Websphere Configuration Oracle FLEXCUBE Universal Banking Release 12.3.0.0.0 [December] [2016]



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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.

<u>Example</u>

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
SHAlwithRSA -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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VebSphere outware VebSphere User ID: Password User ID: User ID: User ID: VebSphere Indiana VebS	TBM Corp. 1997, 2011 All WebSphere are trademarks or Jachines Corp. registered in arvice names might be list of TBM trademarks is _information.

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

The following screen is displayed:

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WebSphere. software		Welcome websphere	Help Logout IBM.
View: All tasks 🔹	Cell=ofss220137Node01Cell, Profile=AppSrv01	2	Close page
■ Welcome Guided Activities	SSL certificate and key management		Field help For field help information,
			select a field label or list marker when the help cursor is displayed.
	SSL configurations The Secure Sockets Layer (SSL) protocol provides secure	Related Items SSL configurations	Page help
Resources 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 Troubleshooting UDDI	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 addition, trust zones can be established in multiple node environments by overriding the default, cell-level 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. Configuration settings <u>Manage endpoint security configurations</u> <u>Manage certificate expiration</u> <u>Manage FIDS</u>	Society Control Society S	More information about this page



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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WebSphere. software	· · · · · · · · · · · · · · · · · · ·	Help Logout IBM.
View: All tasks Welcome	Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management	Close page
 ④ Guided Activities ④ Servers 	SSL certificate and key management > Key stores and certificates Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.	For field help information, select a field label or list marker when the help
 Applications Envices 	Keystore usages SSL keystores	cursor is displayed. Page help
Resources Security	• Preferences	More information about this page
Global security Security domains Administrative Authorization Groups	New Delete Change password Exchange signers	Command Assistance <u>View administrative</u> <u>scripting command for last</u> action
 SSL certificate and key management Security auditing 	Select Name 🗘 Description 🗘 Management Scope 🗘 Path 🗘	
Bus security Environment System administration Users and Groups Monitoring and Tuning	You can administer the following resources: Image: State in the	
Troubleshooting Service integration UDDI	NodeDefaultTrustStore for ofss220137Node01 Default trust store (node):ofss220137Node01Cell: \$(CONFIG_ROOT)/cells /ofss220137Node01Cell /ondes /ofss220137Node01	
	Total 2	
4		

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
■ Welcome Guided Activities	+ Name		will not be availat the general prope this item are appl
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Applications Services Resources	Management scope (cell):ofss220137Node01Cell:(node):ofss220137Node01	•	 Signer cert Personal
Security Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	Path Password Confirm password		certificates Personal certificate requests Custom properties
Environment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration UDD1	Type FXC512 CEKS CMSKS FXC512 FXS Cryptographic Token Device (PKC511) Enable cryptographic operations on hardware device Apply OK Reset Cancel		E
<)	Apply OK Reset Cancel		



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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WebSphere. software		Welcome websphere	Help Logout IBM.
View: All tasks 💌	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management	2	Close page
Welcome Guided Activities	SSL certificate and key management		Field help For field help information,
Servers Applications Services	SSL configurations	Related Items	select a field label or list marker when the help cursor is displayed.
Services Resources Security	The Secure Sockets Layer (SSL) protocol provides secure communications between remote server processes or endpoints. SSL security can be used for establishing communications	SSL configurations	Page help More information about this page
Global security Security domains Administrative Authorization Groups SSL cartificate and key management Security auditing Bus security	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	endpoint SSL configurations Key stores and certificates Key sets Key sets	E
Environment System administration Users and Groups Monitoring and Tuning	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 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	 Key managers Trust managers Certificate Authority (CA) client configurations 	
Troubleshooting Service integration	is necessary for you to re-configure SSL to take advantage of the centralized management capability. Configuration settings		
UDDI	Manage endpoint security configurations Manage certificate expiration Manage FIPS		
()	Dynamically update the run time when SSL configuration		-

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



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Welcome	SSL certificate and key management > SSL	configurations	Field help	
⊕ Guided Activities ■			For field help information,	
Servers	Defines a list of Secure Sockets Layer (SSL)	configurations.	select a field label or list marker when the help	
Applications	Preferences		cursor is displayed.	
Services	New Delete		Page help	
+ Resources			More information about	
Security			this page	
Global security	Select Name 🗘	Management Scope 💲	Command Assistance	
Security domains	You can administer the following resources		View administrative	
 Administrative Authorization Groups SSL certificate and key management 	NodeDefaultSSLSettings	(cell):ofss220137Node01Cell: (node):ofss220137Node01	scripting command for last action	
Security auditing				
Bus security	Total 1			
Environment				
System administration				
Users and Groups				
 Monitoring and Tuning 				
Troubleshooting	1			
Service integration				
± UDDI				
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2. Click 'New' button. The following screen is displayed.

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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 > 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
Security	* Name	the general properties for this item are applied or
Global security	Trust store name	saved.
Security domains	NodeDefaultKeyStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01)	Additional Properties
Administrative Authorization Groups SSL certificate and key management		Quality of
 SSL certificate and key management Security auditing 	Keystore name NodeDefaultKeyStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01)	protection (QoP) settings
Bus security	NodeDeraultKeyStore ((cell):ofss22013/Node01Cell:(node):ofss22013/Node01)	Trust and key
Environment	Default server certificate alias	managers
+ System administration	(none) 💌	Custom
+ Users and Groups	Default client certificate alias	properties
Monitoring and Tuning	(none) 🔻	Related Items
Troubleshooting	Management scope	Key stores and
	(cell):ofss220137Node01Cell:(node):ofss220137Node01	certificates
Service integration		
+ 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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WebSphere, software		Welcome websphere	Help Logout IBM.
View: All tasks View: All tasks Users Values Valu	Cell-ofsi220137kode01Cell, Profile=App5iv01 SSL certificate and key management Communications are between remote server processes or endpoints. SSL security can be used for establishing communications inbound form an endpoint. To establish secure communications, a certificate and an SSL configuration must be specified for the endpoint. To previous versions of this product, it was necessary to manually configure each endpoint for Sacure Sockets Layer (SSL). In this application-serving environment. This capability enables you to cantrally manage secure communications. In addition, trust zones can be established in multiple node environment to this version using the migration utilities, the old Secure Sockets Layer (SSL) is necessary for you to re-configure SSL to take advantage of the centralized management capability. Configuration secures	Related Items	Rep Cope 2006 Cose page Field help Field help Field help information, seict a field label or list marker when the help cursor is displayed. Page help Most information about this page
	Manage endpoint security configurations Manage certificate expiration Manage FIPS		
۰ III • • • • • • • • • • • • • • • • •	Dynamically 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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View: All tasks View: All tasks View: All tasks View: Services Guided Activities Services Applications Security Guided Activities Security Guided Security Guided Security Security domins Administrative Authorization Groups SSL certificate and key management SsL certificate and key management Subsecurity Bus security Eusescurity Eusescurity	Cellendsr220137Node01Cell Close pag S5L certificate and key management ? = S6L certificate and key management ? = Field help For field help information selected scopes, such as a cell, node, server, or Colar Topology
System administration Users and Groups Wenitoring and Tuning Troubleshooting Service integration UDDI	
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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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WebSphere. software	Welcome we	absphere Help	Logout IBM.
View: All tasks	Cell=ofs220137Node01Cell, Profile=App5rv01 55L certificate and key management		Close page
Guided Activities Servers	<u>SSL certificate and key management</u> > <u>Manage endpoint security configurations</u> > ofse2 Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, noc		Field help For field help select a field marker when
Applications Services	General Properties	 Related Items 	cursor is displ
Resources Security	Name	SSL	More informat this page
Security domains Citabi security Security domains Administrative Authorization Groups St. certificate and key management Security auditing Bus security Environment Users and Groups Varian and Tuning Travibleabooting Service integration UDD1	ofss220137Hode01 Direction Inbound Specific SSL configuration for this endpoint SSL configuration NodeDefaultSSLSettings Certificate alias in key store (none) Apply OK Reset Cancel	configurations Dynamic outbound endpoint SB, configurations Key stars and certificates Key sets Key set groups Key managers Dynamics Configurations Configurations	
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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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^{II} Welcome				rs in your environment and th status of a specific application		ach of these		select a	d help ir i field la	nformation			
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Web servers Applications			Name 🗘 Node 🗘 Host Name 🗘 Version 🗘						More in this pac		on about		
± Services		You can administer the server1	following resources:	ofss220137.in.oracle.com	Base 8.5.5.0			Comma View ad					
Resources Security	Ξ	E	=	=	Total 1	0155220137800601	ofsszzors/.in.oracle.com	base 0.5.5.	5		scripting action	g comm	and for la
Global security Security domains Administrative Authorization Groups SL certificate and key management Security auditing Bus security													
± Environment													
System administration													
Users and Groups Monitoring and Tuning Troubleshooting													
Service integration	-												

1. Click the server to which SSL configuration has to be applied. The following screen is displayed.

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WebSphere. software		Welcome websphere	
View: All tasks Vielone Golded Activities Servers Servers WebSphore application servers WebSphore NQ servers WebSphore	Application servers > server1 Use this page to configure an application server. An application server required to ran enterprise applications. Runtime Configuration General Properties Name	ver is a server that provides services Container Settings © Session	Help For field help For field help informatio select a field label or list marker when the help cursor is displayed. Page help More information about
Applications Services Resources	server1 Node name ofss220137Node01	management B SIP Container Settings	this page
Security Global security Global security Administrative Authorization Groups SGL certificate and key management Security auditing Bus security	Run in development mode Parallel start Start components as needed Access to internal server classes Autor	Web Container Settings Web container Web container Veb container Promport diving Profilet Container Settings	
Environment System administration Users and Groups Monitoring and Tuning Troubleshooting	Server-specific Application Settings Classloader policy Multiple Class loading mode	EDB Container Settings Container Services Business Process Services	
Service Integration	Classes loaded with parent class loader first	Applications Installed applications Server messaging Messaging engines	
		Messaoing engine	

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

The following screen is displayed.



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WebSphere. software						Welcome we	bsphere				II	IM.			
View: All tasks			20137Node01Cell, Profile=AppSrv01					_	Help		Close	pag			
Welcome Amplication servers > server1 > Web container transport chains Field help Guided Activities Use this page to view and manage a transport chain. Transport chains represent network protocol stacks Field help information, selects field label or list															
Server Types WebSphere application servers WebSphere MQ servers Web servers		that an	e operating within a client or serve ferences Delete		marker when the help cursor is displayed. Page help More information about										
Applications											this page Command Assistance				
Services			Select Name 🗘 Enabled Host 🗘 Port 🗘 SSL Enabled									View administrative			
	=		an administer the following resour						action	ing comr	nand fo	r las			
Security			HttpQueueInboundDefault	Enabled	•	9080	Disabled		action	-					
Global security Security domains Administrative Authorization Groups			HttpQueueInboundDefaultSecure	Enabled	*	9443	Enabled								
 Administrative Authorization Groups SSL certificate and key management Security auditing 			WCInboundAdmin	Enabled	*	9060	Disabled								
Bus security			WCInboundAdminSecure	Enabled	*	9043	Enabled								
± System administration			WCInboundDefault	Enabled	*	9080	Disabled								
± Users and Groups			WCInboundDefaultSecure	Enabled	•	9443	Enabled								
→ Monitoring and Tuning															
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trans 🔨 🖌 Hig	hlight <u>A</u>	ll Mat	ch Case 2 of 2 matches												

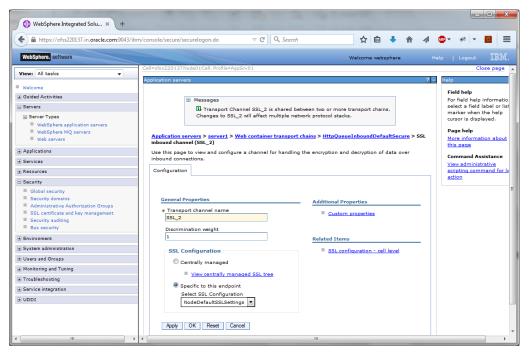
3. Against their respective names, the secured connection is available under the column 'SSL Enabled'. Click 'WCInboundDefaultSecure'.

