

Websphere Configuration
Oracle FLEXCUBE Investor Servicing
Release 12.0.3.0.0
[April] [2014]



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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 INVESTOR SERVICING. For instance, www.example.com.
- **Name of your organizational unit:** Specify the name of the department or unit making the request. For example, BPD. Use this field to identify the SSL Certificate you are creating. For example, by department or by physical server.
- **Name of your organization:** Specify the name of the organization making the certificate request. For example, Oracle Financial Services Software. It is recommended to use the formal name of the company or organization. This name must match the name in the official records.
- **Name of your City or Locality:** Specify the name of the city in which your organization is physically located. For example Mumbai.
- **Name of your State or Province:** Specify the state/province in which your organization is physically located. For example Maharashtra.
- **Two-letter country code for this unit:** Specify the country in which your organization is physically located. For example, US, UK, IN etc.

Example

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

```
C:\Program Files\IBM\WebSphere\AppServer\bin>keytool -
genkeypair -alias cvrhp0729 -keyalg RSA -keysize 1024 -sigalg
SHA1withRSA -validity 365 -keystore D:\keystores\FCINSTALLER
SERVICINGKeyStore.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/ips014dorNode02

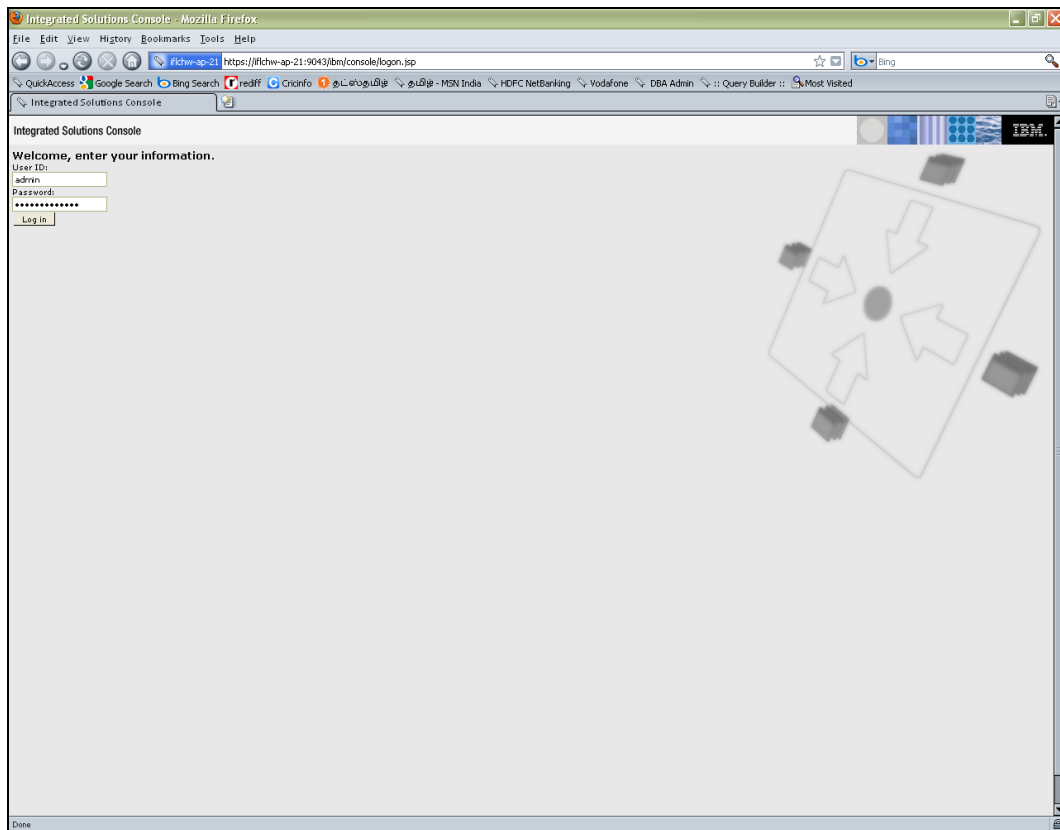
ips014dorCell01 --> <ips014dor> name of the machine and < Cell01>

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

