

Cluster Creation on Websphere Application Server
Oracle Banking Corporate Lending
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1. Purpose

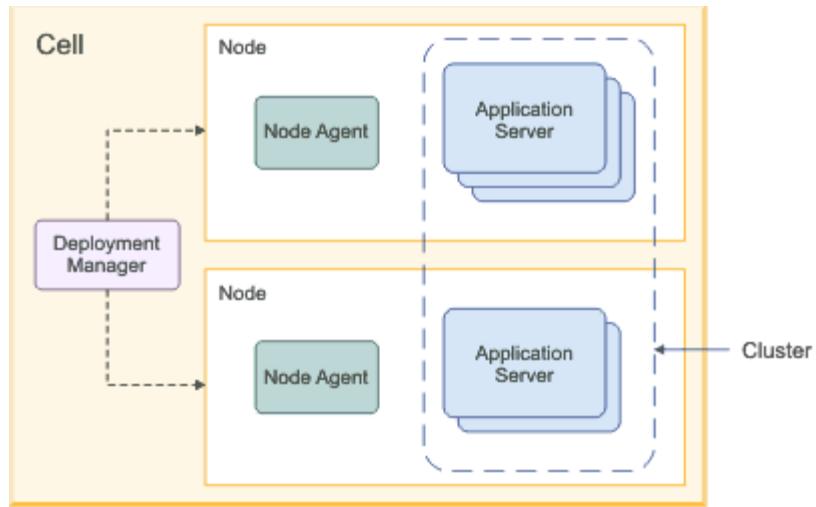
This document explains steps to create Cluster on Websphere Application Server 8.5 and also setup the proxy.

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

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.

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

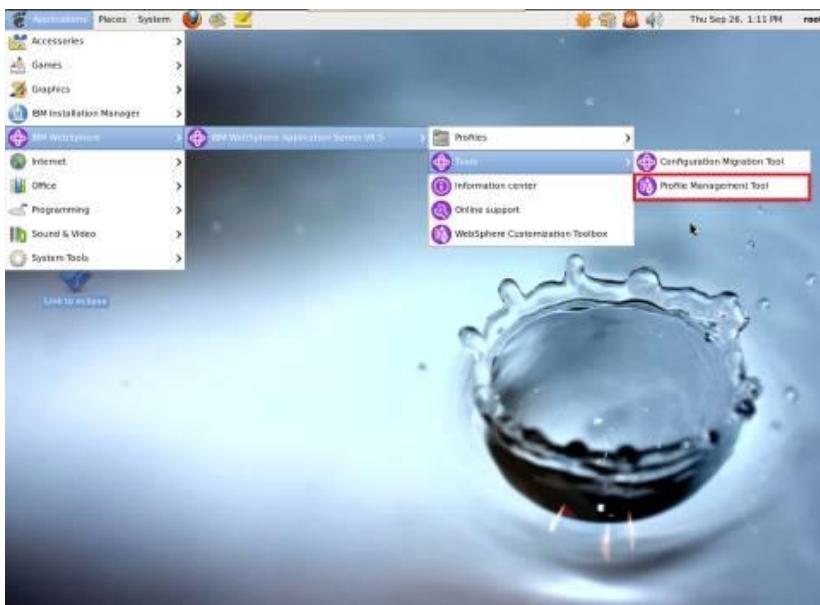
- For SSL configuration in Websphere, refer to the document SSL_Configuration_WAS.doc
- For application deployment, refer to document FCUBS_Application_WAS.doc
- For deployment of Gateway applications, refer to document GATEWAY_Applications_WAS.doc

4. Steps involved for Clustering

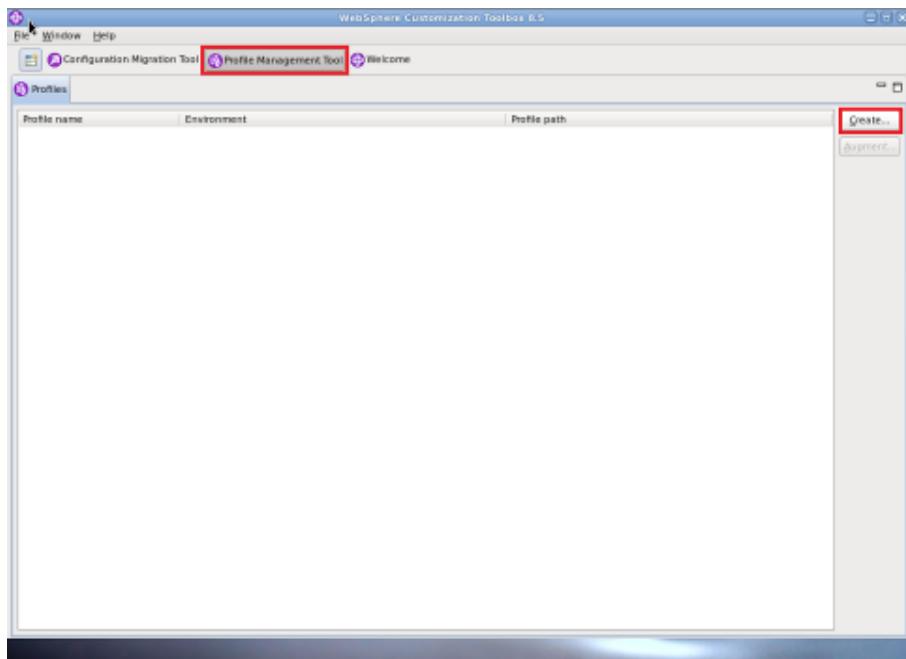
4.1 Create Profile

Go to Profile Management Tool

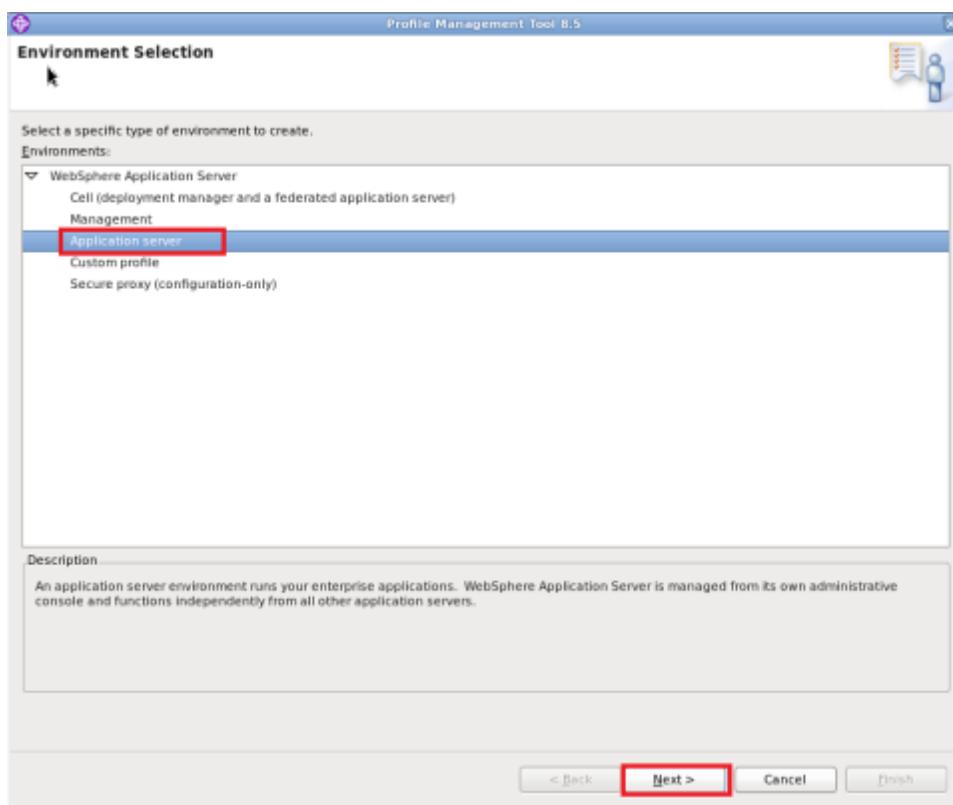
Navigation: IBM WebSphere > *IBM WebSphere Application Server V8.5* > Tools > *Profile Management Tool*



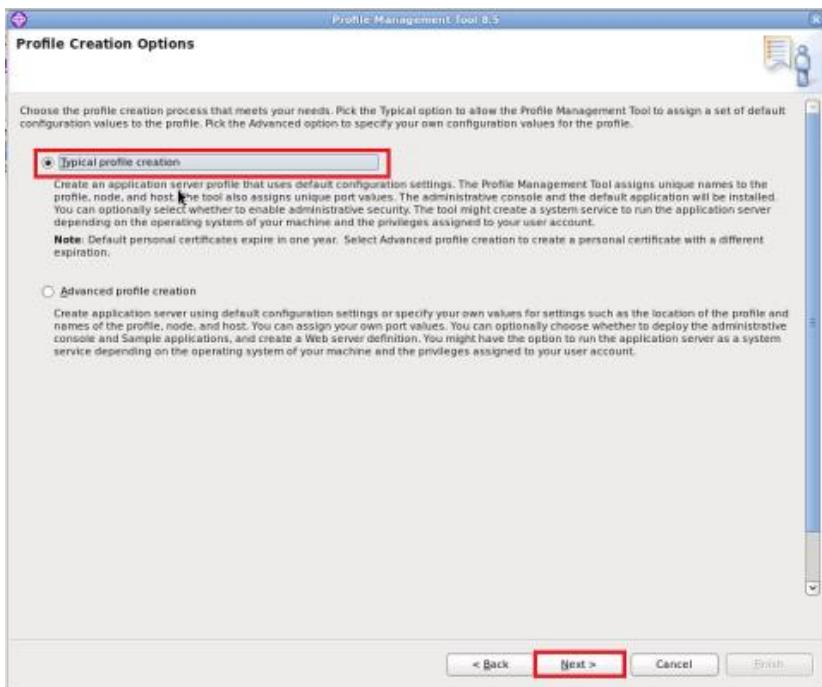
Navigation : *Profile Management Tool > Create*