The following screen is displayed:

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WebSphere, software	Welcome websphere	lelp Logout <u>IBM.</u>
View: All tasks 🔹	Cell=ofss220137Node01Cell, Profile=AppSrv01 Application servers	Close page
Welcome Guided Activities Servers Server Types	Application servers > server1 > Web container transport chains > HttpQueueInboundDefaultSecure Use this page to view and manage a transport chain. Transport chains represent network protocol stacks that are operating within a client or server.	Field help For field help informatio select a field label or list marker when the help cursor is displayed.
WebSphere application servers WebSphere MQ servers Web servers Applications	Configuration General Properties	Page help More information about this page
Services Resources	+ Name HttpQueueInboundDefaultSecure	
Kesources Security	V Enabled	
Global security Security domains Administruke Authorization Groups SSL certificate and key management Security auditing Bus security	Transport Channels TCP Inbund channel (TCP. 4) Host Port Port 9443 Thread pool WebContainer	
System administration	Maximum open connections 20000 Inactivity timeout 60 seconds	
Users and Groups Monitoring and Tuning Troubleshooting	SSL inbound channel (SSL 2) SSL configuration (Centrally managed)	
Service integration	HTTP inbound channel (HTTP_4)	
DDU (Use persistent keep alve connections Enabled Maximum persistent requests per connection 100 Read timeout 60 seconds Write timeout 60 seconds Persistent timeout 30 seconds ITTP gueue inbound channel (HTTPD_2)	
	Thirs SubstainExamples Containing (IVCC_6) Veb container inbound channel (IVCC_6) Apply OK Rest Cancel	
	< III	

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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SSL certifi	cate and key m	lanagement							
SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Personal certificates									
Manag	es personal cer	tificates.							
± Pret	ferences								
Cre	ate Delete	Receive from a	a certificate authority Replace	Extract Import	Export Revoke	Renew			
Select		Alias	Issued To	Issued By	Serial Number	Expiration			
You c	an administer t	he following reso	urces:						
	Q =	default	CN=ofss220137.in.oracle.com,	CN=ofss220137.in.oracle.com,	3446736556526576				
						Jun 22, 2015 to J			
			O=IBM, C=US	OU=ofss220137Node01,		21, 2016.			
				O=IBM, C=US					
	1		CN=ofss220137.in.oracle.com,	CN=ofss220137.in.oracle.com/	3446736182480725	Valid from			
			OU=Root Certificate,	OU=Root Certificate,		Jun 22,			
						2015 to Ju 18, 2030.			
			O=IBM, C=US	O=IBM, C=US					
Total	2								
	SSL certifi SSL ce Manag Prel Cre Select You c	SSL certificate and key m SSL certificate and ke Manages personal cer	SSL certificate and key management SSL certificate and key management > Manages personal certificates. Preferences Create Delete Receive from a Select Alias You can administer the following reson Image Deleta Image Deleta </td <td>SSL certificate and key management > Key stores and certificates > Nor Manages personal certificates. Preferences Create Delete Receive from a certificate authority Replace Select Alias Issued To You can administer the following resources: Image: Delete CN=ofss220137.in.oracle.com, OU=ofss220137Node01Cell, OU=ofss220137Node01, O=IBM, C=US Image: Delete CN=ofss220137.in.oracle.com, OU=Root Certificate, OU=ofss220137Node01, O=IBM, C=US</td> <td>Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management Manages personal certificates. Preferences Create Delete Receive from a certificate authority Replace Extract Import Select Alias Issued To Issued By You can administer the following resources: CN=ofss220137.in.oracle.com, OU=ofss220137Node01Cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137.in.oracle.com, OU=Root Certificate, OU=ofss220137.in.oracle.com, OU=Root Certificate, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell,</td> <td>Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Personal certificates Manages personal certificates. Preferences Create Delete Receive from a certificate authority Replace Extract Import Extract Import Select Alias Issued To Issued By You can administer the following resources: OU=ofss220137.in.oracle.com, OU=ofss220137.in</td>	SSL certificate and key management > Key stores and certificates > Nor Manages personal certificates. Preferences Create Delete Receive from a certificate authority Replace Select Alias Issued To You can administer the following resources: Image: Delete CN=ofss220137.in.oracle.com, OU=ofss220137Node01Cell, OU=ofss220137Node01, O=IBM, C=US Image: Delete CN=ofss220137.in.oracle.com, OU=Root Certificate, OU=ofss220137Node01, O=IBM, C=US	Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management Manages personal certificates. Preferences Create Delete Receive from a certificate authority Replace Extract Import Select Alias Issued To Issued By You can administer the following resources: CN=ofss220137.in.oracle.com, OU=ofss220137Node01Cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137.in.oracle.com, OU=Root Certificate, OU=ofss220137.in.oracle.com, OU=Root Certificate, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell, OU=ofss220137Node01.cell,	Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Personal certificates Manages personal certificates. Preferences Create Delete Receive from a certificate authority Replace Extract Import Extract Import Select Alias Issued To Issued By You can administer the following resources: OU=ofss220137.in.oracle.com, OU=ofss220137.in			

- 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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WebSphere. software		Welcome websphere Help		IBM.
View: All tasks	Â	Cell=ofss220137Node01Cell, Profile=App5rv01 SSL certificate and key management 7	Help	Close page
Welcome Guided Activities Servers Server Types		SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Personal certificates > Extract certificate Extracts a certificate from the key store to be added to another key store. General Properties	Field For t sele mar	i help field help inform ct a field label o ker when the he or is displayed.
WebSphere application servers WebSphere MQ servers Web servers		Certificate alias to extract default	More	e help information ab
Applications Services		+ Certificate file name D:\Keystores\myKeysore.cer		
Resources Security		Data type Base64-encoded ASCII data 💌		
Security Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security		Apply OK Reset Cancel		
Environment				
System administration Users and Groups				
Monitoring and Tuning Troubleshooting				
Froubleshooting Service integration				
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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

Note: 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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WebSphere. software	Welcome websphere	Help Logout IBM.					
View: All tasks	I=ofss220137Node01Cell, Profile=App5rv01 L certificate and key management	Close page					
Welcome							
Guided Activities	SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore						
Servers	Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.						
 Server Types 							
WebSphere application servers	General Properties						
WebSphere MQ servers	General Properties	Additional Properties					
Web servers	Name	Signer certificates					
Applications	NodeDefaultKeyStore	Personal					
Services	Description	certificates					
+ Resources	Default key store for ofss220137Node01	Personal E					
Security	Management scope	certificate requests					
Global security	(cell):ofss220137Node01Cell:(node):ofss220137Node01	Custom					
 Global security Security domains 	(cel)iaiszters/iadericel/iade/iaiszters/iaderi	properties					
Administrative Authorization Groups	Path						
SSL certificate and key management	\${CONFIG_ROOT}/cells/ofss220137Node01Cell/nodes/ofss220137Node01/key.p12						
Security auditing	* Password						
Bus security							
Environment	Туре						
System administration	PKCS12						
Users and Groups							
Monitoring and Tuning	Read only						
	Initialize at startup						
Troubleshooting ■							
Service integration	Enable cryptographic operations on hardware device						
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1. Click 'Signer Certificates'.



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WebSphere, software							We	lcome webst	phere				IBM.			
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Welcome Guided Activities Servers		<u>SSL certif</u> certificat	ficate and es	key manaq	<u>ement</u> > <u>Key stores a</u>	nd certificates >	NodeDefaultKey	<u>/Store</u> > Sigr	ier		Field For fi	eld help in t a field la				
Server Types WebSphere application servers		Manages signer certificates in key stores. 🕃 Preferences										marker when the help cursor is displayed.				
 WebSphere MQ servers Web servers 		Add	Add Delete Extract Retrieve from port								Page help More information about this page					
Applications Services		Select Al			Issued to 💲	Fingerprint	t (SHA Digest) 🗘	Expiration	\$			nand Assis administra				
Resources Security		None Total 0										ing comm	and for last			
Global security Global security Security domains Administrative Authorization Groups SSL certificate and key management Sucurity auditing Bus security Environment System administration Users and Groups Monitoring and Truining Troublescoing	=															
Service integration UDDI	*															

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

The following screen is displayed:

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WebSphere. software	Welcome websphere Ho	lp Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management ? -	Close page Help
Welcome Guided Activities Servers Server Types	SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Signer certificates > Add signer certificate Add signer certificate Adds a signer certificate to a key store.	Field help For field help information, select a field label or list marker when the help cursor is displayed.
WebSphere application servers WebSphere MQ servers Web servers Web servers Applications	General Properties * Alias ELCM Keystore * File name	Page help More information about this page
Services Resources Security	D: Keysores(myKeysore.cer Data type Base64-encoded ASCII data	
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing	Apply OK Reset Cancel	
Security additing Bus security Environment		
 • System administration • Users and Groups • • •		
 Monitoring and Tuning Troubleshooting 		
Service integration UDDI	۲	4

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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WebSphere. software				We	lcome websphere	Help Logout IBM .			
View: All tasks	Cell=ofss220137Nod				2	Close page			
Welcome Guided Activities Servers Server Types WebSphere application servers WebSphere MQ servers WebSpheres MQ	SSL certificate a	and key manage e types, includin	ement > Key stores and	certificates), CMS, Java(TM), and all trusts	itore types.	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			
Applications Services	New De	lete Change	password Exchang	e signers		Command Assistance View administrative scripting command for last			
Services Resources		?							
Security	Select Name 🗘		Description 🗘	Management Scope 🗘	Path 🗘	action			
Global security	You can admin	ister the followir	ng resources:						
Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	NodeDef	aultKeyStore	Default key store for ofss220137Node01	(cell):ofss220137Node01Cell: (node):ofss220137Node01	\${CONFIG_ROOT}/cells /ofss220137Node01Cell /nodes /ofss220137Node01 /key.p12				
Environment System administration Users and Groups	<u>NodeDef</u>	aultTrustStore	Default trust store for ofss220137Node01	(cell):ofss220137Node01Cell: (node):ofss220137Node01	/ofss220137Node01Cell /nodes				
Overs and Groups Monitoring and Tuning Troubleshooting					/ofss220137Node01 /trust.p12				
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WebSphere. software	Welcome websphere Help Logout
View: All tasks	Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.
Welcome	
Guided Activities	General Properties Additional Properties
Servers	Name Signer certificates
Server Types	NodeDefaultKeyStore Personal
 WebSphere application servers WebSphere MQ servers 	Description certificates
Web servers	Default key store for ofss220137Node01 Personal certificate
Applications	Management scope requests [rel]):ofs<220137Node01Cell:(node):ofs<220137Node01
Services	properties
Resources	Path \${CONFIG_ROOT}/cells/ofss220137Node01Cell/nodes/ofss220137Node01/key.p12
Security Global security	* Password
Security domains	=
 Administrative Authorization Groups SSL certificate and key management 	Туре
 Security auditing Bus security 	PKCS12
+ Environment	Read only
System administration	Initialize at startup
Users and Groups	Enable cryptographic operations on hardware device
Monitoring and Tuning	And Off Burt Court
Troubleshooting	Apply OK Reset Cancel
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1. Click 'Signer Certificates'.

The following screen is displayed.

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View: All tasks		Cell=ofss220137Node01Cell, Profile SSL certificate and key managem				Р — н	elp	Close page
Welcome Guided Activities Servers Server Types		SSL certificate and key manage certificates Manages signer certificates in Preferences		<u>certificates</u> > <u>NodeDefaultKey</u>	r <u>Store</u> > Signer		Field help For field help ir select a field la marker when th cursor is displa	ibel or list he help
WebSphere application servers WebSphere MQ servers Web servers Web servers		Add Delete Extract	Retrieve from port				Page help More information this page	on about
Services		Select Alias 🗘	Issued to \Diamond	Fingerprint (SHA Digest) 🗘	Expiration 🗘		Command Assi	ative
Resources Security	=	Total 0					scripting comm action	and for last
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security Henvironment								
System administration Users and Groups								
 Monitoring and Tuning Troubleshooting Ervice integration 								
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2. Click 'Add' button to add the extracted certificate of the second server.



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WebSphere. software		elp Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management ?	Close page
Welcome Guided Activities Servers Servers Server Types WebSphere application servers	SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Signer certificates > Add signer certificate Adds a signer certificate to a key store. General Properties	Field help For field help information, select a field label or list marker when the help cursor is displayed.
WebSphere MQ servers Web servers	+ Alias ELCM	Page help More information about this page
	* File name D:\Keysore\myKeysore.cer	
Resources Security	Data type Base64-encoded ASCII data	
Global security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	Apply OK Reset Cancel	
Environment		
javascript:clearFilter('com.ibm.ws.console.sec	curity.SignerCertsCollectionForm') m	

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.

