Websphere Configuration Oracle FLEXCUBE Universal Banking Release 14.2.0.0.0 [December] [2018]



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# 1. Configuring SSL on Websphere

### 1.1 Introduction

This chapter guides you through the process of configuring SSL on IBM Websphere application server.

### 1.2 Certificates

### 1.2.1 Creating SSL Connection between Application Server and Client

To establish SSL connection between Websphere and client work stations, follow the steps given below:

- Create SSL certificate (this certificate is required during real time production)
- Self signed certificate (SSL) will be used for testing purpose

### 1.2.2 Creating Self Signed Certificate

To create a self signed certificate, you may use various tools including IBM (Keyman). For illustration purpose, this guide explains the method of generating SSL using a tool available in JAVA. The keytool is available in the folder 'JAVA\_HOME\jdk\bin'.

Go to the folder 'bin' of JRE from command prompt and type the following command.

```
keytool -genkeypair -alias alias -keyalg keyalg -keysize keysize -
sigalg sigalg -validity valDays -keystore keystore
```

The texts highlighted in blue are placeholders. You need to replace them with the suitable values while running the command.

In the above command,

- **alias** is used to identify the public and private key pair created. This *alias* is required for configuring the SSL attributes for the managed servers in Oracle WebLogic application server.
- *keyalg* is the key algorithm to generate the public and private key pair. The RSA key algorithm is recommended.
- **keysize** is the size of the public and private key pair generated. A key size of 1024 or more is recommended. Consult your CA on the key size support for different types of certificates.
- *sigalg* is the algorithm used to generate the signature. This algorithm must be compatible with the key algorithm. This has to be one of the values specified in the Java Cryptography API Specification and Reference.
- valdays is the number of days for which the certificate is considered to be valid. Consult your CA on this period.



 keystore is to specify the location of the JKS file. If JKS file is not present in the path provided, this will create it.

The command will prompt for the following attributes of the certificate and keystore:

- Keystore password: Specify a password that will be used to access the keystore. This
  password needs to be specified later, when configuring the identity store in Oracle
  WebLogic Server.
- Key password: Specify a password that will be used to access the private key stored in the keystore. This password needs to be specified later, when configuring the SSL attributes of the managed server(s) in Oracle WebLogic Server.
- First and last name (CN): Specify the domain name of the machine used to access Oracle FLEXCUBE UBS. For instance, www.example.com.
- **Name of your organizational unit**: Specify the name of the department or unit making the request. For example, BPD. Use this field to identify the SSL Certificate you are creating. For example, by department or by physical server.
- Name of your organization: Specify the name of the organization making the certificate request. For example, Oracle Financial Services Software. It is recommended to use the formal name of the company or organization. This name must match the name in the official records.
- Name of your City or Locality: Specify the name of the city in which your organization is physically located. For example Mumbai.
- **Name of your State or Province**: Specify the state/province in which your organization is physically located. For example Maharashtra.
- Two-letter country code for this unit: Specify the country in which your organization is physically located. For example, US, UK, IN etc.

#### **Example**

Listed below is the result of a sample execution of the command:

```
C:\Program Files\IBM\Websphere\AppServer\bin>keytool -
genkeypair -alias cvrhp0729 -keyalg RSA -keysize 1024 -sigalg
SHA1withRSA -validity 365 -keystore
D:\keystores\FCUBSKeyStore.jks
Enter keystore password: < Enter a password to protect the
keystore>
Re-enter new password: < Confirm the password keyed above>
What is your first and last name?
  [Unknown]: cvrhp0729.i-flex.com
What is the name of your organizational unit?
  [Unknown]: BPD
What is the name of your organization?
  [Unknown]: Oracle Financial Services
What is the name of your City or Locality?
  [Unknown]: Mumbai
What is the name of your State or Province?
```



```
[Unknown]: Maharashtra
What is the two-letter country code for this unit?
[Unknown]: IN
Is CN=cvrhp0729.i-flex.com, OU=BPD, O=Oracle Financial
Services, L=Mumbai, ST=Maharashtra, C=IN correct?
[no]: yes
Enter key password for <cvrhp0729>
(RETURN if same as keystore password):<Enter a
password to protect the key>
Re-enter new password:<Confirm the password keyed above>
```

The self signed certificate needs to be added to the web server.

#### 1.2.3 Path Details

You need to copy or move the keystore file *<name of the file>.jks* to the application server location given below:

/oracle1/WAS61/Appserver\_ND/profiles/AppSrv01/config/cells/ips014dorCell01/nodes/ips014dor Node02

ips014dorCell01 --> <ips014dor> name of the machine and < Cell01>

ips014dorNode02 --> < ips014dorNode > name of the machine and <Node02>

### 1.3 Adding Key Store to Application Server

To add keystore to the Websphere application server, follow the instructions given below.

1. Log in to the WAP console as the user 'admin'.



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	WebSphere. software					
		WebSphere Solutions C User ID: Password: Log in				
	Rights Reserved. registered trader many jurisdiction trademarks of 18	. IBM, the IBM logo, ibm.c marks of International Bus is worldwide. Other produc	opyright IBM Corp. 1997, 20 om and WebSphere are tra iness Machines Corp., regi t and service names might current list of IBM trademan demark information.	ademarks or istered in be		
× Sync encountered an error while sy	ncing: Failed to connect to the server. Sync	will automatically retry this	action. Preferences			

2. Specify the user ID of the administrator and the password set while installing the software. Click 'Log In'.

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A https://ofss220137.in.oracle.com/9043/ WebSphere. software	ibm/console/secure/securelogon.do v C Q Search	☆ 自 🕹 🏫 Welcome websphere	✓ ● ✓ ※ ▼ ■ ■ Help   Logout IBM. Close page
View:     All tasks       Welcome          ⊕ Guided Activities           ⊕ Servers	SSL certificate and key management SSL certificate and key management	2	<ul> <li>Help</li> <li>Field help</li> <li>For field help information, select a field label or list</li> </ul>
Applications     Securits     Global security     Security domains     Administrative Authorization Groups     SSL certificate and key management     SsL certificate and key management     Su security	SSL configurations The Secure Sockets Layer (SSL) protocol provides secure communications between remote server processes or endpoints. SSL security can be used for establishing communications inbound to and outbound from an endpoint. To establish secure communications, a certificate and an SSL configuration must be specified for the endpoint. In previous versions of this product, it was necessary to manually configure each endpoint for Secure Sockets Layer (SSL). In this version, you can define a single configuration for the entire application-serving environment. This capability enables you to centrally manage secure communications. In	Related Items SSL configurations Dynamic outbound endpoint SSL configurations Key stores and certificates Key sets Key sets Key sets Key managers	marker when the help cursor is displayed. Page help More information about this page
E Environment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration UDD1	addition, trust zones can be established in multiple node environments by overriding the default, cell-level SSL configuration. If you have migrated a secured environment to this version using the migration utilities, the old Secure Sockets Layer (SSL) configurations are restored for the various endpoints. However, it is necessary for you to re-configure SSL to take advantage of the centralized management capability. <u>Configuration settings</u>	Trust managers     Trust managers     Cartificate Authority     (CA) client     configurations	
r []	Manage endpoint security configurations Manage certificate expiration Manage FIPS		



On the left pane, expand 'Security' and click 'SSL certificate and key management'. The screen displays the details of SSL.

3. Under 'Related items' on the right side, click 'Key stores and certificates'.

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View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management ? -	Close page			
Welcome		Field help			
∃ Guided Activities	SSL certificate and key management > Key stores and certificates	For field help information,			
Servers	Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.	select a field label or list marker when the help			
Applications	Keystore usages	cursor is displayed.			
+ Services	SSL keystores	Page help			
± Resources		More information about			
Security	Preferences	this page			
Global security	New Delete Change password Exchange signers	Command Assistance			
Security domains		View administrative scripting command for last			
<ul> <li>Administrative Authorization Groups</li> <li>SSL certificate and key management</li> </ul>	Select Name  Description  Management Scope  Path	action			
Security auditing					
Bus security	You can administer the following resources:				
Environment	<u>NodeDefaultKeyStore</u> Default key store for       (cell):ofss220137Node01Cell:     \${CONFIG_ROOT}/cells       for     (node):ofss220137Node01     /ofss220137Node01				
System administration	ofss220137Node01 /nodes				
Users and Groups	/ofss220137Node01 /key.p12				
Monitoring and Tuning					
Troubleshooting	NodeDefaultTrustStore         Default trust store         (cell):ofss220137Node01Cell:         \${CONFIG_ROOT}/cells           for         (node):ofss220137Node01         /ofss220137Node01         /ofss220137Node01Cell				
Service integration	for (node):ofss220137Node01 /ofss220137Node01Cell ofss220137Node01 /nodes				
UDDI	/ofss220137Node01 /trust.p12				
	/trust.p12				
	Total 2				
< III )					

The following screen is displayed:

This screen is used for attaching the key store to the application server.

4. Click 'New' button to add a new key to store.

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WebSphere. software	Welcome websphere Help	Logout IBM.
View: All tasks	General Properties	The additional pre
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	Description	Additional Prope
Services	Management scope	Signer cert
Resources	(cell):ofss220137Node01Cell:(node):ofss220137Node01	certificates
Security	* Path	Personal
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	Password     Confirm password	certificate requests Custom properties
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System administration	PKCS12	
	JCEKS CMSKS	
Monitoring and Tuning	PKCS12	
	JKS Cryptographic Token Device (PKCS11)	
Service integration	Enable cryptographic operations on hardware device	
± UDDI	Apply OK Reset Cancel	
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5. Specify the following details:

#### Name

Specify the key store name.

### Path

Specify the location of the key store generated.

This has to be a relative path.

#### <u>Example</u>

\${CONFIG\_ROOT}/cells/ips014dorCell01/nodes/ips014dorNode02/jf3sslstore.jks

#### Password

Specify the password given in the 'store pass' parameter during key store generation.

6. Click 'Apply' and save the changes.

## 1.4 Creating SSL Configuration

To create SSL configuration, on the left pane, click 'SSL certificate and key management'.

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Welcome	SSL certificate and key management		Field help
Servers			select a field label or list marker when the help
Applications     Services	SSL configurations The Secure Sockets Layer (SSL) protocol provides secure	Related Items SSL configurations	cursor is displayed. Page help
Besources     Security     Global security     Security domains     Administrative Authorization Groups     SSL certificate and key management     Sscurity auditing     Bus security	communications between remote server processes or endpoints. SSL security can be used for establishing communications inbound to and outbound from an endpoint. To establish secure communications, a certificate and an SSL configuration must be specified for the endpoint. In previous versions of this product, it was necessary to manually configure each endpoint for Secure Sockets Layer (SSL). In this version, you can define a single configuration for the entire application-serving environment. This capability enables you to	Dynamic outbound endpoint SSL configurations Key stores and certificates Key sets Key sets	More information about this page
Environment     System administration     Users and Groups     Monitoring and Tuning     Troubleshoeting	centrally manage secure communications. In addition, trust zones can be established in multiple node environments by overriding the default, cell-level SSL configuration. If you have migrated as accured environment to this version using the migration utilities, the old Secure Sockets Layer (SSL) configurations are natored for the various endpoints. However, it is necessary for you to re-configure SSL to take advantage of the centralized management capability.	Key managers Trust managers Cartificate Authority (CA) client configurations	
	Configuration settings Manage andpoint security configurations Manage certificate expiration Manage FIPS		
۰ ( الله الله الله الله الله الله الله ال	Dynamically update the run time when SSL configuration		-

1. Under the section 'Related items', click 'SSL configurations'.



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Welcome Guided Activities		SSL certificate and key management > SSL configurations		
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Applications Services	New Delete		cursor is displayed.	
Resources			Page help More information about	
Security	00#9		this page	
Global security	Select Name 🗘	Management Scope 🗘	Command Assistance	
Security domains     Administrative Authorization Groups     SEL cartificate and key management     Security auditing     Bus security	You can administer the following resources:           NodeDefaultSSLSettings	(cell):ofss220137Node01Cell: (node):ofss220137Node01	View administrative scripting command for l action	
Environment	Total 1			
System administration				
Users and Groups				
Monitoring and Tuning				
Troubleshooting				
Service integration				
UDDI				

2. Click 'New' button. The following screen is displayed.

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View: All tasks 🔹	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management	Close page
Welcome		
Guided Activities	SSL certificate and key management > SSL configurations > New	
± Servers	Defines a list of Secure Sockets Layer (SSL) configurations.	
Applications		
Services	General Properties	The additional properties
Resources	* Name	will not be available unti the general properties for
Security		this item are applied or
Global security	Trust store name	
Security domains     Administrative Authorization Groups	NodeDefaultKeyStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01)	
SSL certificate and key management	Keystore name	
Security auditing	NodeDefaultKeyStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01)	settings
Bus security	Default server certificate alias	Trust and key managers
+ System administration	(none) 🔻	Custom
Users and Groups	Default client certificate alias	properties
	(none) 💌	Related Items
Monitoring and Tuning	Management scope	
Troubleshooting	cell):ofss220137Node01Cell:(node):ofss220137Node01	The additional properties Close page Close page Clo
Service integration		
1 UDDI	Apply OK Reset Cancel	
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3. Specify the following details:

#### Name

Specify the name of the SSL configuration.

### **Trusted Store Name**

Select the added key store.

### Key Store Name

Select the added key store.



4. Click the button 'Get Certificate aliases'. Further, click 'Apply' and save the changes.

## 1.5 Managing Endpoint Security Configurations

This section explains the process of managing endpoint security configurations.

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4 <u> </u>	Manage certificate expiration Manage FIPS Vonamically update the run time when SSL configuration		

1. On the left pane, expand 'Security' and click 'SSL certificate and key management'. Under 'Configuration settings', click 'Manage endpoint security configurations'.

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The following screen is displayed:

2. Click the first link under 'Inbound tree'. The following screen is displayed:



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i Applications 2 Applications 2 Security 3 Contrast 4 Services 5 Security Adubtications 5	Servers	Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, node,	, server, or cluster.	select a field
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Under SSL configurations, select the configured SSL from the drop-down list.

3. Click the button 'Update certificate alias list'. Click 'Apply' and save the changes.



## 1.6 SSL Settings at Application Server Level

Go to the servers available on the left and click the application servers link which will refresh the window on the right side to display the details pertaining to application servers

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<ul> <li>System administration</li> </ul>										
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1. Click the server to which SSL configuration has to be applied. The following screen is displayed.

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2. Go to Configuration tab and click 'Web container transport chains' under 'Container settings'.



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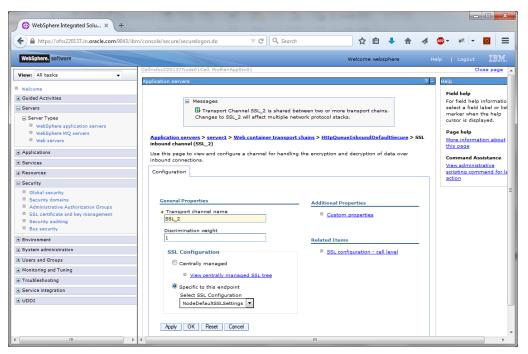
3. Against their respective names, the secured connection is available under the column 'SSL Enabled'. Click 'WCInboundDefaultSecure'.

The following screen is displayed:

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		Web container inbound channel (WCC_6)	

4. Click 'SSL Inbound channel (SSL 2).





5. Select the configured SSL from the list of SSL configurations. Click 'Apply' and save the changes.

## 1.7 Running Application with SSL

To run the application with SSL, use the following syntax:

https://<<ip address or host name>>:<<port number>>/<<context>>>

### 1.8 Certificate Exchange for Two Ways SSL

### 1.8.1 Extracting Certificate for Server1

The process of extracting certificate for Server 1 is described below.



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- On the left pane of the screen, expand 'Security'. Go to 'SSL certificate and key management > Key stores and certificates > {YOUR KEYSTORE NAME} > Personal certificates.
- 2. Select the installed certificate and click 'Extract' button.

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3. Specify the location to save the certificate. This will be used to add in the other server. Ensure that the file has been created in the location.

Eg: \<localfolder>\<server1.cer>

- 4. Similarly extract the certificate for the second server.
- Eg: \<localfolder>\<server2.cer>

### 1.8.2 Extracting Certificate for Server2

You can follow the steps for server 1 described under 'Extracting Certificate for Server1' to extract the certificate for Server2.

#### 1.8.3 Importing Certificate into Keystore for Server1

<u>Note</u>: The trust certificates also needs to be added in the cacerts of the Java Runtime Environment

Go to the other server. Expand 'Security > SSL certificate and key management > Key stores and certificates > Server7Keystore (which is created now).

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-	Management scope	certificate requests
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+ Users and Groups		
Monitoring and Tuning	Read only	
Troubleshooting	Initialize at startup	
Service integration	Enable cryptographic operations on hardware device	
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1. Click 'Signer Certificates'.



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Users and Groups     Monitoring and Tuning     Troubleshooting     Service integration		
	*	

2. Click 'Add' button to add the certificate of the other server.

The following screen is displayed:

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Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing	Apply OK Reset Cancel	
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System administration     Users and Groups		
<ul> <li>Monitoring and Tuning</li> <li>              Troubleshooting      </li> </ul>		
Service integration     UDDI		
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3. The extracted certificate of the second server has to be imported to the key-store and truststore of first server. This has to be done using the same local path where the extract certificate was generated for the first server.



Eg: \<localfolder>\<server1.cer>

### 1.8.4 Importing Certificate into Keystore for Server2

You can follow the steps for server 1 described under 'Importing Certificate into Keystore for Server1' to import the certificate into keystore for Server2.

### 1.8.5 Importing Certificate into Truststore for Server1

Expand 'SSL certificate and key management > Key stores and certificates and click 'NodeDefaultTrustStore'.