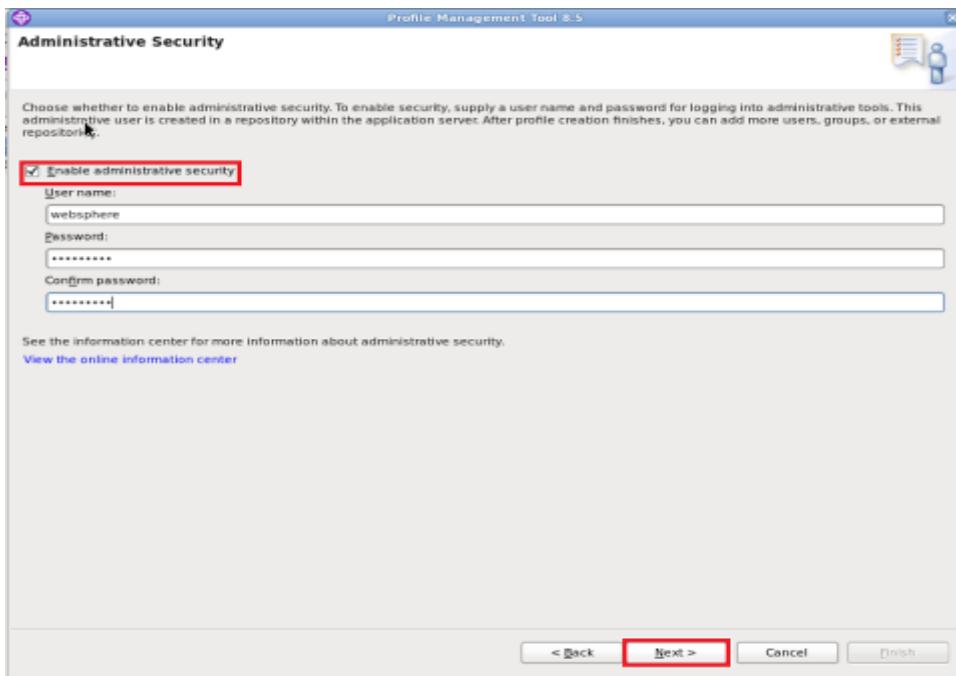
Navigation : Application Server > Next



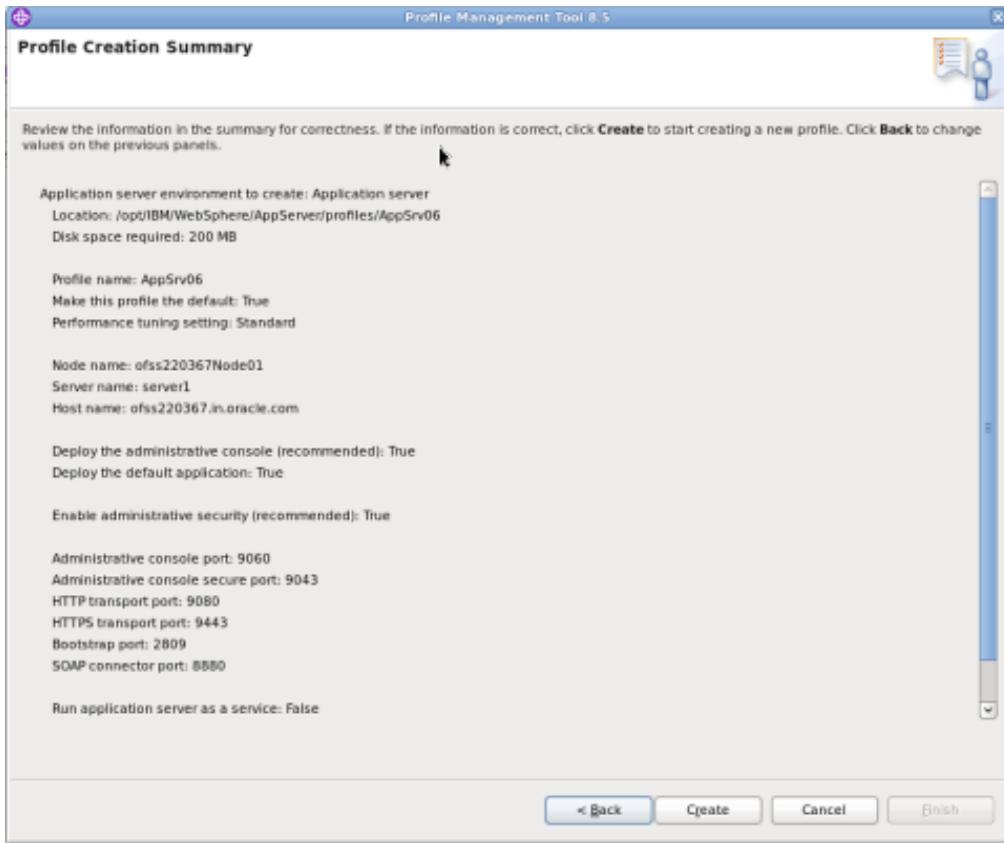
Navigation : Typical profile creation > Next



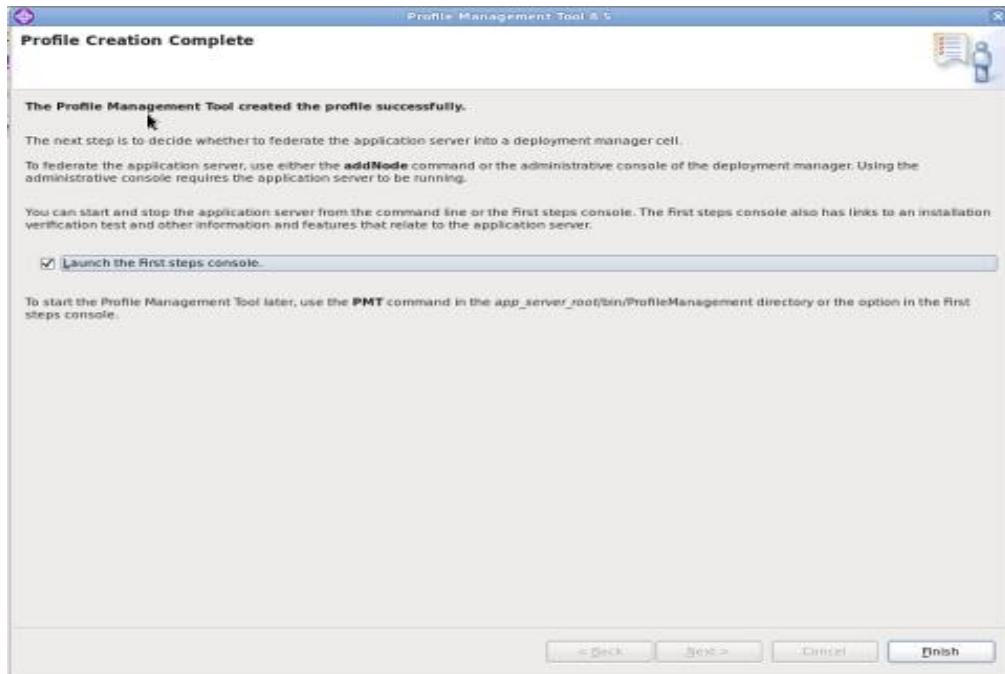
Navigation: *Enable administrative security > Next*



