRESS of Application Server

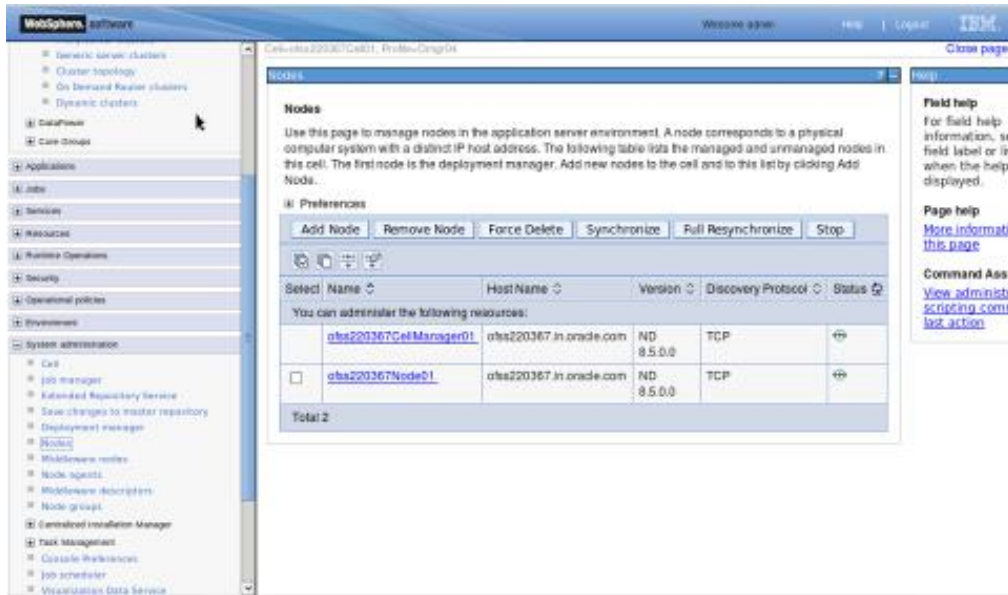
Application server user name : Application server user id

Application server password : Application server password

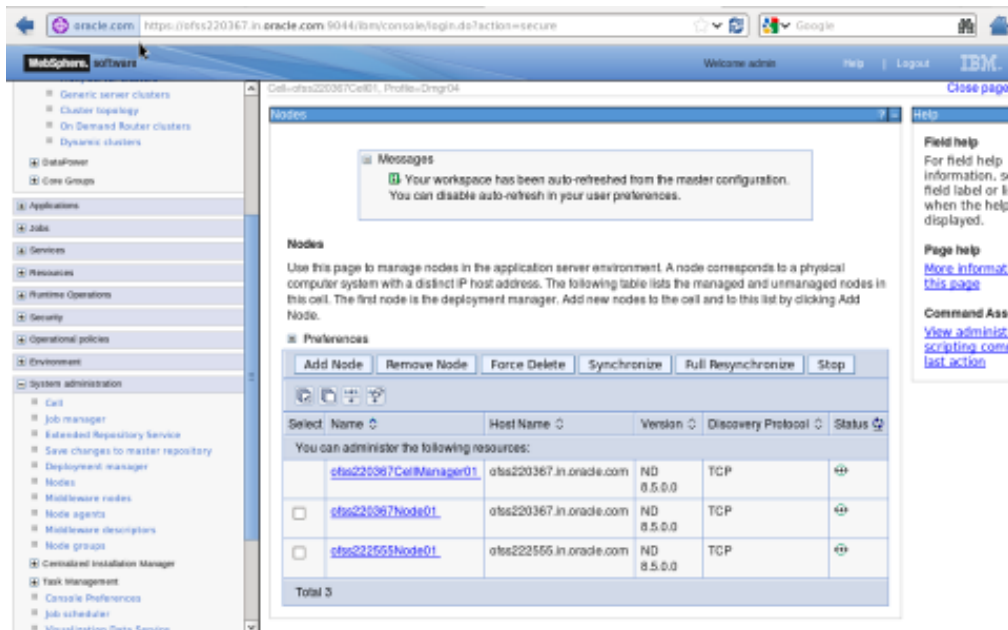
Deployment manager user name : Deployment manager user id

Deployment manager password : Deployment manager password





Create necessary number of nodes following same instructions above:



## 4.2.1 Start Node Agents

Navigation : *System administration> Node agents>Restart*

**Node agents**

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, file transfer, and request routing.

**Preferences**

Stop Restart Restart all Servers on Node

Select Name Node Host Name Version Status

You can administer the following resources:

Select	Name	Node	Host Name	Version	Status
<input type="checkbox"/>	nodeagent	ots222555Node01	ots222555.in.oracle.com	ND 8.5.0.0	OK
<input type="checkbox"/>	nodeagent	ots220367Node01	ots220367.in.oracle.com	ND 8.5.0.0	OK

Total 2

## 4.3 Create Cluster

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

**WebSphere application server clusters**

Use this page to change the configuration settings for a cluster. A server cluster consists of a group of application servers. If one of the member servers fails, requests will be routed to other members of the cluster. Learn more about this task in a [guided activity](#). A guided activity provides a list of task steps and more general information about the topic.

**Preferences**

New... Delete Start Stop Ripplestart ImmediateStop

Select Name Status

Select	Name	Status
None		

Total 0

Navigation : *Uncheck [Prefer Local] > Next*

WebSphere<sup>®</sup> software

Welcome admin Help | Logout

CallInMfs220367 Call03, ProblemMgr04

View: All tasks

Close page

• Welcome

Guided Activities

Servers

- New server
- All servers

Server Types

Clusters

- WebSphere application server clusters
- Proxy server clusters
- Generic server clusters
- Cluster topology
- On Demand Router clusters
- Dynamic clusters

DataPower

Core Groups

Applications

Jobs

Services

Resources

Runtime Operations

Security

Operational policies

Environment

System administration

- Call
- Job manager
- Extended Repository Service
- Save changes to master repository
- Deployment manager
- Nodes
- Middleware nodes
- Node agents
- Middleware descriptors
- Node groups
- Centralized Installation Manager
- Task Management

  - Console Preferences
  - Job scheduler
  - Visualization Data Service
  - Console Identity

Users and Groups

Monitoring and Tuning

Troubleshooting

Create a new cluster

Enter basic cluster information

Cluster name  
[CLUSTER\_1]

Prefer local  
which the client resides when possible.

Configure HTTP session memory-to-memory replication

Next Cancel

Field help  
For field help information, select a field label or list marker when the help cursor is displayed.

Page help  
[View information about this page](#)

## 4.3.1 Add Cluster Members

WebSphere software

Welcome admin Help | Logout IBM

Cell=ofsa220367Cell01, Profile=Dmgr04

Create a new cluster

Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

Step 4: Summary

**Create first cluster member**

The first cluster member determines the server settings for the cluster members. A server configuration template is created from the first member and stored as part of the cluster data. Additional cluster members are copied from this template.