1.3 **Adding Key Store to Application Server**

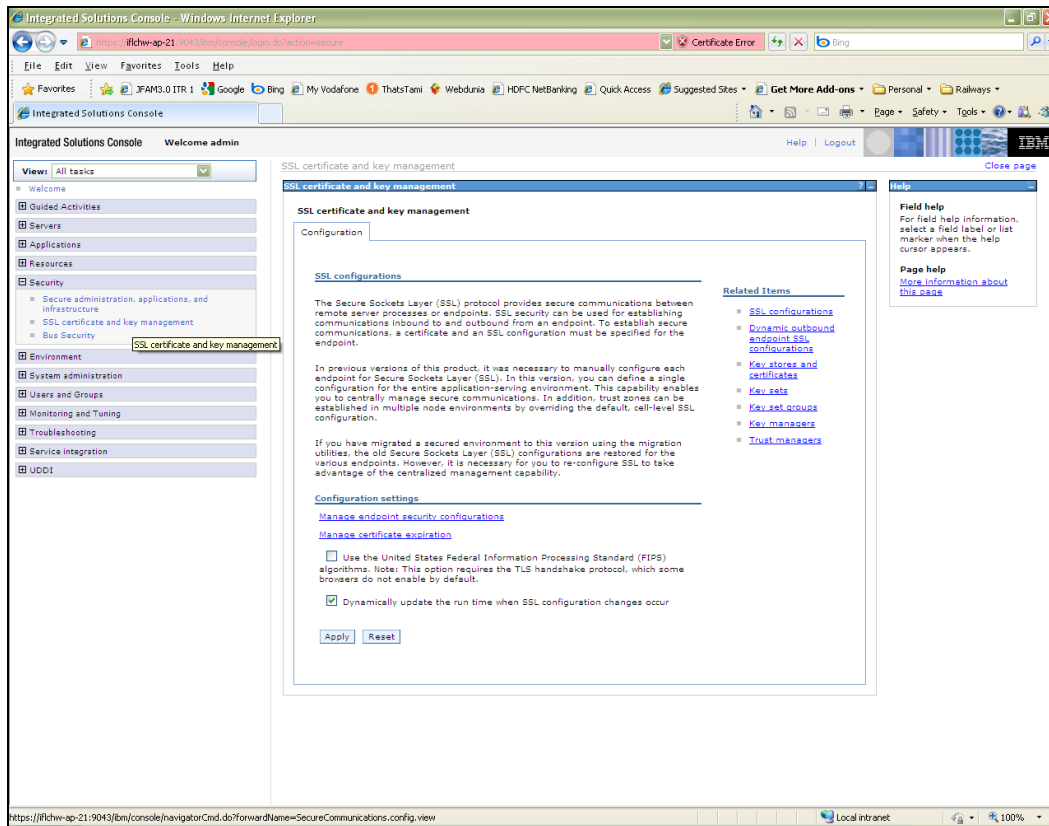
To add keystore to the Websphere application server, follow the instructions given below.

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



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

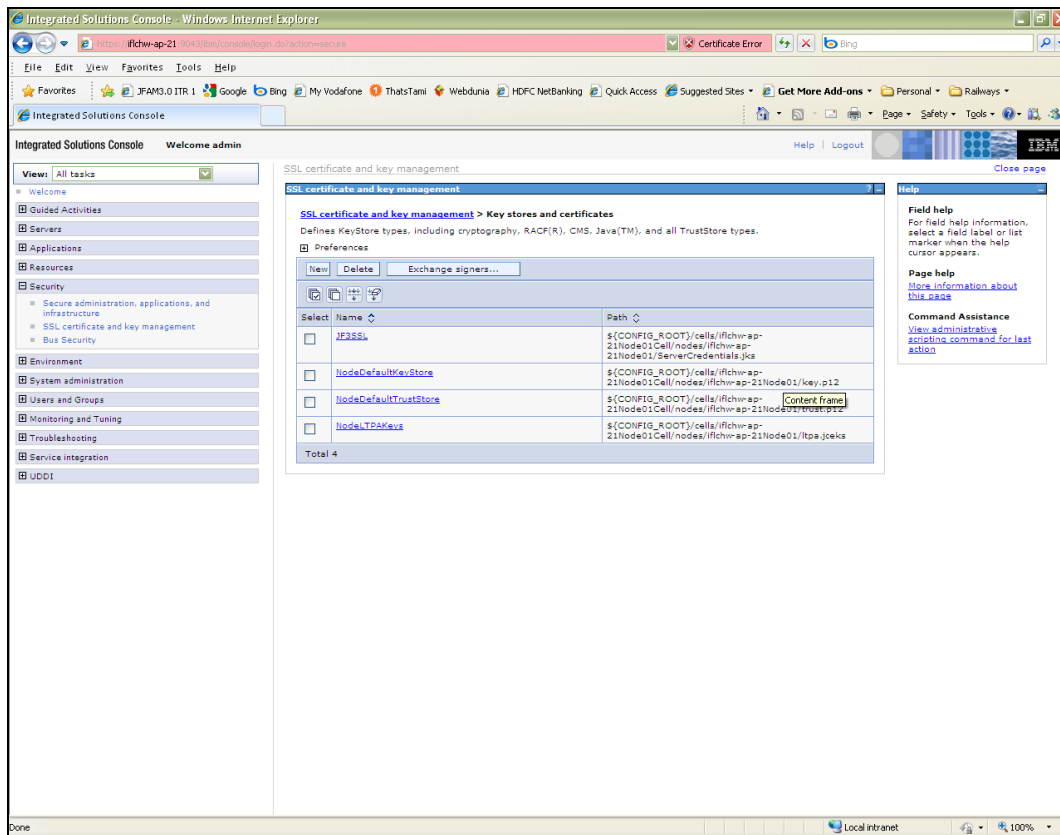
The following screen is displayed:



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

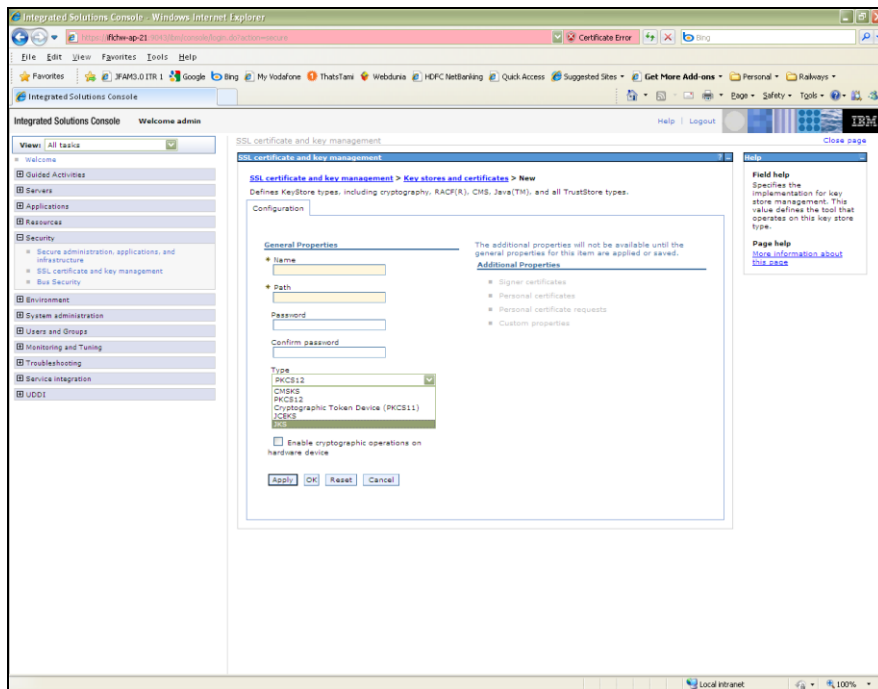
3. Under 'Related items' on the right side, click 'Key stores and certificates'.

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.



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.

Example

`${CONFIG_ROOT}/cells/ips014dorCell01/nodes/ips014dorNode02/jf3sslstore.jks`

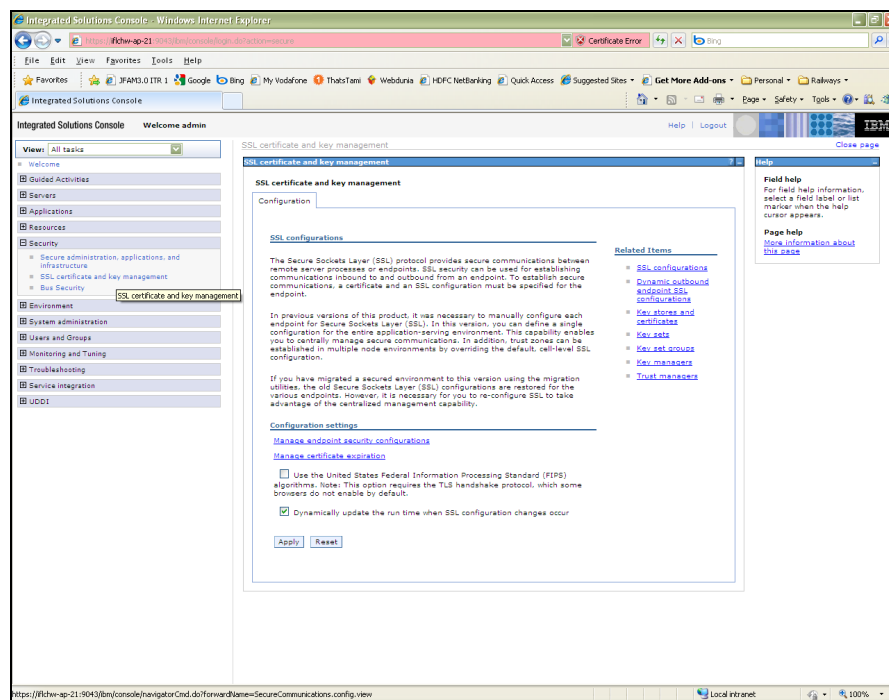
Password

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