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View: All tasks		20137Node01Cell, Profile=A			2 -	– Help	Close page		
Welcome Guided Activities		rtificate and key manage				Field help For field help			
Server Types WebSphere application servers WebSphere MQ servers WebSphere MQ servers Web servers	Keystor SSL	s keystore types, includin e usages . keystores ferences	g cryptography, RACF(R	), CMS, Java(TM), and all trusts	tore types.	select a field I marker when t cursor is displi <b>Page help</b> <u>More informat</u> <u>this page</u>	abel or list the help ayed.		
Applications     Services	Nev	Delete Change	password Exchang	e signers		Command As	sistance		
Services      Resources		D # #				View administr scripting com			
Security	Select	Name 🗘	Description 🗘	Management Scope 🗘	Path 🗘	action			
Global security	You c	an administer the followin	g resources:						
Security domains     Administrative Authorization Groups     SSL certificate and key management     Security auditing     Bus security		<u>NodeDefaultKeyStore</u>	Default key store for ofss220137Node01	(cell):ofss220137Node01Cell: (node):ofss220137Node01	\${CONFIG_ROOT}/cells /ofss220137Node01Cell /nodes /ofss220137Node01 /key.p12				
Environment		NodeDefaultTrustStore	Default trust store for	(cell):ofss220137Node01Cell:	\${CONFIG_ROOT}/cells				
System administration			ofss220137Node01	(node):ofss220137Node01	/ofss220137Node01Cell /nodes				
Users and Groups     Monitoring and Tuning					/ofss220137Node01 /trust.p12				
Troubleshooting									
Service integration	Total	2							
UDDI     ▼									



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A https://ofss220137.in.oracle.com:904	3/ibm/console/secure/securelogon.do 🔍 C 🔍 Search 🔂 🖨 🦊 🏠 🛷	🐠 - 🥐 - 🖸 📃
WebSphere. software	Welcome websphere	Help   Logout <b>IBM</b> .
View: All tasks	Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.	*
Guided Activities	General Properties	Additional Properties
Servers	Name	Signer certificates
<ul> <li>Server Types</li> <li>WebSphere application servers</li> <li>WebSphere MQ servers</li> <li>Web servers</li> </ul>	NodeDefaultKeyStore Description Default key store for ofss220137Node01	<ul> <li><u>Personal</u></li> <li><u>certificates</u></li> <li><u>Personal</u></li> </ul>
Applications      Services	Management scope [cell]:ofss220137Node01Cell:(node):ofss220137Node01	certificate requests Custom
+ Resources	Path	properties
- Security =	\${CONFIG_ROOT}/cells/ofss220137Node01Cell/nodes/ofss220137Node01/key.p12	
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	* Password Type PKCS12 Read only	E
Environment     System administration	Initialize at startup	
Users and Groups	Enable cryptographic operations on hardware device	
Monitoring and Tuning     Troubleshooting	Apply OK Reset Cancel	
Service integration		
▼ IDDU € 4	< III.	* 4

1. Click 'Signer Certificates'.

The following screen is displayed.

() WebSphere Integrated Solu ×	+						-
https://ofss220137.in.oracle.com	:9043	3/ibm/console/secure/securelogon.	do v C	<b>Q</b> Search	☆ 自 🖡 🏠	📣 🐵 🔻 💌 💆 🚍	
WebSphere. software				W	elcome websphere	Help   Logout	
View: All tasks	•	Cell=ofss220137Node01Cell, Profile SSL certificate and key managem				Close pag	•
Welcome Guided Activities		<u>SSL certificate and key manac</u> certificates	Field help For field help information,				
Servers Server Types WebSphere application servers		Manages signer certificates in	select a field label or list marker when the help cursor is displayed.				
<ul> <li>WebSphere MQ servers</li> <li>Web servers</li> </ul>		Add Delete Extract	Retrieve from port			Page help More information about this page	
<ul> <li>Applications</li> <li> </li> <li></li></ul>		Select Alias \$	Issued to $\Diamond$	Fingerprint (SHA Digest)	Expiration \$	Command Assistance <u>View administrative</u>	
Resources     Security	E	Total 0				scripting command for last action	-
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	l						
<ul> <li></li></ul>							
Users and Groups     Monitoring and Tuning							
Troubleshooting  Service integration  UDDI							

2. Click 'Add' button to add the extracted certificate of the second server.



The following screen is displayed.

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+ https://ofss220137.in.oracle.com:9	)43/ibm/console/secure/securelogon.do 🔍 C 🛛 🔍 Search 🔄 🏠 🏚 4	🐵 - 🦇 - 📴 🚍
WebSphere. software	Welcome websphere Ho	elp   Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management ? -	Close page
Welcome     Guided Activities     Servers	SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Signer certificates >           Add signer certificate	Field help For field help information select a field label or list
Server Types  WebSphere application servers  WebSphere MQ servers	Adds a signer certificate to a key store.  General Properties  Alias	marker when the help cursor is displayed. Page help
Web servers     Applications     Services	ELCM + File name D:\Keysore\myKeysore.cer	<u>More information about</u> <u>this page</u>
Resources     Security     Global security	Data type Base64-encoded ASCII data	
Security domains     Administrative Authorization Groups     SSL certificate and key management     Security auditing	Apply OK Reset Cancel	
Bus security  Environment		
System administration     Users and Groups		
Osers and Groups     Monitoring and Tuning     Troubleshooting		
Service integration		
avascript:clearFilter('com.ibm.ws.console.se	unity.SignerCertsCollectionForm')	

3. Specify the 'alias' name to identify the other server.

Eg: For server1, you can give the alias name 'server2Alias'.

4. Further, specify the location of the extracted certificate.

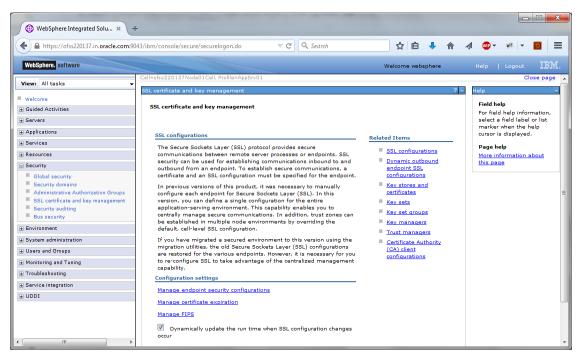
### 1.8.6 Importing Certificate into Truststore for Server2

You can follow the steps for server 1 described under 'Importing Certificate into Truststore for Server2' to import the certificate into Truststore for Server2.



## 1.9 Managing Endpoint Security Configurations

To manage the endpoint security configurations, follow the instructions given below.



1. Expand 'Security > SSL certificate and key management' and click 'Manage endpoint security configurations'.

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← A https://ofss220137.in.oracle.com:904	3/ibm/console/secure/securelogon.do 🔍 C 🔍 Search 🔂 🖨 🤞 🗸	1 🐵 - 🧀 - 🖸 📃
WebSphere. software	Welcome websphere	Help   Logout IBM.
View: All tasks	Cell=cfs220137ko601Cell. Profile=AppSrv01 SSL certificate and Key management 7 =	Close page
<ul> <li>Guided Activities</li> <li>€ Servers</li> </ul>	<u>SSL certificate and key management</u> > Manage endpoint security configurations Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, node, server, or cluster.	Field help For field help information, select a field label or list marker when the help
<ul> <li>Applications</li> <li>⊕ Services</li> </ul>	Local Topology	marker when the help cursor is displayed. Page help
Resources      Security     Global security     Security domains     Administrativa Authorization Groups     SEL certificate and key management     Security authorized authorized to a security     Elivizonnest	□ Inbound         □ driss20137Node01Cell         □ modes         □ modes         □ modes         □ driss220137Node01Cell         □ driss220137Node01Cell         □ driss220137Node01Cell         □ modes         □ driss220137Node01Cell         □ driss220137Node01Cell         □ driss220137Node01Cell         □ modes         □ modes         □ modes         □ modes	More information about this page
System administration Users and Groups		
Generation     Generation     Generation     Generation		
< <u> </u>		

2. Change the inbound node settings. Expand 'Inbound' and click link highlighted in blue color.



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← ▲ https://ofss220137.in.oracle.com:90	43/ibm/console/secure/securelogon.do V C C	合自 🕹 🏦 🐗 🐵 🕇	* - 🖸 😑
WebSphere. software		ome websphere Help	Logout IBM.
View: All tasks           ■ Welcome           ① Guided Activities	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management SSL certificate and key management > Manage endpoint security configurations > ofss2	2 -	Close page Help Field help For field help inform
Servers     Applications     Services	Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, no		select a field label of marker when the he cursor is displayed.
Resources     Security     Global security     Global security     Security domains     Administrative Authorization Groups     SSL certificate and key management     Security auditing     Bus security     Environment     System administration     Users and Groups     Monitoring and Tuning	Name ofss220137Node01 Direction Inbound Specific SSL configuration for this endpoint SSL configuration NodeDefaultSSLSettings Certificate alias in key store default	Related Items SSL configurations Dynamic outbound endpoint SSL configurations Key stores and certificates Key sets Key sets Key set groups Key managers Key managers Certificate	Page help <u>More information al</u> <u>this page</u>
Troubleshooting  Service integration  UDDI	Apply OK Reset Cancel	Authority (CA) client configurations	

- 3. Select the 'SSL Configuration' created which you just created. Click 'Update certificate alias list ' button.
- 4. Ensure that the proper certificate and SSL configuration are selected. Further, click 'Apply' and save the settings.

You can view the settings under 'Inbound'.



https://ofss220137.in.oracle.com:90	B/ibm/console/secure/securelogon.do 🔍 🤄 🔍 Search 🔄 🛊 👘 🐗	🐵 - 🥐 - 🖸 📑
WebSphere, software	Welcome websphere	Help   Logout IBM
View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01	Close pa
Welcome	SSL certificate and key management       ?         SSL certificate and key management       > Manage endpoint security configurations         Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, node, server, or cluster.	Help Field help For field help information select a field label or list
Applications	Local Topology	marker when the help cursor is displayed.
± Services		Page help
Resources     Security     Global security     Security domains     Administrative Authorization Groups     SSL certificate and key management     Security auditing     Bus security	Inbound         ofss220137Node01Cell         □       fss220137Node01(NodeDefaultSSLSettings)         □       ofss220137Node01Cell         □       ofss220137Node01Cell         □       nodes         □       nodes         □       ofss220137Node01Cell         □       nodes         □       nodes         □       fss220137Node01(NodeDefaultSSLSettings)	More information about this page
Environment		
Honitoring and Tuning		
Troubleshooting		
Bervice integration ⊕ UDDI		

- 5. Repeat the above steps for 'Outbound' as well.
- 6. You need to repeat the above steps for server2 also.

## 1.10 Protection Quality

1. Expand 'SSL certificate and key management > SSL configurations > {YOUR SERVER CONFIG }.



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https://ofss220137.in.oracle.com:90	43/ibm/console/secure/securelogon.do 🔍 C 🔍 Search 📩 😭 🖡 🎓 🔌	🐠 🕶 🥐 👻 🗾
WebSphere. software	Welcome websphere	Help   Logout IBM.
View: All tasks 🔻	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management	Close page
Welcome     Guided Activities	SSL certificate and key management > SSL configurations > NodeDefaultSSLSettings	
Servers	Defines a list of Secure Sockets Layer (SSL) configurations.	
<ul> <li>Applications</li> <li></li></ul>	General Properties	Additional Properties
Resources	* Name	Quality of
Security Global security Global security Global security Administrative Authorization Groups Administrative Authorization Groups SSL certificate and key management Security auditing Bus security Environment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration UDDI	NodeDefaultSSLSettings Trust store name NodeDefaultTrustStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01) Keystore name NodeDefaultKeyStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01)  Default server certificate alias (none) Default cliant certificate alias (none) Management scope (cell):ofss220137Node01Cell:(node):ofss220137Node01  Apply OK Reset Cancel	protection (OoP) settings Trust and key managers <u>Custom</u> properties <u>Related Items</u> <u>Key stores and</u> certificates
4 III >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	<	F

2. On the right side, click 'Quality of protection (QoP) settings'.



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WebSphere. software	Welcome websphere	Help   Logout IBM.
View: All tasks	SSL certificate and key management	? - Help -
Welcome     Guided Activities     Guided Activities     Servers     Applications     Sevrices     Global security     Global security     Global security     Security authorization Groups     SSL certificate and key management     Security authorization     Bus security     Bus security	SSL certificate and key management > SSL configurations > NodeDefaultSSLSettings > Quality of protect (QoP) settings         Specifies the security level, ciphers, and mutual authentication settings.         General Properties         Client authentication         None         Protocol         SSL_TLS         Provider         @ Predefined JSSE provider         Select provider         Clients JSSE revider	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 Command Assistance View administrative scripting command for last action
£ System administration ↓ Users and Groups Monitoring and Tuning Troubleshooting Service integration UDDI	Custom JSSE provider Custom provider Cipher suite settings Cipher suite groups Update selected ciphers Cipher suites Cipher suites Cipher suites Selected ciphers Ssl_RSA_WITH_AES_128_CBC_SHA256 SSL_DHE_RSA_WITH_AES_128_CBC_SHA256 SSL_DHE_RSA_WITH_AES_128_CBC_SHA256 SSL_DHE_RSA_WITH_AES_128_CBC_SHA Add Apply OK Reset Cancel	

- 3. Under 'Client authentication' choose 'Supported' from the drop-down list.
- 4. Click 'Apply' and save the changes.
- 5. You need to repeat these steps for the second server. Once you have made the changes to both the servers, restart the servers. It is recommended to restart the servers after making the changes.

// New Changes

## 1.11 Importing or Adding Server Certificates using Batch

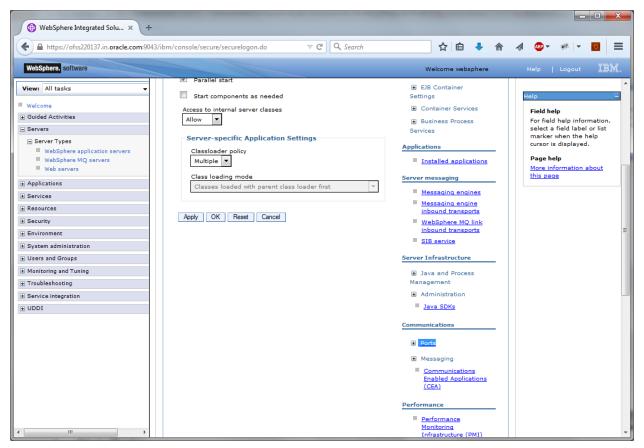
Alternatively, you can import or add the server certificates using *ikeyman.bat*. This batch is available at the following location:

<InstalledLocatio>\IBM\Websphere\AppServer\bin

For security reasons, change the password for 'defaultTruststore' (trust.p12). The default password is 'WebAS'.

SSL port information is available in the following screens.





- 1. Click 'Ports'.
- 2. The details are displayed as follows.



* 🔻 🔽	o'
	IB)
Port	Deta
2809	
8880	1
9100	1
9401	
SS 9403	
ESS 9402	
9060	
9080	
9353	
9043	
9443	
5060	
5061	
7276	
7286	
5558	
5578	
9633	1
11003	1
11004	1
	1

### 1.11.1 Default JAXRS provider settings

- 1. Navigate to Websphere home page.
- 2. Expand Servers > Server Types and click 'Websphere application servers'.



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WebSphere, software				Welcome websphe	re Help Logout IBA
New: All tasks	Cell=ofss222771Node01Cell,	Profile=AppSrvD1			Close pa
	Application servers			? =	Help
Welcome Guided Activities	Application servers				Field help
		list of the application servers in your environment	and the status of each of these servers. You	can also use this page to change the status of a	For field help information, select a
Servers	specific application serve			to thing the states of a	field label or list marker when the help cursor is displayed.
⊟ Server Types	Preferences				
<ul> <li>WebSphere application servers</li> <li>WebSphere MQ servers</li> </ul>	(a) (c)				Page help More information about this page
Web servers	***				
	Name 🗘	Node 🗘	Host Name 🗘	Version 🗘	Command Assistance
E Applications	You can administer the	following resources:			View administrative scripting command for last action
± Services	server1	ofss222771Node01	ofss222771.in.oracle.com	Base 9.0.0.0	
Resources					
Schedulers	Total 1				
Object pool managers					
Java EE default resources					
∃ JMS					
JMS providers					
Connection factories					
Queue connection factories					
Topic connection factories					
Oueues					
Topics					
<ul> <li>Topics</li> <li>Activation specifications</li> </ul>					
# JDBC					
Resource Adapters					
Concurrency					
Cache instances					
Mail					
I URL					
Resource Environment					
E Security					
Environment					
E System administration					
Users and Groups					
E Monitoring and Tuning					
E Troubleshooting					
Service integration					
UDDI					

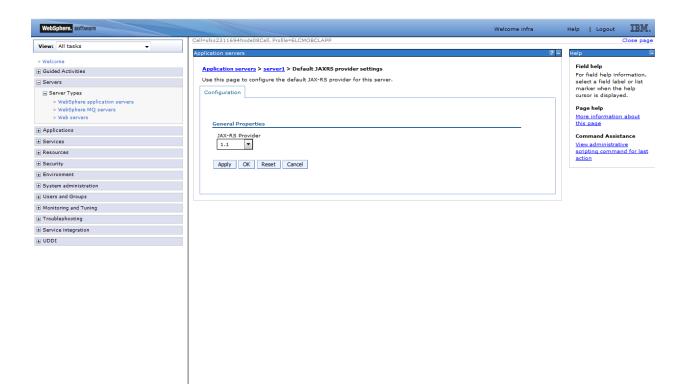
3. Click 'server1'.



WebSphere. software		Welcome infra	Help   Logout IBM.
View: All tasks	Cell=ofss2311694Node08Cell, Profile=ELCMOBCLAPP		Close page
Walcome     Guided Activities     Servers     Server Types     * WebSphere application servers	Application servers Application servers > server1 Use this page to configure an application server. An application server enterprise applications. Runtime Configuration	7 -	Help            Field help         For field help information, select a field label or list marker when the help cursor is displayed.
Hebupines application servers     Web servers     Web servers     Web servers	General Properties	Container Settings	Page help More information about this page
Services	Name	Session management	
Resources     Security     Security     Security     Security     System administration     Users and Groups     Users and Groups     Securical Security     Troubleshooting     Service integration     UDD1	server1 Node name  ofss2311694Node08  Run in development mode  Parallel start Start components as needed Access to internal server classes  Allow Server-specific Application Settings Classloader policy Multiple Classes loader first (Lasses loader first)	Generation service     SP Container Settings     Web Container Settings     Portlet Container Settings     Els Container Settings     Container Services     Application profiling service     Transaction service     Dynamic cache service     Compensation service     Default JAXRS provider settings     Internationalization service     Default JAXRS provider settings     Object nool service     ORE service	
	Apply OK Reset Cancel	Startup beans service     Business Process Services      Applications     Installed applications      Server messaging      Messaging engine inbound transports      WebSphere MO link inbound transports      SIB service      Server Infrastructure      Java and Process Management	

4. Expand 'Container Services' under Communications and select 'default JAX-RS provider settings'.





- 5. Select JSX\_RS Provider version latest available (ex:-2.0) from the drop-down list.
- 6. Click 'Apply' and 'Save' the changes. It is recommended to restart the servers after making the changes.