Member name: MS\_1

Select node: ofsa220367Node01(ND 8.5.0.0)

Weight: 2 (0..100)

Generate unique HTTP ports

Select how the server resources are promoted in the cluster: Cluster

Select basis for first cluster member:

- Create the member using an application server template.  
default
- Create the member using an existing application server as a template.  
ofsa220367Cell01/ofsa220367Node01(ND 8.5.0.0)/MS\_1
- Create the member by converting an existing application server.  
ofsa220367Cell01/ofsa220367Node01(ND 8.5.0.0)/MS\_3
- None. Create an empty cluster.

Previous Next Cancel

Field help: For field help information, select a field label or list marker when the help cursor is displayed.

Page help: More information about this page

Add required number of cluster members

Navigation : Add Member > Next

WebSphere software

Welcome admin Help | Logout IBM

Cell=ofsa220367Cell01, Profile=Dmgr04

Create a new cluster

Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

Step 4: Summary

**Create additional cluster members**

Enter information about this new cluster member, and click Add Member to add this cluster member to the member list. A server configuration template is created from the first member, and stored as part of the cluster data. Additional cluster members are copied from this template.

Member name: MS\_2

Select node: ofsa220367Node01(ND 8.5.0.0)

Weight: 2 (0..100)

Generate unique HTTP ports

Add Member

Use the Edit function to modify the properties of a cluster member in this list. Use the Delete function to remove a cluster member from this list. You are not allowed to edit or remove the first cluster member.

Select	Member name	Nodes	Version	Weight
<input type="checkbox"/>	MS_1	ofsa220367Node01	ND 8.5.0.0	2
Total 1				

Previous Next Cancel

Field help: For field help information, select a field label or list marker when the help cursor is displayed.

Page help: More information about this page

## Navigation : Next

**View:** All tasks

**Navigation:** Welcome, Cluster Activities, Servers, Clusters, DataPower, Core Groups, Applications, Jobs, Services, Resources, Runtime Operations, Security, Operational policies, Environment, System administration, Call, Job manager, Extended Repository Service, Save changes to master repository, Deployment manager, Nodes, Middleware nodes, Node agents, Middleware descriptors, Node groups, Centralized installation Manager, Task Management, Console Preferences.

**Create a new cluster**

Step 1: Enter basic cluster information  
 Step 2: Create first cluster member  
 → **Step 3: Create additional cluster members**  
 Step 4: Summary

**Create additional cluster members**

Enter information about this new cluster member, and click Add Member to add this cluster member to the member list. A server configuration template is created from the first member, and stored as part of the cluster data. Additional cluster members are copied from this template.

+ Member name

Select node

+ Weight  
 (0..100)

Generate unique HTTP ports

**Add Member**

Use the Edit function to modify the properties of a cluster member in this list. Use the Delete function to remove a cluster member from this list. You are not allowed to edit or remove the first cluster member.

**Edit** **Delete**

Select	Member name	Nodes	Version	Weight
<input type="checkbox"/>	MS_1	ofas220367Node01	ND 8.5.0.0	2
<input type="checkbox"/>	MS_2	ofas222555Node01	ND 8.5.0.0	2
Total 2				

**Previous** **Next** **Cancel**

**Help**  
**Field help**  
 For field help information, select a field label or list marker when the help cursor is displayed.  
**Page help**  
[More information about this page](#)

## Navigation : Finish

**View:** All tasks

**Navigation:** Welcome, Cluster Activities, Servers, Clusters, DataPower, Core Groups, Applications, Jobs, Services, Resources, Runtime Operations, Security, Operational policies, Environment, System administration, Call, Job manager, Extended Repository Service, Save changes to master repository, Deployment manager, Nodes, Middleware nodes, Node agents, Middleware descriptors, Node groups, Centralized installation Manager, Task Management, Console Preferences.

**Create a new cluster**

Step 1: Enter basic cluster information  
 Step 2: Create first cluster member  
 Step 3: Create additional cluster members  
 → **Step 4: Summary**

**Summary**

Summary of actions:

Options	Values
Cluster Name	CLUSTER_1
Core Group	DefaultCoreGroup
Node group	DefaultNodeGroup
Prefer local	false
Configure HTTP session memory-to-memory replication	false
Server name	MS_1
Node	ofas220367Node01(ND 8.5.0.0)
Weight	2
Clone Template	default
Clone Basis	Create the member using an application server template.
Select how the server resources are promoted in the cluster.	cluster
Generate unique HTTP ports	true
Server name	MS_2
Node	ofas220367Node01(ND 8.5.0.0)
Weight	2
Clone Template	Version 8.5 member template
Generate unique HTTP ports	true

**Previous** **Finish** **Cancel**

**Help**  
**Field help**  
 For field help information, select a field label or list marker when the help cursor is displayed.  
**Page help**  
[More information about this page](#)



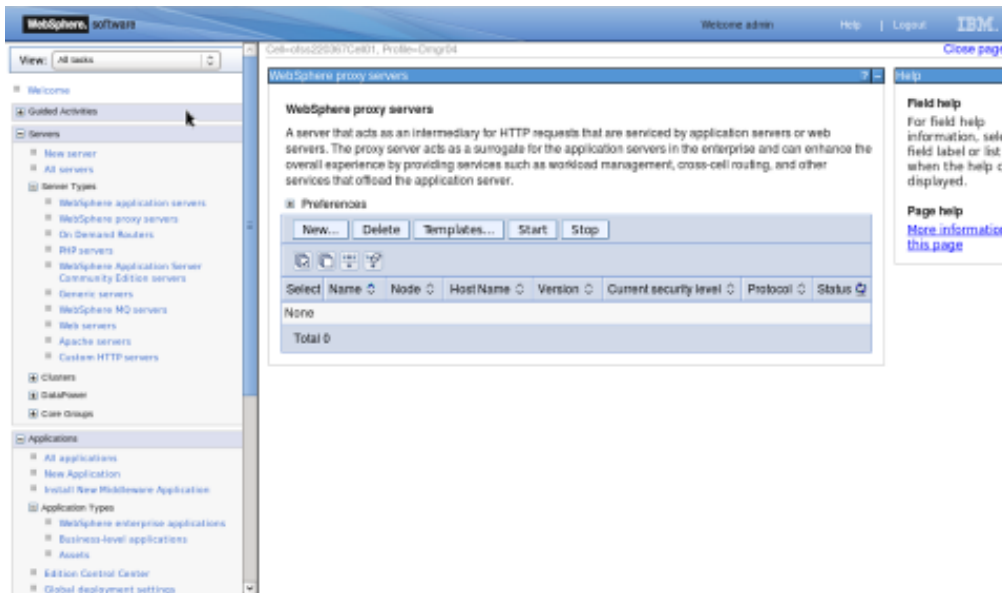
## 4.3.2 Start Cluster

The screenshot shows the WebSphere software administration console. The left-hand navigation pane is expanded to 'Clusters' > 'WebSphere application server clusters'. The main content area displays the 'WebSphere application server clusters' page. At the top, there are buttons for 'New...', 'Delete', 'Start', 'Stop', 'Ripplstart', and 'ImmediateStop'. Below these is a table with columns for 'Select', 'Name', and 'Status'. One cluster, 'CLUSTER\_1', is listed with a checked checkbox and a red 'X' in the status column. A 'Total 1' summary is shown at the bottom of the table. On the right side, there are links for 'Field help', 'Page help', and 'Command Assistant'.