Navigation : *Create Summary*

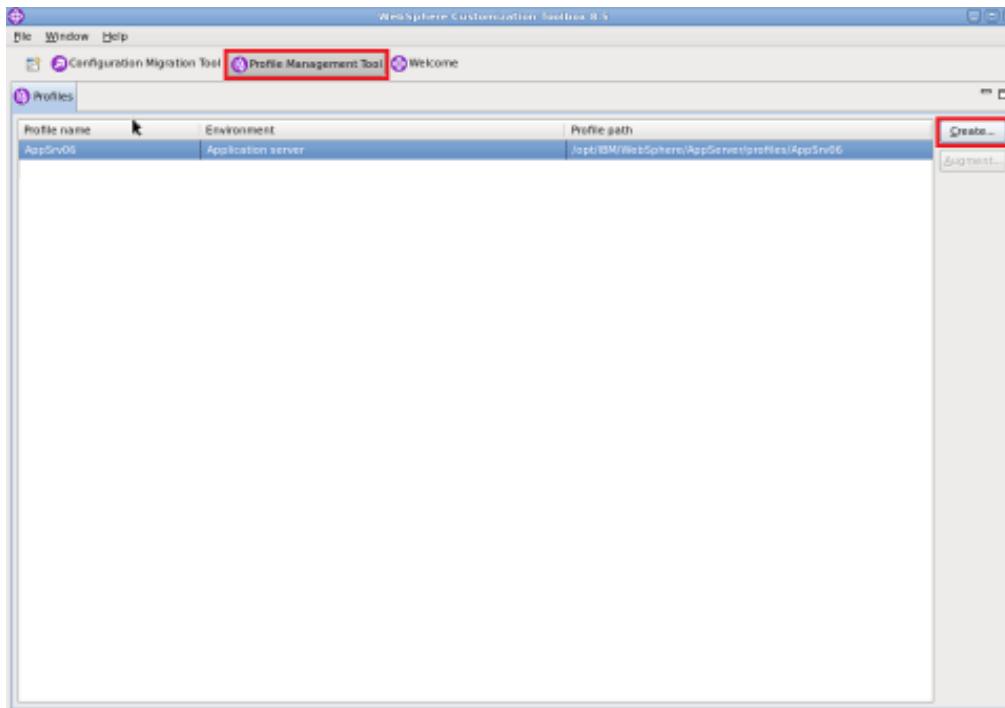


Navigation : Finish

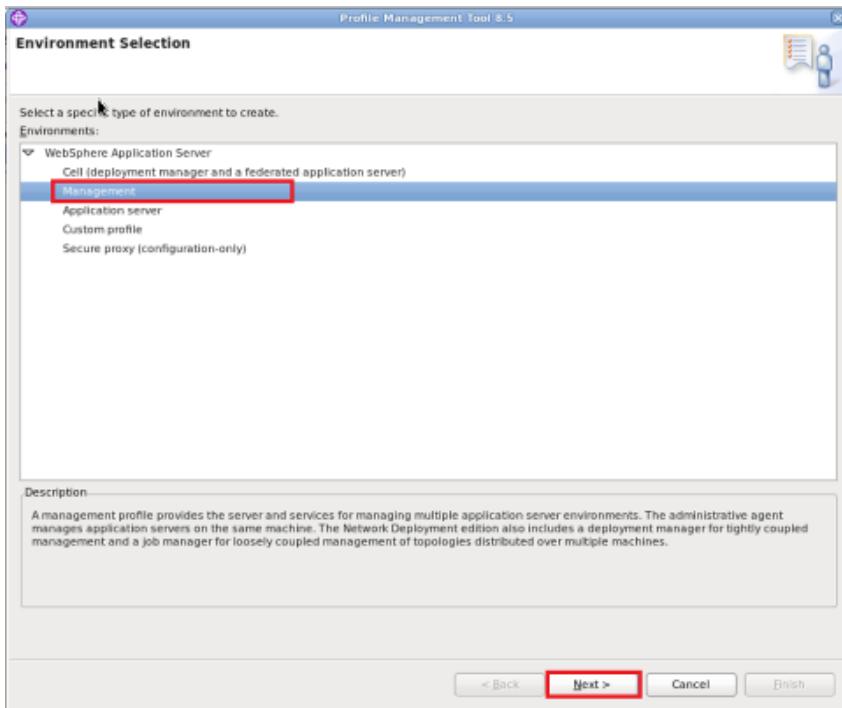


4.1.1 Create Deployment Manager Profile

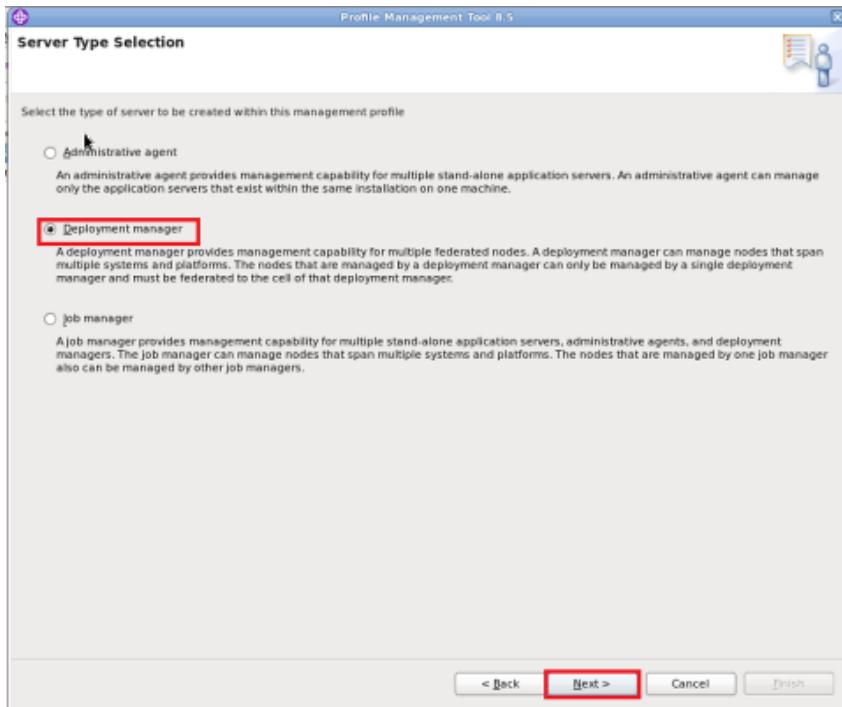
Navigation : *Profile Management Tool > Create*