6. Click 'Apply' and save the changes.

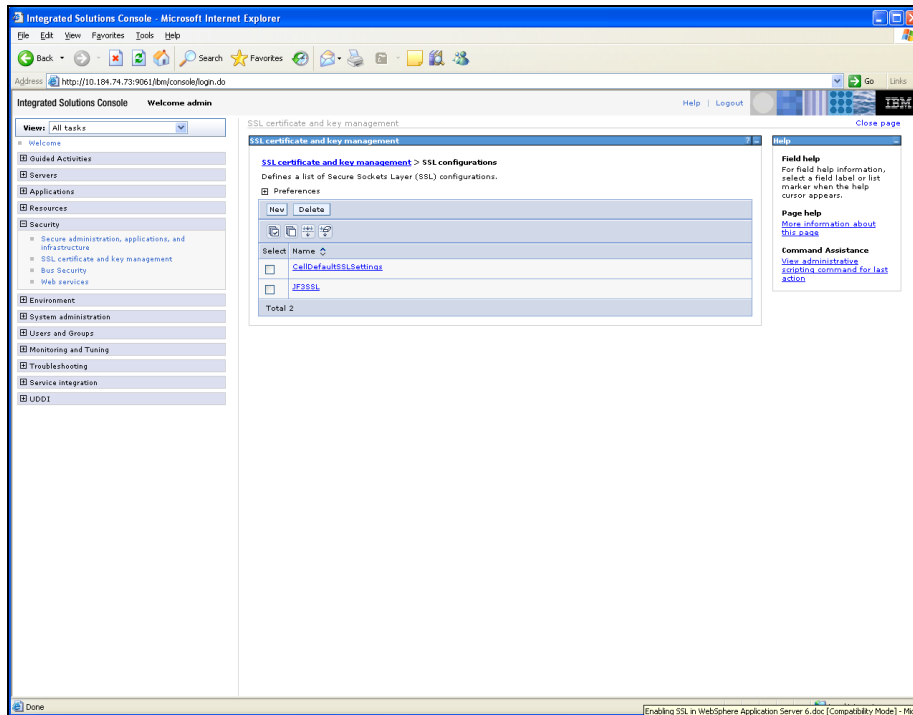
1.4 Creating SSL Configuration

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

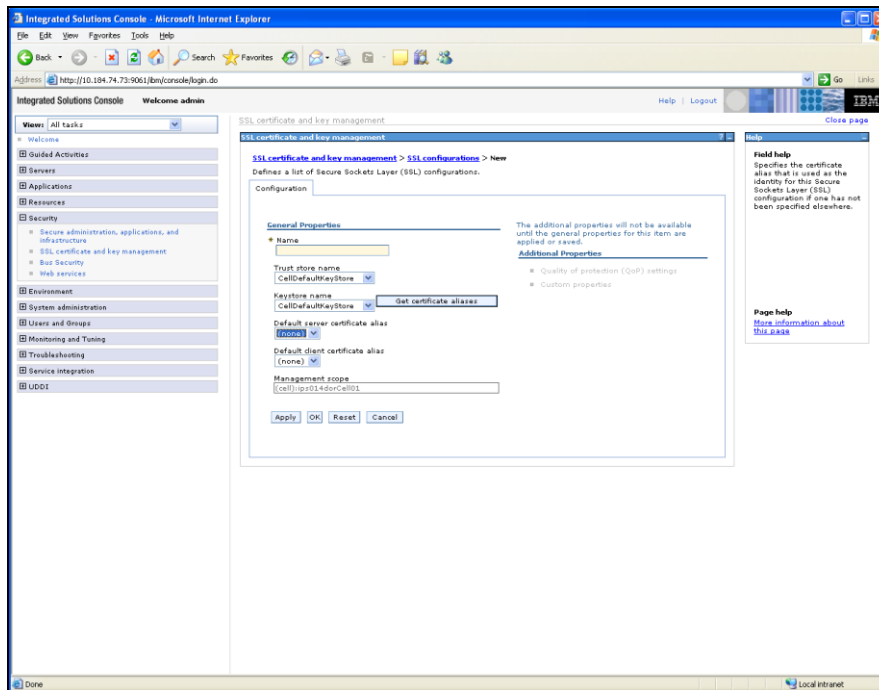


1. Under the section 'Related items', click 'SSL configurations'.

The following screen is displayed:



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



3. Specify the following details:

Name

Specify the name of the SSL configuration.