# 2. Creating Resources on Websphere

## 2.1 Introduction

This document explains the steps to create resources on Websphere application server and Queues in Websphere MQ server.

### 2.2 Creating Queues on Websphere MQ Server

The process of creation of queues on Websphere is explained under the following headings.

### 2.2.1 Creating Queue Manager through Console

To create queue manager through console, follow the steps given below:

1. Start MQ server console.

BM WebSphere MQ Explorer		- 6 🛛
Ele Window Help		
🔁 MQ Explorer - Navigator 🛛 💧 🖓 🌩 🧇 🍟 🗖	MQ Explorer - Content 🛛 👘	\$\$ T = = = = = = = = = = = = = = = = = =
Ben WebSphere MQ     Course Annagers     Queue Manager Clusters	WebSphere. MQ	IBM.
	Welcome to MQ Explorer In MQ Explorer you can administer local and remote queue managers and their	
	resources, such as queues, channels, and listeners. Help on MO Explorer	
	Helio on MO Explorer Preferences	
	Queue manager icons	
	The following icons are used in the Navigator view to indicate queue manager status:	
	Mail Local queue manager; running and connected to MQ Explorer           D         Local queue manager; running but disconnected from MQ Explorer	
	Cocal queue manager; stopped and disconnected from MQ Explorer     Image: Connected to MQ Explorer	
	Remote queue manager; disconnected from MQ Explorer	
	O Local queue manager; running as standby and disconnected from MQ Explorer	

 On the left pane, go to 'IBM Websphere MQ > Queue Manager > New > Queue Manager' as shown below:



File       Window Help       Image: Second S	🕀 IBM WebSphere MQ E	Explorer									
Concernance     Some Managers     Some Managers     Some Manager	File Window Help										
Current Manager Show/hide Quoue Managers       Filter: Standard for Quoue Managers         Image: Standard for Quoue Managers       Filter: Standard for Quoue Managers         Image: Standard for Quoue Managers       Image: Standard for Quoue Managers         Image: Standard for Quoue Managers       Image: Standard for Quoue Managers         Image: Standard for Quoue Managers       Image: Standard for Quoue Managers         Image: Standard for Quoue Managers       Image: Standard for Quoue Managers         Image: Standard for Quoue Managers       Image: Standard for Quoue Managers         Image: Standard for Quoue Managers       Image: Standard for Quoue Managers	MQ Explorer - Navigator	X (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	7 🗖 🔲 🙋 MQ	Explorer - Content	×						비
Add Remote Queue Managers      Add Remote Queue Managers	🗁 Queue Manage		Que	ue Manager	-s						
Tests Sets Sets Sets Sets Sets Sets Sets	- Cueue Manage - Company JMS Administer		Filter: Standard for Queue Managers								
Solos	- 🗁 Service Definiti	New 🔸	Queue Manager	ue manag	Command level	Queue manager status	Platform	Queue-sharing group name	Dead-letter queue	Description	Default bind type
Scheme: Standard for Queue Managers											
Scheme: Standard for Queue Managers											
Scheme: Standard for Queue Managers											
Scheme: Standard for Queue Managers											
Scheme: Standard for Queue Managers											
Scheme: Standard for Queue Managers											
Scheme: Standard for Queue Managers											
Scheme: Skandard for Queue Managers											
Scheme: Skandard for Queue Managers											
Scheme: Skandard for Queue Managers											
Scheme: Standard for Queue Managers			1000								
Select a queue manager to show its connection details here:			Select	a queue manager ti	5 show its connecti	ion details here:					



\varTheta Create Queue Manage	er	
Queue Manager		
Enter basic values		
Queue manager name:	QM_DDHP0520	
Make this the default que		
Default transmission queue:		
Dead-letter queue:		
Max handle limit:	256	*
Trigger interval:	999999999	*
Max uncommitted messages:	10000	*
0	Back Next > Finish	Cancel

- 3. Specify the 'Queue manager name'. Check the box 'Make this the default queue manager'.
- 4. Click 'Next'. The following screen is displayed:



🕀 Create Queue Manager		
Queue Manager Enter data and log valu	Jes	
Queue manager name:	QM_DDHP0520 • Use circular logging • Use linear logging	
Log file size: (x4KB)	4096	*
Log primary files:	3	÷
Log secondary files:	2	*
	am Files\IBM\WebSphere MQ\qmgrs am Files\IBM\WebSphere MQ\log	Browse Browse
0	< <u>B</u> ack <u>N</u> ext > <u>Finish</u>	Cancel

5. Click 'Next'.



🕀 Create Queue Manager		
Queue Manager		
Enter configuration options		
Queue manager name: QM_DDHP0520		
Start queue manager after it has been created		
Multi-instance Queue Manager:		
Permit a standby instance		
Select type of queue manager startup		
⊙ Automatic		
◯ Service (manual)		
O Interactive (manual)		
Configures the queue manager to start automatically when the machine starts up.		
Create server-connection channel to allow remote administration of the queue		
manager over TCP/IP		
Create server-connection channel		
Image: Concel         Cancel		

6. Click 'Next'.



🕀 Create Queue Manager
Queue Manager
Enter listener options
Queue manager name: QM_DDHP0520
The queue manager needs a listener to monitor for incoming network connections, for some network protocols.
Create listener configured for TCP/IP
The listener needs to listen on a port number not used by any other queue manager, service or application on this computer
Listen on port number: 1414
⑦ < <u>Back</u> <u>Next</u> > <u>Finish</u> Cancel

7. Specify the 'Listen on port number' as '1414' (default). Click 'Next'



🕀 Create Queue Manager 📃 🗖 🔀
Queue Manager Enter explorer options
Queue manager name:       QM_DDHP0520         ✓ Autoreconnect         Automatic Refresh         ✓ Automatically refresh information shown for this queue manager         Interval (seconds):       15         ✓ Apply Default
Image: Cancel       Image: Cancel

8. Click 'Finish'.



Details		
********************************** * Command: crtmqm -sa - *********************************** WebSphere MQ queue mar Directory 'D:\Program Files The Queue Manager ender exitvalue = 268455953	q QM_DDHP0520 ***********************************	s\QM_DDHP0520' creat
<		
Print	Save As	Close

Close the message. The following screen is displayed:

Window Help									
MQ Explorer - Navigator 🙁 🏠 🗇 🗇 🎺 🏹	MQ Explorer - Content 🛛	🕅 MQ Explorer - Content 🔅 👘 🖓 🖓 🖓							
IBM WebSphere MQ     Cucue Managers	Queue Managers	Filter: Standard for Queue Managers							
	Filter: Standard for Queue Mana								
IMS Administered Objects Service Definition Repositories	Queue manager name				Queue-sharing group name	Dead-letter queue	Description		
	C (M, DOHPOSZO		Stopped	Windows				Shared	
	<							2	
	Scheme: Standard for Queue Ma	Scheme: Standard for Queue Managers							
	Last updated: 16:50:26	Scheiner skandard für Queue managers							
	Select a queue manager to show its	connection details h	ere:						

9. Right click 'Queue Manager' and select 'Start'.



🕀 IBM WebSphere MQ Explorer		
File Window Help		
🔂 MQ Explorer - Navigator 🛛 👘 🗇 🗇 🏟 🍸 🗖 🗖	MQ Explorer - Content 🕺	
BIM WebSphere MQ     Geue Managers     Got DOHR0522     Start	Queue Manager QM_DDHP0520 Connection QuickView:	
Course Marager C Hade     Properties	Connection status Connection hype Connection name Channel name Channel definition table Refresh interval Autoreconnect	Disconnected Local 15 Yes
	Last updated: 16:50:53 Status Quick/iew: Queue manager status Command server status	Stopped Stopped

10. Right click 'Queue Manager QM\_DDHP0520' and select 'Start'. The following screen is displayed:

└── Start Queue Manager - "QM_DDHP0520"	
Choose Start Method:	
Start as created	
Start as service	
Start interactive	
Multi-instance Queue Manager:	
0	OK Cancel

11. Click 'OK'.



IM WebSphere MQ Explorer			
Window Help			
	🔅 🍸 🗖 🚺 MQ Explorer - Content 🕴		朝 🕸 🗸
IBM WebSphere MQ	Queue Manager QM_DDHPI	1520	
B 🗁 Queue Managers		<i>1020</i>	
	Connection Quick/liew:		
Queue Manager Clusters			
IMS Administered Objects	Connection status	Connected	
Service Definition Repositories	Connection type	Local	
	Connection name		
	Channel name Channel definition table		
	Refresh interval	15	
	Autoreconnect	Yes	
	Autoreconnect	res	
	Last updated: 17:16:07		
	Status QuickView:		
	Queue manager status	Running	
	Command server status	Running	
	Channel initiator status	Stopped	
	Connection count	1	
	Standby	Not permitted	
	Last updated: 17:16:07		
	Properties Quick/liew:		
	Queue manager name	OM_DDHP0520	
	Description		
	Platform	Windows	
	Command level	701	
	Default transmission queue		
	Startup	Automatic	
	Last updated: 17:16:07		

## 2.2.2 Creating Queues

To create queues, follow the steps given below:

1. Start MQ server console.



IBM WebSphere MQ Explorer     File Window Help			
	🗖 🗖 MQ Explorer - Content 💈		≝ 🙆 ▽ ⊓ 🖬
EM WebSphere MQ     EM WebSphere MQ     Cueue Managers     E→      Queue Managers	Queue Manager QM_DDHF Connection QuickView:	0520	
Course Manager Cutates     Course Manager Cutates     Service Definition Repositories	Connection status Connection type Connection name Charmel anne Charmel definition table Refrech interval Autoreconnect	Connected Local 15 Yes	
	Last updated: 17:16:07		
	Status Quidk/lew: Queue manager status Command server status Channel Initistor status Connection count Standby	Running Running Stopped 4 Not permitted	
	Last updated: 17:16:07		
	Properties QuickWew:		
	Queue manager name Description Platform Command level Default transmission queue Startup	QM_DDHP0520 Windows 701 Automatic	
	Last updated: 17:16:07		
I			:

2. On the left pane, go to 'IBM Websphere MQ > Queue Managers > QM\_DDHP0520 > Queues > New > Local Queue' as shown below.

File Window Help								
🕾 MQ Explorer - Navigator 🛛 👔 🗇 🔿 🤣 🍸 🗖 🗖	🗐 MQ Ex	plorer - Content 🕺						
(     (     )	Queue Filter:	<b>25</b> Standard for Queue:	i					
Copies Merry 2 Local Operations     Copies Advance     Copies Adv	nition	tueue name	Queue type	Open input count	Open output count	Current queue deșth	Max queue depth	



Noto:- Ouque Name should be ALL CAPS, also issue will occur at listener level in WAS.

🕀 New Local Queue	
Create a Local Queue	
Enter the details of the object you wish to create	
Name:	
NOTIFY_QUEUE	
Select an existing object from which to copy the attributes for the new object.	
SYSTEM.DEFAULT.LOCAL.QUEUE	Select
When this wizard completes, another wizard can be started automatically to create a matching objec	t.
Start wizard to create a matching JMS Queue	
(2) C Back Next	> <u>F</u> inish Cancel

3. Specify the queue name. Click 'Next'. The following screen is displayed:

🕀 New Local Queue			
Change properties Change the properties of the new	Local Queue		
General - Extended - Cluster - Triggering - Events - Storage - Statistics	General Queue name: Queue type: Description: Put messages: Get messages: Default priority: Default prisistence: Scope: Usage:	NOTIFY_QUEUE         Local         NOTIFY_QUEUE         Allowed         Allowed         0         Persistent         Queue manager         Normal	
0		< Back Next > Finish	Cancel

4. Specify the description. Select 'Persistent' as the 'Default persistence'.



Help									
er - Navigator 🛛 💧 🗇 🌩 🚸	🗢 🗖 🔯 MQ Explorer - Content 🛛				<b>2</b> 月 19	• 🚸 🍸 •			
VebSphere MQ	Queues	Queues							
ueue Managers QM_DDHP0520_NEW	Filter: Standard for Queues								
QM_DDHP0520									
Dueues Contraction Contraction	Queue name     NOTIFY_QUEUE	Queue type			Current queue depth	Max queue			
- 🗁 Subscriptions	E North - States	2000		Ŭ.	о 	3000			
🖥 🧀 Advanced Jueue Manager Clusters									
MS Administered Objects									
ervice Definition Repositories									
						>			
	Scheme: Standard for Queues - Distributed					~			
	Last updated: 18:38:00								

5. You can find the new queue name in the list.

## 2.3 <u>Creating Queue Manager and Queue using UNIX</u> <u>Commands</u>

You need to create, configure, post and view messages in IBM MQ queues. The method is described under the following headings.

For this, first you need to open 'Putty' and connect it to the MQ server installed box.

### 2.3.1 Creating Queue Manager

Change the directory to '<Websphere\_MQ\_HOME>'. Here, 'Websphere\_MQ\_HOME' is the MQ server software installation directory.

The command to create Queue Manager is given below:

crtmqm <queue\_manager\_name>

### **Example**

crtmqm FC\_QMGR

This command creates the queue manager 'FC\_QMGR' in the MQ server.



## 2.3.2 Starting Queue Manager

Once the queue manager is created, you need to start the queue manager using the following command:

strmqm <queue\_manager\_name>

### <u>Example</u>

strmqm FC\_QMGR

This command starts the 'FC\_QMGR' queue manager.

### 2.3.3 Starting MQ Service to Create Queues under FC\_QMGR

After stating the queue manager, run the MQSC service (for creating queues and other objects) of queue manager. You can use the following command:

runmqsc <queue\_manager\_name>

### Example

runmqsc FC\_QMGR

This command starts the MQ service for 'FC\_QMGR'.

### 2.3.4 Creating Queues

After starting the MQSC issue, you need to create the required queues using the following command:

DEFINE QLOCAL (<QUEUE\_NAME>)

### **Example**

DEFINE QLOCAL (EMSOUT\_QUEUE)

This command creates all the necessary queues.

### 2.3.5 Creating Channel

After creating the queues, you need to create a channel for queue manager using the following command:

DEFINE CHANNEL (<CHNL\_NAME>) CHLTYPE(<CHANNEL\_TYPE>)

Here, 'CHNL\_NAME' is the name of the channel and 'CHANNEL\_TYPE' is the type of channel such as server connection, sender, receiver, etc. You can create the server connection channel using the following command:

DEFINE CHANNEL (FC\_CNL) CHLTYPE (SVRCONN)

Here, SVRCONN stands for the 'Server Connection' channel type.

### 2.3.6 Ending MQSC

You can use the command 'END' to end the MQSC service.



## 2.3.7 Creating Bindings

After creating the queues and the channel, you need to bind them using the JMSAdmin. To do this, start Putty and connect it to the MQ server installed box.

Move to the directory '<Websphere\_MQ\_HOME>/java/bin'. Here, 'Websphere\_MQ\_HOME' is the MQ server software installation path.

In this folder, you will find the file 'JMSAdmin.config'. You need to give the PROVIDER\_URL to which the *.bindings* files need to be created.

PROVIDER\_URL=file: <Websphere\_MQ\_HOME>/JNDI

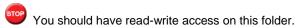
### **Example**

PROVIDER\_URL=file: /var/mqm/JNDI

Below environment variables need to be set before creating queue/connection factory configurations.

PATH=\$PATH:\$HOME/bin export MQ\_JAVA\_INSTALL\_PATH=/opt/mqm/java export MQ\_JAVA\_DATA\_PATH=/var/mqm export MQ\_JAVA\_LIB\_PATH=/opt/mqm/java/lib L=\$MQ\_JAVA\_INSTALL\_PATH/lib CLASSPATH=\$CLASSPATH:\$L/com.ibm.mq.jar:\$L/com.ibm.mqjms.jar export CLASSPATH=\$CLASSPATH:/opt/mqm/samp/jms/samples:/opt/mqm/samp/wmqjava/samp export PATH

Launch JMSAdmin



## 2.3.8 Creating QCF

After creating the queues and channel, you need to create a queue connection factory in the MQ server. Complete the above steps and make above changes to the 'JMSAdmin.config' file. Move to the directory '<Websphere\_MQ\_HOME>/java/bin' in Putty. Type 'JMSAdmin' as shown in the figure.





This will take you to the 'InitCtx>' section. Use the following command to create queue connection factory:

define qcf (<qcf\_name>) qmgr(<queue\_mgr\_name>) host (<ip-address>) port(1010)
tran(CLIENT)

### **Example**

define qcf (fc\_qcf) qmgr(FC\_QMGR) host (10.10.10.10) port(1010) tran(CLIENT)

This creates the queue connection factory for the queue manager 'FC\_QMGR' in 10.10.10.10 server.

Now, you need to create the bindings for each queue. Use the following command in 'InitCtx>'.

DEFINE Q(EMSOUT\_QUEUE) QUEUE(EMSOUT\_QUEUE) QMGR(FC\_QMGR)

Use the same command for other queues also.

You can use the following command to view the binding details:

InitCtx> display ctx

The binding details are displayed as shown in the figure below.



🖨 10.180.196.51 - PuTTY		
InitCtx> dis ctx		^
Contents of InitCtx		
.bindings a SFMS_DEST_QUEUE a NOTIFY_QUEUE_DLQ a SWIFT_DEST_QUEUE a SWIFT_IN_QUEUE a EMSOUT_QUEUE a RTGS_DEST_QUEUE a SFMS_IN_QUEUE a fc_qcf a NOTIFY_QUEUE a EMSOUT_QUEUE_DLQ a RTGS_IN_QUEUE a EMSIN_QUEUE	com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue	
14 Object(s) O Context(s) 14 Binding(s), 13 Admin	istered	
InitCtx>		~

Once this is created, you need to check whether the *.bindings* file is available in the path given in 'JMSAdmin.config' (PROVIDER\_URL).

Now, you need to create JMS queues for DIRECT queues to post messages. DIRECT queues require connection to Oracle FLEXCUBE application.