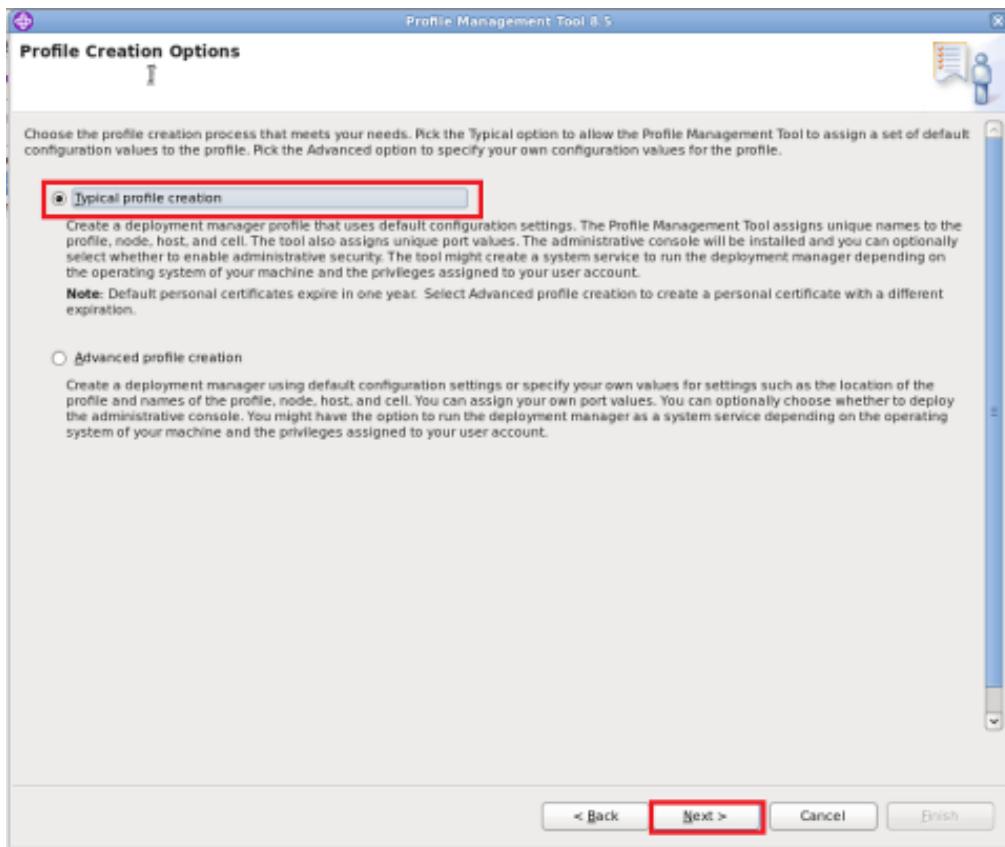
Navigation : *Management >Next*



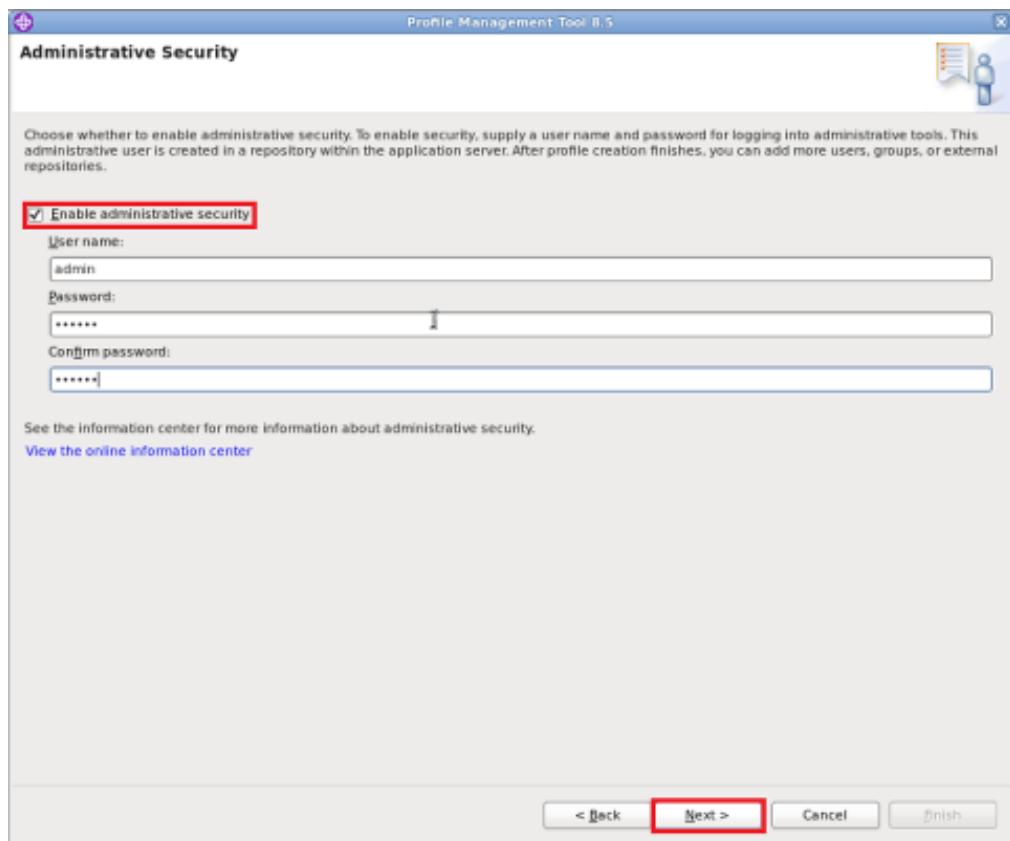
Navigation : Deployment Manager > Next



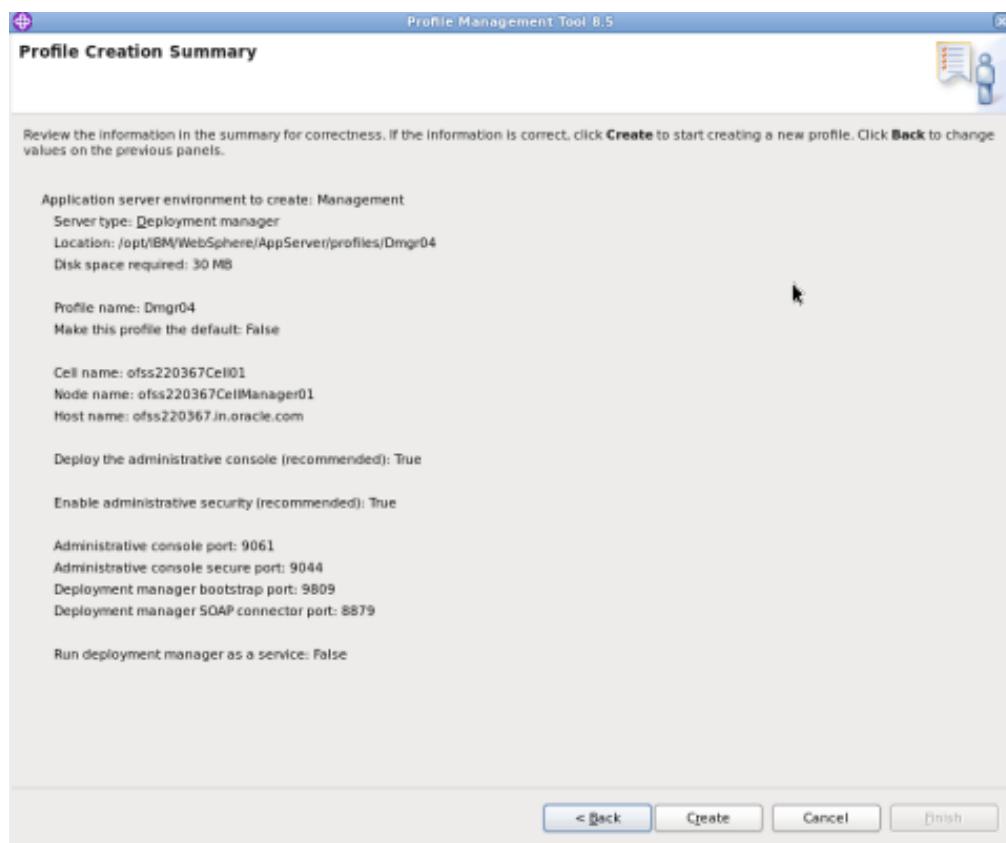
Navigation: Typical profile creation > Next

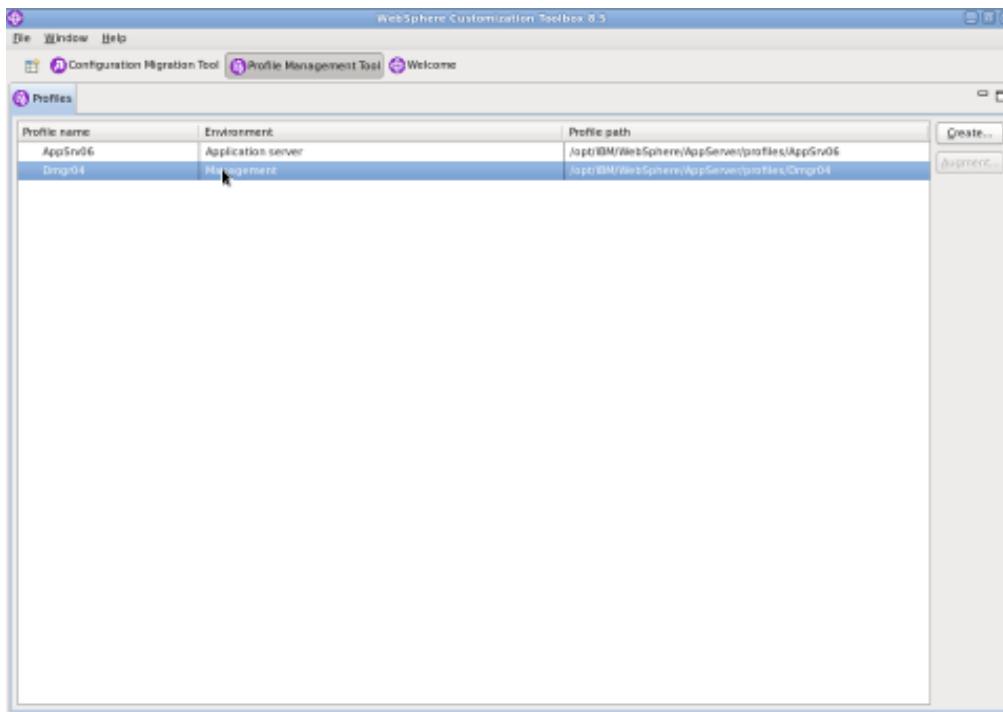


Navigation: *Enable administrative security > Next*



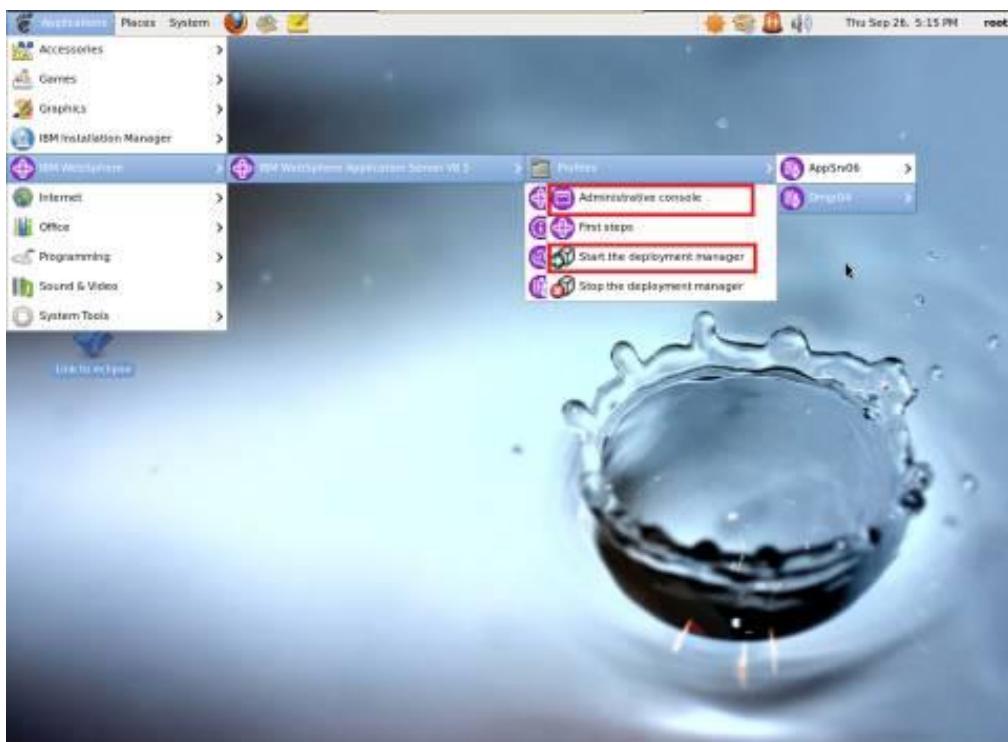
Navigation : Create





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 Manager Console



Navigation : System administration > Nodes > Add Node

A screenshot of the 'Nodes' management page within the WebSphere Integrated Solutions Console. The URL is https://ofsa220367.in.oracle.com:9044/lbm/console/login.jsp?action=secure. The left sidebar shows a tree view of system administration components like Cell, Job manager, Extended Repository Service, etc. The main panel shows a table of nodes. One row is selected, showing details: Name: ofsa220367CellManager\$1, Host Name: ofsa220367.in.oracle.com, Version: ND, Discovery Protocol: TCP, Status: 8.5.0.0. Buttons at the top of the table include Add Node, Remove Node, Force Delete, Synchronize, Full Resynchronize, and Stop. To the right of the table are help links for field and page help, and a command assist section.

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 | |

WebSphere software

View: All tasks

- Welcome
- Guided Activities
- Servers
- 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
 - Node groups
- Centralized Installation Manager
- Task Management
 - Console Preferences
 - Job scheduler
 - Visualization Data Service
 - Console Identity
- Users and Groups
- Monitoring and Tuning
- Troubleshooting
- Service Integration
- UDDI

Nodes

Add Managed Node

This page allows you 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 addnode command from the bin directory of the stopped application server profile.

Node connection

- Host: ohs220367
- JMX connector type: SOAP
- JMX connector port: 8880
- Application server user name: websphere
- Application server password: *****
- Deployment manager user name: admin
- Deployment manager password: *****

Config URL: file:///USER_INSTALL_ROOT/properties/sas.dl

Options

- Include applications
- Include buses

Starting port

- Use default
- Specify Port number:

OK Cancel

WebSphere software

Adding node

ADMU0002: Begin federation of node ohs220367Node01 with Deployment Manager at ohs220367.in.oracle.com:8879.

ADMU0009: Successfully connected to Deployment Manager Server: ohs220367.in.oracle.com:8879

ADMU0505: Servers found in configuration:

ADMU0506: Server name: server1

ADMU0210: Stopping all server processes for node ohs220367Node01

ADMU0510: Server server1 is now STOPPED

ADMU0034: Deleting the old backup directory.

ADMU0015: Backing up the original cell  Node01

ADMU0012: Creating Node Agent config

ADMU0014: Adding node ohs220367Node01 configuration to cell: ohs220367Cell01

ADMU0016: Synchronizing configuration between node and cell.

Transferring data from ohs220367.in.oracle.com...

Nodes

Use this page to manage nodes in the application server environment. A node corresponds to a physical computer system with a distinct IP host address. The following table lists the managed and unmanaged nodes in this cell. The first node is the deployment manager. Add new nodes to the cell and to this list by clicking Add Node.