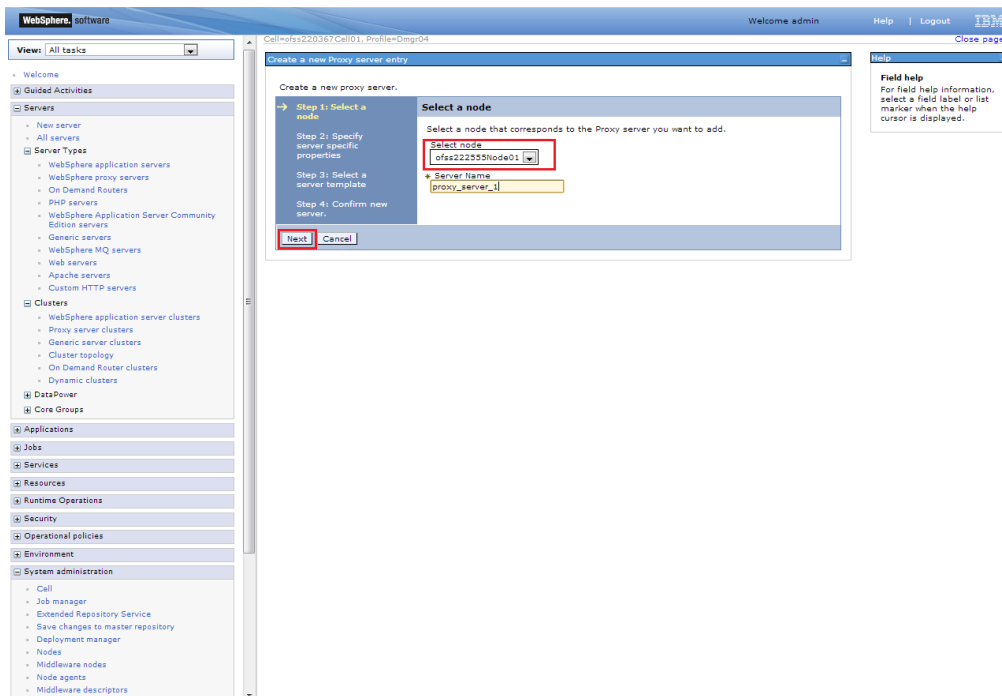
This screenshot shows the same WebSphere software administration console page as above, but with a message box displayed. The message box contains the text: 'The start operation on cluster CLUSTER\_1 has been initiated. It may take several minutes for each cluster member to finish starting.' The table below the message shows that the checkbox for 'CLUSTER\_1' is now unchecked and the status column contains a green arrow icon. The 'Total 1' summary remains at the bottom of the table.

## 4.4 Create Proxy Server

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



Navigation : [Select appropriate Node] > Next



WebSphere, software | Welcome admin | Help | Logout | Close page

Cell:cells220367/Cell01, Profile:Dmgr04

Views: All tasks

Guided Activities

- Servers
  - New server
  - All servers
  - Server Types
    - WebSphere application servers
    - WebSphere proxy servers
    - On Demand Routers
    - PHP servers
    - WebSphere Application Server Community Edition servers
    - Generic servers
    - WebSphere MQ servers
    - Web servers
    - Apache servers
    - Custom HTTP servers
  - Clusters
    - WebSphere application server clusters
    - Proxy server clusters
    - Generic server clusters
    - Cluster topology
    - On Demand Router clusters
    - Dynamic clusters
  - DataPower
  - Core Groups
- Applications
- Jobs
- Services
- Resources
- Runtime Operations
- Security
- Operational policies
- Environment
- System administration
  - Cell
  - Job manager
  - Extended Repository Service
  - Save changes to master repository
  - Deployment manager
  - Nodes
  - Middleware nodes
  - Node agents
  - Middleware descriptors

Create a new Proxy server entry

Step 1: Select a node

Step 2: Specify server specific properties

Step 3: Select a server template

Step 4: Confirm new server.

Specify server specific properties

Supported protocols

- HTTP
- SIP
- Generate unique ports

Previous Next Cancel

Field help  
For field help information, select a field label or list marker when the help cursor is displayed.

WebSphere, software | Welcome admin | Help | Logout | Close page

Cell:cells220367/Cell01, Profile:Dmgr04

Views: All tasks

Guided Activities

- Servers
  - New server
  - All servers
  - Server Types
    - WebSphere application servers
    - WebSphere proxy servers
    - On Demand Routers
    - PHP servers
    - WebSphere Application Server Community Edition servers
    - Generic servers
    - WebSphere MQ servers
    - Web servers
    - Apache servers
    - Custom HTTP servers
  - Clusters
    - WebSphere application server clusters
    - Proxy server clusters
    - Generic server clusters
    - Cluster topology
    - On Demand Router clusters
    - Dynamic clusters
  - DataPower
  - Core Groups
- Applications
- Jobs
- Services
- Resources
- Runtime Operations
- Security
- Operational policies
- Environment
- System administration
  - Cell
  - Job manager
  - Extended Repository Service
  - Save changes to master repository
  - Deployment manager
  - Nodes
  - Middleware nodes
  - Node agents
  - Middleware descriptors

Create a new Proxy server entry

Step 1: Select a node

Step 2: Specify server specific properties

Step 3: Select a server template

Step 4: Confirm new server.

Select a server template

Select the template that best specifies the attributes of the server you wish to create.

Select	Name	Type	Describe the purpose of this template
<input checked="" type="radio"/>	proxy_server_foundation	System	The WebSphere Default Proxy Server Template

Previous Next Cancel

Field help  
For field help information, select a field label or list marker when the help cursor is displayed.

**WebSphere software** | Welcome admin | Help | Logout | Close page

View: All tasks

Guided Activities

- Servers
  - New server
  - All servers
  - Server Types
    - WebSphere application servers
    - WebSphere proxy servers
    - On Demand Routers
    - PHP servers
    - WebSphere Application Server Community Edition servers
    - Generic servers
    - WebSphere MQ servers
    - Web servers
    - Apache servers
    - Custom HTTP servers
  - Clusters
    - WebSphere application server clusters
    - Proxy server clusters
    - Generic server clusters
    - Cluster topology
    - On Demand Router clusters
    - Dynamic clusters
- DataPower
- Core Groups

Applications

Jobs

Services

Resources

Runtime Operations

Security

Operational policies

Environment

System administration

- Cell
- Job manager
- Expanded Repository Service
- Save changes to master repository
- Deployment manager
- Nodes
  - Middleware nodes
  - Node agents
  - Middleware descriptors

**Create a new Proxy server entry**

Step 1: Select a node

Step 2: Specify server specific properties

Step 3: Select a server template

→ Step 4: Confirm new server.

**Confirm new server.**

The following is a summary of your selections. Click the Finish button to complete the Proxy server creation. If there are settings you wish to change, click on the Previous button to review the server settings.

Summary of actions:

- New server "proxy\_server\_1" will be created on node "ofsa22255Node01", in a new server process.
- New Proxy server "proxy\_server\_1" will be created on node "ofsa22255Node01", in a new server process.