Trusted Store Name

Select the added key store.

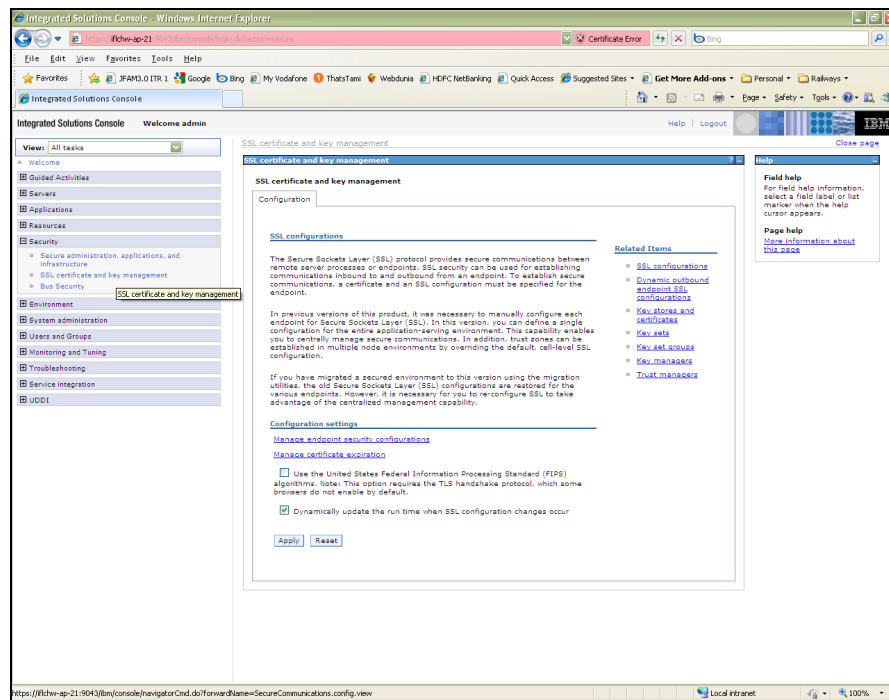
Key Store Name

Select the added key store.

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

1.5 Managing Endpoint Security Configurations

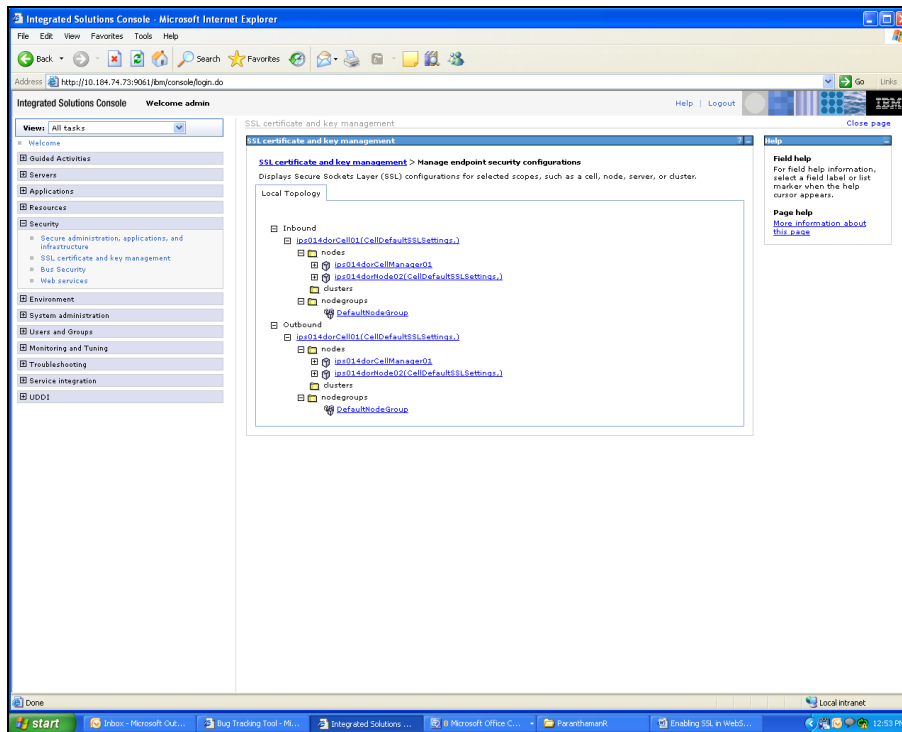
This section explains the process of managing endpoint security configurations.