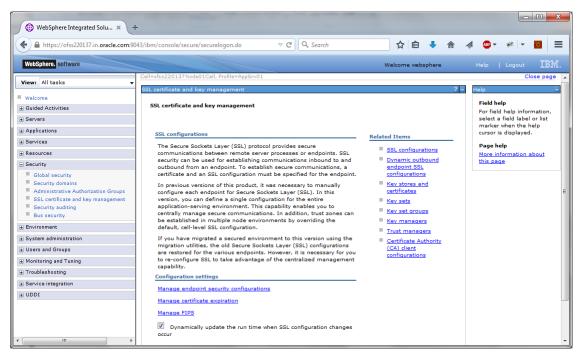
1.8.6 Importing Certificate into Truststore for Server2

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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WebSphere. software	Welcome websphere	Help Logout IBM.
View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management ?	Close page
Welcome	SSL certificate and key management > Manage endpoint security configurations	Field help
Guided Activities	Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, node, server, or cluster.	For field help information,
Servers		select a field label or list marker when the help
Applications	Local Topology	cursor is displayed.
Services		Page help
Resources	Inbound	More information about this page
Security	ofss220137Node01Cell m nodes	this page
Global security Security domains	E ADDES ModeDefaultSSLSettings)	
 Security domains Administrative Authorization Groups 	Outbound	
SSL certificate and key management	ofss220137Node01Cell	
Security auditing	E in nodes	
Bus security	of <u>ofss220137Node01(NodeDefaultSSLSettings)</u>	
Environment		
System administration		
Users and Groups		
Monitoring and Tuning		
Troubleshooting		
Service integration		
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2. Change the inbound node settings. Expand 'Inbound' and click link highlighted in blue color.



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View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01 SSL certificate and key management	7 -	Close page
Welcome Guided Activities	SSL certificate and key management > Manage endpoint security configurations > ofss	220137Node01	Field help
E Servers	Displays Secure Sockets Layer (SSL) configurations for selected scopes, such as a cell, no	ode, server, or cluster.	For field help inform select a field label of marker when the he
	General Properties	Related Items	cursor is displayed.
Resources Security Global security	Name ofss220137Node01	SSL configurations	More information at this page
Security domains Administrative Authorization Groups SSL certificate and key management	Direction Inbound	Dynamic outbound endpoint SSL configurations	
 SSL certificate and key management Security auditing Bus security 	Specific SSL configuration for this endpoint	Key stores and certificates	
Environment System administration	NodeDefaultSSLSettings Update certificate alias list Manage certificates	Key sets Key set groups	
	default 💌	 Key managers Trust managers Certificate 	
Troubleshooting Service integration	Apply OK Reset Cancel	<u>Certificate</u> <u>Authority (CA)</u> <u>client</u> configurations	
		conneurations	
۰	٠ [١١]		4

- 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'.



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WebSphere. software	Welcome websphere	Help Logout IBM
View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01	Close pag
Welcome Guided Activities Servers	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.
Security Security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	□ Inbound □ ofss220137Node01Cell □ nodes □ 0 ofss220137Node01(NodeDefaultSSLSettings) □ Outbound □ ofss220137Node01Cell □ nodes □ nodes □ ofss220137Node01(NodeDefaultSSLSettings)	Page help More information about this page
+ Environment + System administration		
Users and Groups		
+ Monitoring and Tuning		
+ Troubleshooting		
Service 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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WebSphere. software	Welcome websphere Help Logout
View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01 Close particles and key management
Welcome Guided Activities	SSL certificate and key management > SSL configurations > NodeDefaultSSLSettings
Servers	Defines a list of Secure Sockets Layer (SSL) configurations.
Services	General Properties Additional Properties
Resources Security Security domains Administrative Authorization Groups SSL certificate and key management Security auditing Bus security	Name NodeDefaultSSLSettings Trust store name NodeDefaultTrustStore ((cell):ofss220137Node01Cell:(node):ofss220137Node01) ▼ Get certificate aliases Settings Custom properties Related Items
Environment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration	Default server certificate alias (none) Image: Key stores and certificate alias Default client certificate alias certificates (none) Image: Key stores and certificates Management scope (cell):ofss220137Node01Cell:(node):ofss220137Node01
UDDI	Apply OK Reset Cancel
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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 Welcome Builded Activities Bailed Activities Bailed Activities Barries Ba	Vielp 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

- 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

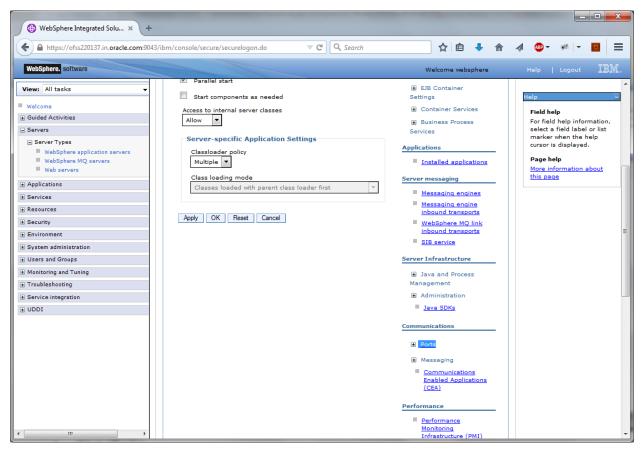
Alternatively, you can import or add the server certificates using *ikeyman.bat*. This batch is available at the following location:

<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.



me vebsphere Help Log ons ame STRAP_ADDRESS _CONNECTOR_ADDRESS LISTENER_ADDRESS LISTENER_ADDRESS SL_SERVERAUTH_LISTENER_ADDRESS LSSL_MUTUALAUTH_LISTENER_ADDRESS LSSL_MUTUALAUTH_LISTENER_ADDRESS dminhost efaulthost UNICAST_ADDRESS dminhost_secure	Port 2809 8880 9100 9401 9403 5 9402 9060 9080 9353	Details
ame CONNECTOR_ADDRESS _CONNECTOR_ADDRESS LISTENER_ADDRESS SU_SERVERAUTH_LISTENER_ADDRESS LSSL_SERVERAUTH_LISTENER_ADDRESS LSSL_MUTUALAUTH_LISTENER_ADDRESS dminhost efaulthost JNICAST_ADDRESS	2809 8880 9100 9401 9403 9403 9402 9060 9080 9353	Detail
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EFAULTHOST	5060	
EFAULTHOST_SECURE	5061	
NDPOINT_ADDRESS	7276	
NDPOINT_SECURE_ADDRESS	7286	
IQ_ENDPOINT_ADDRESS	5558	
IQ_ENDPOINT_SECURE_ADDRESS	5578	
CONNECTOR_ADDRESS	9633	
LAY_UDP_LISTENER_ADDRESS	11003	
LAY_TCP_LISTENER_ADDRESS	11004	
	NDPOINT_SECURE_ADDRESS IQ_ENDPOINT_ADDRESS IQ_ENDPOINT_SECURE_ADDRESS :ONNECTOR_ADDRESS IAY_UDP_LISTENER_ADDRESS	NDPOINT_SECURE_ADDRESS 7286 IQ_ENDPOINT_ADDRESS 5558 IQ_ENDPOINT_SECURE_ADDRESS 5578 SONNECTOR_ADDRESS 9633 IAY_UDP_LISTENER_ADDRESS 11003 IAY_TCP_LISTENER_ADDRESS 11004 Ing



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		- 7 🛛
Ele Window Help		
	MQ Explorer - Content 🖾	# ⊘ ~
Given and the second seco	WebSphere. MQ	IBM.
EM WebSphere MQ		

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



😍 IBM WebSphere MQ E	voloror									
File Window Help	Aptorer									
MQ Explorer - Navigator	x h c c ø v =		MQ Explorer - Content	2						411 6
B () IBM WebSphere MQ										
Cueue Manager		0	Queue Manager	s						
🗁 Queue Manage 🧀 JMS Administer	Queue Manage Show/Hide Queue Managers Add Remote Queue Managers		Filter: Standard for Queue Managers							
- 🗁 Service Definiti	New 🕨 Qu	ieue Ma	nager ue manag	Command level	Queue manager status	Platform	Queue-sharing group name	Dead-letter queue	Description	Default bind type
	Tests									
			<							
			Scheme: Standard for Q	ueue Managers						
			Last updated: 16:47:03							
		5	ielect a queue manager to	show its connection	on details here:					



🕀 Create Queue Manage	e Manager				
Queue Manager					
Enter basic values					
Queue manager name:	QM_DDHP0520				
Make this the default que	ue manager				
Default transmission queue:					
Dead-letter queue:					
Max handle limit:	256	*			
Trigger interval:	999999999	*			
Max uncommitted messages:	10000	×			
0	Back Next > Einish	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 Q	ueue Ma	nager	
Queue Man Enter data ar	-	es	
Queue manag	jer name:	QM_DDHP0520 Use circular logging Use linear logging	
Log file siz	e: (x4KB)	4096	*
Log prin	hary files:	3	
Log second	dary files:	2	< > < >
Data and Lo Use defa Data path: Log path:	D:\Progra	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: Second



^{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
Image: Concelement of the sector of

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	
? < Back	Cancel

8. Click 'Finish'.



Details		
****		~
* Command: crtmqm -sa		
	anager created. :s\IBM\WebSphere MQ\qmgrs\ ed for reason 545284625 "	,QM_DDHP0520' creat
<		
Print	Save As	Close

9. Close the message. The following screen is displayed:

Explorer - Navigator 🕄 👘 🗇 🗇 🌼	🗢 🗖 🚺 MQ Explorer - Content 🖾							배 🚸 🏱 🖻		
B B B B B B B B B B B	Queue Managers									
	Filter: Standard for Queue Mana									
	Queue manager name QM_DDHP0520	Command level 701	Queue manager status Stopped	Platform Windows	Queue-sharing group name	Dead-letter queue	Description	Default bind ty Shared		
		Scheme: Standard for Queue Managers								
	Last updated: 16:50:26									
	Select a queue manager to show its	Select a queue manager to show its connection details here:								

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



🔁 IBM WebSphere MQ Explorer						
File Window Help						
🔁 MQ Explorer - Navigator 🔀	🔂 MQ Explorer - Navigator 🕴 🔰 🗇 🗢 🛛 🤣 🌋 🕆 🗖 🗾 🗶 MQ Explorer - Content 🕄					
BM WebSphere MQ Geue Managers Comparison Comparis	Diartin	Queue Manager QM_DDH Connection QuickView:	20520			
Odece Manager C JMS Administered	Hide	Connection status	Disconnected			
Service Definition (Delete	Connection type	Local			
		Connection name Channel name				
	Tests 🕨	Channel definition table				
	Connection Details 🔸	Refresh interval	15			
	Properties	Autoreconnect Yes				
L	Propercies					
		Last updated: 16:50:53				
		Last updated. 10:00:00				
		Status QuickView:				
		Queue manager status	Stopped			
		Command server status	Stopped			

11. Right click 'Queue Manager QM_DDHP0520' and select 'Start'. The following screen is displayed:

OK Cancel

12. Click 'OK'.



Te Window Heb EWD Extrar Nengotar 10 ■ O DW NotScher 10 ■ O DW	Queue Manager QM_DDHP0 Correction QuickNew: Correction status Correction https Correction https Correction https Correction https Charnel addination table Refresh interval	520	# ∲ ~ 5
BM WebSphere MQ Cusue Managers M Concentration Queue Manager Custers Queue Manager Clusters Monimistered Cojects	Queue Manager QM_DDHP0 Correction QuickNew: Correction status Correction https Correction https Correction https Correction https Charnel addination table Refresh interval	Connected	# • ♥ ▽ *
Concernence Concernen	Connection QuickNiew: Connection status Connection type Connection name Channel admittor table Refresh interval	Connected	
- 🗁 JMS Administered Objects	Connection type Connection name Channel name Channel definition table Refresh interval		
	Autorecorrect Last-updated: 17:16:07 Statu: Quadrate: Quant and support status Connection quart Standby	15 Yes Parving Porong Stopped 4 Not permitted	
	Last updated: 17:16:07 Properties Quick/lew: Queue manager name	QM_D0HP0520	
	Queue manager name Description Potisment Potisment Potisment Santup	Ger Luferska Window 701 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 - Navigator 🗵 👔 🗇 🗢 🛷	🗖 🗖 👩 MQ Explorer - Content 🛛		# ∳ ▼ - □				
BIM WebSphere MQ BM Curue Managers		Queue Manager QM_DDHP0520					
Concernantager Octoors Concernantager Objects Service Definition Repositories	Connection status Connection hype Connection name Channel definition table Refires interval Autoreconnect	Connected Local 15 Yes					
	Last updated: 17:16:07						
	Status QuickView:						
	Queue manager status Command server status Channel initiator status Connection count Standby	Punning Running Stopped 4 Not permitted					
	Last updated: 17:16:07						
	Properties QuickView:						
	Quise manager name Description Pleform Command level Default transmission queue Startup	QM_DOHPOS20 Windows 701 Automatic					
	Last updated: 17:16:07						

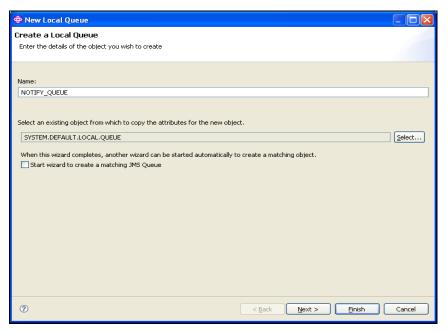
2. On the left pane, go to 'IBM Websphere MQ > Queue Managers > QM_DDHP0520 > Queues > New > Local Queue' as shown below.