#### <u>Example</u>

Following are the DIRECT queues:

- NOTIFY\_QUEUE
- EMSIN\_QUEUE
- EMSOUT\_QUEUE
- SFMS\_INQUEUE
- SFMSOUT\_QUEUE
- RTGS\_INQUEUE
- INTERNAL\_BIPREPORT\_QUEUE
- INTERNAL\_BIP\_QUEUE\_DLQ
- INTERNAL\_BIPADVREPORT\_QUEUE
- INTERNAL\_BIP\_ADVICE\_QUEUE\_DLQ
- INTERNAL\_GI\_UPLOAD\_QUEUE
- INTERNAL\_GI\_UPLOAD\_DLQ
- EMS\_QUEUE\_DLQ
- SNCKREQ\_QUEUE
- SNCKRES\_QUEUE
- SNCKASYNC\_QUEUE



You need to create JMS queues for the above queues as shown in the figure:

🛆 Queue name	Queue type	Open input count	Open output count	Current queue depth
DEFFERED_DEST_QUEUE	Local	0	0	0
EL_NOTIFY_DLQ	Local	0	0	0
EL_NOTIFY_REQ_Q	Local	0	0	0
EL_NOTIFY_RES_Q	Local	0	0	0
🔁 ELMDB_DLQ	Local	0	0	0
🖾 ELMDB_REQ_Q	Local	0	0	0
🖾 ELMDB_RES_Q	Local	0	0	0
EMS_EXTQUEUE	Local	0	0	0
EMS_INQUEUE	Local	2	0	0
EMS_OUTQUEUE	Local	1	0	0
MDB_QUEUE	Local	0	0	0
MDB_QUEUE_DLQ	Local	0	0	0
MDB_QUEUE_RESPONSE	Local	0	0	0
NOTIFY_DEST_QUEUE	Local	0	0	0
D NOTIFY_QUEUE	Local	1	0	0
DVDTIFY_QUEUE_DLQ	Local	0	0	0
RTGS_INQUEUE	Local	1	0	0
	Local	1	0	0

## 2.3.9 MQ Channel Authentication

MQ Channel Authentication can be managed using following set of MQSC Commands

• Enable Channel Authentication

>ALTER QMGR CHLAUTH(ENABLE)

• b) Allow MQ Privileged Users to access Channel

>SET CHLAUTH(\*) TYPE(BLOCKUSER) USERLIST(\*MQADMIN) ACTION(REMOVE)

• c) Allow all client addresses to access Channel

>SET CHLAUTH(SYSTEM.\*) TYPE(ADDRESSMAP) ADDRESS(\*) ACTION(REMOVE

## 2.4 Viewing IBM MQ Queues

Through MQ explorer, you can view the queues created in IBM MQ. If the IBM MQ server sits on a Unix box, an MQ client needs to be setup in a client machine in Windows operating system.

Follows the below steps to view the queues created in server, from an MQ client:

- 1. Install IBM MQ client in a client terminal.
- 2. Open the client MQ explorer.
- 3. Right click 'Queue Managers' on the left pane and select 'Show/Hide Queue Managers'.
- 4. Click 'Add' in the Show/Hide Queue Managers window.
- 5. Specify the name of Queue Manager which is created in the MQ server. Click 'Next'.
- 6. Specify the IP address of the IBM MQ server in the Host name or IP address field.



- 7. Specify the Port number in which the Queue manager is created in MQ server.
- 8. Specify the server connection channel created in the MQ server. Click 'Finish'.

Under the Queue Manager menu, the queue manger created in the server is displayed with its IP address and port number in braces.

WebSphere MQ Explorer - Navigator 🛛 🤣	🔻 🗖 🗖 🦉 WebSphere MQ Explorer - Con	tent 🗙					41 3	1 🧇 🔻
IBM WebSphere MQ     Oueue Managers	Queues							
FC_QMGR on '10.180.196.51(1415)'	Filter: Standard for Queues							•
E 😂 Advanced	Queue name	Queue type	Definition type	Open input count	Open output count	Current queue depth	Max queue depth	Put message
🗁 Channels	EMSIN_QUEUE	Local	Predefined	1	0	0	5000	Allowed
	EMSOUT_QUEUE	Local	Predefined	1	0	12	5000	Allowed
🔁 Listeners	EMSOUT_QUEUE_DLQ	Local	Predefined	0	0	0	5000	Allowed
🗁 Services	FCQMGR	Local	Predefined	0	0	0	5000	Allowed
Process Definitions Annelists	MDB_QUEUE	Local	Predefined	1	0	0	999999999	Allowed
	MDB_QUEUE_DLQ	Local	Predefined	0	0	6	999999999	Allowed
LC_QMGR	MDB_QUEUE_RESPONSE	Local	Predefined	0	0	12	999999999	Allowed
SWIFT on 'fichw-ap-21(1414)'	NOTIFY_DEST_QUEUE	Local	Predefined	0	0	1	5000	Allowed
TEST on 'flchw-ap-21(1415)'	NOTIFY_QUEUE	Local	Predefined	3	0	0	5000	Allowed
WINOM	NOTIFY_QUEUE_DLQ	Local	Predefined	0	0	19	5000	Allowed
Cueue Manager Clusters	RTGS_DEST_QUEUE	Local	Predefined	0	0	0	5000	Allowed
	RTGS_IN_QUEUE	Local	Predefined	1	0	0	5000	Allowed
	SFMS_DEST_QUEUE	Local	Predefined	0	0	32	5000	Allowed
	SFMS_IN_QUEUE	Local	Predefined	1	0	3	5000	Allowed
	SFMSOUT_QUEUE	Local	Predefined	1	0	3	5000	Allowed



# 3. Creating JDBC Resources on Web Sphere

## 3.1 Introduction

This chapter guides you through the process of JDBC resource creation on IBM Websphere application server.

## 3.2 **Prerequisite:**

If OCI configuration needs to be used in data sources, please refer the vendor specific support manual and make the configuration changes before creating datasources.

## 3.3 Creating JDBC Sources

## 3.3.1 Creating Global Security

- 1. Specify the Websphere administrator username and password.
- 2. Click 'Log In'.



4. Navigate to the Websphere home page . Expand 'Security' and select 'Global Security'. The following screen is displayed.

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♦ A https://ofss220137.in.oracle.com:904	ł3/ibm/console/secure/securelogon.do ♥ ♂ Q Search	☆ 自 ↓ ☆ ∢ ∞- * - 0 =
WebSphere, software		Welcome websphere Help   Logout IBM.
	Cell=ofss220137Node01Cell, Profile=AppSrv01	Close page
View: All tasks -	Global security	
Welcome  Guided Activities  Servers	Global security Use this panel to configure administration and the default application security po	licy. This security configuration applies to the security policy for all
Servers     Applications     Services	functions and is used as a default security policy for user applications. Security d applications.	
Services	Security Configuration Wizard Security Configuration Report	
Security	Administrative security	Authentication
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing	Enable administrative security     Administrative user roles     Administrative group roles     Administrative authentication	Authentication mechanisms and expiration    LTPA  Kerberos and LTPA Kerberos configuration
Bus security     Environment     System administration	Application security  Enable application security	SWAM (deprecated): No authenticated communication <u>Authentication cache settings</u> Web and SIP security
Users and Groups     Monitoring and Tuning     Troubleshooting     Service integration	Java 2 security      Use Java 2 security to restrict application access to local resources     Warn if applications are granted custom permissions     Restrict access to resource authentication data	RMI/IIOP security     Java Authentication and Authorization Service     Enable Java Authentication SPI (JASPI)
± UDDI	User account repository	Providers Use realm-qualified user names
	Realm name defaultWIMFileBasedRealm Current realm definition [rederated repositories Available realm definitions Federated repositories Configure Set as current	Security domains External authorization providers Proarammatic session cookle configuration Custom properties
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5. Expand 'Java Authentication and Authorization Service' and click 'J2C authentication data'.



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https://ofss220137.in.oracle.com:90	43/ibm/console/secure/securelogon.do 🔍 🤁 🤇 🤇 Search 🔄 🖈 🎓 📣	🕸 🔻 🌾 🚺 🚍
WebSphere. software		Help   Logout IBM.
View: All tasks 🔻	Cell=ofss220137Node01Cell, Profile=AppSrv01 Global security ? -	Close page Help –
Welcome     Welcome     Guided Activities     Servers     Applications     Services	Global security > JAAS - J2C authentication data Specifies a list of user identities and passwords for Java(TM) 2 connector security to use. ☑ Prefix new alias names with the node name of the cell (for compatibility with earlier releases)	Field help For field help information, select a field label or list marker when the help cursor is displayed.
	Apply  B Preferences	Page help More information about this page
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	New     Delete       Image: Select Alias      User ID        You can administer the following resources:	Command Assistance View administrative scripting command for last action
Environment     System administration	ofss220137Node01/FC121ASK FC121ASK FC121ASK FC121ASK	
Users and Groups     Monitoring and Tuning     Troubleshooting	ofss220137Node01/FCUBS121_DEV         FCUBS121_DEV         FCUBS121_DEV           Total 2         Total 2         FCUBS121_DEV         FCUBS121_DEV	
Service integration UDDI		

6. Click 'New'.



- 7. You need to define the connection properties. Specify the following details.
  - Alias
  - User ID of the Database
  - Password of the Database
  - Description
- 8. Once you have specified the above details, click 'Apply' and then click 'Save' link appears in the top.

## 3.3.2 JDBC Provider for Non XA Data Source

Follow the steps given below:

1. Login to the application server administration console.



2. Expand 'Resources > JDBC' and select 'JDBC Providers'.

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https://ofss220137.in.oracle.com:90	l3/ibm/console/secure/securelogon.do	Search	☆ 自 🖡 🏠 🦯	a 🐵 - 🦗 - 🖸 🚍
WebSphere. software			Welcome websphere	Help   Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01		?	Close page
Welcome     Guided Activities     Guided Activities     Guided Activities     Guided Activities     Guided Activities     Applications     Gesources     Gotect pool managers     JMS     JDBC     JDBC     JDBC     JDBC     JDBC     Data sources     Data sources     Obta sources     Cata sources	JDBC providers Use this page to edit properties of a JDBC provid driver implementation class for access to the spe this task in a <u>guided activity</u> . A guided activity pre the topic.      Goope: Cell=ofss220137Node01Cell      Scope specifies the level at which the re detailed information on what scope is a settings help.      Cell=ofss220137Node01Cell      Preferences      New Delete      Delete	ific vendor database of your vides a list of task steps an source definition is visible. F	r environment. Learn more about Id more general information about For	Field help For field help information, select a field label or list markrew when the help cursor is displayed. Page help More information about this gade Command Assistance View administrative scripting command for last action
	Select Name \$ Scope	\$	Description 🗘	
I URL I Resource Environment	None Total 0			
Security  Security  Security  System administration  Users and Groups  Monitoring and Tuning  Troubleshooting				

3. Select 'Node' from the dropdown list.



Click New, The following screen is displayed:

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♦ ▲ https://ofss220137.in.oracle.com:9043	3/ibm/console/secure/secure/	ogon.do	📣 👜 - 🥐 - 🖸 📑
WebSphere. software		Welcome websphere	Help   Logout IBM
View: All tasks	Cell=ofss220137Node01Cell, P	rohie=App5rvU1	Close page
Welcome	Create a new JDBC Provider		Field help
Guided Activities	Create a new JDBC Provid	er	For field help information,
± Servers	→ Step 1: Create new	Create new JDBC provider	select a field label or list
Applications	JDBC provider		marker when the help cursor is displayed.
+ Services	Step 2: Enter	Set the basic configuration values of a JDBC provider, which encapsulates the specific vendor JDBC driver implementation classes that are required to access	
- Resources	database class path information	the database. The wizard fills in the name and the description fields, but you	
Schedulers	information	can type different values.	
Object pool managers	Step 3: Summary	Scope	
± JMS		cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1	
∃ JDBC		* Database type	
JDBC providers		Oracle	
<ul> <li>Data sources</li> <li>Data sources (WebSphere Applica</li> </ul>			
Server V4)		* Provider type	
Resource Adapters		Oracle JDBC Driver	
		* Implementation type	
		Connection pool data source 💌	
Mail			
URL     URL		* Name Oracle JDBC Driver	
Resource Environment		Oracle JDBC Driver	
Security		Description	
+ Environment		Oracle JDBC Driver	
System administration			
+ Users and Groups			
+ Monitoring and Tuning			
Troubleshooting     ▼		h.	
4			

4. Specify the following details:

Database Type	Oracle
Provider Type	Oracle JDBC Driver
Implementation Type	Connection pool data source
Name	FCUBS
Description	FCUBS JDBC Driver

5. Click 'Next'.



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← ▲ https://ofss220137.in.oracle.	com	9043,	/ibm/console/secure/s	secu	ur 🔻 C 🔍 Search	☆	Ê	÷	⋒		ABP 🔻	÷	-	0	=
WebSphere. software						Welcom	e webs	phere		H	Help	Log	out	IB	M.
View: All tasks			ss220137Node01Cell,		file=AppSrv01									Close	page
Welcome	Cr	reate	e a new JDBC Provider	r											_
Guided Activities		Cre	ate a new JDBC Provi	der											
Servers			Step 1: Create new JDBC provider	I	Enter database class path infor	matior	ı								
			Step 2: Enter		Set the class path for the JDBC driv your JDBC provider. This wizard pag	ge displa	ays a d	lefault	list of	jars a	nd allow	s you	to se	t the	
Resources     Schedulers			database class path information		environment variables that define t when you type the JDBC driver file l /home/db2inst1/sqllib/java on Linu	location									aths
Object pool managers     JMS     JDBC			Step 3: Summary		Entries are separated by using the ';' or ':'). If a value is specified for								or cha	racters	(such a
■ JDBC providers ■ Data sources					Class path:										
Data sources (WebSphere A Server V4)					\${ORACLE_JDBC_DRIVER_PATH}/d	ojdbc6.ja	ar								
<ul> <li>              € Resource Adapters      </li> <li>             • Asynchronous beans         </li> </ul>															
															Appt
URL     Resource Environment															
Kesource Environment     Security					Directory location for "ojdbc6.jar" w \${ORACLE_JDBC_DRIVER_PATH}	which is :	saved a	as Wel	Sphe	re varia	able				
Environment					D:Softwares\Application Server\IB	M\Webp	shere\	AppSe	rver\0	ptiona	lLibrarie	s\orac	le\JD	BC\	
Users and Groups     Monitoring and Tuning		P	Previous Next	Car	ncel										
Troubleshooting															
<	•				III	_									F

6. Provide the location of Latest jar (ex:-ojdbc6.jar). Click 'Next'.

Note : If latest jar (ojdbc6.jar) is not available at your Websphere server, then copy them into your server (eg: path: /scratch/app/WAS9/lib) and run an export of the jar.

(Eg.in putty run a command

export ORACLE\_JDBC\_DRIVER\_PATH=/scratch/app/WAS9/lib;)Then give the "Directory location for ojdbc6.jar which is saved as Websphere variable

\${ORACLE JDBC DRIVER PATH}" as /scratch/app/WAS9/lib



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https://ofss220137.in.oracle.com	9043/ibm/console/secure/securel	ogon.do ⊽ C Q Search		☆ 自	↓ ⋒		<b>ABP</b> -	*	<u> </u>			
WebSphere, software			Wel	ome webst	ohere		Help	Logout	IBM			
View: All tasks	Cell=ofss220137Node01Cell, Pro	ofile=AppSrv01							Close pag	ge F		
Welcome	Create a new JDBC Provider								-			
Guided Activities     ■	Create a new JDBC Provide	r										
± Servers	Step 1: Create new	Summary										
Applications	JDBC provider											
Services	Step 2: Enter	Summary of actions:										
Resources	database class path information	Options	Values									
Schedulers		Scope	cells:ofss220137Nc	de01Cell:n	odes:ofss	220137	'Node01:	servers:se	rver1			
Object pool managers	→ Step 3: Summary	JDBC provider name	Oracle JDBC Driver									
JMS     JDBC		Description	Oracle JDBC Driver	er								
JDBC providers =		Class path	\${ORACLE_JDBC_D	_DRIVER_PATH}/ojdbc6.jar								
Data sources		\${ORACLE_JDBC_DRIVER_PATH}	C:\Oracle\app\sarr	athi\produc	t\12.1.0\d	bhome	_1\jdbc\l	ib\ojdbc6.j	ar			
<ul> <li>Data sources (WebSphere Applic Server V4)</li> </ul>		Implementation class name	oracle.jdbc.pool.Ora	acleConnec	tionPoolD	ataSour	ce					
± Resource Adapters	Previous Finish C	ancel										
	Previous Prinsit C	ancer										
Cache instances												
Mail     URL												
URL     Resource Environment												
Security												
Environment												
System administration												
Users and Groups												
Monitoring and Tuning												
Troubleshooting     ▼												
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7. Click 'Finish'.



The following screen is displayed.

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WebSphere, software						v	Velcome	e webs	phere					IB	M.
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Welcome													help		
<ul> <li>Guided Activities</li> <li>              € Servers      </li> </ul>			Messages     Achanges have	a baan mada to	your local configuration	on You	(20)					selec	ield help ir t a field la	bel or lis	
Applications			-	to the master o	· · ·	011. 100	can.						er when ther is displa		
Services			Review change	ges before savir	ng or discarding.							-	help		
Schedulers Object pool managers JMS JMS JDBC JDBC Data sources Data sources Data sources (WebSphere Applic Server V/4) Resource Adapters Cache instances Cache instances	Ξ	JDBC driver more about information Scope: C Sco de	lers in the properties of implementation class this task in a <u>guided</u> about the topic. ell=ofss220137Nodel oppe specifies the leve	of a JDBC provid- for access to th <u>activity</u> . A guide D1Cell, Node=of: I at which the re	estarted for these cha ar. The JDBC provider e specific vendor data d activity provides a li ss220137Node01, Ser source definition is vis nd how it works, <u>see t</u>	object of abase of ist of ta rver= <b>see</b> sible. Fo	encapsu f your e sk step rver1 or	ılates nviron	ment. I	Learn		this Com View	<u>informatic</u> page mand Assi administra ting comm <u>n</u>	stance ative	E
<ul> <li>Mail</li> <li>URL</li> <li>Resource Environment</li> </ul>		_	Node=ofss220137Nod	e01, Server=ser	ver1 🔻										
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8. Click 'Save'.

## 3.3.3 Creating Non XA Data Source

Follow the steps given below:

- 9. Login to the application server administration console.
- 10. Expand 'Resources > JDBC' and click 'Data sources'.