Preferences

Add Node Remove Node Force Delete Synchronize Full Resynchronize Stop

Select	Name	HostName	Version	Discovery Protocol	Status
<input checked="" type="checkbox"/>	otss220367CellManager01	otss220367.in.oracle.com	ND 8.5.0.0	TCP	
<input type="checkbox"/>	otss220367Node01	otss220367.in.oracle.com	ND 8.5.0.0	TCP	

Total 2

Create necessary number of nodes following same instructions above:

Messages

Your workspace has been auto-refreshed from the master configuration.
You can disable auto-refresh in your user preferences.

Nodes

Use this page to manage nodes in the application server environment. A node corresponds to a physical computer system with a distinct IP host address. The following table lists the managed and unmanaged nodes in this cell. The first node is the deployment manager. Add new nodes to the cell and to this list by clicking Add Node.

Preferences

Add Node Remove Node Force Delete Synchronize Full Resynchronize Stop

Select	Name	HostName	Version	Discovery Protocol	Status
<input checked="" type="checkbox"/>	otss220367CellManager01	otss220367.in.oracle.com	ND 8.5.0.0	TCP	
<input type="checkbox"/>	otss220367Node01	otss220367.in.oracle.com	ND 8.5.0.0	TCP	
<input type="checkbox"/>	otss222555Node01	otss222555.in.oracle.com	ND 8.5.0.0	TCP	

Total 3

4.2.1 Start Node Agents

Navigation : System administration> Node agents>Restart

The screenshot shows the WebSphere Software interface with the title 'Cell=cls220367/Cell01, Profile=Dirn04'. The left sidebar includes sections like Jobs, Services, Resources, Runtime Operations, Security, Operational policies, Environment, System administration (with Cell, 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, and Console Identity), Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDIs. The main content area is titled 'Node agents' and contains a table with two rows:

Select	Name	Node	Host Name	Version	Status
<input type="checkbox"/>	nodeagent	cls222555Node01	cls222555.in.oracle.com	ND 8.5.0.0	
<input type="checkbox"/>	nodeagent	cls220367Node01	cls220367.in.oracle.com	ND 8.5.0.0	

Total 2

4.3 Create Cluster

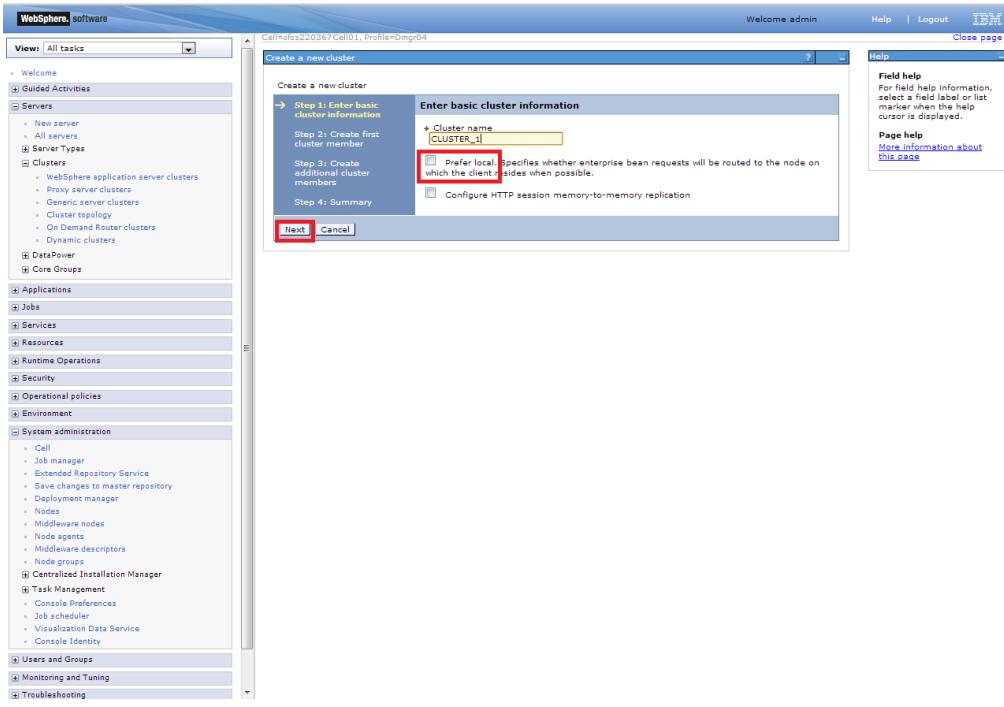
Navigation: Servers>Clusters> WebSphere application server clusters > New

The screenshot shows the WebSphere Software interface with the title 'Cell=cls220367/Cell01, Profile=Dirn04'. The left sidebar includes sections like Welcome, Guided Activities (New server, All servers, Server Types, Clusters (WebSphere application server clusters, Rely server clusters, Generic server clusters, Cluster topology, On Demand Router clusters, Dynamic clusters)), DataPower, Core Group, Applications, Jobs, Services, Resources, Runtime Operations, Security, Operational policies, Environment, System administration, Users and Groups, and Monitoring and Tuning. The main content area is titled 'WebSphere application server clusters' and contains a table with one row:

Select	Name	Status
	None	

Total 0

Navigation : Uncheck [Prefer Local] > Next



4.3.1 Add Cluster Members

Create a new cluster

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.

Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

Step 4: Summary

Member name: MS_1

Select node: ofss220367Node01(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. ofss220367Cell01/ofss220367Node01(ND 8.5.0.0)/MS_1
- Create the member by converting an existing application server. ofss220367Cell01/ofss220367Node01(ND 8.5.0.0)/MS_2
- None. Create an empty cluster.

Next > **Cancel**

Add required number of cluster members

Navigation : Add Member > Next

Create a new cluster

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.

Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

Step 4: Summary

Member name: MS_2

Select node: ofss222355Node01(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.

Edit	Delete	Select	Member name	Nodes	Version	Weight
			MS_1	ofss220367Node01	ND 8.5.0.0	2
Total 1						

Previous > Next > **Cancel**

Navigation : Next

The screenshot shows the 'Create a new cluster' wizard in progress, specifically Step 4: Summary. The left sidebar lists various management categories. The main panel shows a summary table of cluster members:

Select	Member name	Nodes	Version	Weight
<input checked="" type="checkbox"/>	MS_1	otfs220367Node01	ND 8.5.0.0	2
<input type="checkbox"/>	MS_2	otfs222555Node01	ND 8.5.0.0	2
Total 2				

Buttons at the bottom include 'Edit', 'Delete', 'Previous', 'Next', and 'Cancel'.

Navigation : Finish

The screenshot shows the 'Create a new cluster' wizard in progress, specifically Step 4: Summary. The left sidebar lists various management categories. The main panel shows a detailed summary table of cluster members, including clone basis and resource promotion information:

Options	Values
Cluster Name	CLUSTER1_1
Core Group	DefaultCoreGroup
Node group	DefaultNodeGroup
Prefer local	false
Configure HTTP session memory-to-memory replication	false
Server name	MS_1
Node	otfs220367Node01(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	otfs222555Node01(ND 8.5.0.0)
Weight	2
Clone Template	Version 8.5 member template
Generate unique HTTP ports	true

Buttons at the bottom include 'Previous', 'Finish', and 'Cancel'.

4.3.2 Start Cluster

The screenshot shows the WebSphere application server clusters configuration page. The left sidebar contains a navigation tree with categories like Welcome, Guided Activities, Servers, Clusters, DataPower, Applications, Jobs, Services, Resources, Runtime Operations, Security, Operational policies, Environment, and System administration. Under Clusters, there are options for WebSphere application server clusters, Proxy server clusters, Generic server clusters, Cluster topology, On-Demand Router clusters, and Dynamic clusters. The main panel displays the 'WebSphere application server clusters' section with a brief description and a guided activity link. It features a toolbar with New..., Delete, Start, Stop, Ripplestart, and ImmediateStop buttons. A table lists a single cluster entry: CLUSTER_1, with a status column showing a red error icon. The right sidebar includes help sections for Field help, Page help, and Command Assist, along with links to View administrative scripting commands and last action.

This screenshot shows the same configuration page after the cluster has been started. The 'Messages' box now displays a green success icon and the message: "The start operation on cluster CLUSTER_1 has been initiated. It may take several minutes for each cluster member to finish starting." The cluster entry in the table now has a green success icon in the status column. The rest of the interface remains identical to the first screenshot, including the navigation tree and the right-hand help sidebar.