🕀 IBM WebSphere MQ Explorer									
File Window Help									
陆 MQ Explorer - Navigator 🛛 👘 🗇	⇒ 🚸 ▽ 🗖 🗖	MQ Explorer - Content 🛛							
BM WebSphere MQ Coucue Managers Queue Managers Queues		Queue	es Standard for Queues						
- 🧀 Tapics New 🕨	Local Queue		lueue name	Queue type	Open input count	Open output count	Current queue depth	Max queue depth	Pu
Substri Satur Queue Manager Cybeck Authorities Service Definition Repositories	Alas Queue Model Queue Remote Queue Defi	inition							

The following screen is displayed:



Note:- Queue Name should be ALL CAPS, else issue will occur at listener level in WAS.



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

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

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



Select 'Queues' on the left pane.

Explorer - Navigator 🛛 👔 🗇 🌳 📢	🗢 🗖 🔲 MQ Explorer - Content 🛛				当 组 [19]	• 🤣 🌣 🗖
IBM WebSphere MQ	Queues					
Contraction Contra	Filter: Standard for Queues					~
QM_DDHP0520	Queue name Queue type Open input count Open output count Current que					
Oueues Oueues	Queue name					Max queue c 5000
- 🗁 Subscriptions	En nora - Secon	Local	Ŭ.	Ŭ	ů.	0000
Advanced Gueue Manager Clusters						
MS Administered Objects						
Service 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>

<u>Example</u>

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



You should have read-write access on this folder.

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		X
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 NOTIFY_DEST_QUEUE a RTGS_EST_QUEUE a fc_qcf a NOTIFY_QUEUE a EMSOUT_QUEUE_DLQ a RTGS_IN_QUEUE a EMSIN_QUEUE	<pre>java.io.File com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue com.ibm.mq.jms.MQQueue</pre>	
14 Object(s) O Context(s) 14 Binding(s), 13 Admi	nistered	(IT)
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



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
DINOTIFY_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 - Conl	ent ×					1 3	• 🧇 🔻
1BM WebSphere MQ	Queues							
FC_QMGR on '10.180.196.51(1415)'	Filter: Standard for Queues							•
😑 🗁 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
Client Connections	EMSOUT_QUEUE	Local	Predefined	1	0	12	5000	Allowed
🗁 Listeners	EMSOUT_QUEUE_DLQ	Local	Predefined	0	0	0	5000	Allowed
	FCQMGR	Local	Predefined	0	0	0	5000	Allowed
	MDB_QUEUE	Local	Predefined	1	0	0	999999999	Allowed
	MDB_QUEUE_DLQ	Local	Predefined	0	0	6	999999999	Allowed
LC_OMGR	MDB_QUEUE_RESPONSE	Local	Predefined	0	0	12	999999999	Allowed
SWIFT on 'ifichw-ap-21(1414)'	NOTIFY_DEST_QUEUE	Local	Predefined	0	0	1	5000	Allowed
TEST on 'flchw-ap-21(1415)'	MOTIFY_QUEUE	Local	Predefined	3	0	0	5000	Allowed
WINOM	NOTIFY_QUEUE_DLQ	Local	Predefined	0	0	19	5000	Allowed
🗁 Queue Manager Clusters	RTG5_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'.



3. Navigate to Websphere home page.

WebSphere Integrated Solu × +	
← ▲ https://ofss220137.in.oracle.com:90	43/ibm/console/secure/secure/gon.do 🔍 🥙 🔍 Search 🏠 🖨 🗍 🔹 👘 🛷 🚳 🖛 🦉
WebSphere. software	Welcome websphere Help Logout IBM.
View: All tasks 🗸	Welcome
Welcome Guided Activities Servers Applications Services	Welcome About this Integrated Solutions Console Image: Console provides a common administrative console for multiple products. The table lists the product suites that can be administered through this installation. Select a product suite to view more information. Integrated Solutions Console, 8.5.5.0 Image: Console provides a common administrative console for multiple products. The table lists the product suite to view more information. LICENSED MATERIALS PROPERTY OF IBM Image: Console provides a common administrative console for multiple products. The table lists the product suite to view more information. Image: Console provides a common administrative console for multiple products. The table lists the product suite to view more information. Image: Console provides a common administrative console for multiple products. Image: Console provides a common administrative console for multiple products.
	Suite Name Version IBM WebSphere Application Server 8.5.5.0 5724-108, 5724-163,
Security Global security Global security Global security Administrative Authorization Groups SSL certificate and key management SSL certificate and key management Security auditing Bus security Chevroment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration	Copyright International Business
IDDU	



4. Expand 'Security' and select 'Global Security'. The following screen is displayed.

(WebSphere Integrated Solu × +		
← https://ofss220137.in.oracle.com:904		
WebSphere, software		Welcome websphere Help Logout
View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01	Close page
Welcome Guided Activities Servers	Global security Global security Use this panel to configure administration and the default application security po functions and is used as a default security policy for user applications. Security d	
Applications	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 Authentication cache settings
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	Web and SIP security RMI/IIOP security Java Authentication and Authorization Service Enable Java Authentication SPI (JASPI)
€ UDDI	User account repository Realm name	Providers Use realm-qualified user names
	defaultWIMFileBasedRealm Current realm definition Federated repositories Available realm definitions Federated repositories Configure Set as current	 Security domains External authorization providers Programmatic session cookie configuration Custom properties
4	< III	•

5. Expand 'Java Authentication', go to 'Authorization Service' and click 'J2C authentication data'.



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WebSphere, software			Welcome websphere	Help Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01 Global security		?	Close page
Welcome	<u>Global security</u> > JAAS - J2C authenticat	tion data		Field help
Servers	Specifies a list of user identities and pass	swords for Java(TM) 2 connecto	or security to use.	For field help information, select a field label or list
Applications	Prefix new alias names with the node	a name of the cell (for compati	bility with earlier releases)	marker when the help cursor is displayed.
Services	Apply			Page help
Resources Security	Preferences			More information about this page
Global security Security domains Administrative Authorization Groups SSL certificate and key management	New Delete			Command Assistance View administrative scripting command for last action
 Security auditing Bus security 	Select Alias 🗘	User ID 🗘	Description 🔆	
Bus security Environment	You can administer the following resource ofss220137Node01/FC121ASK	FC121ASK	FC121ASK	
System administration				-
+ Users and Groups	ofss220137Node01/FCUBS121_DB	EV FCUBS121_DEV	FCUBS121_DEV	
Monitoring and Tuning	Total 2			
Troubleshooting Service integration				
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6. Click 'New'.



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WebSphere. software		Help Logout IBM.
Views: All tasks Welcome © Guided Activities ⊕ Servers ⊕ Applications ⊕ Services ⊕ Resources © Security ■ Global security ■ Global security ■ Security domains Administrative Authorization Groups ■ SSL certificate and key management ■ Security auditing ■ Bus security ● Environment ● System administration ● Uses and Groups ● Monitoring and Tuning ● Troubleshooting ● Survice integration ● UDDI	Cell=ofss220137Node01Cell, Profile=AppSrv01	Close page Close page 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 Yiew administrative action
4		

- 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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WebSphere, software			Welcome websphere	Help Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv0 JDBC providers	1	?	Close page
Guided Activities Servers Applications Services	JDBC providers Use this page to edit properties of a JD driver implementation class for access t this task in a <u>guided activity</u> . A guided a the topic.	o the specific vendor database of yo	ur environment. Learn more about	Field help For field help information, select a field label or list marker when the help cursor is displayed.
		ich the resource definition is visible. cope is and how it works, <u>see the sc</u>		Page help More information about this page Command Assistance View administrative scripting command for last action
 In Resource Adapters In Asynchronous beans 				
	Select Name 🗘 None Total 0	Scope 🗘	Description 🗘	
Security Environment System administration Users and Groups Monitoring and Tuning Troubleshooting ""				

3. Select 'Node' from the dropdown list.



4. Click New, The following screen is displayed:

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WebSphere. software		Welcome websphere	Help Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Pr	ofile=AppSrv01	Close page 🔺
Welcome	Create a new JDBC Provider		Field help
Guided Activities	Create a new JDBC Provide	er	For field help information,
€ Servers	→ Step 1: Create new	Create new JDBC provider	select a field label or list marker when the help
Applications	JDBC provider		cursor is displayed.
Services	Step 2: Enter database class path	Set the basic configuration values of a JDBC provider, which encapsulates the specific vendor JDBC driver implementation classes that are required to access	
Resources	information	the database. The wizard fills in the name and the description fields, but you can type different values.	
Schedulers			
Object pool managers	Step 3: Summary	Scope	
∎ JMS		cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1	
JDBC JDBC providers =		* Database type	
Data sources		Oracle	=
 Data sources Data sources (WebSphere Applica) 			
Server V4)		* Provider type	
Resource Adapters		Oracle JDBC Driver	
		* Implementation type	
Cache instances		Connection pool data source	
Mail			
URL		* Name Oracle JDBC Driver	
Resource Environment		Oracle JDBC Driver	
Security		Description Oracle 10BC Driver	
Environment			
System administration			
Monitoring and Tuning			
Troubleshooting ▼		h.	
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5. Specify the following details:

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

6. Click 'Next'.



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WebSphere. software		Welcome websphere Help Logout
View: All tasks	Cell=ofss220137Node010	Cell, Profile=AppSrv01 Close page
	Create a new JDBC Prov	ider
Welcome		
∃ Guided Activities	Create a new JDBC P	rovider
Servers	Step 1: Create n	ew Enter database class path information
Applications	JDBC provider	
Services	→ Step 2: Enter	Set the class path for the JDBC driver class files, which WebSphere(R) Application Server uses to defi your JDBC provider. This wizard page displays a default list of jars and allows you to set the
- Resources	database class p information	
Schedulers	intormation	when you type the JDBC driver file locations. For example: C:\SQLLIB\java on Windows(R) or /home/db2inst1/sqllib/java on Linux(TM).
Object pool managers	Step 3: Summar	y in the second s
± JMS		Entries are separated by using the ENTER key and must not contain path separator characters (such : ';' or ':'). If a value is specified for you, you may click Next to accept the value.
⊒ JDBC		; or f). If a value is specified for you, you may click wext to accept the value.
JDBC providers		Class path:
Data sources (WebSphere A		
Server V4)		\${ORACLE_JDBC_DRIVER_PATH}/ojdbc6.jar
± Resource Adapters		
Cache instances		
Mail		
URL Resource Environment		
		Directory location for "ojdbc6.jar" which is saved as WebSphere variable
+ Security		\${ORACLE_JDBC_DRIVER_PATH} D:Softwares\\Application Server\IBM\\Webpshere\AppServer\OptionalLibraries\oracle\JDBC\
Environment		Provinances (http://weiter.com/weiter.chttp://http://opublicitionalis/opublic/
System administration		
Users and Groups		
Monitoring and Tuning	Previous Next	Cancel
+ Troubleshooting -		
	•	111 · · · · · · · · · · · · · · · · · ·

7. Provide the location of ojbc6.jar. Click 'Next'.

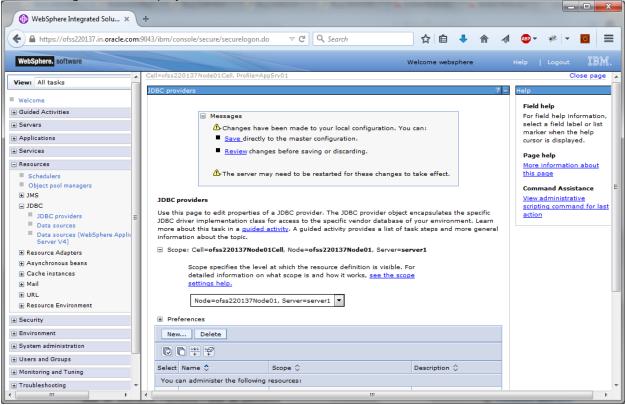
The following screen is displayed.