Previous **Finish** Cancel

**Field help**  
For field help information, select a field label or list marker when the help cursor is displayed.

**WebSphere software** | Welcome admin | Help | Logout | Close page

View: All tasks

Guided Activities

- Servers
  - New server
  - All servers
  - Server Types
    - WebSphere application servers
    - WebSphere proxy servers
    - On Demand Routers
    - PHP servers
    - WebSphere Application Server Community Edition servers
    - Generic servers
    - WebSphere MQ servers
    - Web servers
    - Apache servers
    - Custom HTTP servers
  - Clusters
  - DataPower
  - Core Groups
- Applications
  - All applications
  - New Application
  - Install New Middleware Application
  - Application Types
    - WebSphere enterprise applications
    - Business-level applications
    - Assets
  - Fabric Control Center
  - Global deployment settings

**Messages**

- New server is created successfully.
- Modify variables, resources, and other server configuration settings, such as message broker queue names before running the newly created server.
- Changes have been made to your local configuration. You can:
  - Save directly to the master configuration.
  - Review changes before saving or discarding.
- An option to synchronize the configuration across multiple nodes after saving can be enabled in [Preferences](#).
- The server may need to be restarted for these changes to take effect.

**WebSphere proxy servers**

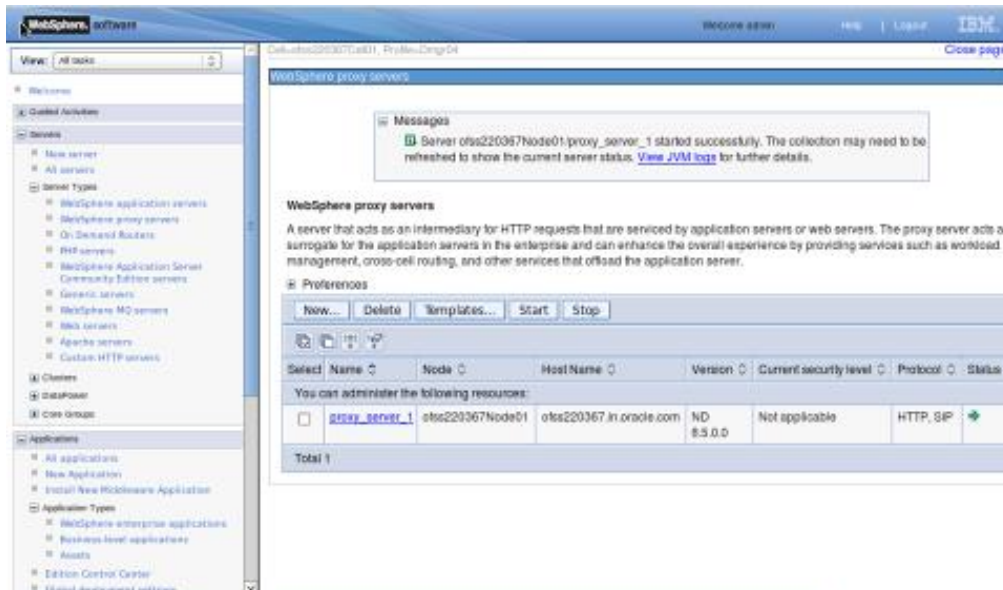
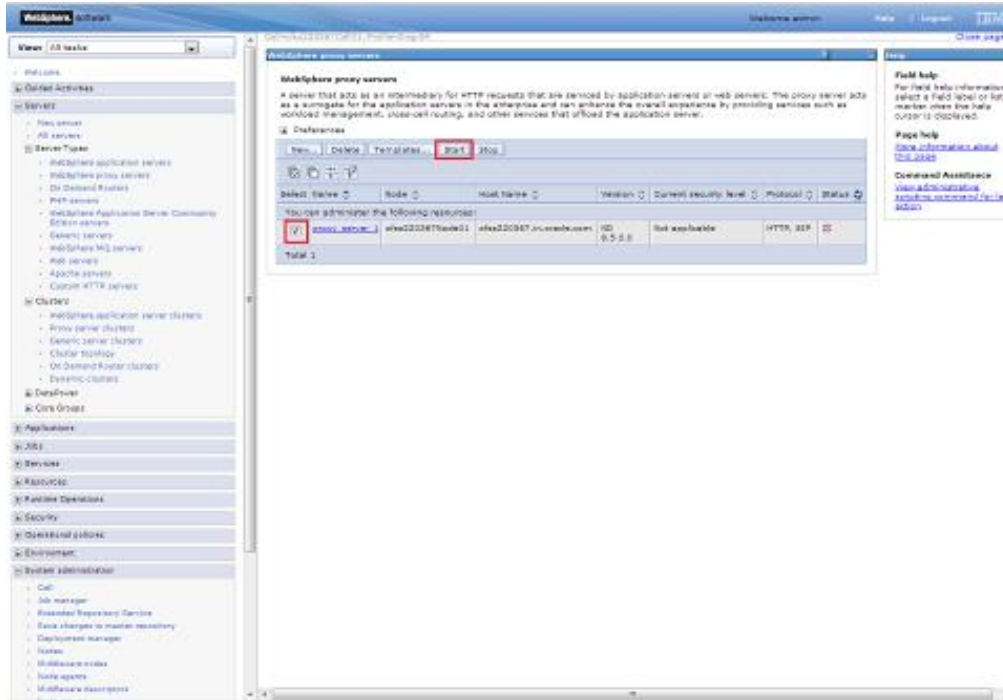
A server that acts as an intermediary for HTTP requests that are serviced by application servers or web servers. The proxy server acts as a surrogate for the application servers in the enterprise and can enhance the overall experience by providing services such as workload management, cross-cell routing, and other services that offload the application server.

**Preferences**

New... Delete Templates... Start Stop

Select	Name	Nodes	Host Name	Version	Current security level	Protocol	Status
<input type="checkbox"/>	proxy_server_1	ofsa22255Node01	ofsa220367.in.oracle.com	ND 8.5.0.0	Not applicable	HTTP_SIP	⚠
<b>Total 1</b>							

## 4.4.1 Start Proxy Server



## 4.5 Configure Virtual Host

Make a note of "WC\_defaulthost"/"WS\_defaulthost\_secure" port for server MS1 : 9081/9444

**Middleware services > MS\_1 > Ports**  
Specify the TCP/IP ports this server uses for connections.

**Preferences**

You can administer the following resources:

Service	Port Name	Host	Port	Transport Details
<input type="checkbox"/>	WC_defaulthost_secure	*	9445	Use associated listener
<input type="checkbox"/>	WC_defaulthost	*	9082	Use associated listener
<input type="checkbox"/>	WC_adminhost_secure	*	9045	Use associated listener
<input type="checkbox"/>	WC_adminhost	*	9042	Use associated listener
<input type="checkbox"/>	SOAP_CONNECTOR_ADDRESS	oracle20067.in.oracle.com	8861	No associated transports
<input type="checkbox"/>	SOAP_DEFAULTHOST_SECURE	*	9043	Use associated listener
<input type="checkbox"/>	SOAP_DEFAULTHOST	*	9042	Use associated listener
<input type="checkbox"/>	SOAP_MQ_INCOMING_SECURE_ADDRESS	*	8879	Use associated listener
<input type="checkbox"/>	SOAP_MQ_INCOMING_ADDRESS	*	8889	Use associated listener
<input type="checkbox"/>	SOAP_ENDPOINT_SECURE_ADDRESS	*	7287	Use associated listener
<input type="checkbox"/>	SOAP_ENDPOINT_ADDRESS	*	7278	Use associated listener
<input type="checkbox"/>	SOAP_SOAP_DEFAULTHOST_LISTENER_ADDRESS	oracle20067.in.oracle.com	9407	No associated transports
<input type="checkbox"/>	OVERLAY_MQ_LISTENER_ADDRESS	*	11009	No associated transports
<input type="checkbox"/>	OVERLAY_TCP_LISTENER_ADDRESS	*	11810	No associated transports
<input type="checkbox"/>	ORB_LISTENER_ADDRESS	oracle20067.in.oracle.com	9102	No associated

Make a note of “WC\_defaulthost”/“WC\_defaulthost\_secure” for MS2 : 9082/9445

**Middleware services > MS\_2 > Ports**  
Specify the TCP/IP ports this server uses for connections.

**Preferences**

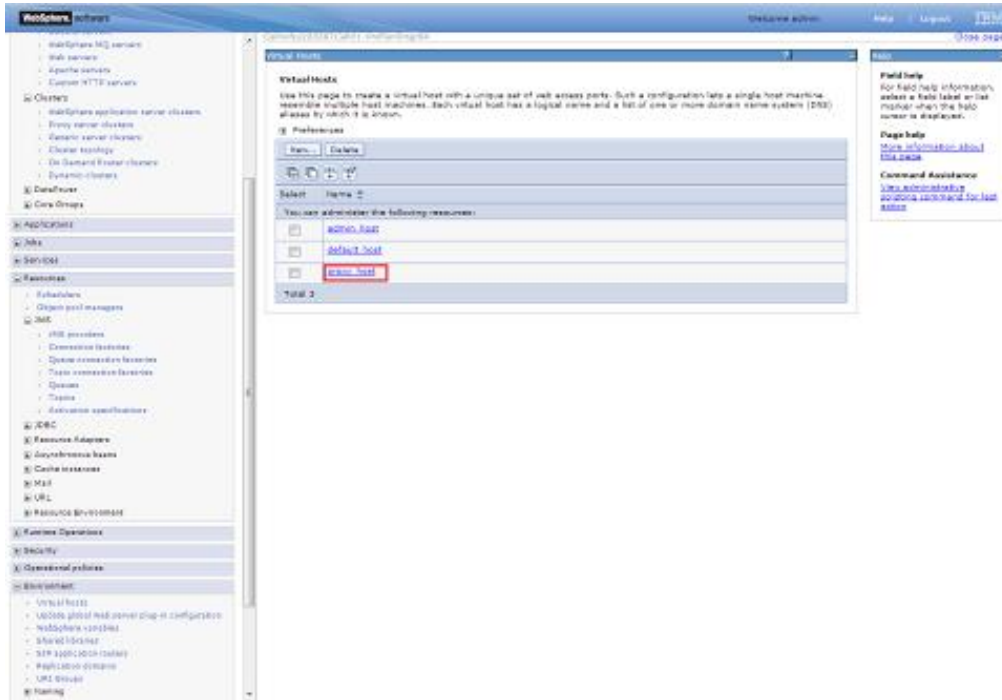
You can administer the following resources:

Service	Port Name	Host	Port	Transport Details
<input type="checkbox"/>	WC_defaulthost_secure	*	9445	Use associated listener
<input type="checkbox"/>	WC_defaulthost	*	9082	Use associated listener
<input type="checkbox"/>	WC_adminhost_secure	*	9045	Use associated listener
<input type="checkbox"/>	WC_adminhost	*	9042	Use associated listener
<input type="checkbox"/>	SOAP_CONNECTOR_ADDRESS	oracle20067.in.oracle.com	8862	No associated transports
<input type="checkbox"/>	SOAP_DEFAULTHOST_SECURE	*	9043	Use associated listener
<input type="checkbox"/>	SOAP_DEFAULTHOST	*	9042	Use associated listener
<input type="checkbox"/>	SOAP_MQ_INCOMING_SECURE_ADDRESS	*	9000	Use associated listener
<input type="checkbox"/>	SOAP_MQ_INCOMING_ADDRESS	*	8880	Use associated listener
<input type="checkbox"/>	SOAP_ENDPOINT_SECURE_ADDRESS	*	7288	Use associated listener
<input type="checkbox"/>	SOAP_ENDPOINT_ADDRESS	*	7279	Use associated listener
<input type="checkbox"/>	SOAP_SOAP_DEFAULTHOST_LISTENER_ADDRESS	oracle20067.in.oracle.com	9410	No associated transports
<input type="checkbox"/>	OVERLAY_MQ_LISTENER_ADDRESS	*	11011	No associated transports
<input type="checkbox"/>	OVERLAY_TCP_LISTENER_ADDRESS	*	11012	No associated transports
<input type="checkbox"/>	ORB_LISTENER_ADDRESS	oracle20067.in.oracle.com	9103	No associated