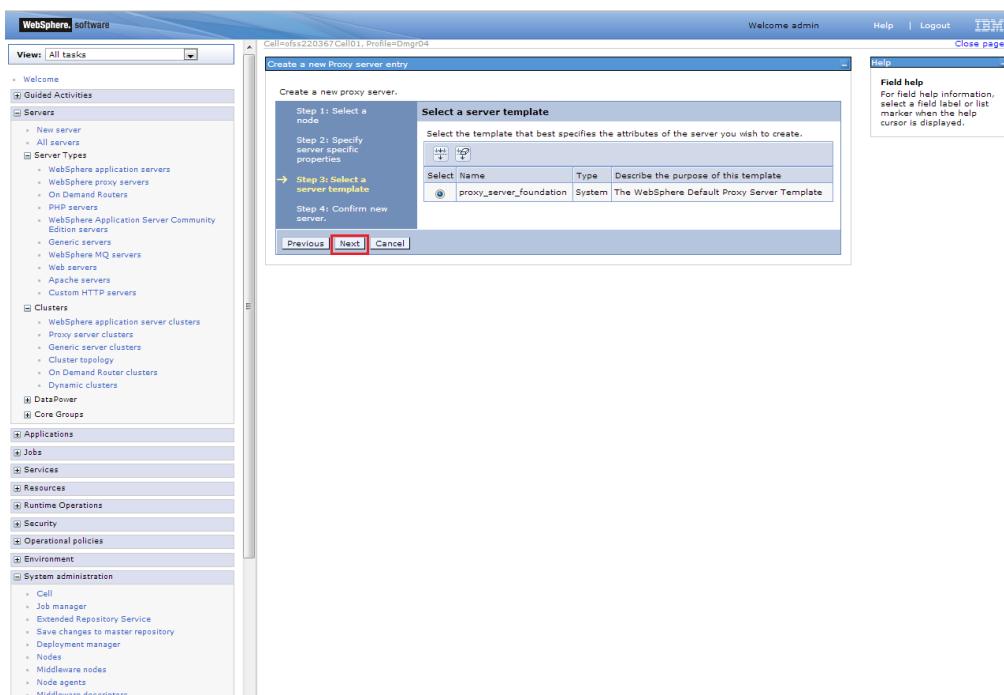
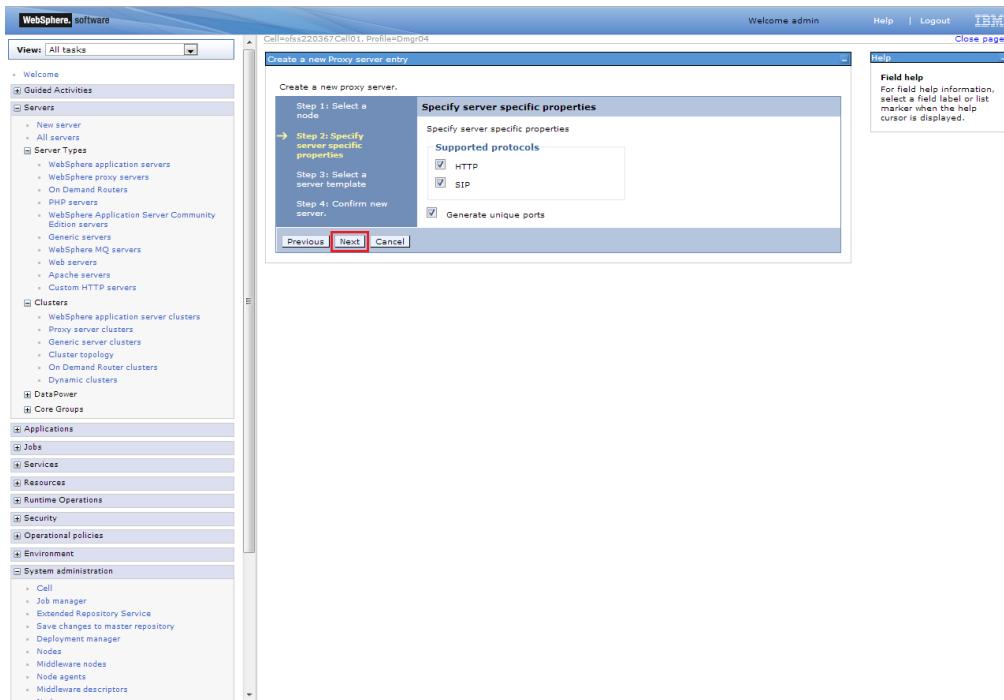
4.4 Create Proxy Server

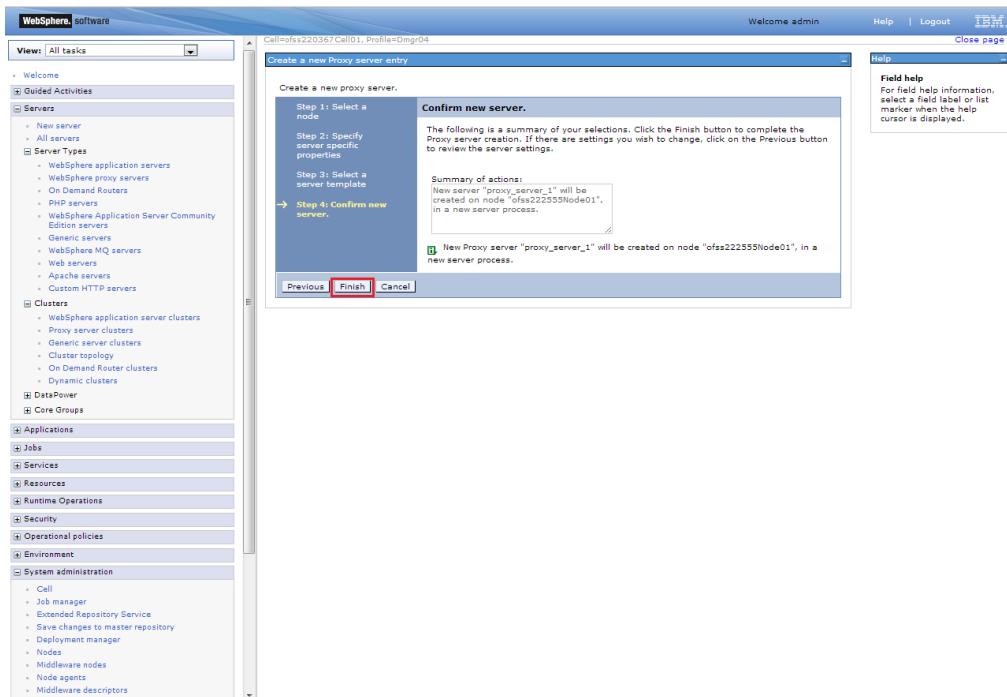
Navigation : Servers > Server Types > WebSphere proxy servers > New

The screenshot shows the WebSphere software interface. The left sidebar has sections for Welcome, Guided Activities, Servers, Clusters, DataPower, Core Groups, Applications, and System administration. Under Servers, 'Server Types' is expanded, showing options like WebSphere application servers, WebSphere proxy servers, On Demand Routers, RFP servers, WebSphere Application Server Community Edition servers, Generic servers, WebSphere MQ servers, Web servers, Apache servers, and Custom HTTP servers. The main panel displays a table titled 'WebSphere proxy servers' with columns: Select, Name, Node, HostName, Version, Current security level, Protocol, and Status. A message above the table states: '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-site routing, and other services that offload the application server.' Below the table are buttons for New..., Delete, Templates..., Start, and Stop.

Navigation : [Select appropriate Node] > Next

The screenshot shows the 'Create a new Proxy server entry' wizard. Step 1: Select a node. It asks to select a node that corresponds to the Proxy server you want to add. A dropdown menu labeled 'Select node' contains the option 'ofss22255Node01'. Step 2: Specify server specific properties. Step 3: Select a server template. Step 4: Confirm new server. At the bottom are 'Next' and 'Cancel' buttons. The 'Next' button is highlighted with a red box. A 'Help' panel on the right provides field help information.





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.

Select	Name	Node	HostName	Version	Current security level	Protocol	Status
<input type="checkbox"/>	proxy_server_1	ofss220367Node01	ofss220367.in.oracle.com	ND - 8.5.0.0	Not applicable	HTTP, SIP	#

Total 1

4.4.1 Start Proxy Server

WebSphere Application Server

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

Select	Name	Node	Host Name	Version	Current security level	Protocol	Status
<input checked="" type="checkbox"/>	proxy_server_1	ots220367Node01	ots220367.in.oracle.com	ND	Not applicable	HTTP, SIP	

Total: 1

WebSphere Application Server

WebSphere proxy servers

Messages

Server ots220367Node01:proxy_server_1 started successfully. The collection may need to be refreshed to show the current server status. [View JVM logs](#) for further details.

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.

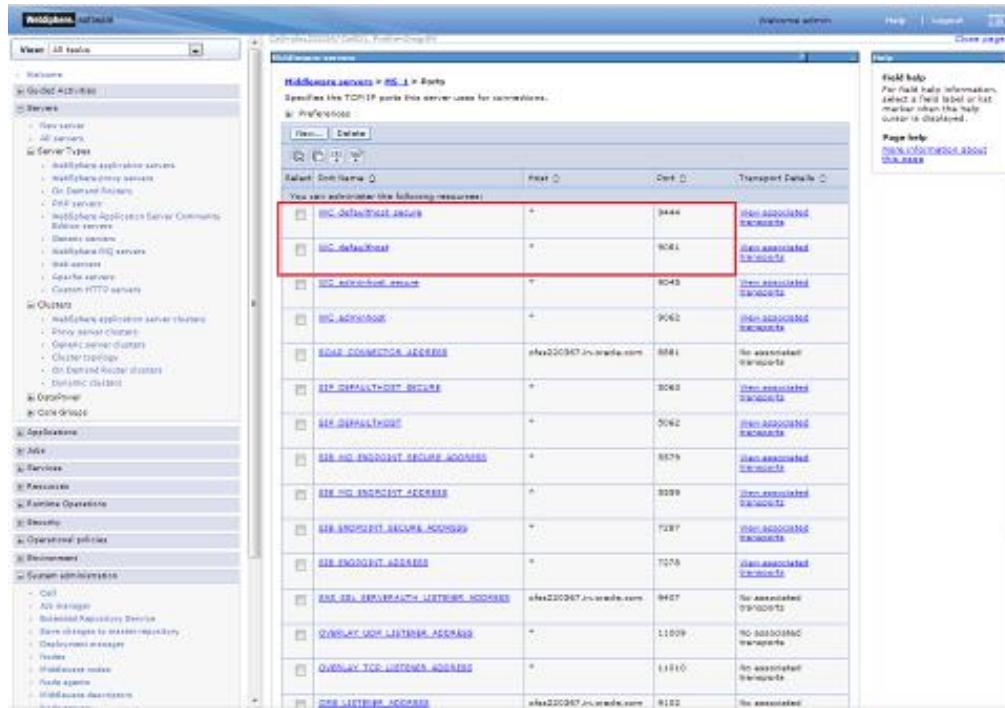
Preferences

Select	Name	Node	Host Name	Version	Current security level	Protocol	Status
<input type="checkbox"/>	proxy_server_1	ots220367Node01	ots220367.in.oracle.com	ND	Not applicable	HTTP, SIP	

Total: 1

4.5 Configure Virtual Host

Make a note of "WC_defaulthost"/"WS_defaulthost_secure" port for server MS1 : 9081/9444