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WebSphere. software			We	lcome webs	phere				IBN	×.
View: All tasks	Cell=ofss220137Node01Cell, Pro	file=AppSrv01							Close pa	a
Welcome	Create a new JDBC Provider									
Guided Activities	Create a new JDBC Provide	r								
Servers	Step 1: Create new	Summary								
Applications	JDBC provider	Summary of actions:								
Services	Step 2: Enter database class path	Options	Values							
Resources	information	Scope	cells:ofss220137	Inde01Cellur	odesto	ee22013	R7Node01		over1	
Schedulers Object pool managers	→ Step 3: Summary	JDBC provider name	Oracle JDBC Drive		lodes.o	352201.	, NODEOI	.5017015.50	IVEII	
± JMS		Description	Oracle JDBC Driver							
= JDBC		Class path	\${ORACLE_JDBC_	-	'HV/oidb	c6 jar				
JDBC providers		\${ORACLE_JDBC_DRIVER_PATH}		_		-	o 1\idbc\	lib\oidbc£ i	75	
 Data sources Data sources (WebSphere Applic Server V4) 		Implementation class name	oracle.jdbc.pool.C					10 (0]0000.]		
± Resource Adapters	Previous Finish C	ancel								
	Previous Prinsit C	ancer								
Cache instances										
Mail URL										
Resource Environment										
Security										
Environment										
System administration										
Users and Groups										
Monitoring and Tuning										
Troubleshooting 👻										
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8. Click 'Finish'.





9. Click 'Save'.

3.3.3 Creating Non XA Data Source

Follow the steps given below:

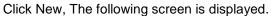
- 10. Login to the application server administration console.
- 11. Expand 'Resources > JDBC' and click 'Data sources'.



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WebSphere, software Welcome websphere Help) Logout IBM.
View: All tasks Cell=ofss220137 Node01Cell, Profile=AppSrv01 Welcome Data sources	Close page

12. Select 'Node' from the drop-down list.

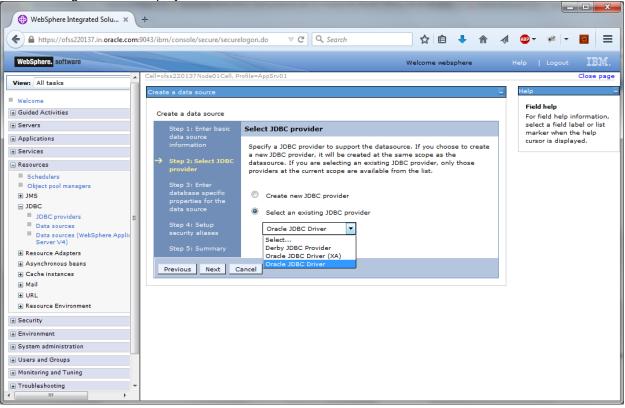




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WebSphere. software	Welcome websphere Help Logout IBM,
View: All tasks	Cell=ofss220137 Node01Cell, Profile=AppSrv01 Close page
Welcome	Create a data source - Help Field help
Guided Activities Guided Activities Subscript Activities Subscrite Subscript Activities Subscript Activities Subs	Create a data source For field help information,
Servers	→ Step 1: Enter basic data source information select a field label or list
Applications	data source cursor is displayed.
Services	JDBC provider. A datasource supplies the physical connections between the
- Resources	Step 2: Select JDBC application server and the database.
 Schedulers Object pool managers JDBC JDBC providers Data sources Data sources (WebSphere Applic Server V4) B Resource Adapters Asynchronous beans Cache instances Mail WRL 	Step 3: Enter database specific properties for the data source 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. Step 4: Setup security aliases Cells:ofss220137Node01Cell Step 5: Summary * Data source name FCUBS DS * JNDI name jdbc/fcjdevDS
Resource Environment Security Environment System administration Users and Groups Monitoring and Tuning	
Troubleshooting ▼ III III III	<[)

- 13. Specify the data source name as 'FCUBS Data source'.
- 14. Specify the JNDI name as 'jdbc/fcjdevDS'.
- 15. Click 'Next'.





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



The following screen will be displayed:

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WebSphere. software			Welcome websphere		Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, P	rofile=AppSrv01			Close page
- Welcome	Create a data source			Help	
⊕ Guided Activities	Create a data source			Field h For fie	lelp
Servers	Step 1: Enter basic	Enter database specific properties for the	e data source	select	a field label or list when the help
Applications	data source information			cursor	is displayed.
Services	Step 2: Select JDBC	Set these database-specific properties, which ar			
Resources	provider	vendor JDBC driver to support the connections t the datasource.	hat are managed through		
Schedulers Object pool managers	→ Step 3: Enter				
± JMS	database specific	Name Value			
⊟ JDBC	properties for the data source	* URL dbc:oracle:oci:@10.10.1	0.10:1010:KER		
JDBC providers	Step 4: Setup	* Data store helper class name			
 Data sources Data sources (WebSphere Applic 	security aliases	Oracle11g data store helper 💌			
Server V4)	Step 5: Summary	Use this data source in container managed	persistence (CMP)		
+ Resource Adapters	Step 51 Summary				
Asynchronous beans Cache instances	Previous Next C	Cancel			
Gache instances Mail					
Resource Environment					
Gecurity					
Environment					
System administration					
Users and Groups					
Monitoring and Tuning					
Troubleshooting -					
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17. Specify the URL of the Database

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

<u>Example</u>

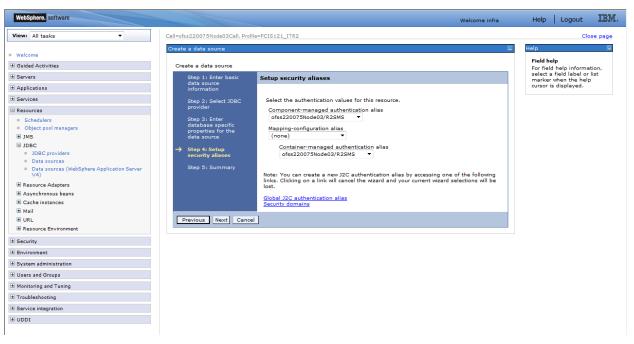
jdbc:oracle:thin:@10.10.10.10:1010:KERDEV2

Here, 10.10.10.10 is the *hostname* where the database is installed, 1010 the *port number* and *KERDEV*2 the *instance name*.

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

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





20. Click 'Next'.

The following screen is displayed.

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WebSphere. software			Welcome websphere H	elp Logout IBM
View: All tasks 🗸	Step 1: Enter basic data source	Summary		Help
Welcome	information	Summary of act	ions:	
Guided Activities Guided Activi	Step 2: Select JDBC	Options	Values	Field help For field help inform
+ Servers	provider	Scope	cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1	select a field label o
Applications Services	Step 3: Enter database specific	Data source name	FCUBS DS	marker when the he cursor is displayed.
Resources	properties for the data source	JNDI name	jdbc/fcjdevDS	
Schedulers Object pool managers	Step 4: Setup security aliases	Select an existing JDBC provider	Oracle JDBC Driver	
JMS JDBC	→ Step 5: Summary	Implementation class name	oracle.jdbc.pool.OracleConnectionPoolDataSource	
JDBC providers Data sources		URL	jdbc:oracle:oci:@10.10.10.10:1010:KERDEV2	
 Data sources (WebSphere Application Server V4) 		Data store helper class	com.ibm.websphere.rsadapter.Oracle11gDataStoreHelper	
Resource Adapters Asynchronous beans		name Use this data		
Asynchronous beans Cache instances		use this data source in		
± Mail		container managed	true	
URL		persistence		
Resource Environment		(CMP)		
Security Environment		Component- managed authentication	ofss220137Node01/FCUBS121_DEV	
		alias		
Users and Groups		Mapping- configuration	(none)	
Monitoring and Tuning		alias		
Troubleshooting Service integration		Container- managed authentication	(none)	
± UDDI		alias		



21. Click 'Finish'.

The following screen is displayed.

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WebSphere. software	Welcome websphere Help Logout	IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=App5rv01 Clo Data sources ? -	se page 🔺
■ Welcome Guided Activities	Messages	Field he
€ Servers	A Changes have been made to your local configuration. You can:	select a marker
Applications Services	 <u>Save</u> directly to the master configuration. <u>Review</u> changes before saving or discarding. 	cursor is Page he
Resources Schedulers Object pool managers	The server may need to be restarted for these changes to take effect.	<u>More inf</u> ≣ <u>this pag</u>
Opecciposi managers JMS JDBC JDBC JDBC providers Data sources Data sources (WebSphere Applica 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	Comma <u>View adı</u> scriptinc action
 Resource Adapters Asynchronous beans Cache instances Mail 	Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help.	
URL Resource Environment		
Security Environment	New Delete Test connection Manage state	
	Select Name ① JNDI name ② Scope ③ Provider ③ Description ③ Category ③	
Users and Groups Monitoring and Tuning	You can administer the following resources:	
Monitoring and Funing Troubleshooting Time	FCUBS DS jdbc/fcjdevDS1 Node=ofss220137Node01,Server=server1 Oracle New JDBC Datasource	

- 22. Click 'Save'.
- 23. Following steps need to be followed only for Non-XA datasources
- 24. 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
View: All tasks	Cell=ofss220239Node01Cell, Profile=FPCFL Data sources	Close page
■ Welcome Guided Activities	Data sources > Default Datasource	
	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 Resources	Configuration	
Kesolices Schedulers Object pool managers JMS JDBC	Test connection General Properties	Additional Properties
JDBC providers Data sources Data sources (WebSphere Application	<pre>* Scope cells:ofss220239Node01Cell:nodes:ofss220239Node01:servers:server1 * Provider</pre>	Connection pool properties WebSphere
Server V4)	JDBC Provider	Application Server data source properties
	* Name FCUBS DS JNDI name	Custom properties
	jdbc/fgdevDS	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		
Service integration	Category	

25. 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 IEM,
View: All tasks	Cell=ofss220239Node01Cell, Profile=FPCFL Close page
Welcome Guided Activities Servers Activities	Data sources Path source Data sources > Default Datasource > WebSphere Application Server data source properties Field help infor select a field label and the properties that affect a field label marker when the help infor select a field label and the properties that affect a field label affect a
Applications Services	Configuration cursor is displayed Page help
Resources Schedulers Object pool managers JDBC JDBC providers Data sources Data sources (WebSphere Application Server V4) Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment Security Environment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration	General Properties More information # Statement cache size statements 10 Enable multithreaded access detection Enable database reauthentication Enable JMS one-phase optimization support Image: Log missing transaction context Image: Monetransactional data source Error detection model Use WebSphere Application Server exception checking model Image: Use WebSphere Application Server exception mapping model Connection validation properties Image: Validate new connections Number of retries Image: 100 Retry interval 3 seconds
	i seconds

26. Select the checkbox "Non-transactional data source".

27. Click Apply button and Click Save link.

Wote 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'.