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WebSphere. software		Help   Logout IBM.							
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01 Data sources 7	Close page							
Welcome     Guided Activities     Servers     Applications     Services     Schedulers     Object pool managers     JDBC     JDBC     JDBC providers     Data sources     Data sources     Data sources	Data sources         Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a <u>guided activity</u> . A guided activity provides a list of task steps and more general information about the topic.         □ Scope: Cell=ofss220137Node01Cell         Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, <u>see the scope settings help.</u> Cell=ofss220137Node01Cell         ▼         Preferences	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 Command Assistance View administrative scripting command for last action							
Server V4) Resource Adapters	New Delete Test connection Manage state								
<ul> <li>Asynchronous beans</li> <li>⊕ Cache instances</li> </ul>	Select Name 🗘 JNDI name 🗘 Scope 🗘 Provider 🗘 Description 🗘 Category 🗘								
	Select     Name     JNDI name     Scope     Provider     Description     Category       None       Total 0								
Monitoring and Tuning     Troubleshooting     III									

11. Select "Scope' from the drop-down list.

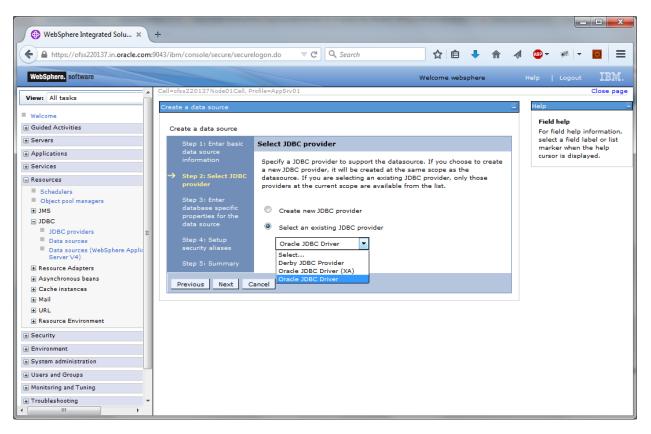
Click New, The following screen is displayed.



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WebSphere. software	Welcome websphere	elp   Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=App5rv01	Close page
Welcome	Create a data source	Help Field help
Guided Activities     Guided Activities     Subscript Activities     Subscrite     Subscript Activities     Subscript Activities     Subs	Create a data source	For field help information,
Servers     Applications     Applications     Services     Resources     Schedulers     Object pool managers     JMS     JDBC     DBC providers     Data sources     Data sources     Data sources     Data sources     Cache instances     Mail     URL     Resource Environment     Security     Environment     System administration     Users and Groups     Monitoring and Tuning	Step 1: Enter basic data source information     Step 2: Select JDBC provider     Step 3: Enter data source     Step 3: Enter data source     Step 4: Setup security aliases     Step 5: Summary     Enter basic data source information     Step 5: Summary     Enter basic data source information     Step 4: Setup security aliases     Step 5: Summary     Enter basic data source information     Step 4: Setup     Step 5: Summary     Step 5: Summ	select a field label or list marker when the help cursor is displayed.
Troubleshooting     ▼		
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- 12. Specify the data source name as 'FCUBS DS'.
- 13. Specify the JNDI name as 'jdbc/fcjdevDS'.
- 14. Click 'Next'.





15. Select the option 'Select an existing JDBC provider'. From the drop-down list, choose 'Oracle JDBC Driver' and click next.



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WebSphere, software				Welcom	ne websp	here				IBM
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View: All tasks		Tome=App31V01						Help		Close pa
Welcome	Create a data source						-			
E Guided Activities	Create a data source								<b>d help</b> field help i	oformatio
± Servers	Step 1: Enter basic	Enter database s	pecific properties fo	or the data so	ource			sele	ct a field la	abel or list
Applications	data source	Linter dotobase s	poenie properdes in	or the data st					ker when t or is displa	
Services	information							cars	a. is disple	,
Resources	Step 2: Select JDBC		-specific properties, wh to support the connect							
Schedulers	provider	the datasource.			2	-				
Object pool managers	→ Step 3: Enter									
. JMS	database specific properties for the	Name	Value							
⊒ JDBC	data source	* URL	dbc:oracle:oci:@1	0.10.10.10:101	0:KER					
JDBC providers	Step 4: Setup	* Data store helper								
<ul> <li>Data sources</li> <li>Data sources (WebSphere Applic</li> </ul>	security aliases	Oracle11g data si	tore helper							
Server V4)	Step 5: Summary	📃 Use this data s	ource in container mar	naged persisten	nce (CMP	)				
± Resource Adapters	Step 5: Summary									
Asynchronous beans	Previous Next C	Cancel								
Cache instances										
Mail     URL										
Resource Environment										
-										
E Security										
Environment										
System administration										
Users and Groups										
Monitoring and Tuning										
Troubleshooting     ▼										

16. Specify the URL of the Database

Uncheck "Use this data source in container managed persistence (CMP)"

#### Example

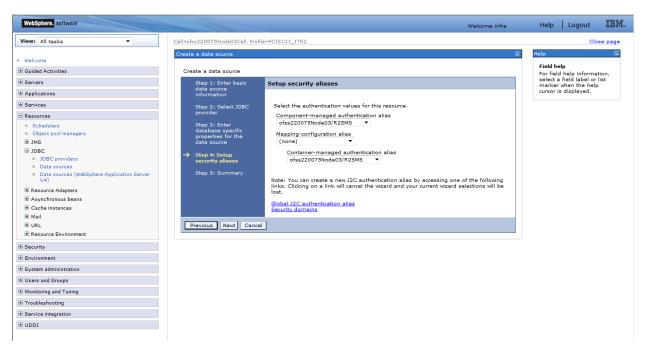
jdbc:oracle:thin:@ @//10.10.10.10:1010/KERDEV2

Here, 10.10.10.10 is the hostname where the database is installed, 1010 the port number and KERDEV2 the instance name.

- 17. Select the data store helper class as 'Oracle11g data store helper'.
- 18. Click 'Next'. The following screen is displayed.

Select user alias from Component-managed authentication alias and Container-managed authentication alias dropdown.





#### 19. Click 'Next'.

The following screen is displayed.

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WebSphere, software					Welcome websphere He	≥lp			IBM			
iew: All tasks 👻		Step 1: Enter basic data source	Sur	nmary			Help					
Welcome		information	s	ummary of act	tions:							
Guided Activities		Step 2: Select JDBC	0	tions	Values		Field		lp inforr			
Servers				ope	cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1		select	t a fiel	id label			
Applications		Step 3: Enter database specific		ta source me	FCUBS DS				en the h splayed.			
Services					· II. /( · I							
Resources				DI name	jdbc/fcjdevDS							
<ul><li>Schedulers</li><li>Object pool managers</li></ul>		Step 4: Setup security aliases	ex	lect an isting JDBC ovider	Oracle JDBC Driver							
± JMS	->	Step 5: Summary		plementation								
JDBC JDBC providers				ss name	oracle.jdbc.pool.OracleConnectionPoolDataSource							
Data sources			UF	L	jdbc:oracle:oci:@10.10.10.10:1010:KERDEV2							
<ul> <li>Data sources (WebSphere Application Server V4)</li> </ul>				ta store Iper class	com.ibm.websphere.rsadapter.Oracle11gDataStoreHelper							
Resource Adapters     ■			na	me								
Asynchronous beans				e this data urce in								
Cache instances     Mail				ntainer								
URL				managed								
Resource Environment				rsistence MP)								
Security			Co	mponent-								
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System administration			ali									
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Monitoring and Tuning			-	ntainer-								
Troubleshooting			m	anaged	(none)							
Service integration			au ali	thentication as	(							
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### 20. Click 'Finish'.

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WebSphere. software	Welcome websphere Help   Logout	IBM.						
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Welcome		Field he						
Guided Activities     Guided Activities     Subscript Activities     Subscrites     Subscript Activities     Subscript Activities     Sub	Messages	For field						
Servers	⚠ Changes have been made to your local configuration. You can:	select a marker						
Applications	Save directly to the master configuration.	cursor is						
Services	Review changes before saving or discarding.	Page he						
Resources		More inf E						
<ul> <li>Schedulers</li> <li>Object pool managers</li> </ul>	The server may need to be restarted for these changes to take effect.	<u>this pag</u>						
Object pool managers     JMS		Comma						
□ JDBC	Data sources	View adı scriptinc						
JDBC providers	Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a guided activity. A guided	action						
<ul> <li>Data sources</li> <li>Data sources (WebSphere Applica)</li> </ul>	activity provides a list of task steps and more general information about the topic.							
Server V4)	Scope: Cell=ofss220137Node01Cell, Node=ofss220137Node01, Server=server1							
± Resource Adapters	Scope specifies the level at which the resource definition is visible. For detailed information							
Asynchronous beans	on what scope is and how it works, see the scope settings help.							
	Node=ofss220137Node01, Server=server1							
URL	Node=orss22013/Node01, Server=server1 V							
Resource Environment								
Security	New Delete Test connection Manage state							
Environment								
	Select Name O JNDI name O Scope O Provider O Description O Category O							
+ Users and Groups	You can administer the following resources:							
Monitoring and Tuning	FCUBS DS idbc/fcidevDS1 Node=ofss220137Node01,Server=server1 Oracle New JDBC							
+ Troubleshooting	FC0BS DS Jobc/rgdevDS1 Node=ofss22013/Node01;server=server1 Oracle New JDBC JDBC Datasource	-						
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- 21. Click 'Save'.
- 22. Following steps needs to be followed only for Non-XA datasources
- 23. Click on the newly created Non-XA datasource, in our example "FCUBS DS". The following screen is displayed



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WebSphere. software	Welcome saravanan	Help   Logout IBM.
View: All tasks	Cell=ofss220239Node01Cell, Profile=FPCFL Data sources	Close page
Welcome     Guided Activities	Data sources > Default Datasource	
Servers     Applications	Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. T application with connections for accessing the database.	The datasource object supplies your
Services	Configuration	E
Schedulers     Object pool managers	Test connection	
JMS     JDBC     JDBC providers	General Properties + Scope	Additional Properties
Data sources Data sources (WebSphere Application Server V4)	cells:ofss220239Node01Cell:nodes:ofss220239Node01:servers:server1      Provider	Properties WebSphere Application Server
<ul> <li>It Resource Adapters</li> <li>It Asynchronous beans</li> </ul>	JDBC Provider	data source properties
<ul> <li>Gache instances</li> <li>Mail</li> </ul>	FCUBS DS	Custom properties
★ URL ★ Resource Environment	JNDI name jdbc/fcjdevDS	Related Items
Security     Environment	Use this data source in container managed persistence (CMP) Description	JAAS - J2C
System administration	Datasource for the WebSphere Default Application	<u>authentication</u> <u>data</u>
Users and Groups     Monitoring and Tuning		
Troubleshooting	н	
	Category	

24. Make sure that the checkbox "Use this data source in container managed persistence (CMP)" is unchecked. Then click on the link "Webpshere Application Server data source properties" on the right side.



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WebSphere. software	Welcome saravanan Help	Logout IBM.							
View: All tasks	Cell=ofs220239Node01Cell, Profile=FPCFL Data sources 2 -	Close page							
Welcome     Guided Activities     Servers     Applications	Data sources > Default Datasource > WebSphere Application Server data source properties           Use this page to set WebSphere(R) Application Server connection management-specific properties that affect a connection pool.           Configuration	Field help For field help inforn select a field label marker when the h cursor is displayed							
Schedulers	General Properties	Page help More information a this page							
Column Object pool managers DJMS DDBC DDBC DDBC providers	Statement cache size           10         statements           Image: Enable multithreaded access detection	E							
<ul> <li>Data sources</li> <li>Data sources (WebSphere Application Server V4)</li> </ul>	Enable database reauthentication     Enable JMS one-phase optimization support								
<ul> <li>Resource Adapters</li> <li>Asynchronous beans</li> <li>Cache instances</li> <li>Mail</li> </ul>	<ul> <li>Log missing transaction context</li> <li>Non-transactional data source</li> </ul>								
	Error detection model     Use WebSphere Application Server exception checking model								
Security     Environment	Use WebSphere Application Server exception mapping model								
System administration     Users and Groups     Monitoring and Tuning	Connection validation properties           Validate new connections           Number of retries								
Homotoning and taning     Troubleshooting     Service integration	100       Retry interval       3   seconds								
۰									

- 25. Select the checkbox "Non-transactional data source".
- 26. Click Apply button and Click Save link.

### Note the following

- You need to create another data source for Oracle FCUBS with the JNDI name '<Non-XA FCUBS HOST JNDI name>\_ASYNC'. For example, if the Oracle FCUBS HOST Non XA data source JNDI name is 'jdbc/fcjdevDS', then you need to create another data source for FCUBS with the JNDI name 'jdbc/fcjdevDS\_ASYNC'.
- While creating a branch using the 'Branch Parameters Maintenance' (STDBRANC) screen, if you have created a data source for the branch, then you need to create a corresponding ASYNC data source with the JNDI name '<Non-XA FCUBS BRANCH JNDI name>\_ASYNC'.
- You need to create another data source for Oracle ELCM with the JNDI name '<ENTITY\_ID JNDI name>\_EL'. For example, if the Oracle FCUBS HOST Non XA data source JNDI name is 'jdbc/fcjdevDS', then you need to create another data source for FCUBS with the JNDI name 'jdbc/fcjdevDS\_EL'. Ensure that the check box "Nontransactional data source" is unchecked for ELCM data source.
- Tthe following are the list of datasources that can be created depending on the requirement. Please refer to the document Resources\_to\_ be\_created.docx for more information -

Purpose	Datasource Name	JNDI Name
FCUBS	FCUBS Data source	jdbc/fcjdevDS



SMS	SMS_Datasource	jdbc/fcjdevDSSMS
VAMS	VAMS_DATASOURCE	jdbc/fcvamDS
Gateway	FLEXTEST.WORLD	FLEXTEST.WORLD
Async data source	FCUBS DS ASYNC	jdbc/fcjdevDS_ASYNC
Scheduler	Scheduler_Datasource	jdbc/fcjSchedulerDS

## 3.3.4 Testing Data Source

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Follow the steps given below:

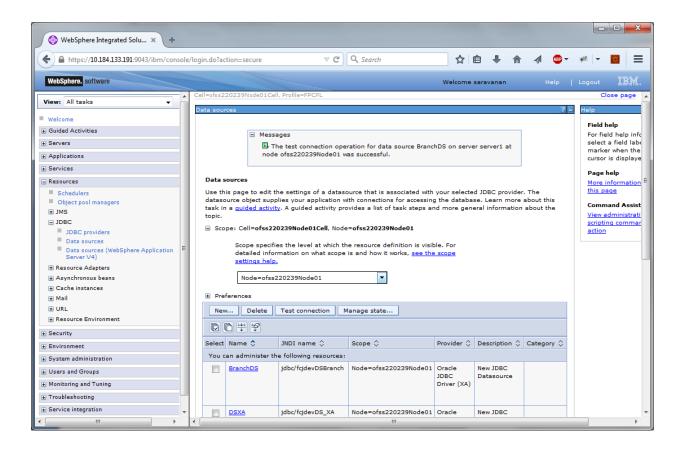
1. Select the data source as shown in the figure.

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♦ https://10.184.133.191:9043/ibm/conso	le/log	in.do?ac	tion=secure	⊽ <b>C</b>	Q. Search	☆	<b>≜ ↓ ∧</b>	- 🦔 👜 -	* · O =
WebSphere, software						Welcome	saravanan		Logout IBM.
View: All tasks	▲ <u>C</u> e	ll=ofss2	20239Node01Cel	, Profile=FPCFL					Close page
Welcome	D	ata soui	ces					? -	Help
Guided Activities		Data s	ources						Field help For field help info
					ource that is associated with ith connections for accessing				select a field labe
					wides a list of task steps a				marker when the cursor is displaye
		topic.							
Resources		🖃 Sco	pe: Cell=ofss220	0239Node01Cell, Node	=ofss220239Node01				Page help More information
<ul><li>Schedulers</li><li>Object pool managers</li></ul>		Scope specifies the level at which the resource definition is visible. For the detailed information on what scope is and how it works, <u>see the scope</u>							
± JMS	settings help. View admini								View administrati
JDBC     JDBC providers		Node=ofss220239Node01							
Data sources		E Dro	ferences						
<ul> <li>Data sources (WebSphere Application Server V4)</li> </ul>	=			Test connection M	lanage state				
Resource Adapters		Nev		Test connection	lanage state				
			ō # \$						
		Select	Name 🗘	JNDI name 🗘	Scope 🗘	Provider 🗘	Description 🗘	Category 🗘	
Mail		You d	an administer th	e following resources:					
URL  Resource Environment			BranchDS	jdbc/fcjdevDSBranch	Node=ofss220239Node01		New JDBC		
						JDBC Driver (XA)	Datasource		
+ Environment									
Environment     System administration									
System administration     Users and Groups			DSXA	jdbc/fcjdevDS_XA	Node=ofss220239Node01	Oracle JDBC	New JDBC Datasource		
Users and Groups     Monitoring and Tuning						Driver (XA)			
Monitoring and Funing     Troubleshooting									
Froubleshooting     Service integration	Ŧ		FPPATCHSTAGE	jdbc/FPPATCHSTAGE	Node=ofss220239Node01	NONXA DS	New JDBC Datasource		
4 III >>	•				III				•

2. Click 'Test connection' button.

On successful creation, the following message is displayed.







## 3.3.5 JDBC Provider for XA Data Source

Follow the steps given below:

- 1. Login to the application server administration console.
- 2. Expand 'Resources > JDBC' and click 'JDBC Providers'. The following screen is displayed.

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WebSphere. software			Welcome websphere	Help   Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01		? -	Close page
Welcome Guided Activities Guided Activities Generations Generatio	JDBC providers Use this page to edit properties of a JDBC pr driver implementation class for access to the this task in a guided activity. A guided activit the topic.  ■ Scope: Cell=ofss220137Node01Cell Scope specifies the level at which th detailed information on what scope sattings help.  Cell=ofss220137Node01Cell  ■ Preferences New Delete  ■ Celte	e specific vendor database of your ty provides a list of task steps and he resource definition is visible. Fo	environment. Learn more about d more general information about or	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 Command Assistance View administrative scripting command for last action
<ul> <li>Gache instances</li> <li>Mail</li> </ul>	Select Name 🗘 S			
URL	Total 0			
Security     Environment     System administration     Users and Groups     Monitoring and Tuning     Troubleshooting     T				

3. Select 'Node' from the drop-down list and click 'New' button.

The following message is displayed.