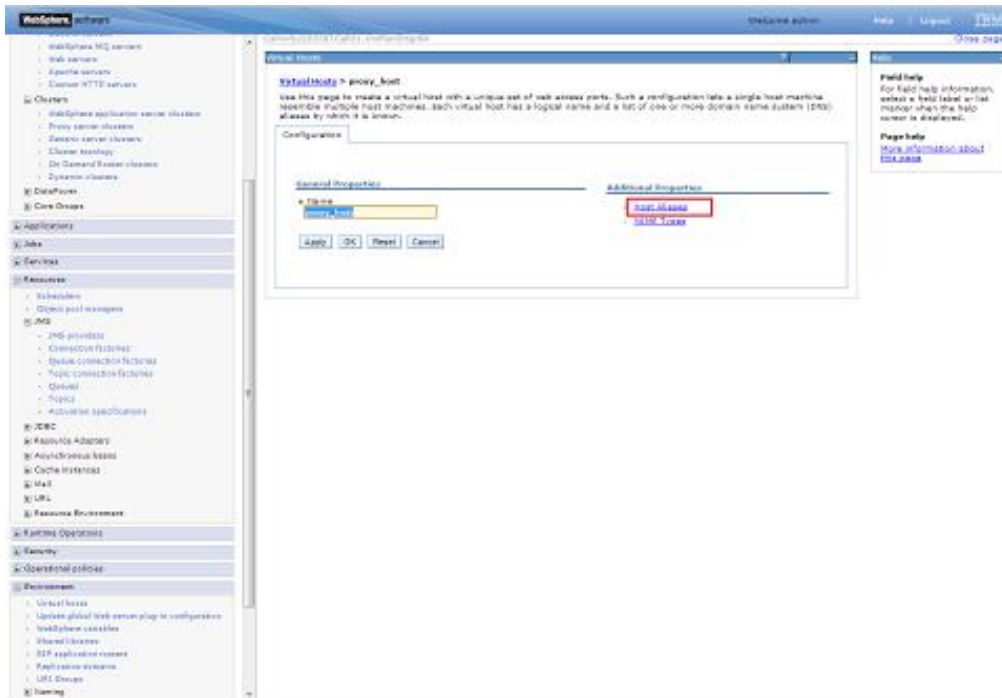


## 4.5.1 Virtual Host Setup

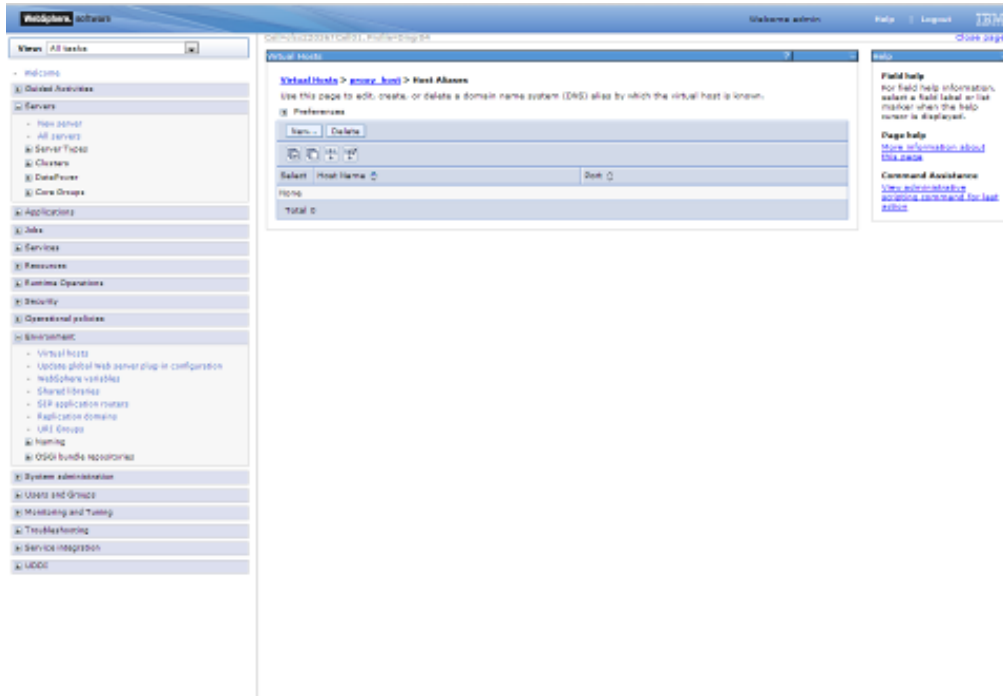
Navigation : *Environment*>*Virtual hosts*>*proxy\_host*



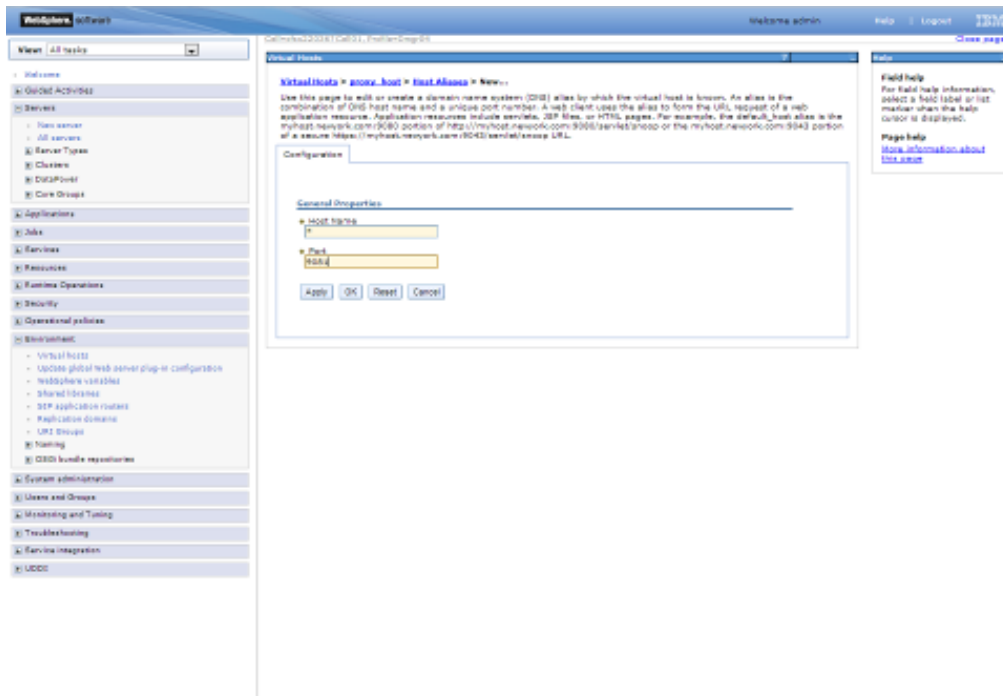
Navigation : *Host Aliases*



Navigation : *Environment>Virtual hosts>proxy\_host>Host Aliases > New*



Create New Alias for default port in managed server <<9081>>:





The screenshot shows the Oracle WebSphere Admin Center interface. The main content area displays the 'Virtual Hosts' configuration page for 'proxy\_host'. The page title is 'Virtual Hosts > proxy\_host > Host Aliases'. Below the title, there is a description: 'Use this page to edit, create, or delete a domain name system (DNS) alias by which the virtual host is known.' There is a 'References' section with a 'New...' button and a 'Delete' button. Below that, there is a table with columns 'Select', 'Host Name', and 'Port'. The table contains one entry with a 'Total 1' label at the bottom.

Select	Host Name	Port
<input type="checkbox"/>		8082

Total 1

Similarly create proxy alias for all cluster related server default ports

The screenshot shows the Oracle WebSphere Admin Center interface. The main content area displays the 'Virtual Hosts' configuration page for 'proxy\_host'. The page title is 'Virtual Hosts > proxy\_host > Host Aliases'. Below the title, there is a description: 'Use this page to edit, create, or delete a domain name system (DNS) alias by which the virtual host is known.' There is a 'References' section with a 'New...' button and a 'Delete' button. Below that, there is a table with columns 'Select', 'Host Name', and 'Port'. The table contains four entries with a 'Total 4' label at the bottom.

Select	Host Name	Port
<input type="checkbox"/>		8082
<input type="checkbox"/>		8084
<input type="checkbox"/>		8082
<input type="checkbox"/>		8448

Total 4

# 5. Create Resources in Cluster Scope

JDBC Provider :

**JDBC providers**

Use this page to edit properties of a JDBC provider. The JDBC provider object encapsulates the specific JDBC driver implementation class for access to the remote vendor database of your environment. Learn more about this task in a [guided activity](#). A guided activity provides a list of main steps and more general information about the task.

Scope: **Cluster=CLUSTER\_1**

Show scope selection drop-down list with the all scopes option

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see [the scope and scope table](#).