Make a note of "WC_defaulthost"/"WS_defaulthost_secure" for MS2 : 9082/9445

Ports

Protocol	Port Name	Host	Port	Transport Details
HTTP	HTTP Default Listener	*	8080	View associated transports
HTTP	HTTP Default Host	*	8082	View associated transports
HTTP	HTTP Administered Listener	*	8046	View associated transports
HTTP	WL Administered	*	8060	View associated transports
HTTP	ASGI CONDUCTOR ADDRESS	ofw100347-in-oracle.com	8882	No associated transports
HTTP	HTTP DEFAULT SECURE	*	4443	View associated transports
HTTP	HTTP AUTHORITY	*	2094	View associated transports
HTTP	HTTP NO DIRECT SOURCE ADDRESS	*	1906	View associated transports
HTTP	HTTP NO DIRECT ADDRESS	*	2882	View associated transports
HTTP	HTTP ENDPOINT ADDRESS	*	2279	View associated transports
HTTP	HTTP SECURE LISTENER ADDRESS	ofw100347-in-oracle.com	8410	No associated transports
TCP	HTTP LISTENER ADDRESS	*	11001	No associated transports
TCP	HTTP/2 LISTENER ADDRESS	*	11002	No associated transports
TCP	HTTP LISTENING ADDRESS	ofw100347-in-oracle.com	9009	No associated

4.5.1 Virtual Host Setup

Navigation : Environment>Virtual hosts>proxy_host

Virtual Hosts

Use this page to create a virtual host with a unique set of web servers ports. Each a configuration targets a single host machine, severable from multiple host machines...Each virtual host has a logical name and a list of one or more domain name systems (DNS) and alias to which it is bound.

Resources

- adminHost
- defaultHost
- newHost**

Navigation : Host Aliases

The screenshot shows the 'Virtual Hosts > proxy_host' configuration page. On the left, a navigation tree includes 'Virtual hosts', 'Clusters', 'DataPower', 'Core Groups', 'Applications', 'Jobs', 'Services', 'Resources', 'WebSphere', 'System Administration', and 'System Monitoring'. The 'Virtual hosts' node is expanded. The main panel displays 'General Properties' and 'Additional Properties' tabs. In the 'General Properties' tab, the 'Host Name' field contains 'proxy_host' and the 'Alias' field contains 'http://proxy'. The 'Additional Properties' tab has a single entry: 'Host Alias' with the value 'http://proxy'. Buttons for 'Apply', 'OK', 'Reset', and 'Cancel' are at the bottom.

Navigation : Environment>Virtual hosts>proxy_host>Host Aliases > New

The screenshot shows the 'Virtual Hosts > proxy_host > Host Aliases' creation page. The left navigation tree is identical to the previous screenshot. The main panel has a 'Create' button and a 'Host Name' input field containing 'proxy'. A 'Select' dropdown is set to 'Host Name'. A 'Save' button is at the bottom. The right side of the screen shows help text and command assistance links.

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

The image consists of two vertically stacked screenshots of the WebSphere Application Server Administration Console.

Screenshot 1: Creating a New Host Alias

- Left Panel (Navigation):** Shows the 'VirtualHosts' section under 'Managed Servers'.
- Center Panel (Form):**
 - Title Bar:** VirtualHosts > proxy_host > HostAliases > New...
 - Description:** Use this page to edit, create, or delete a domain name system (DNS) alias by which the virtual host is known. An alias is the combination of the host name and a unique port number. A client uses the alias to form the URL request of a web application resource. Application resources include services, JSP files, or HTML pages. For example, the default alias is the myhost.mylink.com:9080 portion of http://myhost.mylink.com:9080/lenfetshop or the myhost.mylink.com:9843 portion of a secure https://myhost.mylink.com:9843/secure/alias URL.
 - Configuration:** Contains fields for 'Host Name' (set to 'localhost') and 'Port' (set to '9081').
 - Buttons:** Apply, OK, Reset, Cancel.
- Right Panel (Help):** Field help, page help, links to information about this page.

Screenshot 2: Host Aliases List

- Left Panel (Navigation):** Same as Screenshot 1.
- Center Panel (Table):**
 - Title Bar:** VirtualHosts > proxy_host > Host Aliases
 - Description:** Use this page to edit, create, or delete a domain name system (DNS) alias by which the virtual host is known.
 - Buttons:** New... | Delete
 - Table Headers:** Host Name | Port
 - Data Row:** localhost | 9081
 - Total:** 1
- Right Panel (Help):** Field help, page help, links to information about this page, Command Assistance, View administrative scripting command for host alias.

Similarly create proxy alias for all cluster related server default ports

The screenshot shows the WebSphere administrative console interface. The left sidebar contains a navigation tree with categories like Server Types, Clusters, and Security. The main content area is titled "VirtualHosts > proxy_host > Host Aliases". It displays a table of host aliases with the following data:

Select	Host Name	Port
<input type="checkbox"/>	proxy	8080
<input type="checkbox"/>	proxy	8084
<input type="checkbox"/>	proxy	8082
<input type="checkbox"/>	proxy	8088

Total 4

On the right side of the page, there are links for "Field Help", "page help", "Command Assistance", and "Logout".

5. Create Resources in Cluster Scope

JDBC Provider :

The screenshot shows the 'JDBC providers' configuration page in WebSphere Studio. The left sidebar navigation includes 'Views / All objects', 'Nodes', 'Clusters', 'DataSources', 'Applications', 'Jobs', and 'Services'. Under 'Services', 'JDBC providers' is selected. The main panel displays the 'JDBC providers' configuration for 'Cluster(CLUSTER_1)'. It shows two entries: 'Oracle JDBC Driver' and 'Oracle JDBC Driver (TNS)'. A note at the top states: 'Use this page to edit properties of a JDBC provider. This JDBC provider object encapsulates the specific JDBC driver implementation and connection settings for a resource. Learn more about this task in a [guided activity](#). A guided activity provides a list of tasks steps and more general information about the topic.' Below this is a 'Scope' dropdown set to 'Cluster(CLUSTER_1)'.

Datasource :

The screenshot shows the 'DataSources' configuration page in WebSphere Studio. The left sidebar navigation includes 'Views / All objects', 'Nodes', 'Clusters', 'DataSources', 'Applications', 'Jobs', and 'Services'. Under 'Services', 'DataSources' is selected. The main panel displays the 'Data sources' configuration for 'Cluster(CLUSTER_1)'. It shows two entries: 'CLUSTERSQLDB' and 'MSSQL_2005'. A note at the top states: 'Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object encodes your application's connection settings for accessing the database. Learn more about this task in a [guided activity](#). A guided activity provides a list of tasks steps and more general information about the topic.' Below this is a 'Scope' dropdown set to 'Cluster(CLUSTER_1)'.

Queue Connection Factory

The screenshot shows the WebLogic Server Administration Console interface. The left sidebar contains a navigation tree with categories like Applications, JMS, Services, and Resources. Under Resources, the JMS section is expanded, showing sub-categories: JMS providers, Connection factories, Dynamic connection factories, Queue connection factories, Topics, and Resource specifications. A dropdown menu is open over the 'Queue connection factories' link, displaying the value 'Cluster=CLUSTER_1'. The main content area shows a table of queue connection factories, each with columns: Name, JNDI name, Provider, Description, and Scope. The table lists four entries, all associated with the provider 'WebSphere MQ messaging provider' and scope 'Cluster=CLUSTER_1'.

Name	JNDI name	Provider	Description	Scope
test	testQ	WebSphere MQ messaging provider		Cluster=CLUSTER_1
PC_QCF	PC_QCF	WebSphere MQ messaging provider		Cluster=CLUSTER_1
MQ_QCF	MQ_QCF	WebSphere MQ messaging provider		Cluster=CLUSTER_1
Subscriptions	SubscriptionsQCF	WebSphere MQ messaging provider		Cluster=CLUSTER_1

JMS Queue:

This screenshot shows the JMS Queue configuration page in the WebLogic Server Administration Console. The left sidebar has the same navigation structure as the previous screenshot. The main content area displays a table of JMS queues. A dropdown menu is open over the 'Cluster' column for the first row, showing 'Cluster=CLUSTER_1'. The table includes columns: Name, JNDI name, Provider, Description, and Scope. The table lists eight entries, all using the 'WebSphere MQ messaging provider' and have a scope of 'Cluster=CLUSTER_1'.

Name	JNDI name	Provider	Description	Scope
END_QUEUE	END_QUEUE	WebSphere MQ messaging provider		Cluster=CLUSTER_1
END_OUTQUEUE	END_OUTQUEUE	WebSphere MQ messaging provider		Cluster=CLUSTER_1
END_QUEUE	END_QUEUE	WebSphere MQ messaging provider		Cluster=CLUSTER_1
END_QUEUE_DLG	END_QUEUE_DLG	WebSphere MQ messaging provider		Cluster=CLUSTER_1
END_QUEUE_RESPONSE	END_QUEUE_RESPONSE	WebSphere MQ messaging provider		Cluster=CLUSTER_1
NOTIFY_DEBT_QUEUE	NOTIFY_DEBT_QUEUE	WebSphere MQ messaging provider		Cluster=CLUSTER_1
NOTIFY_QUEUE	NOTIFY_QUEUE	WebSphere MQ messaging provider	NOTIFY_QUEUE	Cluster=CLUSTER_1
NOTIFY_QUEUE_DLG	NOTIFY_QUEUE_DLG	WebSphere MQ messaging provider		Cluster=CLUSTER_1

Create Message Listeners for individual Servers in Cluster

Navigation : Middleware servers > MS_1 > Message listener service > Listener Ports

The screenshot shows the Oracle WebLogic Server Administration Console interface. The left sidebar navigation tree is expanded to show 'Middleware servers' > 'MS_1' > 'Message listener service' > 'Listener Ports'. The main content area displays a table titled 'Listener Ports' with the following data:

Select Item	Description	Connection Pattern (WebLogic Name)	Destination (WebLogic Name)	Status
AMQ01_LISTENER	AMQ01_LISTENER	ENHANCED	EMS_INQUEUE	Green
AMQ02_LISTENER	AMQ02_LISTENER	ENHANCED	EMS_OUTQUEUE	Green
EMR_LISTENER	EMR_LISTENER	ENHANCED	MQE_QUEUE	Green
NOTIFICATION_LISTENER	NOTIFICATION_LISTENER	NOTIFICATION	NOTIFI_QUEUE	Green
RTMQ_LISTENER	RTMQ_LISTENER	NOTIFICATION	RTMQ_QUEUE	Green
SMQ_LISTENER	SMQ_LISTENER	NOTIFICATION	SMQ_QUEUE	Green

Total 6

On the right side of the screen, there are several help links and a 'Command Assistance' section.