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WebSphere, software	Cell=ofss220137Node01Cell, P	Welcome websphere	Help   Logout IBM.
View: All tasks  Welcome  Gided Activities	Create a new JDBC Provider		- Help - Field help
Servers Applications	→ Step 1: Create new JDBC provider	Create new JDBC provider	For field help information, select a field label or list marker when the help cursor is displayed.
Applications     Services     Schedulers     Object pool managers     Object pool managers     JMS     JDBC     JDBC     JDBC     JDBC     JDBC providers     Data sources     Data sources     Cache instances     Mail     URL     Resource Environment     Security     Environment     System add Groups	Step 2: Enter database class path information Step 3: Summary	Set the basic configuration values of a JDBC provider, which encapsulates the specific vendor JDBC driver implementation classes that are required to access the database. The wized fills in the name and the description fields, but you can type different values. Scope          Scope         cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1         • Database type         Oracle         • Provider type         Oracle JDBC Driver         • Implementation type         X data source         • Name         Oracle JDBC Driver (XA)         Description	cursor is displayed.
Monitoring and Tuning Troubleshooting		E.	-

### 4. Specify the following details:

Database Type	Oracle
Provider Type	Oracle JDBC Driver
Implementation Type	XA data source
Name	FCUBS Oracle JDBC Driver (XA)
Description	FCUBS Oracle JDBC Driver (XA)

Click next, the following message is displayed.



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WebSphere. software		ell=ofss220137Node01Cell, Pr		IBM.
View: All tasks		reate a new JDBC Provider		telp
Welcome				Field hel
Guided Activities		Create a new JDBC Provide		For field select a f
Servers		Step 1: Create new JDBC provider	Enter database class path information	marker w
Applications			Set the class path for the JDBC driver class files, which WebSphere(R) Application Server uses to define	cursor is
Services		→ Step 2: Enter database class path	your JDBC provider. This wizard page displays a default list of jars and allows you to set the environment variables that define the directory locations of the files. Use complete directory paths	
Resources     Schedulers     Object pool managers     MMS     DDBC     JDBC      JDBC providers     Data sources     Vast sources     Construction     Resource Adapters     Asynchronous beans     Cache instances     Mail     URL     Resource Environment     Security     Environment     System administration		information Step 3: Summary	environment vanaolest hat define the directory locations of the files. Use complete directory parts when you type the JDBC drive file locations. For example: CL\SQLLB\java on Window(R) or /home/db2inet1/sqllb/java on Linux(TM). Entries are separated by using the ENTER key and must not contain path separator characters (such as ';' or ';'). If a value is specified for you, you may click Next to accept the value. Class path: \$\{ORACLE_JDBC_DRIVER_PATH}/ojdbc6.jar Directory location for "ojdbc5.jar" which is saved as WebSphere variable \$\(ORACLE_JDBC_DRIVER_PATH) m Files\LBM.WebSphere\AppServer\optionalLibraries\Oracle\jdbc	
Users and Groups  Monitoring and Tuning		Previous Next Ca	ancel	
Troubleshooting     ✓     III	•			Þ

5. Specify the location of ojbc6.jar and click next.

Note :If ojdbc6.jar is not available at your Websphere server, then copy them into your server (path: /scratch/app/WAS9/lib) and run an export of the jar .

(Eg.in putty run a command

export ORACLE\_JDBC\_DRIVER\_PATH=/scratch/app/WAS9/lib;)

Then give the "Directory location for ojdbc6.jar which is saved as Websphere variable

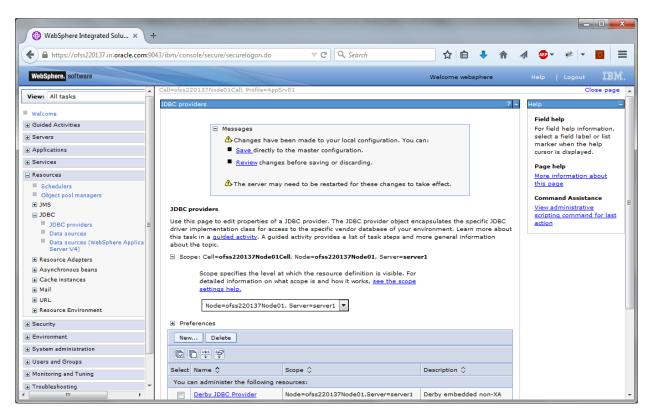
6. \${ORACLE JDBC DRIVER PATH}" as /scratch/app/WAS9/lib



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WebSphere. software			Welcome websphere Help   Logout	IBM.					
View: All tasks	Cell=ofss220137Node01Cell, Pro	file=AppSrv01		Close pag					
Welcome	Create a new JDBC Provider			- Help Field					
Guided Activities	Create a new JDBC Provider	r		For f					
Servers	Step 1: Create new	Summary		selec					
+ Applications	JDBC provider	Summary		mar					
Services	Step 2: Enter	Summary of actions:		Cura					
- Resources	database class path	Options	Values						
Schedulers	information	Scope	cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1						
Object pool managers	→ Step 3: Summary	JDBC provider name	Oracle JDBC Driver (XA)						
± JMS		Description	Oracle JDBC Driver (XA)						
∃ JDBC		Class path	\${ORACLE_JDBC_DRIVER_PATH}/ojdbc6.jar						
JDBC providers E			C:\Oracle\app\sarrathi\product\12.1.0\dbhome_1\jdbc\lib\ojdbc6.jar						
<ul> <li>Data sources</li> <li>Data sources (WebSphere Applica Server V4)</li> </ul>		Implementation class name	oracle.jdbc.xa.client.OracleXADataSource						
+ Resource Adapters	Previous Finish C	ancel							
Asynchronous beans									
Mail									
URL  Resource Environment									
+ Resource Environment									
± Security									
Environment									
System administration									
± Users and Groups									
Monitoring and Tuning									
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7. Click 'Finish'.





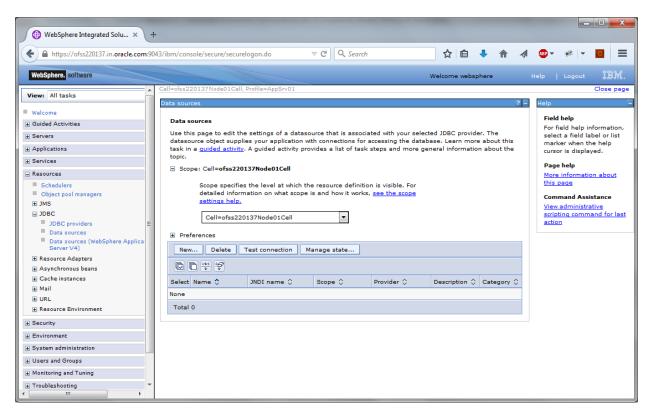
8. Click 'Save'.

#### 3.3.6 Creating XA Data Source

Follow the steps given below:

- 1. Login to the application server administration console.
- 2. Expand 'Resources > JDBC' and click 'Data sources'.





3. Select 'Scope' from the dropdown list and click 'New' button.



The following screen is displayed.

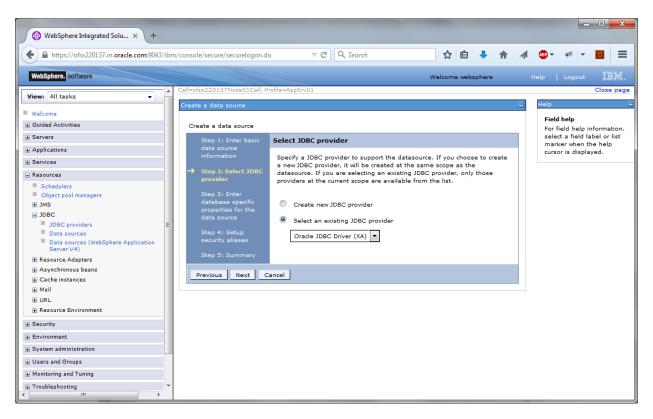
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View: All tasks 👻		_	=ofss220137Node01Cell, F	Profile=AppSrv01										Clos	se pag		
Welcome		Create a data sourceH										Help	eld help				
Guided Activities			Create a data source											e inform	matia		
+ Servers			Step 1: Enter basic      Enter basic data source information										For field help inform select a field label marker when the h				
+ Applications			data source										cursor is displayed.				
Services					figuration values datasource suppli												
Resources			Step 2: Select JDBC provider		r and the databas			mections	Detween	n the							
<ul> <li>Schedulers</li> <li>Object pool managers</li> <li>MS</li> <li>JDBC</li> <li>JDBC providers</li> <li>Data sources</li> <li>Data sources (WebSphere Application Server V4)</li> <li>Resource Adapters</li> <li>Asynchronous beans</li> <li>Cache instances</li> <li>Mail</li> <li>URL</li> <li>Resource Environment</li> </ul>	III		Step 3: Enter database specific properties for the data source Step 4: Setup security aliases Step 5: Summary Next Cancel	Requirement: Use the Datasources (WebSphere(R) Application Server V4) console pages if your applications are based on the Enterprise JavaBeans(TM) (EB) 1.0 specification or the Java(TM) Servlet 2.2 specification. Scope cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1 * Data source name FCUBS DS * JNDI name jdbc/fqSchedulerDS													
. Security . Environment																	
± System administration																	
± Users and Groups																	
Monitoring and Tuning																	
+ Troubleshooting	Ŧ	∢ [													_		

### 4. Specify the following details:

Data source name	FCUBS Scheduler Data source
JNDI Name	jdbc/fcjSchedulerDS

Click next, the following screen is displayed.





5. Select the option 'Select an existing JDBC provider' and choose 'FCUBS Oracle JDBC Deriver (XA)' from the drop-down list and click next.



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WebSphere. software			w	elcome webs	sphere				IBM.
View: All tasks	Cell=ofss220137Node01Cell, P Create a data source	Profile=AppSrv01				-	Help		Close pag
Welcome	Create a data source					-	Field	-	nformation,
Servers Applications Services Resources Schedulers Object pool managers St JMS JDBC JDBC providers Data sources Data sources (WebSphere Applic)	Step 1: Enter basic data source information Step 2: Select JDBC provider Step 3: Enter database specific properties for the data source Step 4: Setup security aliases	* Data store helper class na Oracle11g data store hel	c properties, which are re ort the connections that ::oracle:oci:@10.10.10.1 ame	quired by the are manage 0:1010:KER	d through	]	mark	t a field la ær when tl r is displa	
Server V4)  Carter Server V4)  Carter Adapters  Asynchronous beans  Cache instances  Maii  URL  Resource Environment	Step 5: Summary Previous Next C	ancel							
Security     Environment     System administration     Users and Groups									
Monitoring and Tuning Troubleshooting									

6. Specify the URL of the Database

Uncheck "Use this data source in container managed persistence (CMP)"

#### Example

jdbc:oracle: thin:@10.10.10.10:1010:KERDEV2

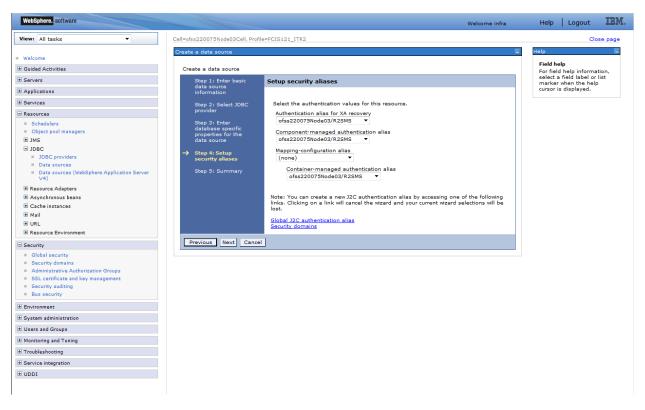
Here, 10.10.10 is the *hostname* where the database is installed, 1010 is the *port number*, *KERDEV*2 is the *instance name*.

- 7. Select the 'Data store helper class' as 'Oracle11g data store helper'.
- 8. Click 'Next'.

The following screen is displayed.

Select user alias from Authentication alias for XA Recovery, Component-managed authentication alias and Container-managed authentication alias dropdown.





9. Click 'Next'.



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WebSphere, software View: All tasks		Create a data source	una-Abbaroz	Welcome websphere Help	Logout IBM Close page								
Welcome		Create a data source											
Servers		Step 1: Enter basic data source	Summary		For field help i select a field la								
Applications		data source information	Summary of act	ions:	marker when t cursor is displa								
+ Services		Step 2: Select JDBC	Options	Values									
Resources		provider	Scope	cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1									
<ul> <li>Schedulers</li> <li>Object pool managers</li> <li>JMS</li> </ul>		Step 3: Enter database specific	Data source name	FCUBS DS									
I JDBC		properties for the data source	JNDI name	jdbc/fcjSchedulerDS1									
<ul> <li>JDBC providers</li> <li>Data sources</li> <li>Data sources (WebSphere Application</li> </ul>	E	Step 4: Setup security aliases	Select an existing JDBC provider	Oracle JDBC Driver (XA)									
Server V4)		→ Step 5: Summary	Implementation class name	oracle.jdbc.xa.client.OracleXADataSource									
Asynchronous beans			URL	jdbc:oracle:oci:@10.10.10.10:1010:KERDEV2									
<ul> <li>              € Cache instances      </li> <li>             Mail         </li> <li>             URL         </li> </ul>			Data store helper class name	com.ibm.websphere.rsadapter.Oracle11gDataStoreHelper									
Resource Environment Security	-	Use this data source in container											
■ Environment E System administration			managed persistence (CMP)	true									
			Authentication alias for XA recovery	ofss220137Node01/FCUBS121_DEV									
+ Troubleshooting			Component-		•								

10. Click 'Finish', the following screen is displayed.

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WebSphere. software	Welcome websphere Help   Logout 語號.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01     Close page       Data sources     ? -
Guided Activities  Guided Activities  Guided Activities  Applications	<ul> <li>Messages</li> <li>Changes have been made to your local configuration. You can:</li> <li>Save directly to the master configuration.</li> </ul>
Services      Resources      Schedulers      Object pool managers      H JMS	<ul> <li><u>Review</u> changes before saving or discarding.</li> <li>The server may need to be restarted for these changes to take effect.</li> </ul>
■ JDBC ■ JDBC providers ■ DBC providers ■ Data sources ■ Data sources (WebSphere Application Server V4)	Data sources         Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a <u>guided activity</u> . A guided activity provides a list of task steps and more general information about the topic.            Scope: Cell=ofss220137Node01Cell, Node=ofss220137Node01, Server=server1
<ul> <li>Resource Adapters</li> <li>▲ Asynchronous beans</li> <li>▲ Cache instances</li> <li>➡ Mail</li> <li>➡ URL</li> </ul>	Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, <u>see the scope settings help.</u> Node=ofss220137Node01, Server=server1
Resource Environment     Security	Preferences      New Delete Test connection Manage state
Environment     System administration     Users and Groups	Image: Select Name Image: NNDI name Image: Scope Image: Scope Image: Provider Image: Description Image: Category Image: Scope Image
4	You can administer the following resources:       III

11. Click 'Save'.



The following are the list of XA datasources that can be created depending on the requirement.Please refer to the document Resources\_To\_ Be\_Created.docx for more information-

Purpose	Datasource Name	JNDI Name
Schedular	Schedular_XA	jdbc/fcjSchedulerDS
FCUBS	FCUBS_DS_XA	jdbc/fcjdevDS_XA
Branch	FCUBS DSBranch	jdbc/fcjdevDSBranch



### 3.3.7 Testing Data Source

Follow the steps given below:

Select data source as given below.

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WebSphere. software					Welcome we	bsphere		Logout 📱	BM					
View: All tasks 🗸			Node=ofss220:	137Node01, Server=s	erver1 V				He					
Welcome	Preferences													
Guided Activities	es a la l													
± Servers	ars Delete Test connection Manage state													
Applications														
∃ Services		Select	Name 🗘	JNDI name 🗘	Scope 🗘	Provider 🗘	Description 🗘	Category 🗘						
Resources		You	an administer the fo	lowing resources:										
Schedulers Object pool managers JMS			FLEXTEST.WORLD	FLEXTEST.WORLD	Node=ofss220137Node01,Server=server1	Oracle JDBC Driver	New JDBC Datasource							
	=					Driver								
JDBC providers Data sources Data sources (WebSphere Application Server V4)			POSSTEST.WORLD	POSSTEST.WORLD	Node=ofss220137Node01,Server=server1	Oracle JDBC Driver (XA)	New JDBC Datasource							
<ul> <li>A synchronous beans</li> <li>Cache instances</li> <li>Mail</li> <li>URL</li> </ul>			<u>fciSchedulerDS</u>	jdbc/fcjSchedulerDS	Node=ofss220137Node01,Server=server1	Oracle JDBC Driver (XA)	New JDBC Datasource							
Resource Environment			fcjdevDS	jdbc/fcjdevDS	Node=ofss220137Node01,Server=server1	Oracle JDBC	New JDBC Datasource							
Security						Driver (XA)								
) Environment														
System administration		Total	4											
Users and Groups	+	Iotal	4											
4 11	4													

Click 'Test connection' button. The following screen is displayed on successful creation



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WebSphere. software	Welcome websphere	Help   Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01 Data sources	Close page .
Welcome		
Guided Activities	Messages	
Servers     Applications	The test connection operation for data source fcjSchedulerDS on server server1 at ofss220137Node01 was successful.	t node :
Services		
Resources	Data sources > fcjSchedulerDS	
Schedulers Object pool managers JMS JMS JDBC JDBC Data sources Data sources Data sources	Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The application with connections for accessing the database. Configuration Test connection	e datasource object supplies your
Server V4) Resource Adapters     Asynchronous beans     Cache instances	General Properties  * Scope [cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1]	Additional Properties
Mail     URL     Resource Environment	* Provider Oracle JDBC Driver (XA)	WebSphere Application Server data source properties
Security  Environment	+ Name fcjSchedulerDS	<u>Custom</u> properties
System administration	JNDI name	
Users and Groups     ✓	jdbc/fcjSchedulerDS	Related Items
4 III +	• III	4

## 3.4 Creating JMS Resources

### 3.4.1 Creating Queue Connection Factory

Follow the steps given below:

1. Start the administrative console of Websphere application server. Open an internet browser and enter the Websphere admin console URL.

http://{Host}:{Port}/console

Eg: https://10.10.10.10:1010/console

In this example, 10.10.10.10 is the machine IP address on which Websphere is running.



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many jurisdiction trademarks of IB	ls - Property of IBM (c) Copyright IBM Corp. 1997, 2011 All . IBM, the IBM logo, ibm.com and WebSphere are trademarks or marks of International Business Machines Corp., registered in Is worldwide. Other product and service names might be M or other companies. A current list of IBM trademarks is Web at <u>Copyright and trademark information</u> .

- 2. Specify the Websphere administrator username and password.
- 3. Click 'Log In'.