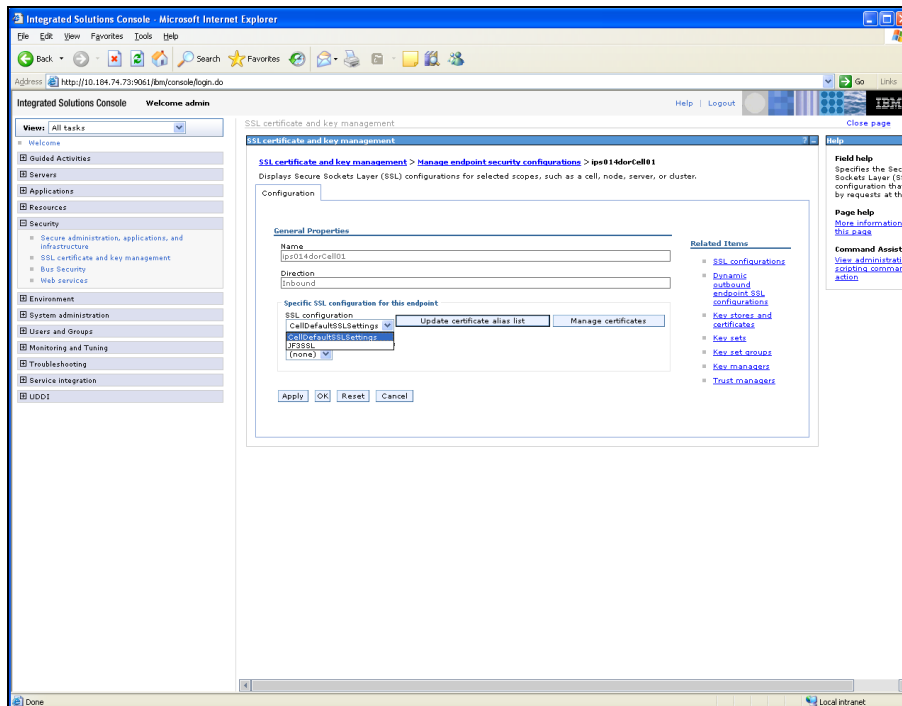
- On the left pane, expand 'Security' and click 'SSL certificate and key management'. Under 'Configuration settings', click 'Manage endpoint security configurations'.

The following screen is displayed:





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

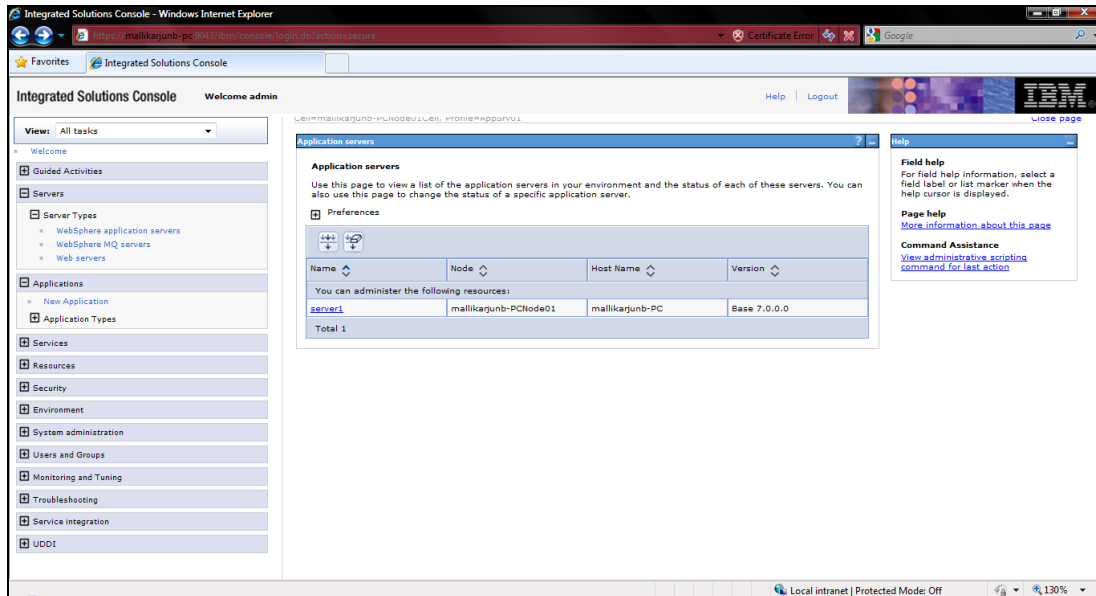


Under SSL configurations, select the configured SSL from the drop-down list.