3.3.4 Testing Data Source

Follow the steps given below:



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

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WebSphere. software				Welcome	saravanan		Logout IBM.
View: All tasks ■ Welcome	Cell=ofss220239Node01Cell, Profile=FPCFL e Activities bitions bitions is ces adulers adulers set pool managers						
Data sources Data sources (WebSphere Application Server V4) Resource Adapters Asynchronous beans Cache instances Mail WIL	00#7	JNDI name 🗘	anage state	Provider 🗘	Description 🗘	Category 🗘	
Security Environment	V BranchDS j	jdbc/fcjdevDSBranch	Node=ofss220239Node01	Oracle JDBC Driver (XA)	New JDBC Datasource		
 ↔ System administration ↔ Users and Groups ↔ Monitoring and Tuning ↔ Troubleshooting 		jdbc/fcjdevDS_XA	Node=ofss220239Node01	Oracle JDBC Driver (XA)	New JDBC Datasource		
Service integration	EPPATCHSTAGE j	jdbc/FPPATCHSTAGE	Node=ofss220239Node01	NONXA DS	New JDBC Datasource		

2. Click 'Test connection' button.



On successful creation, the following message 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		Field help				
Servers Applications	Messages The test connection operation for data source BranchDS on server server1 at node ofss220239Node01 was successful.	For field help info select a field labe marker when the				
Services		cursor is displaye Page help				
- Resources	Data sources	More information				
Schedulers Object pool managers JDBC JDBC JDBC JDBC providers Data sources Data sources Reasource Adapters Resource Adapters Asynchronous beans Cache instances	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=ofss220239Node01Cell, Node=ofss220239Node01 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=ofss220239Node01 Node=ofss220239Node01	this page Command Assist View administrati scripting commar action				
	E Preferences					
URL Resource Environment	New Delete Test connection Manage state					
+ Security						
Environment	Select Name 🗘 JNDI name 🗘 Scope 🗘 Provider 🗘 Description 🗘 Category 🗘					
System administration	You can administer the following resources:					
 	BranchDS jdbc/fcjdevDSBranch Node=ofss220239Node01 Oracle New JDBC Datasource Driver (XA)					
Service integration	DSXA jdbc/fcjdevDS_XA Node=ofss220239Node01 Oracle New JDBC					
4 III >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>		4				



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 websph	
View: All tasks Welcome Guided Activities Activities Applications Services Resources Schedulers Object pool managers MMS JDBC JDBC JDBC JDBC providers E	Cell=ofss220137 Node01Cell, Profile=AppSrv01 DBC providers JDBC providers Use this page to edit properties of a JDBC provider. The JDBC provider object encapsulates the speci driver implementation class for access to the specific vendor database of your environment. Learn m this task in a guided activity. A guided activity provides a list of task steps and more general informat 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, see the scope settings.help. Cell=ofss220137Node01Cell	ore about marker when the help
 ■ Data sources ■ Data sources (WebSphere Applica Server V4) 	Preferences New Delete Delete	
 Asynchronous beans Cache instances Mail URL Resource Environment 	Select Name Scope Description Description Total 0	
Security Environment System administration Users and Groups Monitoring and Tuning Troubleshooting III		

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



The following message is displayed.

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View: All tasks	Cell=ofss220137Node01Cell, P	rofile=AppSrvO1	Close page
Welcome	Create a new JDBC Provider		– Help –
Guided Activities Guided Activi	Create a new JDBC Provid	er	Field help For field help information,
€ Servers	→ Step 1: Create new	Create new JDBC provider	select a field label or list marker when the help
Applications	JDBC provider	Set the basic configuration values of a JDBC provider, which encapsulates the	cursor is displayed.
Services	Step 2: Enter database class path	specific vendor JDBC driver implementation classes that are required to access the database. The wizard fills in the name and the description fields, but you	
Schedulers	information	can type different values.	
Object pool managers JMS	Step 3: Summary		
a) JMS a) JDBC a) DBC providers bata sources bata sources bata sources bata sources barse cache instances b Mail b URL Resource Environment b Security b Environment b System administration b Usters and Groups t Monitoring and Tuning		cells:ofss220137Node01:servers:server1	E
troubleshooting		h.	-

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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Step 1: Create new Enter database class path information	lect a f arker w
1DBC provider	rker w sor is
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5. Specify the location of ojbc6.jar and click next.

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View: All tasks	Cell=ofss220137Node01Cell, Pro	ofile=AppSrv01		Close page		
	Create a new JDBC Provider			E Help		
Welcome				Field he		
Guided Activities	Create a new JDBC Provide	ir -		For field		
Servers		Summary		select a marker		
Applications	JDBC provider			cursor i		
Services	Step 2: Enter	Summary of actions:	1			
- Resources	database class path information	Options	Values			
Schedulers		Scope	cells:ofss220137Node01Cell:nodes:ofss220137Nod	e01:servers:server1		
Object pool managers	→ Step 3: Summary	JDBC provider name	Oracle JDBC Driver (XA)			
JMS JDBC		Description	Oracle JDBC Driver (XA)			
JDBC providers		Class path	s path \${ORACLE_JDBC_DRIVER_PATH}/ojdbc6.jar			
Data sources		\${ORACLE_JDBC_DRIVER_PATH}	C:\Oracle\app\sarrathi\product\12.1.0\dbhome_1\jo	dbc\lib\ojdbc6.jar		
 Data sources (WebSphere Applica Server V4) 		Implementation class name	oracle.jdbc.xa.client.OracleXADataSource			
+ Resource Adapters	Previous Finish C	Cancel				
Cache instances						
H Mail URL						
Resource Environment						
Environment						
E System administration						
Monitoring and Tuning						
+ Troubleshooting -						
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The following screen is displayed.

6. Click 'Finish'.



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Servers Applications Services	Save_directly	e been made to your local configuration. You (to the master configuration. Jes before saving or discarding.	an:	select a field label or list marker when the help cursor is displayed.			
Resources Schedulers Object pool managers	The server ma	Page help More information about this page Command Assistance					
JMS JDBC JDBC providers Data sources Data sources Data sources	JDBC providers Use this page to edit properties of driver implementation class for acc this task in a <u>guided activity</u> . A gu about the topic.	View administrative scripting command for last action					
 Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment 	Scope specifies the level	1Cell, Node=ofss220137Node01, Server=serv at which the resource definition is visible. For what scope is and how it works, see the scope 01, Server=server1	erl				
€ Security	Preferences						
Environment System administration Users and Groups	New Delete						
Monitoring and Tuning	Select Name 🗘	Scope 🗘	Description 🗘				
Troubleshooting ▼ III ►	You can administer the following Derby JDBC Provider	resources: Node=ofss220137Node01,Server=server1	Derby embedded non-XA	-			

7. 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'.



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WebSphere. software				١	Welcome websphe	re	Help Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Prof	file=AppSrv01					Close page
View. All tasks	Data sources					? -	Help 📮
Welcome							Field help
Guided Activities	Data sources						For field help information,
Servers	Use this page to edit the se datasource object supplies y						select a field label or list marker when the help
Applications	task in a <u>quided activity</u> . A g						cursor is displayed.
	Scope: Cell=ofss220137	N-d-orc-ll					Page help
- Resources	Scope: Cell=0f55220137	NodeUICell					More information about
Schedulers		e level at which the					this page
Object pool managers	detailed information settings help.	on on what scope is	and how it works,	<u>see the scope</u>			Command Assistance
JMS JDBC							View administrative scripting command for last
JDBC providers E	Cell=ofss220137	7Node01Cell	•				action
Data sources	Preferences						
Data sources (WebSphere Applica Server V4)	New Delete Test	t connection Ma					
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	Select Name 🗘 🛛 JN	VDI name 🗘	Scope 🗘	Provider 0	Description 🗘 🕻	ategory 🗘	
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3. Select 'Node' from the dropdown list and click 'New' button.



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WebSphere. software	Welcome websphere	Help Logout IBM.
View: All tasks	Cell=ofss220137Node01Cell, Profile=AppSrv01 Create a data source	Close page
Guided Activities	Create a data source	Field help For field help information,
Servers	Step 1: Enter basic data source information data source	select a field label or list marker when the help
 	information Set the basic configuration values of a datasource for association with your JDBC provider. A datasource supplies the physical connections between the	cursor is displayed.
	Step 2: Select JDBC provider A datasource supplies the physical connections between the application server and the database. Step 3: Enter A stabase specific properties for the data source Image: Step 4: Setup security aliases Scope Step 5: Summary Cells:ofss220137Node01:servers:server1 Pote Step 5: Summary P bata source name FCUBS DS + JNDI name jdbb/fcgSchedulerDS Next	
Monitoring and Tuning		
Troubleshooting Troubleshooting	۳ •	•

4. Specify the following details:

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



Click next, the following screen is displayed.

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View: All tasks Welcome ① Guided Activities	Cell=ofss220137Node01Cell, Profile=App5rv01 Create a data source Create a data source	Close page Help Field help For field help information,
Servers Applications Services Seconces Schedulers Object pool managers JMS JDBC JDBC providers Data sources Server V4) Resource Adapters Asynchronous beans	Step 1: Enter basic data source information → Step 2: Select JDBC provider Step 2: Select JDBC provider Step 3: Enter database specific properties for the data source. If you are selecting an existing JDBC provider, only providers at the current scope are available from the list. Step 4: Setup security aliases Step 5: Summary	e
Cache instances Mail URL Resource Environment Security Environment System administration Users and Groups Monitoring and Tuning Troubleshooting	Previous Next Cancel	
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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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 ➡ Servers ➡ Applications 	Step 1: Enter basic data source information	Enter database specific properties for the	data source	mark	t a field label or lis er when the help or is displayed.	st
Services Resources Schedulers Object pool managers	Step 2: Select JDBC provider → Step 3: Enter	Set these database-specific properties, which are vendor JDBC driver to support the connections the the datasource.				
JM5 JDBC JDBC providers E	database specific properties for the data source	Name Value Value URL Data store helper class name	.10:1010:KER			
 Data sources Data sources (WebSphere Applic Server V4) Resource Adapters 	Step 4: Setup security aliases Step 5: Summary	Oracle11g data store helper 💌	persistence (CMP)			
 Asynchronous beans Cache instances Mail 	Previous Next C	ancel				
■ URL ■ Resource Environment						
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

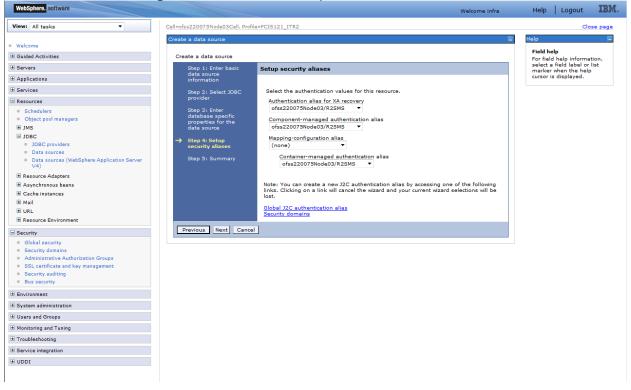
Here, 10.10.10 is the *hostname* where the database is installed, 1010 is the *port number*, *KERDEV*2 is the *instance name*.

- 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				Welcome websphere Help	Logout IBM.											
View: All tasks 🔻		Create a data source	onie-Apportor		Help											
Welcome					Field help											
Guided Activities		Create a data source			For field help i											
		Step 1: Enter basic data source	Summary		select a field la marker when t											
Applications		information	Summary of act	ions:	cursor is displa											
Services		Step 2: Select JDBC	Options	Values												
Resources		provider	Scope	cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1												
Schedulers Object pool managers				Step 3: Enter database specific	Data source name	FCUBS DS										
		properties for the data source	JNDI name	jdbc/fcjSchedulerDS1												
 JDBC providers Data sources Data sources (WebSphere Application 	=	E	=	E	н	Е	н	Ξ	E	E	Ξ	=	Step 4: Setup security aliases		Oracle JDBC Driver (XA)	
Server V4) Resource Adapters		→ Step 5: Summary	Implementation class name	oracle.jdbc.xa.client.OracleXADataSource												
			URL	jdbc:oracle:oci:@10.10.10.10:1010:KERDEV2												
 ★ Cache instances ★ Mail ★ URL 			Data store helper class name	com.ibm.websphere.rsadapter.Oracle11gDataStoreHelper												
Resource Environment Security Environment			Use this data source in container managed persistence	true												
System administration			(CMP)													
 			Authentication alias for XA recovery	ofss220137Node01/FCUBS121_DEV												
Troubleshooting III III III III III	+		Components		•											

Click finish, the following screen is displayed.

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View: All tasks 🗸		ll=ofss220137Node01Cell, Profile=AppSrv01	Close page
Welcome	Da	ta sources	<u> </u>
∃ Guided Activities		Messages	
Servers		Changes have been made to your local configuration. You can:	
Applications		Save directly to the master configuration.	
Services		<u>Review</u> changes before saving or discarding.	=
- Resources			
Schedulers		${f \Delta}$ The server may need to be restarted for these changes to take effect.	
Object pool managers			
JMS JDBC	E	Data sources	
JDBC providers		Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource ob	
Data sources		your application with connections for accessing the database. Learn more about this task in a <u>guided activity</u> . A guided ar provides a list of task steps and more general information about the topic.	ctivity
 Data sources (WebSphere Application Server V4) 		Scope: Cell=ofss220137Node01Cell, Node=ofss220137Node01, Server=server1	
		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>	
🛨 Mail		Node=ofss220137Node01, Server=server1	
URL		Preferences	
Resource Environment			
Security		New Delete Test connection Manage state	
Environment ■			
∃ System administration		Select Name 🗘 JNDI name 🗘 Scope 🗘 Provider 🗘 Description 🗘	Category A
	-	You can administer the following resources:	
4	•		•



10. Click 'Save'.



3.3.7 Testing Data Source

Follow the steps given below:

1. Select data source as given below.

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Welcome		±١	references						F
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- Resources		Yo	u can administer the fo	ollowing resources:					<u>t</u> i
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2. Click 'Test connection' button. The following screen is displayed on successful creation.