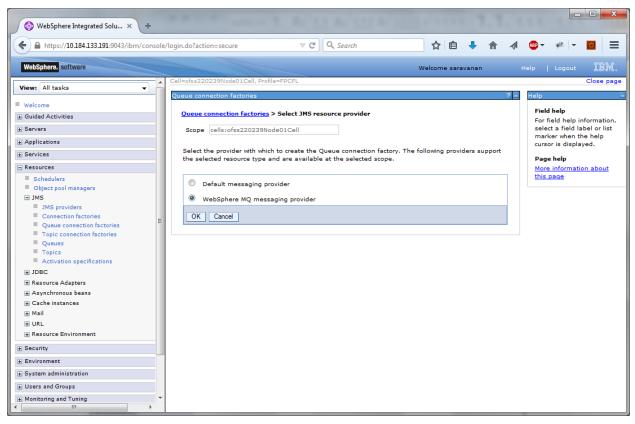


4. Navigate to Websphere Home page .Expand 'Resources' and select 'JMS'. Click 'Queue connection factories'. The following screen is displayed.

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WebSphere. software	Welcome saravanan Help   Logout ] 臣龍.
View: All tasks	Cell=ofss220239Node01Cell, Profile=FPCFL     Close page     Oueue connection factories     P - Help
■ Welcome Guided Activities	Queue connection factories Field help For field help information,
	A queue connection factory is used to create connections to the associated JMS provider of the JMS queue select a field label or list marker when the help
Services	Scope: Cell=ofss220239Node01Cell cursor is displayed. Scope specifies the level at which the resource definition is visible. For Page help
	detailed information on what scope is and how it works, see the scope settings help.       More information about this page         Cell=ofss220239Node01Cell           Preferences           New Delete           Select Name \$ JNDI name \$ Provider \$ Description \$ Scope \$
JDBC     Resource Adapters     Asynchronous beans     Cache instances     Mail     URL	Total 0
Resource Environment     Security	
<ul> <li>Environment</li> <li>System administration</li> </ul>	
Users and Groups  Monitoring and Tuning	-

5. Select 'Scope' from the drop down list and click 'New' button.





6. Select 'Websphere MQ messaging provider' and click 'OK'.



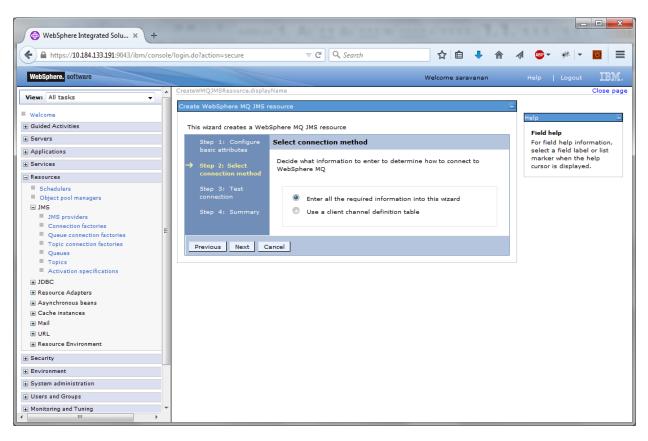
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WebSphere. software								Welco	me sara	vanan				IBM.
View: All tasks			)JMSResource.d ebSphere MQ .								Ξ	Help		Close page
<ul> <li>Guided Activities</li> <li></li></ul>					phere MQ JMS re							Field I	-	
<ul> <li>Applications</li> <li>⊕ Services</li> </ul>		ba Ste	p 1: Configur sic attributes p 2: Select	F	Configure basi Configure the b messaging prov	asic attributes to	use for the	new Web	Sphere	MQ		select marke	ld help info a field lab r when the is displaye	el or list help
<ul> <li>Resources</li> <li>Schedulers</li> <li>Object pool managers</li> <li>JMS</li> <li>JMS providers</li> <li>Connection factories</li> <li>Queue connection factories</li> <li>Topic connection factories</li> <li>Queues</li> <li>Topics</li> <li>Activation specifications</li> <li>JDBC</li> <li>Resource Adapters</li> <li>Cache instances</li> <li>Mail</li> <li>URL</li> <li>Resource Environment</li> <li>Security</li> </ul>	H	Ste	nection metho p 3: Test inection p 4: Summa		Name     NotfyDestQCF     JNDI name     NotfyDestQCF     Description     NotfyDestQCF									
Environment     System administration     Users and Groups     Monitoring and Tuning     III	+													

7. Specify the following details:

Name	Notify Destination QCF
JNDI Name	NotifyDestQCF
Description	NotifyDestQCF

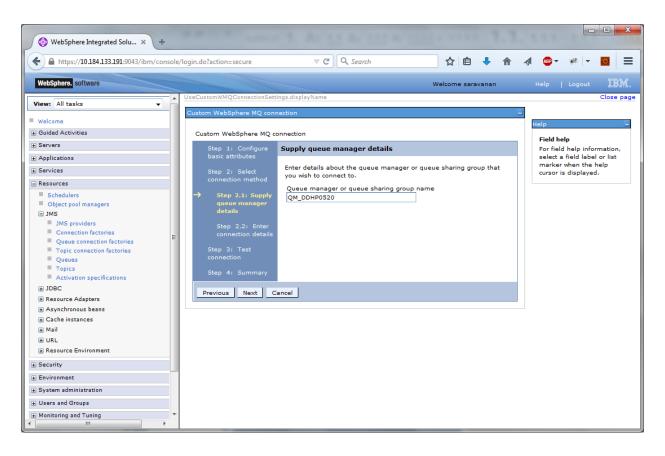
Click 'Next'. The following screen is displayed.





8. Set the options as shown in the figure. Click 'Next'.





Specify the queue manager name 'QM\_DDHP0520'. Click 'Next'.

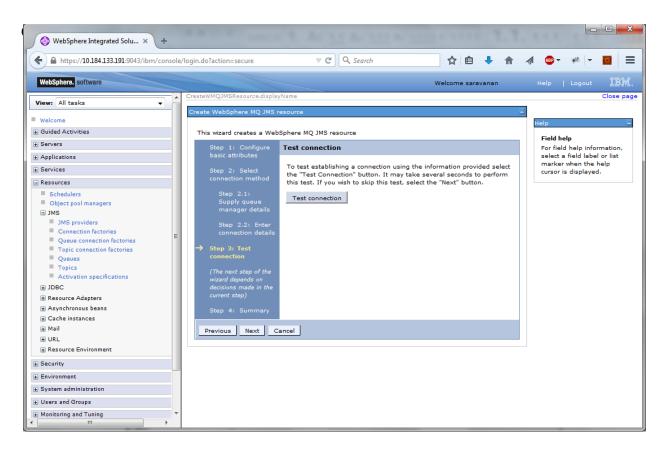


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WebSphere, software	Welcome saravanan	Help   Logout
View: All tasks	UseCustomWMQConnectionSettings.displayName Custom WebSphere MQ connection	Close page
Guided Activities     Servers     Applications	Custom WebSphere MQ connection Step 1: Configure basic attributes Enter connection details	Field help For field help information, select a field label or list marker when the help
Services      Resources      Schedulers      Object pool managers      JMS      JMS      JMS providers      Connection factories      Queue connection factories      Topic connection factories      Queues      Topics      Activation specifications      DDBC      Resource Adapters      Asynchronous beans      Cache instances	Step 2: Select connection method       Enter the details required to establish a connection to the queue manager or queue sharing group         Step 2.1: Supply queue manager details       Transport         Bindings, then client ▼ <ul> <li>Indings, then client ▼</li> <li>Indings, then client ▼</li> <li>Step 2.2: Enter connection details</li> <li>Step 3: Test connection</li> <li>Step 4: Summary</li> <li>Enter host and port information in the form of a connection name list</li> </ul> On         Enter host and port information in the form of a connection name list           Connection name list             Step 4: Summary             Server connection channel             Server connection channel	cursor is displayed.
Mail     URL     Resource Environment     Security     Environment     System administration     Users and Groups     Monitoring and Tuning     III	SYSTEM.DEF.SVRCONN           Previous         Next           Cancel	

9. Specify the following details:

Host Name	10.10.10.10 (Host where Websphere MQ is installed)
Port	1010 (Web sphere MQ port)
Server Connection Channel	SYSTEM.DEF.SVRCONN





10. Click 'Test Connection' button.

The following screen is displayed:

basic attributes	
Step 2: Select connection method Step 2.1: Supply queue connection details Step 2.2: Enter connection	Result of testing the connection A connection was successfully made to WebSphere MQ.
details Step 3: Test connection Step 3.1: Test connection	



11. Click 'Next'. The following screen is displayed with a message in the summary field.

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WebSphere. software	Welcome saravanan Help   Logout [몰랐.
View: All tasks	CreateWMQJMSResource.displayName Close page Create WebSphere MQ JMS resource _
Guided Activities  Servers  Applications	This wizard creates a WebSphere MQ JMS resource Step 1: Configure basic attributes
	Step 2: Select Summary
Resources     Schedulers     Object pool managers     JMS     JMS providers     Connection factories     Queue connection factories     Queues     Topic connection factories     Queues     Topics     Activation specifications     JDBC     Resource Adapters     Asynchronous beans	Creating a resource of type Queue connection factory- Name "NotifyDestQCF" - JNDI name "NotifyDestQCF" - JNDI name "NotifyDestQCF" - Queue manager or queue sharing group name "QM_DDHP0520" - Server type "QMGR" - Server type "QMGR" - Server type "QMGR" - Step 2.2: Enter connection details Step 3: Test connection result → Step 4: Summary Previous Finish Cancel
Cache instances Mail Mail URL Resource Environment Security Environment System administration Users and Groups Monitoring and Tuning	

12. Click 'Finish'.



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WebSphere. software					١	Welcome saravana	an	Help   Logout IB/
View: All tasks 🗸		l=ofss220239Node01Cell,	Profile=FPCFL					Close page
Welcome	Qu	ueue connection factories					2 -	- Help
E Guided Activities		- Message	-					Field help For field help information
Servers					al configuration. Y			select a field label or lis
Applications			e directly to the r		-	ou can:		marker when the help
- Services			iew changes befo	-				cursor is displayed.
		- <u>Kev</u>	iew changes bero	re saving or dis	carding.			Page help
Resources		A -1						More information about this page
Schedulers		4D-The	server may need	to be restarted	for these changes	to take effect.		this page
Object pool managers JMS								Command Assistance
JMS providers		Queue connection facto	ries					View administrative
Connection factories		A queue connection facto	ory is used to crea	ate connections	to the associated J	IMS provider of the	a JMS queue	scripting command for action
Oueue connection factories	=	destinations, for point-to	-point messagin	g.				action
Topic connection factories		Scope: Cell=ofss2202	39Node01Cell					
Queues								
Topics					efinition is visible.			
Activation specifications		settings help.	ation on what sco	ope is and how if	works, <u>see the sc</u>	ope		
∃ JDBC		seconds melph						
± Resource Adapters		Cell=ofss220	239Node01Cell	-				
Asynchronous beans								
		<ul> <li>Preferences</li> </ul>						
± Mail		New Delete						
± URL								
		Q D # #						
Security		Select Name 🛟	JNDI name 🗘	Provider 🗘	Description 🗘	Scope 🗘		
Environment		You can administer the	following resourc	es:				
System administration		NotifyDestQCF	NotifyDestQCF	WebSphere	NotifyDestQCF	Cell=ofss22023	9Node01Cell	
Users and Groups				MQ				

- 13. Click 'Save'.
- 14. Similarly, you need to create the all queue connection factories mentioned in the document "Resource To be Created"
- 15. Make sure that the checkbox "Support two phase commit protocol" is un-checked when creating FCM\_QCF as JNDI name.

### 3.4.2 Creating Queues

Follow the steps given below:

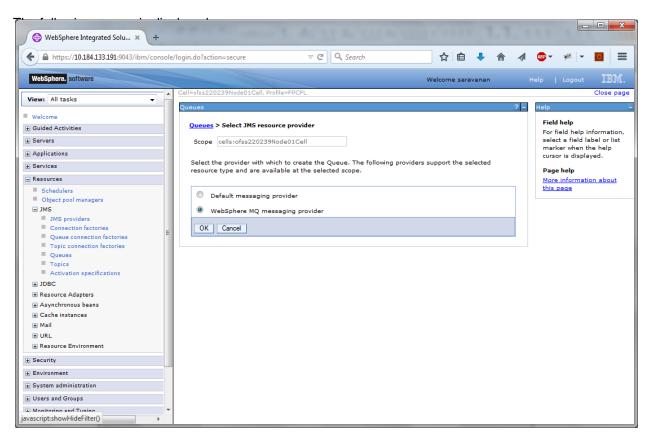


1. Expand 'Resources > JMS' and click Queues.

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System administration     Users and Groups     Monitoring and Tuning     III	+ +					m					4

2. Select 'Scope' from the drop down list. Click 'New'.





3. Select 'Websphere MQ messaging provider'. Click 'OK'.



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	WebSphere MQ messaging provider		F N
Resources	* Name		V C
Schedulers     Object pool managers	NOTIFY_QUEUE		C E E
□ JMS	* JNDI name		= c
JMS providers	NOTIFY_QUEUE		F
Connection factories	Description		
Queue connection factories	NOTIFY_QUEUE		
Topic connection factories			
Queues Topics			
Activation specifications			
JDBC		.4	
Resource Adapters		,	
Asynchronous beans			=
	WebSphere MQ Queue		
Mail	* Queue name		
+ URL	NOTIFY_QUEUE		
Resource Environment	Queue manager or Queue sharing group name		
Security	QM_DDHP0520		
Environment			
	Apply OK Reset Cancel		
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Specify the following details:

Name	NOTIFY_QUEUE
JNDI Name	NOTIFY_QUEUE
Description	NOTIFY_QUEUE
Queue Name	NOTIFY_QUEUE on Websphere MQ to which the queue needs to be mapped
Queue Manager or Queue sharing group name	QM_DDHP0520

4. Click 'Apply'.



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View: All tasks	Messages	
Welcome	A Changes have been made to your local configuration. You can:	Help
E Guided Activities	<ul> <li><u>Save</u> directly to the master configuration.</li> <li><u>Review</u> changes before saving or discarding.</li> </ul>	Field help
E Servers	The server may need to be restarted for these changes to take effect.	For field help information, select a field label or list
Applications	to the action may held to be rescaled for these changes to take effect.	marker when the help
		cursor is displayed.
E Services	Queues > WebSphere MQ messaging provider > NOTIFY_QUEUE	Page help
3 Resources	Queue destinations provided for point-to-point messaging by the WebSphere MQ messaging provider. Use WebSphere MQ queue destination administrative objects to manage queue destinations for the WebSphere MQ messaging provider.	More information about this page
Schedulers		
Object pool managers	Configuration	Command Assistance View administrative
= JMS = JMS providers		scripting command for last
Connection factories	General Properties Additional Properties	action
<ul> <li>Queue connection factories</li> </ul>	Administration = Advanced properties	
<ul> <li>Topic connection factories</li> </ul>	- Advanced properties	
= Queues	Scope = WebSphere MQ Queue Connection Node=DDHP0520Node01 Properties	
<ul> <li>Topics</li> <li>Activation specifications</li> </ul>	Provider = Custom properties	
	WebSphere MQ messaging	
I JDBC	provider	
Resource Adapters	* Name	
Asynchronous beans  Cache instances	NOTIFY_QUEUE	
Ⅲ Cache instances Ⅲ Mail	* JNDI name	
E Mail	NOTIFY_QUEUE	
Resource Environment	Description	
	NOTIFY_QUEUE	
D Security		
Environment		
System administration		
E Users and Groups		
Monitoring and Tuning	WebSphere MQ Queue	
	* Queue name NOTIFY_QUEUE	
1 Troubleshooting		
E Service integration	Queue manager or Queue sharing group name OM DDHP0520	
UDDI	CW_DDHP0320	
	Apply OK Reset Cancel	
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5. Click 'Websphere MQ Queue Connection Properties'.

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Welcome	Queues 7 =	telp 🗉
Guided Activities	E Messages	Field help
T Servers	Changes have been made to your local configuration. You can:	The name of the channel
Applications	<ul> <li><u>Save</u> directly to the master configuration.</li> </ul>	to use to connect to the queue manager.
	Review changes before saving or discarding.	Page help
E Services	⚠ The server may need to be restarted for these changes to take effect.	More information about
E Resources		this page
= Schedulers	Queues > WebSphere MQ messaging provider > NOTIFY_QUEUE > WebSphere MQ connection properties	
Object pool managers     IMS	Use this panel to specify how to connect to the queue manager that hosts the queue. The system uses these connection	
= JMS providers	properties to retrieve, display and update the queue configuration details that are shown on the WebSphere MQ queue settings panel.	
= Connection factories		
<ul> <li>Queue connection factories</li> </ul>	Configuration	
<ul> <li>Topic connection factories</li> </ul>		
= Queues		
<ul> <li>Topics</li> <li>Activation specifications</li> </ul>	General Properties Additional Properties	
Activation specifications	Queue manager host = MQ Config 10.10.10.10	
H JDBC		
Asynchronous beans	Queue manager port	
E Asynchronous beans	1010	
H Mail	Server connection channel name	
E URL		
Resource Environment	User ID	
Security		
	Password	
Environment		
System administration		
Users and Groups	Apply OK Reset Cancel	
Monitoring and Tuning		
Troubleshooting		
Service integration		
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6. Specify the following details:

Queue manager host	10.10.10.10 (IP address of the MQ server)
Queue manager port	1010
Server Connection channel name	SYSTEM.DEF.SVRCONN

7. Click 'Save'.

#### The following screen is displayed.

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View: All tasks	Cell=DDHP0520Node0	1Cell, Profile=AppSrv01				Close page
<ul> <li>Welcome</li> </ul>	Queues				?.	Help -
Guided Activities	Queues					Field help
Servers		d as a destination for point-to-p	point messaging			For field help information, select a field label or list
Applications		P0520Node01Cell, Node=DDH				marker when the help
E Services						cursor is displayed.
	Scope spe informatio	cifies the level at which the res on on what scope is and how it v	ource definition is visible	a. For detailed		Page help More information about
= Schedulers						this page
<ul> <li>Object pool managers</li> </ul>	Node=	DDHP0520Node01	*			
⊟ JMS	Preferences					
= JMS providers	New Delete					
Connection factories     Queue connection factories	inen berete					
<ul> <li>Queue connection factories</li> <li>Topic connection factories</li> </ul>						
= Queues	Select Name 🔿	JNDI name 🖒	Provider 🖒	Description ()	Scope ()	
= Topics		r the following resources:	Provider V	Description V	scope v	
<ul> <li>Activation specifications</li> </ul>	NOTIFY OUR				Node=DDHP0520Node01	
I JDBC		NOTIFY_QUEUE	WebSphere MQ messaging provider	NOTIFY_QUEUE	Node=DDHP0520Node01	
Resource Adapters	Total 1					
Asynchronous beans  Cache instances						
Mail						
I URL						
Resource Environment						
Security						
Environment						
System administration						
E Users and Groups						
Monitoring and Tuning						
Troubleshooting						
Service integration						
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Done					Socal intr	ranet 🦓 = 🔍 100% = 🛒

8. Similarly, you need to create all the queues mentioned in the document "Resource To be Created".

## 3.5 Creating Message Listener

Follow the steps given below:

1. Start the administrative console of Websphere application server. Open an internet browser and enter the Websphere admin console URL.

http://{Host}:{Port}/console

Eg: https://10.10.10.10:1010/console

In this example, 10.10.10.10 is the machine IP address on which Websphere is running.