Preferences

Select Name	Scope	Description
<input type="checkbox"/> Oracle JDBC Driver	Cluster=CLUSTER_1	Oracle JDBC Driver
<input type="checkbox"/> Oracle JDBC Driver (XA)	Cluster=CLUSTER_1	Oracle JDBC Driver (XA)

Total 2

Datasource :

**Data sources**

Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object provides your application with connections for accessing the database. Learn more about this task in a [guided activity](#). A guided activity provides a list of main steps and more general information about the task.

Scope: **Cluster=CLUSTER\_1**

Show scope selection drop-down list with the all scopes option

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see [the scope and scope table](#).

Preferences

Select Name	JDBC name	Scope	Provider	Description	Category
<input type="checkbox"/> CLUSTER_1	jdbc/cluster/1	Cluster=CLUSTER_1	Oracle JDBC Driver (XA)	Non-JDBC DataSource	
<input type="checkbox"/> CLUSTER_1	jdbc/1	Cluster=CLUSTER_1	Oracle JDBC Driver	Non-JDBC Datasource	

Total 2

## Queue Connection Factory

The screenshot shows the 'Queue connection factories' configuration page in the WebSphere Admin Console. The page title is 'Queue connection factories'. Below the title, there is a description: 'A queue connection factory is used to create connections to the associated JMS provider of the JMS queue destinations, for point-to-point messaging.' The scope is set to 'Cluster=CLUSTER\_1'. There is a checkbox for 'Show scope selection drop-down list with the all scopes option' which is checked. Below this, there is a dropdown menu for 'Scope' with 'Cluster=CLUSTER\_1' selected. The 'Preferences' section includes a table with columns: 'JMS name', 'Provider', 'Description', and 'Scope'. The table lists four entries: 'EMRQCF', 'PC\_QCF', 'REBQCF', and 'WALDQCF', all with 'Waldphire MQ messaging provider' as the provider and 'Cluster=CLUSTER\_1' as the scope. The total count is 4.

## JMS Queue:

The screenshot shows the 'Queues' configuration page in the WebSphere Admin Console. The page title is 'Queues'. Below the title, there is a description: 'A JMS queue is used as a destination for point-to-point messaging.' The scope is set to 'Cluster=CLUSTER\_1'. There is a checkbox for 'Show scope selection drop-down list with the all scopes option' which is checked. Below this, there is a dropdown menu for 'Scope' with 'Cluster=CLUSTER\_1' selected. The 'Preferences' section includes a table with columns: 'JMS name', 'Provider', 'Description', and 'Scope'. The table lists ten entries: 'EMR\_QUEUE', 'EMR\_OUT\_QUEUE', 'REB\_QUEUE', 'REB\_QUEUE\_PQ', 'REB\_QUEUE\_REBQCF', 'NOTIFY\_DEST\_QUEUE', 'NOTIFY\_QUEUE', and 'NOTIFY\_QUEUE\_PQ', all with 'Waldphire MQ messaging provider' as the provider and 'Cluster=CLUSTER\_1' as the scope. The total count is 8.

Create Message Listeners for individual Servers in Cluster

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

**Middleware servers > MS\_1 > Message listener service > Listener Ports**

Use this page to configure listener ports upon which message-driven beans listen for messages. Each port specifies the JMS connection factory and JMS destination that a message-driven bean declared against that port listens upon.

**Preferences**

Buttons: [Name](#) [Delete](#) [Start](#) [Stop](#) [Convert to activation specification](#)

Select	Name	Description	Connection factory JNDI name	Destination JNDI name	Status
<input type="checkbox"/>	EMailListener	EMailListener	EMailCF	EMail_QUEUE	➔
<input type="checkbox"/>	EMailOutListener	EMailOutListener	EMailCF	EMail_OUT_QUEUE	➔
<input type="checkbox"/>	MDBListener	MDBListener	MDBCF	MDB_QUEUE	➔
<input type="checkbox"/>	NOTIFYMDBListener	NotifyMDBListener	NotifyMDBCF	NOTIFY_QUEUE	➔
<input type="checkbox"/>	NOTIFYListener	NotifyListener	NotifyMDBCF	NOTIFY_QUEUE	➔
<input type="checkbox"/>	SMSListener	NotifyListener	NotifyMDBCF	SMS_QUEUE	➔

Total: 6

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

**Middleware servers > MS\_2 > Message listener service > Listener Ports**

Use this page to configure listener ports upon which message-driven beans listen for messages. Each port specifies the JMS connection factory and JMS destination that a message-driven bean declared against that port listens upon.

**Preferences**

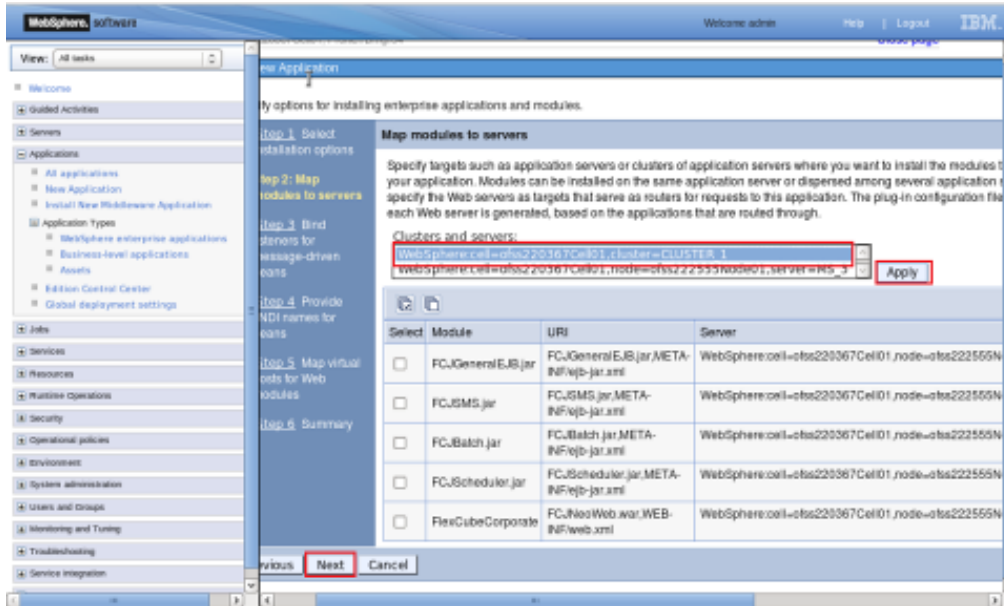
Buttons: [Name](#) [Delete](#) [Start](#) [Stop](#) [Convert to activation specification](#)

Select	Name	Description	Connection factory JNDI name	Destination JNDI name	Status
<input type="checkbox"/>	EMailListener	EMailListener	EMailCF	EMail_QUEUE	➔
<input type="checkbox"/>	EMailOutListener	EMailOutListener	EMailCF	EMail_OUT_QUEUE	➔
<input type="checkbox"/>	MDBListener	MDBListener	MDBCF	MDB_QUEUE	➔
<input type="checkbox"/>	NOTIFYMDBListener	NotifyMDBListener	NotifyMDBCF	NOTIFY_QUEUE	➔
<input type="checkbox"/>	NOTIFYListener	NotifyListener	NotifyMDBCF	NOTIFY_QUEUE	➔
<input type="checkbox"/>	SMSListener	NotifyListener	NotifyMDBCF	SMS_QUEUE	➔