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View: All tasks 🗸	Cell=ofss220137Node01Cell, Profile=AppSrv01	Close page
Welcome		
Guided Activities Guided Activities Second Secon	Messages	
± Servers	The test connection operation for data source fcjSchedulerDS on server server1 at	t node =
Applications	ofss220137Node01 was successful.	1
Services		
Resources	Data sources > fcjSchedulerDS	
 Schedulers Object pool managers JMS 	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.	e datasource object supplies your
JDBC JDBC providers Data sources Data sources (WebSphere Application Server V4)	Test connection	
Resource Adapters	General Properties	Additional Properties
 Asynchronous beans Cache instances Mail 	* Scope cells:ofss220137Node01Cell:nodes:ofss220137Node01:servers:server1	Connection pool properties
 ■ URL ■ Resource Environment 	+ Provider Oracle JDBC Driver (XA)	WebSphere Application Server data source properties
Security Environment	+ Name fcjSchedulerDS	Custom
Environment System administration	JNDI name	properties
	jdbc/fcjSchedulerDS	Related Items
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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- 2. Specify the Websphere administrator username and password.
- 3. Click 'Log In'.



4. Navigate to Websphere home page.

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Applications	through this installation. Select a product suite	e to view more information.	
+ Services			LICENSED MATERIALS PROPERTY OF IBM
+ Resources	Suite Name	Version	5724-J08, 5724-I63, 5724-H88,5724-H89, 5655-W65 (C)
+ Security	WebSphere Application Server	8.5.5.0	5724-H88,5724-H89, 5655-W65 (C) Copyright International Business
Environment			
Users and Groups			
Monitoring and Tuning			
Troubleshooting			
Service integration			
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5. Expand 'Resources' and select 'JMS'. Click 'Queue Connection Factories. 'The following screen is displayed.

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WebSphere. software	Welcome saravanan	Help Logout IBM.
View: All tasks	Cell=ofss220239Node01Cell, Profile=FPCFL Queue connection factories ? -	Close page
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 destinations, for point-to-point messaging.	select a field label or list marker when the help
Services	Scope: Cell=ofss220239Node01Cell	cursor is displayed.
Resources Schedulers Object pool managers JMS JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment System administration Users and Groups	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> settings help. Cell=ofss220239Node01Cell Preferences New Delete Select Name JNDI name Provider Description Scope None Total 0	More information about this page
Monitoring and Tuning III	▼	

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



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WebSphere. software View: All tasks Welcome Guided Activities Guided Activities Guided Activities Gervers Gervices Gervices Schedulers Object pool managers JMS JMS providers Queue connection factories Queues Topic connection factories Queues Topics Activation specifications JDBC Resource Adapters Jabcheinstances	Cell=ofss220239Node01Cell, Profile=FPCFL Queue connection factories Queue connection factories Scope cells:ofss220239Node01Cell Select the provider with which to create the Queue connection factory. The following providers support the selected resource type and are available at the selected scope.	Close page
System administration Users and Groups Monitoring and Tuning V		

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



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 Guided Activities € Servers 	This wizard creates a Wel → Step 1: Configure	bSphere MQ JMS resource Configure basic attributes		Field help
	basic attributes Step 2: Select	Configure the basic attributes to use for the messaging provider resource	e new WebSphere MQ	select a field label or list marker when the help cursor is displayed.
Resources Schedulers Object pool managers JMS JMS providers Connection factories Queue connection factories Queue connection factories Queue connection factories Activation specifications JDBC Resource Adapters Activation specifications Cache instances Mail Resource Environment Security Environment Security Convertion System administration Users and Groups Miniter Interview	connection method Step 3: Test connection Step 4: Summary Next Cancel	Name NotifyDestQCF JNDI name Description NotifyDestQCF		

8. Specify the following details:

Name	NotifyDestQCF
JNDI Name	NotifyDestQCF
Description	NotifyDestQCF



9. Click 'Next'. The following screen is displayed.

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View: All tasks	CreateWMQJMSResource.display	,		Ξ			Close page
Guided Activities	This wizard creates a Web	Sphere MQ JMS resource			Help Field help	, ,	
Servers Applications Services	Step 1: Configure basic attributes → Step 2: Select	Select connection method Decide what information to enter to dete WebSphere MQ	rmine how to connect to		select a f marker w	help inform ield label o hen the he displayed.	or list
Resources Schedulers Object pool managers Object pool managers JMS JMS providers Connection factories Queue connection factories Queue connection factories Queues Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment Security Environment System administration Users and Groups Monitoring and Tuning M	connection method Step 3: Test connection Step 4: Summary	WebSphere MQ Enter all the required information Use a client channel definition 1 ancel					

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



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View: All tasks	UseCustomWMQConnectionSettings.displayName Custom WebSphere MQ connection -	Close page
Welcome	Custom WebSphere MQ connection	Help –
Servers Applications	Step 1: Configure Supply queue manager details basic attributes	For field help information, select a field label or list
Services	Step 2: Select connection method	marker when the help cursor is displayed.
 Resources Schedulers Object pool managers JMS providers Connection factories Queue connection factories Topic connection factories Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment Security 	Step 2.1: Supply gene manager or queue sharing group name QM_DDHP0520 gene manager or queue sharing group name	
 System administration Users and Groups 		
Monitoring and Tuning ✓ III		



12. Specify the queue manager name 'QM_DDHP0520'. Click 'Next'.

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WebSphere. software		Welcome saravanan	Help Logout IBM.
View: All tasks	UseCustomWMQConnectionSettings.displayName Custom WebSphere MQ connection Custom WebSphere MQ connection Step 1: Configure Enter connection details		Close page
Applications Services Resources	basic attributes Step 2: Select Enter the details required to establish a con connection method Transport	nection to the queue	select a field label or list marker when the help cursor is displayed.
 Schedulers Object pool managers JMS MS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL 	Step 2.1: Bindings, then client ▼ Supply queue Bindings, then client ▼ 		
Resource Environment Security Environment System administration Users and Groups Monitoring and Tuning Minitoring and Minitoring a	Previous Next Cancel		

13. 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



14. Click 'OK'. The following screen is displayed.

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View: All tasks Welcome ④ Guided Activities ④ Servers ④ Applications ④ Services ● Services ■ Schedulers ■ Object pool managers ■ JMS providers ■ Connection factories ■ Queue connection factories ■ Queue connection factories ■ Queues ■ Topics ■ Activation specifications ঊ JDBC ঊ Resource Adapters ঊ Asynchronous beans ঊ Cache instances ঊ Mail ঊ URL ঊ Resource Environment I System administration I Users and Groups I Monitoring and Tuning	Step 2: Select the "Test Col	tion vlishing a connection using the inform nnection" button. It may take several ou wish to skip this test, select the "M	I seconds to perform	Close page

15. Click 'Test Connection' button.

The following screen is displayed:

Step 1: Configure	Test connection result
basic attributes	
Step 2: Select connection method	Result of testing the connection
Step 2.1: Supply queue connection details	to WebSphere MQ.
Step 2.2: Enter connection details	
Step 3: Test connection	
Step 3.1: Test connection result	



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

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WebSphere. software	Welcome saravanan Help Logout	IBM.
View: All tasks	CreateWMQJMSResource.displayName Create WebSphere MQ JMS resource	Close page
Welcome		
Guided Activities ■	This wizard creates a WebSphere MQ JMS resource	
Servers	Step 1: Configure Summary	
Applications	basic attributes	
Gervices	Step 2: Select	
- Resources	connection method Creating a resource of type Queue connection factory- Name "NotifyDestQCF"	
 Schedulers Object pool managers JMS JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications JDBC Resource Adapters Asynchronous beans 	Step 2.1: • JNDI name "NotifyDestQCF" Supply queue • Queue manager or queue sharing group name "QM_DDHP0520" manager details • Sterver type "QMGR" Step 2.2: Enter • Ont "1010" connection • Channel name "SYSTEM.DEF.SVRCONN" Step 3: Test • Ont "1010" • Step 3:1: Test • Step 4: Summary	
	Previous Finish Cancel	
URL Resource Environment Security		
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17. Click 'Finish'.



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View: All tasks Welcome Guided Activities Servers Applications	Cell=ofss220239Node01Cell, Profile=FPCFL Close page Queue connection factories ? Help Field help Field help information For field help information Save_directly to the master configuration. You can:
Services Resources Schedulers Object pool managers	Review changes before saving or discarding. Page help The server may need to be restarted for these changes to take effect. More information about this page
 Object pool managers JMS JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications 	Queue connection factories Command Assistance A queue connection factory is used to create connections to the associated JMS provider of the JMS queue destinations, for point-to-point messaging. View administrative associated JMS provider of the JMS queue activation command for las action Scope: Cell=ofss220239Node01Cell 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> settings help. For the scope
 DBC € Resource Adapters Asynchronous beans Cache instances Mail 	Cell=ofss220239Node01Cell ▼ Preferences
mail URL Resource Environment	New Delete
Security Environment	Select Name JNDI name Provider Description Scope You can administer the following resources:
Environment System administration Users and Groups Monitoring and Tuning	You can administer the following resources: Image: NotifyDestQCF NotifyDestQCF WebSphere MQ messaging provider NotifyDestQCF Cell=ofss220239Node01Cell
4 III >	

- 18. Click 'Save'.
- 19. Similarly, you need to create the all queue connection factories mentioned in the document "Resource To be Created"
- 20. 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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View: All tasks Welcome GetWide Activities Servers Applications Services Resources Schedulers Object pool managers MS JMS providers Connection factories Queue connection factories Topic connection factories Columnes Colu	 Cell=ofss220239Node01Cell, Profile=FPCFL Close page Queues A JMS queue is used as a destination for point-to-point messaging. Scope : Cell=ofss220239Node01Cell Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help. Cell=ofss220239Node01Cell Preferences New Delete Wew Delete Wew Delete
 Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment Security Environment System administration Uses and Groups 	Select Name INDI name Provider Description Scope None Total 0

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



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View: All tasks Welcome • Guided Activities • Servers • Applications • Services • Services • Schedulers • Object pool managers • JMS • JMS providers • Connection factories • Queue connection factories • Queues • Topic • Asynchronous beans • Cache instances • Mail • URL • Resource Environment • Security • Environment • Users and Groups • Manipring and Truing	Cell=ofss220239Node01Cell, Profile=FPCFL Queues Queues > Select JMS resource provider Scope cells:ofss220239Node01Cell Select the provider with which to create the Queue. T resource type and are available at the selected scop Default messaging provider WebSphere MQ messaging provider OK Cancel	he following providers support the selecte	Close page Pield help For field help information, select a field label or list marker when the help cursor is displayed.
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3. Select 'Websphere MQ messaging provider'. Click 'OK'.