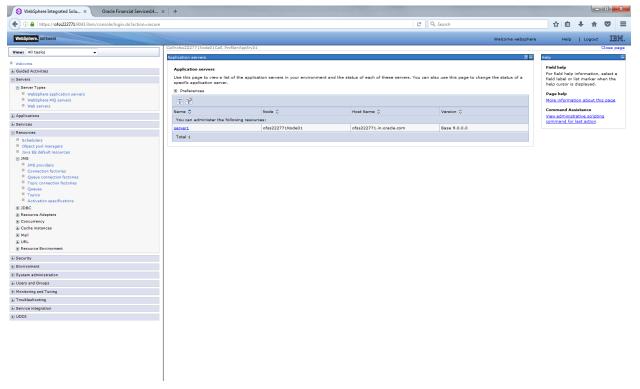
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- 2. Specify the Websphere administrator username and password.
- 3. Click 'Log In'.



4. Navigate to Websphere home page .Expand 'Servers > Server Types' and click 'Websphere application servers'.

The following screen is displayed.



5. Click 'server1'.



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Welcome	Access to internal server classes	Applications		Help			-
Guided Activities	Allow 💌	Installed applications		Field help			
				For field help field label or l			
3 Servers	Server-specific Application Settings	Server messaging		help cursor is			•
Server Types	Classloader policy	Messaging engines		Page help			
WebSphere application servers WebSphere MQ servers	Multiple •	Messaging engine inbound transports		Page help More informat	tion about	this once	
Web servers	Class loading mode	WebSphere MQ link inbound transports		More morna	cion about	uns page	÷
Applications	Classes loaded with parent class loader first	SIB service					
Services		Server Infrastructure					
Resources	Apply OK Reset Cancel	Java and Process Management					
Schedulers		Administration					
Object pool managers     Java EE default resources		Java SDKs					
□ JMS		<u></u>					
JMS providers		Communications					
Connection factories							
Queue connection factories		Ports					
Topic connection factories		E Messaging					
Queues Topics		Message listener service					
Activation specifications							
■ JDBC		Performance					
Resource Adapters		Performance Monitoring Infrastructure (PMI)					
Concurrency							
		Performance and Diagnostic Advisor Configuration					
Mail		Security					
■ URL		Security domain					
Resource Environment		Default policy set bindings					
Security		JAX-WS and JAX-RPC security runtime					
Environment							
System administration		Troubleshooting					
Users and Groups		NCSA access and HTTP error logging					
		Diagnostic trace service					
Monitoring and Tuning		Logging and tracing					
Troubleshooting		Change log detail levels					
Service integration							
IDDI		Additional Properties					
		Class loader viewer service					
		Endpoint listeners					
		Debugging service					
		Thread pools					
		Reliable messaging state					
		Web server plug-in properties					

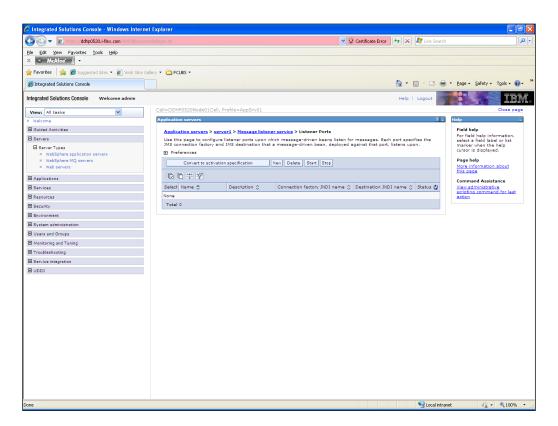
6. Expand 'Messaging' under Communications and select 'Message listener service'.



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View: All tasks 👻	Cell=ofss220239Node01Cell, Profile=FPCFL Application servers	Close page
Welcome Guided Activities Servers Server Types WebSphere application servers Web servers Applications Services Services Security Environment System administration	Application servers > server1 > Message listener service Use this page to configure the message listener service. This service provides the message-driven bean (MDB) listening process, in which message-driven beans are deployed against listener ports that define th JMS destination to listen upon. These listener ports are defined within this service along with settings for it thread pool. Configuration Additional Properties Listener Ports Listener Ports Listener Ports Custom properties Custom properties	Field help For field help informati select a field label or li marker when the help
System administration     Users and Groups     Monitoring and Tuning     Troubleshooting     Service integration     UDDI		
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7. Click 'Listener Ports'.





8. Click 'New'.



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View: All tasks Welcome Guided Activities Servers Server Types WebSphere application servers WebSphere MQ servers Web servers Applications Services Services Services Security Environment	Cell=ofss220239Node01 Cell, Profile=FPCFL       Close p         Application servers          Application servers       > server1 > Message listener service > Listener Ports > New         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, deployed against that port, listens upon.         Configuration	
System administration     Users and Groups     Monitoring and Tuning     Troubleshooting     Service integration     UDDI	Description NotifyMDB_Listener  * Connection factory JNDI name NotifyMDB_Listener  * Destination JNDI name NOTIFY_MDB_QCF Maximum sessions 1 Maximum retries 0 Maximum retries 1 Apply OK Reset Cancel	•

9. Specify the following details:

Name	NotifyMDB_Listener
Description	NotifyMDB_Listener
Connection factory JNDI name	NOTIFY_MDB_QCF
Destination JNDI name	NOTIFY_QUEUE
Maximum retries	1

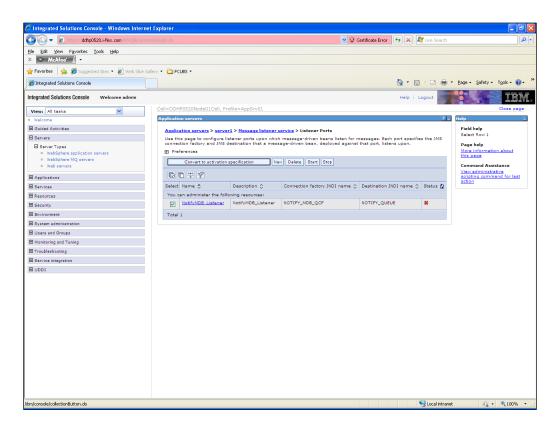
10. Click 'Apply'.



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<ul> <li>Applications</li> <li></li></ul>	⚠ The server may need to be restarted for these changes to take effect.	Ce ≡
🕀 Resources	Application servers > server1 > Message listener service > Listener Ports > NotifyMDB_Listener	Vi sc ac
Security	Use this page to configure listener ports upon which message-driven beans listen for messages. Each port specifies the JMS	
Environment     System administration	connection factory and JMS destination that a message-driven bean, deployed against that port, listens upon.	
System administration     Users and Groups		
Monitoring and Tuning		
Troubleshooting	General Properties	
Service integration	* Name NotifyMDB Listener	
⊕ UDDI		•
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11. Click 'Save'.





12. Select 'NotifyMDB\_Listener'. Click 'Start'.



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Guided Activities	Applie	ation servers > server1	> Message listener serv	vice > Listener Ports			Field help
E Servers	Use ti	his page to configure list	ener ports upon which m	essage-driven beans listen for mes	sages. Each port specifies t	he JMS	For field help information select a field label or list
E Server Types			stination that a message	e-driven bean, deployed against that	at port, listens upon.		marker when the help cursor is displayed.
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<ul> <li>WebSphere MQ servers</li> <li>Web servers</li> </ul>		Convert to activation sp	ecification New	Delete Start Stop			More information about
Applications	R	D # 9					this page
Applications     Services		Name O	Description ()	Connection factory JNDI name 🔿	Destination WDI came A	Charles do	Command Assistance View administrative
El Services		can administer the follow		Connection ractory Shor name 🗸	Destination Shor name V	status 🕁	scripting command for la action
± Resources ∃ Security		EMSInMDB Listener	EMSInMDB_Listener	NotifyDestQCF	EMS_INQUEUE		action
Security     Environment		EMSOutMDB Listener	EMSOutMDB_Listener	NotifyDestQCF	EMS_OUTQUEUE	•	
I Environment						-	
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Users and Groups     Monitoring and Tuning	Tota	13					
Troubleshooting							
I roubleshooting I Service integration							
E UDDI	-						
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13. Similarly, you need to create the following listeners:

MDB_Listener
NotifyMDB_Listener
RecordingMDB_Listener
ELMDB_Listener
ELNotifyMDB_Listener

The complete list of listener queue and QCF to be created for Websphere is given below.

Application Name	Listener Name	Listener QCF	Listener QUEUE
GWMDB	MDB_Listener	MDBQCF	MDB_QUEUE
GWNotifyMDB Bean	NotifyMDB_Listener	NOTIFY_MDB_ QCF	NOTIFY_QUEUE
RTGSInMDB	RTGS_Listener	RTGSQCF	RTGS_INQUEUE
SFMSInMDB	SFMS_Listener	SFMSQCF	SFMS_INQUEUE



ELGWMDBBea n	ELMDB_Listener	ELMDBQCF	ELMDB_REQ_Q
ELNotifyMDBB ean	ELNotifyMDB_Listener	EL_NOTIFY_Q CF	EL_NOTIFY_REQ_Q
EMSInMDB	EmsIn_Listener	EmsQcf	EMS_INQUEUE
EMSOutMDB	EmsOut_Listener	EmsQcf	EMS_OUTQUEUE
BipReportMDB	BipReport_Listener	BIPQCF	INTERNAL_BIPREPORT_QUE UE
BipAdviceMDB	BipAdvReport_Listener	BIPQCF	INTERNAL_BIPADVREPORT_ QUEUE
GIUploadMDB	Gi_Upload_Listener	GI_UPLOAD_Q CF	INTERNAL_GI_UPLOAD_QUE UE
PMScheduler	PMSCH_Listener	SchedulerQCF	SchedulerQueue
PMGateway	PMGW_Listener	PM_GW_QCF	PM_GW_REQ_QUEUE
FCMCore	FCM_RECEIVER_ Listener	FCM_QCF	FCM_RECEIVER
FCMCore	FCM_BULKER_ Listener	FCM_QCF	FCM_BULKER
FCMCore	FILE_PROCESSOR_ Listener	FCM_QCF	FILE_PROCESSOR
FCMCore	pymtGatewayResQ_ Listener	FCM_QCF	pymtGatewayResQ
SnChk	SnChkMDBListener	SNCKREQQCF	SNCKREQ_QUEUE

Here,

- MDB\_Listener is mandatory for Gateway MDB applications
- PMGW\_Listener is mandatory for Payment Gateway MDB applications
- PMSCH\_Listener is mandatory for Payment Job framework applications
- FCMCore related listeners are mandatory for FLEXCUBE Messaging.
- All others are required for FCJ Applications embedded with Scheduler and ELCM



## 4. Default Settings for Web Sphere

## 4.1 Libraries for PMGateway Application

To deploy the PMGateway application, Following steps need to be performed

- 1. Copy runtime12.jar from database servers ORACLE\_HOME/sqlj/lib to application servers library path (WAS\_HOME/lib/ext)
- 2. Create a global shared library containing the following file: a. eclipselink.jar

Find this file in the

'TOPLINK\_INSTALLATION\oracle\_common\modules\oracle.toplink\_ver\_no' directory created by the TopLink quick installer.

• For step 2 Kindly Refer the document Toplink\_IBM\_WAS\_setup.doc



# 5. Configuring Mail Session on Websphere

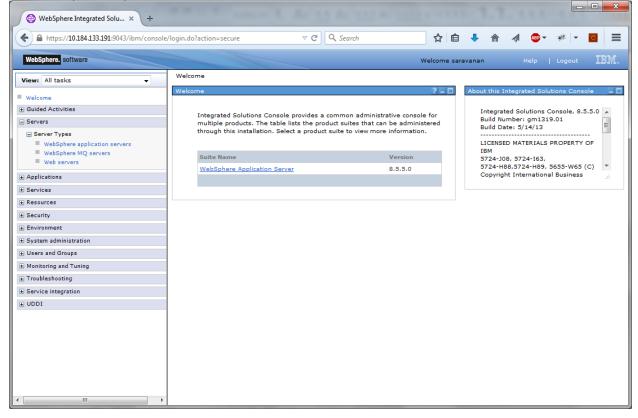
## 5.1 Introduction

This section describes the method to configure Websphere application server for Oracle FLEXCUBE to generate and send passwords to the users via e-mail.

## 5.2 Creating Java Mail Session

To create Java mail session, follow the steps given below:

On the left pane, expand 'Resources' and select 'Mail'.



1. Click 'Mail Sessions' to invoke the 'Mail sessions' screen.



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View: All tasks 🗸	Cell=ofss220239Node01Cell, Profile=FPCFL Close page Mail Sessions ? - Help -
■ Welcome	Mail Sessions Field help For field help information,
	Use this page to create mail sessions, which are collections of properties that define how your application sends mail and accesses the mail store. To create a useful mail session, an outgoing or incoming server and protocol must be provided. Configure mail sessions only after you configure the necessary protocol cursor is displayed.
Services	providers.  Scope: =All scopes Page help
Resources      Schedulers      Object pool managers      JMS      JDBC      Resource Adapters      Asynchronous beans      Cache instances      Mail      Mail providers      Mail sessions      URL      Resource Environment	Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, <u>see the scope</u> <u>settings help</u> . All scopes Preferences New Delete Select Name $\Diamond$ JNDI name $\Diamond$ Scope $\Diamond$ Provider $\Diamond$ Description $\Diamond$ Category $\Diamond$ None
	Total 0
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2. Click 'New' button to create a new mail session.



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Welcome	* JNDI name		Help
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∃JDBC			
Resource Adapters	Enable debug mode		
<ul> <li>Asynchronous beans</li> <li></li></ul>			
Mail			
Mail providers	Outgoing Mail Properties		
Mail sessions	Server		
URL  Resource Environment	10.10.10.10		
	* Protocol		
E Security	smtp 🔻		
Environment	User		
System administration			
Users and Groups	Password		
Monitoring and Tuning			
Troubleshooting	Verify Password		
Service integration		]	
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	Incoming Mail Properties		
	Server		
	* Protocol		
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3. Provide the required information. Sample details are given below for your reference.

General Properties					
Name	FCUBSMail				
JNDI Name	mail/FCUBSMail				
Outgoing Mail	Outgoing Mail Properties				
Server	< HOST_MAIL_SERVER >				
Protocol	Smtps				

4. Click 'Custom Properties' link to configure the custom properties.



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<ul> <li>Servers</li> </ul>	Use this page to create mail sessions, which are collections of properties that define how your application sends mail and accesses the mail store. To create a useful	field label or list marker when the
Server Types	mail session, an outgoing or incoming server and protocol must be provided. Configure mail sessions only after you configure the necessary protocol providers.	help cursor is displayed.
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5. Click 'New' button to create new custom properties.



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6. Specify the information required for creating custom properties. Sample details are given below:

Name	mail.smtps.host
Value	<host_smtps_mail_server></host_smtps_mail_server>
Туре	java.lang.String

The custom properties are given below:

Name	Value	Туре
mail.smtp.host	<host_smtps_mail_server></host_smtps_mail_server>	java.lang.String
mail.smtp.port	<smtps_server_port></smtps_server_port>	java.lang.String
mail.host	<host_mail_server></host_mail_server>	java.lang.String
mail.smtps.auth	TRUE	java.lang.String



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<ul> <li>Object pool managers</li> <li>IMS</li> </ul>						Viev administ	trative
IT JDBC	<u>Mail Sessions</u> > <u>FCUBSMail</u> > Cu					scripting com action	mand for last
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Asynchronous beans	additional custom properties for	data sources that access th	e database.				
	Preferences						
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I URL	Select Name 🗘	Value 🔿	Description 🗇	Required ()			
Resource Environment	You can administer the followin	g resources:					
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Environment	~						
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Users and Groups	·						
Monitoring and Tuning							
Troubleshooting							
Service integration							

Click 'Save' to complete the configuration.

The file 'fcubs.properties' needs to be updated with the encrypted values of the following components

- SMTP\_HOST
- SMTP\_USER
- SMTP\_PASSWORD
- SMTP\_JNDI

You can update this using Oracle FLEXCUBE UBS Installer.



## 6. Annexure

Ensure the following settings before deploying the application:

## 6.1 IBM Websphere Server - Increasing Heap Size

- 1. Go to 'Server > Application Servers' and select the 'server\_name'
- Under the Configuration tab, navigate to 'Server Infrastructure > Java(TM) and Process Management
   > Process Definition > Additional Properties: Java Virtual Machine'
- 3. Modify the initial heap size and maximum heap size appropriately based on the load size

### 6.2 IBM Websphere Server - Transaction Service Properties

- 1. Go to' Server > Application Servers' and select the 'server\_name'
- 2. Choose 'Container Services > Transaction Service'
- 3. Change the total transaction lifetime timeout appropriately
- 4. Party content, products, or services.

## 6.3 IBM Websphere Server – ORB Service Configuration

1. Go to' Server > Application Servers' and select the 'server\_name'

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2. Expand 'Container Services' and click 'ORB Service'

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± Security	1 retries				
Environment	* Request retries delay				
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Users and Groups	* Connection cache maximum				
± Monitoring and Tuning	240 connections				
+ Troubleshooting	* Connection cache minimum				
Service integration	100 connections				
	ORB tracing				
- 0001	* Locate request timeout				
	180 seconds				
	Force tunnel				
	NEVER				
	Tunnel agent URL				
	Pass by reference				
	Thread Pool Settings				
	Use the <u>ORB.thread.pool</u> settings associated with the Thread				
	Pool Manager (recommended).				
	Use the <u>Thread Pool Settings</u> directly associated with the ORB service.				
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3. Check 'Pass by reference' and click Apply

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4. Click 'Save'.



Websphere Configuration [December] [2018] Version 14.2.0.0.0

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