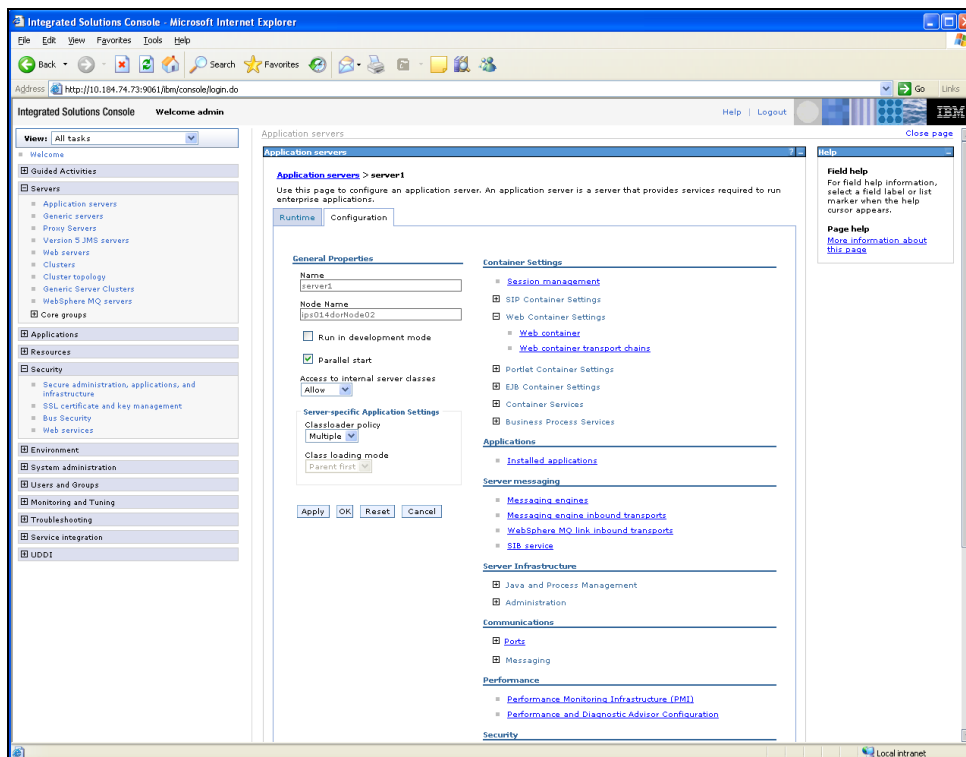
7. Click the button 'Update certificate alias list'. Click 'Apply' and save the changes.

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



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



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

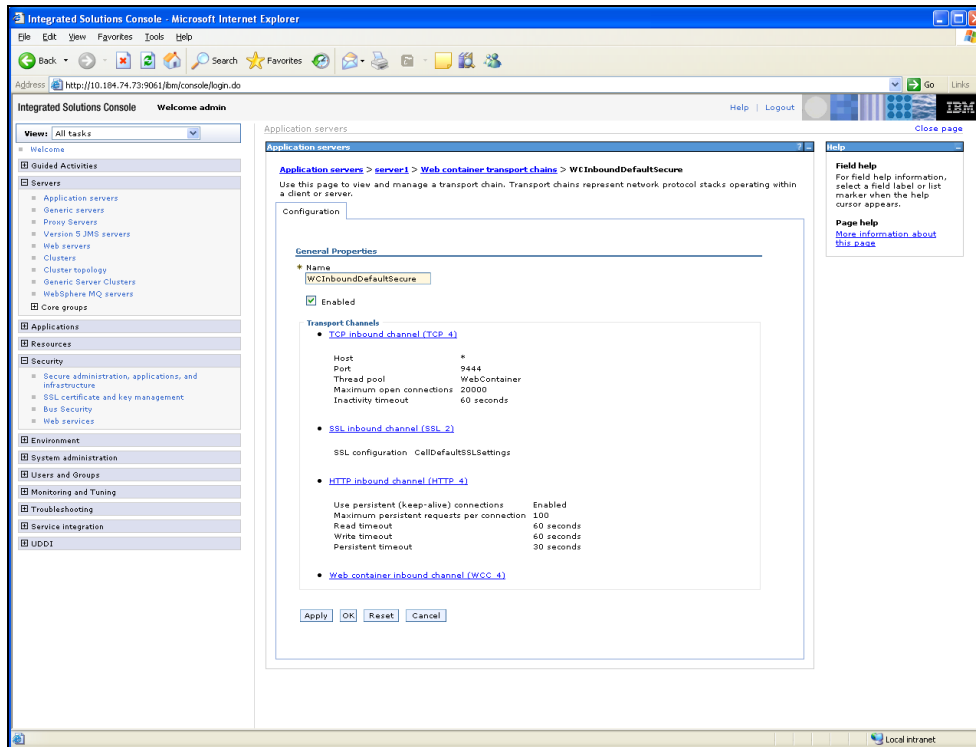
The following screen is displayed.