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⊕ Guided Activities ■	Scope		this iter saved.
Servers	Cell=ofss220239Node01Cell		Additio
Applications	Provider		A
Gervices	WebSphere MQ messaging provider		F
Resources	* Name		V C
Schedulers	NOTIFY_QUEUE		c
Object pool managers JMS	* JNDI name		
JMS providers	NOTIFY_QUEUE		
Connection factories			-
Queue connection factories	Description NOTIFY_QUEUE		
Topic connection factories	NOTIFY_QUEUE		
Queues			
Topics			
Activation specifications			
JDBC		lh.	
Resource Adapters			-
Asynchronous beans	WebSphere MQ Queue		=
Cache instances			
🕀 Mail	* Queue name NOTIFY_QUEUE		
1 URL	NOTIFY_QUEUE		
Resource Environment	Queue manager or Queue sharing group name		
Security	QM_DDHP0520		
Environment			
+ System administration	Apply OK Reset Cancel		
Monitoring and Tuning			
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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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Guided Activities	 <u>Save</u> directly to the master of Review changes before saving 		Field help
Servers		estarted for these changes to take effect.	For field help information, select a field label or list
Applications			marker when the help
Services			cursor is displayed.
	<u>Oueues</u> > <u>WebSphere MO messaging provider</u> > NO		Page help
Resources	Queue destinations provided for point-to-point mess queue destination administrative objects to manage	saging by the WebSphere MQ messaging provider. Use WebSphere MQ queue destinations for the WebSphere MQ messaging provider.	More information about this page
 Schedulers Object pool managers 	Configuration		Command Assistance
■ Object poor managers ■ JMS	Configuration		View administrative
= JMS providers			scripting command for last
 Connection factories 	General Properties	Additional Properties	action
 Queue connection factories 	Administration	 Advanced properties 	
 Topic connection factories 	Scope	= WebSphere MO Queue Connection	
= Queues = Topics	Node=DDHP0520Node01	Properties	
 Activation specifications 	Provider	 Custom properties 	
I JDBC	WebSphere MQ messaging provider		
Resource Adapters			
Asynchronous beans	* Name NOTIFY_QUEUE		
Cache instances			
H Mail	* JNDI name		
E URL	NOTIFY_QUEUE		
Resource Environment	Description		
Security	NOTIFY_QUEUE		
Environment			
System administration			
E Users and Groups	WebSphere MQ Queue		
Monitoring and Tuning	* Queue name		
Troubleshooting	NOTIFY_QUEUE		
Service integration	Queue manager or Queue sharing group nam	19	
E UDDI	QM_DDHP0520		
	Apply OK Reset Cancel		
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Done		Scal intra	anet 🦙 • 🔍 100% • 🤮

5. Click 'Websphere MQ Queue Connection Properties'.

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View: All tasks	Cell=DDHP0520Node01Cell, Profile=AppSrv01 Celose p	age
= Welcome	Queues ? Help	-
Guided Activities	E Messages Field help	
H Servers	▲ Changes have been made to your local configuration. You can: to use to connect to the	
Applications	<u>Save</u> directly to the master configuration. <u>Review</u> changes before saving or discarding.	
Services	A The server may need to be restarted for these changes to take effect. Page help	
E Resources	More information about this page	
Scheales Object pol managers Object pol managers Object pol managers Object pol managers Object polymers Connection factories Object Object polymers Object Object	Operator Note NoteStylese ND message/magnet/set ND (NULL) 2 VehSphere ND connection properties Use Nite said to specify how to connect to the queues configuration details that we shown on the VebSphere ND queue straing area. Configuration General Properties Queue manager host Isolo 10.0 Queue manager host Queue ID Barver connection channel name Queue Queue Apply Queue	
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	न्द्र Local intranet 🦂 👻 ज्यापार	* •

The following screen is displayed.



6. Specify the following details:

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

7. Click 'Save'.

The following screen is displayed.

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Integrated Solutions Console Welcome admin					Help Logout	IBM.
View: All tasks	Cell=DDHP0520Node01Cell, Pr	ofile=AppSrv01				Close page
= Welcome	Queues				? -	Help –
E Guided Activities	Queues					Field help
Servers	A JMS queue is used as a de	stination for point-to-;	point messaging.			For field help information, select a field label or list
Applications	E Scope: Cell=DDHP0520N	ode01Cell, Node=DDH	P0520Node01			marker when the help cursor is displayed.
Services	Scope specifies the	a level at which the res	ource definition is visible	. For detailed		Page help
E Resources	information on what	at scope is and how it a	vorks, see the scope set	tings help.		More information about
= Schedulers	Node=DDHP052	0Node01	~			this page
= Object pool managers	H Preferences					
= JMS providers						
 Connection factories 	New Delete					
 Queue connection factories 	00**					
 Topic connection factories Queues 	0000					
= Topics	Select Name 🛟	JNDI name 🗘	Provider 🗘	Description 🗘	Scope 🗘	
 Activation specifications 	You can administer the follo					
I JDBC	NOTIFY QUEUE	NOTIFY_QUEUE	WebSphere MQ messaging provider	NOTIFY_QUEUE	Node=DDHP0520Node01	
Resource Adapters	Total 1					
Asynchronous beans Cache instances						
H Cache Instances						
⊞ url						
Resource Environment						
E Security						
Environment						
System administration						
Users and Groups						
Monitoring and Tuning						
Troubleshooting						
Service integration						
Done					S Local intr	anet 🦓 🔹 🔍 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.

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Welcome Guided Activities Servers	Welcome Integrated Solutions Console provides a c multiple products. The table lists the prod	ommon administrative console for	About this Integrated Solutions Console Integrated Solutions Console, 8.5.5.0 Build Number: gm1319.01
Applications Services	through this installation. Select a product :		Build Number: gm1319.01 Build Date: 5/14/13 LICENSED MATERIALS PROPERTY OF
Services Resources Security	Suite Name WebSphere Application Server	Version 8.5.5.0	IBM 5724-J08, 5724-I63, 5724-H88,5724-H89, 5655-W65 (C) ▼
Environment			Copyright International Business
 ➡ System administration ➡ Users and Groups 			
Monitoring and Tuning Troubleshooting			
 			
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5. Expand 'Servers > Server Types' and click 'Websphere application servers'.



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Welcome Guided Activities Servers 	Application servers	s ew a list of the application serve so use this page to change the			Field help
 WebSphere application servers WebSphere MQ servers Web servers 			1		Page help More information about
Applications	Name 🗘	Node 🗘	Host Name 🗘	Version 🗘	this page
ervices	You can administe	er the following resources:	ofss220239.in.oracle.com	Base 8.5.5.0	Command Assistance View administrative
Resources	Total 1	01332202331000001	01332202353111.018cle.com	base 0.5.5.0	scripting command for la action
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6. Click 'server1'.



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WebSphere. software		Welcome saravanan Help Logout IBM.
View: All tasks Welcome Guided Activities Servers	Application servers > server1 Use this page to configure an application server. An application server required to run enterprise applications. Runtime Configuration	is a server that provides services Field help For field help informa select a field label or
Server Types WebSphere application servers WebSphere MQ servers Web servers Applications	General Properties Name server1	Container Settings Session management management
Services Resources Security Environment System administration	Node name ofss220239Node01 Run in development mode Parallel start	 SIP Container Settings Web Container Settings Portlet Container Settings
Users and Groups Monitoring and Tuning Troubleshooting Service integration	Start components as needed Access to internal server classes Allow Server-specific Application Settings	EDB Container Settings Container Services Business Process Services
UDDI	Classloader policy Multiple Class loading mode Classes loaded with parent class loader first	Applications Installed applications Server messaging Messaging engines
< <u> </u>	Apply OK Reset Cancel	Messading engine inbound transports WebSphere MQ link

7. Expand 'Messaging' and select 'Message listener service'.



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WebSphere. software	Welcome saravanan He	elp Logout IBM.
View: All tasks	Cell=ofss220239Node01Cell, Profile=FPCFL Application servers ?	Close page
Guided Activities Servers	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 the	Field help For field help information select a field label or list
 Server Types WebSphere application servers WebSphere MQ servers Web servers 	(MUB) listening process, in which message-driven beans are deployed against listener ports that define the JMS destination to listen upon. These listener ports are defined within this service along with settings for its thread pool.	marker when the help cursor is displayed. Page help More information about
 Applications Services 		<u>this page</u>
 Resources B Security 	Additional Properties Listener Ports Thread Pool	
Environment System administration Users and Groups	Custom properties	
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8. Click 'Listener Ports'.



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= Welcome	Application servers ? Help
E Guided Activities	Application servers > server1 > Message listener service > Listener Ports Field help
Servers	Use this page to configure listener ports upon which message-driven beans listen for messages. Each port specifies the select a field label or list
E Server Types	JMS connection factory and JMS destination that a message-driven bean, deployed against that port, listens upon. marker when the help
 WebSphere application servers 	Preferences cursor is displayed.
= WebSphere MQ servers	Convert to activation specification New Delete Start Stop
 Web servers 	Contract to accuration about his page.
Applications	
E Services	Select Name 👌 Description 🗘 Connection factory JNDI name 🗘 Destination JNDI name 🗘 Status 🔯
E Resources	None scripting command for last
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9. Click 'New'.



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View: All tasks 🗸	Cell=ofss220239Node01Cell, Profile=FPCFL C	Close page . ? - Help
■ Welcome Guided Activities 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.	Fi Fc se
Server Types WebSphere application servers WebSphere MQ servers Web servers	Configuration	cu Pi M
Applications Services Resources	General Properties + Name NotifyMDB_Listener	<u>th</u>
Security Environment	+ Initial State Started	:
System administration Users and Groups Monitoring and Tuning	Description NotifyMDB_Listener * Connection factory JNDI name	
Monitoring and Luning Troubleshooting Service integration	NotifyMDB_Listener Destination JNDI name	
E UDDI	NOTIFY_MDB_QCF Maximum sessions Maximum retries 0	
	Maximum messages	
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10. 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

11. Click 'Apply'.

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View: All tasks 🗸	Cell=ofss220239Node01Cell, Profile=FPCFL Close p Application servers ?
Welcome Guided Activities Servers Server Types WebSphere application servers WebSphere MQ servers Web servers Web servers	 Messages The server may need to be restarted for these changes to take effect. Changes have been made to your local configuration. You can: Save directly to the master configuration. Review changes before saving or discarding. The server may need to be restarted for these changes to take effect.
E Services E Security = =	Application servers > server1 > Message listener service > Listener Ports > NotifyMDB_Listener 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.
 Environment System administration Users and Groups Monitoring and Tuning Troubleshooting Service integration 	Configuration General Properties * Name
 A Service integration 	* Name NotifyMDB_Listener * Initial State Started Description NotifyMDB_Listener * Connection factory JNDI name NotifyMDB_Listener * Destination JNDI name
4	* Destination JNDI name

12. Click 'Save'.



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View: All tasks	Cell=DDHP0520Node01Cell, Profile=AppSrv01	Close page
Welcome	Application servers ? Help	
E Guided Activities	Application servers > server1 > Message listener service > Listener Ports Field help	
E Servers	Use this page to configure listener ports upon which message-driven beans listen for messages, Each port specifies the JMS	1
E Server Types	connection factory and JMS destination that a message-driven bean, deployed against that port, listens upon. Page help	nation about
 WebSphere application servers WebSphere MQ servers 	this page	metion about
= Web servers	Convert to activation specification New Delete Start Stop Command	Assistance
Applications		nistrative Immand for last
Services	Select Name 🗘 Description 🗘 Connection factory JNDI name 🗘 Destination JNDI name 🖒 Status 🗘	
Resources	You can administer the following resources:	
Security	IndtifyMDB_Listener NoTIFY_MDB_QCF NOTIFY_QUEUE	
Environment	Total 1	
System administration		
Users and Groups		
Monitoring and Tuning		
Troubleshooting		
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13. Select 'NotifyMDB_Listener'. Click 'Start'.



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Environment	EMSOutMDB Listener	EMSOutMDB_Listener	NotifyDestQCF	EMS_OUTQUEUE	•	
System administration	NotifyMDB Listener	NotifyMDB Listener	NOTIFY MDB OCF	NOTIFY QUEUE		
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Monitoring and Tuning	Total 3					
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14. 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



		1	
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

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)
- 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:



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

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



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Applications	and protocol must be provided. Configure mail sessions only after you configure the necessary protocol cursor is displayed,	,
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Resources	Scope: =All scopes Page neip More information abo	out
Schedulers Object pool managers JMS JDBC Resource Adapters Asynchronous beans Cache instances Mail Mail Mail groviders 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> settings help. All scopes Preferences New Delete Select Name JNDI name Scope Provider Description Category None	
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3. Click 'New' button to create a new mail session.



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4. Provide the required information. Sample details are given below for your reference.

General Properties			
Name	FCUBSMail		
JNDI Name	mail/FCUBSMail		
N.B	This has to be maintained in the file 'fcubs.properties' in encrypted format		
Outgoing Mail	Outgoing Mail Properties		
Server	< HOST_MAIL_SERVER >		
Protocol	smtps		



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

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6. Click 'New' button to create new custom properties.



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7. 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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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

- 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'
- Modify the initial heap size and maximum heap size appropriately based on the load size

6.2 IBM Websphere Server - Transaction Service Properties

- Go to' Server > Application Servers' and select the 'server_name'
- Choose 'Container Services > Transaction Service'
- Change the total transaction lifetime timeout appropriately
- Party content, products, or services.

6.3 IBM Websphere Server – ORB Service Configuration

Go to' Server > Application Servers' and select the 'server_name'

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Users and Groups Monitoring and Tuning Troubleshooting Service integration UDDI	Start components as needed Access to internal server classes Allow Server-specific Application Settings Classloader policy Multiple	Container Services Application profiling service Transaction service Ovnamic cache service Compensation service	
< > <	Class loading mode Classes loaded with parent class loader first •	ations Internationalization Service Default Java Persistence ADI settings Object pool service DitS service The ser	4
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• Expand 'Container Services' and click 'ORB Service'

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Check 'Pass by reference' and click Apply



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Click 'Save'.





Websphere Configuration [December] [2016] Version 12.3.0.0.0

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