Navigation : Middleware servers > MS_2 > Message listener service > Listener Ports

WebLogic Admin

View All tasks

Navigation: Home > Services > Message Interceptors > Listener Points

Message Interceptors > M2_2 > MessageListenerService > Listener Points

This page lets you configure listener points upon which message-driven beans listen for messages. Each point specifies the JMS connection factory and JMS destination that a message-driven bean deployed against that point listens upon.

Preferences

Name	Delete	Start	Stop	Convert to activation specification
EMQ_M2_2				
EMQ_M2_2_out				
EMQ_M2_2_in				
EMQ_M2_2_inout				
EMQ_M2_2_inout2				
EMQ_M2_2_inout3				

Select Name: **Description:** **Connection factory JNDI name:** **Destination JNDI name:** **Status:**

You can subscribe the following resources:

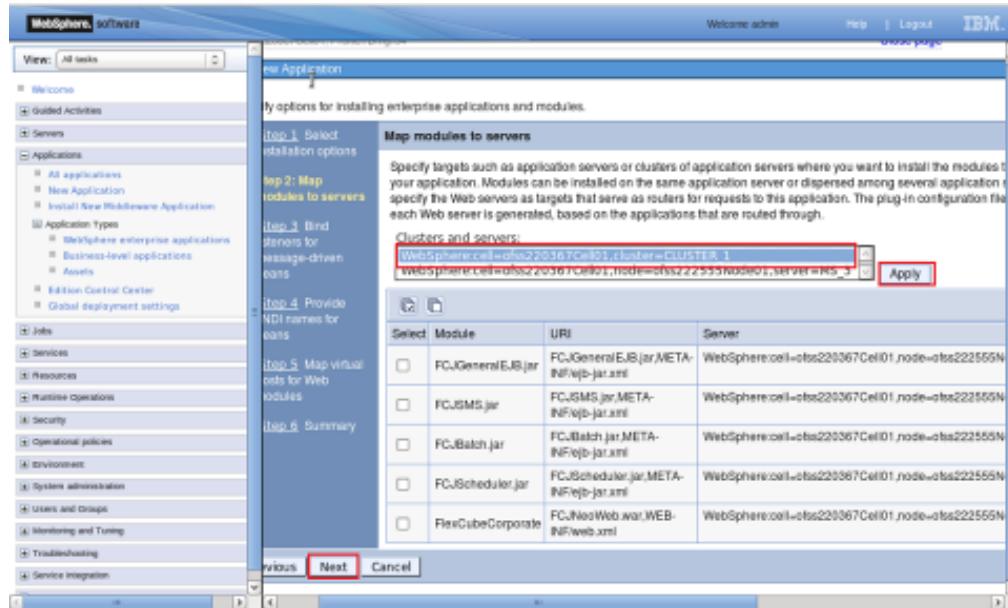
Name	Endpoint	Destinations
EMQ_M2_2	Endpoint	EMQ_INQUEUE
EMQ_M2_2_out	Endpoint_listener	EMQ_OUTQUEUE
EMQ_M2_2_in	Message	EMQ_QUEUE
EMQ_M2_2_inout	EndpointJMSQCP	ROTARY_QUEUE
EMQ_M2_2_inout2	EndpointJMSQCP	EMQ_QUEUE
EMQ_M2_2_inout3	EndpointJMSQCP	EMQ_QUEUE

Total 6

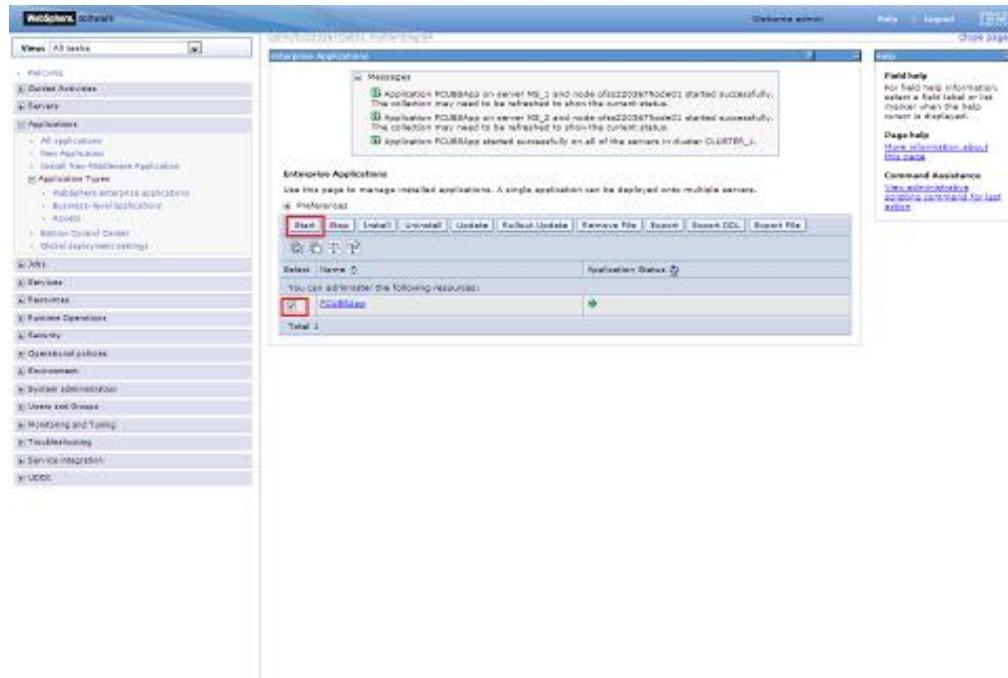
Field help
Page help
More information about this page
Command Assistance
View administration interface
Resource management test results

6. Deploy Application to Cluster

While deploying ensure the application is installed to Cluster



Start FCUBS application



6.1.1 Test the application

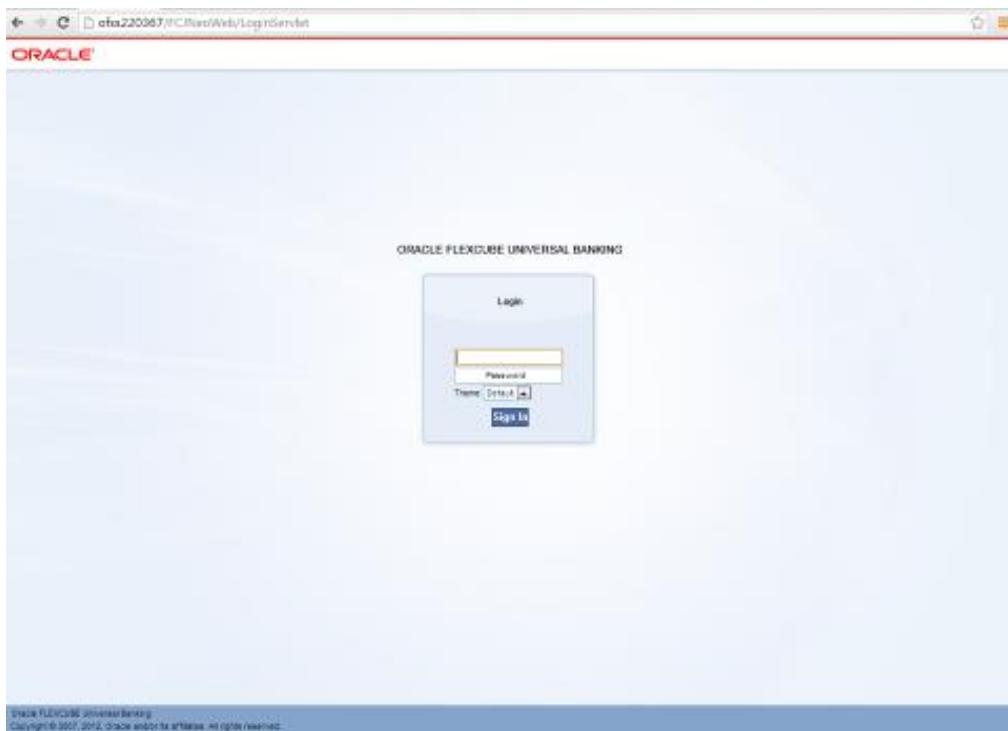
Make a note of the ports `PROXY_HTTPS_ADDRESS/PROXY_HTTP_ADDRESS` to access the application.

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

The screenshot shows the WebSphere Admin Console interface. The left sidebar navigation tree includes: Home, General Availability, Servers, Server Types, Clusters, Deployment, Core Groups, Application Types, JNDI, Services, Resources, Runtime Operations, Facility, Operational policies, Environment, System Administration, Users and Groups, Monitoring and Tuning, Troubleshooting, and Service Integrations. The main content area displays the 'Ports' configuration for 'proxy_server_1'. It lists various port definitions with their host, port, and transport details. Two specific entries are highlighted with red boxes: 'PROXY_HTTPS_ADDRESS' (host: 192.168.1.10, port: 443, transport: https) and 'PROXY_HTTP_ADDRESS' (host: 192.168.1.10, port: 80, transport: http). Other listed ports include: ROOTHTTPPORT (host: 192.168.1.10, port: 8080, transport: http), LOCALHOST (host: localHost, port: 9826, transport: http), and several listener addresses (host: 192.168.1.10, ports: 8001, 8002, 8003, 8004, 8005, 8006, 8007).

Launch Application:

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



ORACLE



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