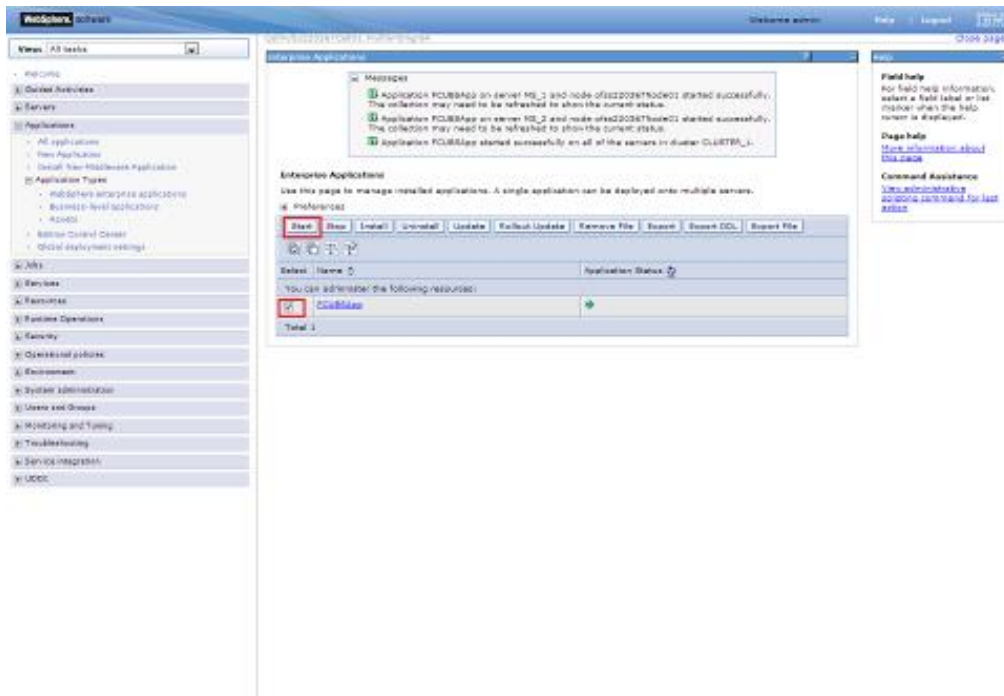
Total: 6

# 6. Deploy Application to Cluster

While deploying ensure the application is installed to Cluster



Start FCUBS application



## 6.1.1 Test the application

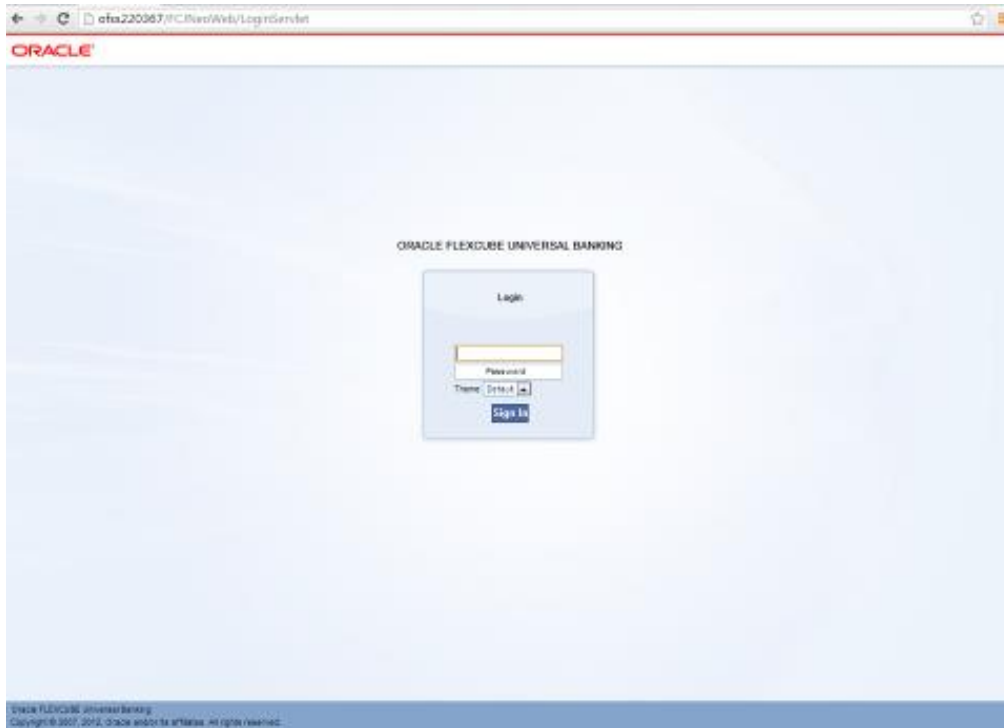
Make a note of the ports `PROXY_HTTPS_ADDRESS/PROXY_HTTP_ADDRESS` to access the application.

**Navigation :** *Servers > Server Types > WebSphere proxy servers > [proxy\_server\_1] > Ports*

Name	Host	Port	Transport Details
<a href="#">EQUATEXMAP_ADDRESS</a>	efwa222867.in.oracle.com	8813	No associated transports
<a href="#">EQUATEX_IPC_VIRTUALMATH_LISTENER_ADDRESS</a>	efwa222867.in.oracle.com	0	No associated transports
<a href="#">EQUATEX_IPC_SECURITY_LISTENER_ADDRESS</a>	efwa222867.in.oracle.com	0	No associated transports
<a href="#">EQUATEXMAP_ADDRESS</a>	*	8887	<a href="#">View associated transports</a>
<a href="#">EQUATEXMAP_ADDRESS</a>	*	7874	No associated transports
<a href="#">EQUATEXMAP_ADDRESS</a>	localhost	8426	No associated transports
<a href="#">EQUATEXMAP_ADDRESS</a>	efwa222867.in.oracle.com	0	No associated transports
<a href="#">EQUATEXMAP_ADDRESS</a>	*	10014	No associated transports
<a href="#">EQUATEXMAP_ADDRESS</a>	*	10013	No associated transports
<a href="#">PROXY_HTTPS_ADDRESS</a>	*	443	<a href="#">View associated transports</a>
<a href="#">PROXY_HTTP_ADDRESS</a>	*	80	<a href="#">View associated transports</a>
<a href="#">PROXY_HTTPS_ADDRESS</a>	*	3061	<a href="#">View associated transports</a>
<a href="#">PROXY_HTTP_ADDRESS</a>	*	2090	<a href="#">View associated transports</a>
<a href="#">EQUATEX_IPC_SECURITY_LISTENER_ADDRESS</a>	efwa222867.in.oracle.com	0	No associated transports
<a href="#">EQUATEXMAP_ADDRESS</a>	efwa222867.in.oracle.com	8883	No associated transports

Launch Application:

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



ORACLE





Cluster Creation on Websphere  
[May] [2019]  
Version 14.3.0.0.0

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