The screenshot shows the Integrated Solutions Console in a Microsoft Internet Explorer browser window. The address bar shows the URL <http://10.184.74.73:9061/ibm/console/login.do>. The console interface includes a left-hand navigation pane with a tree view containing categories like Servers, Applications, Resources, Security, Environment, System administration, Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. The main content area is titled 'Application servers' and displays the 'Web container transport chains' configuration for 'server1'. It includes a 'Preferences' section with a table of transport chains. The table has columns for 'Select', 'Name', 'Enabled', 'Host', 'Port', and 'SSL Enabled'. There are four entries: 'WCInboundAdmin' (Disabled, Port 9062), 'WCInboundAdminSecure' (Enabled, Port 9045), 'WCInboundDefault' (Disabled, Port 9081), and 'WCInboundDefaultSecure' (Enabled, Port 9444). A 'Total 4' summary is shown at the bottom of the table. A 'Help' sidebar on the right provides field help and page help information.

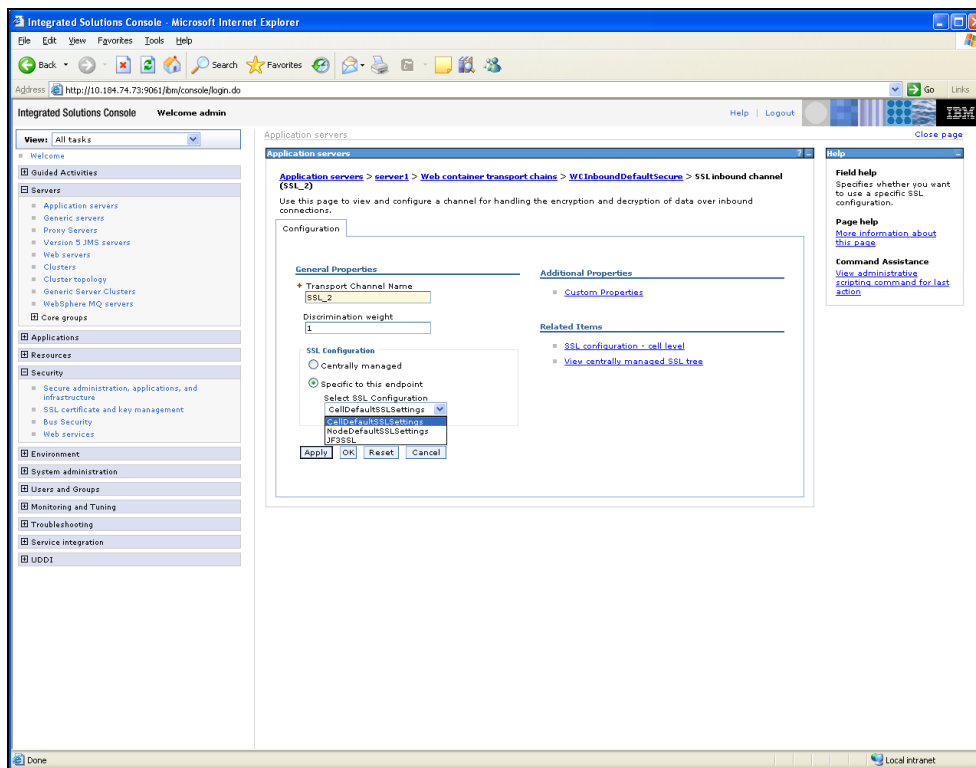
Select	Name	Enabled	Host	Port	SSL Enabled
<input type="checkbox"/>	WCInboundAdmin	Disabled	*	9062	Disabled
<input type="checkbox"/>	WCInboundAdminSecure	Enabled	*	9045	Enabled
<input type="checkbox"/>	WCInboundDefault	Disabled	*	9081	Disabled
<input type="checkbox"/>	WCInboundDefaultSecure	Enabled	*	9444	Enabled
Total 4					

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

The following screen is displayed:



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

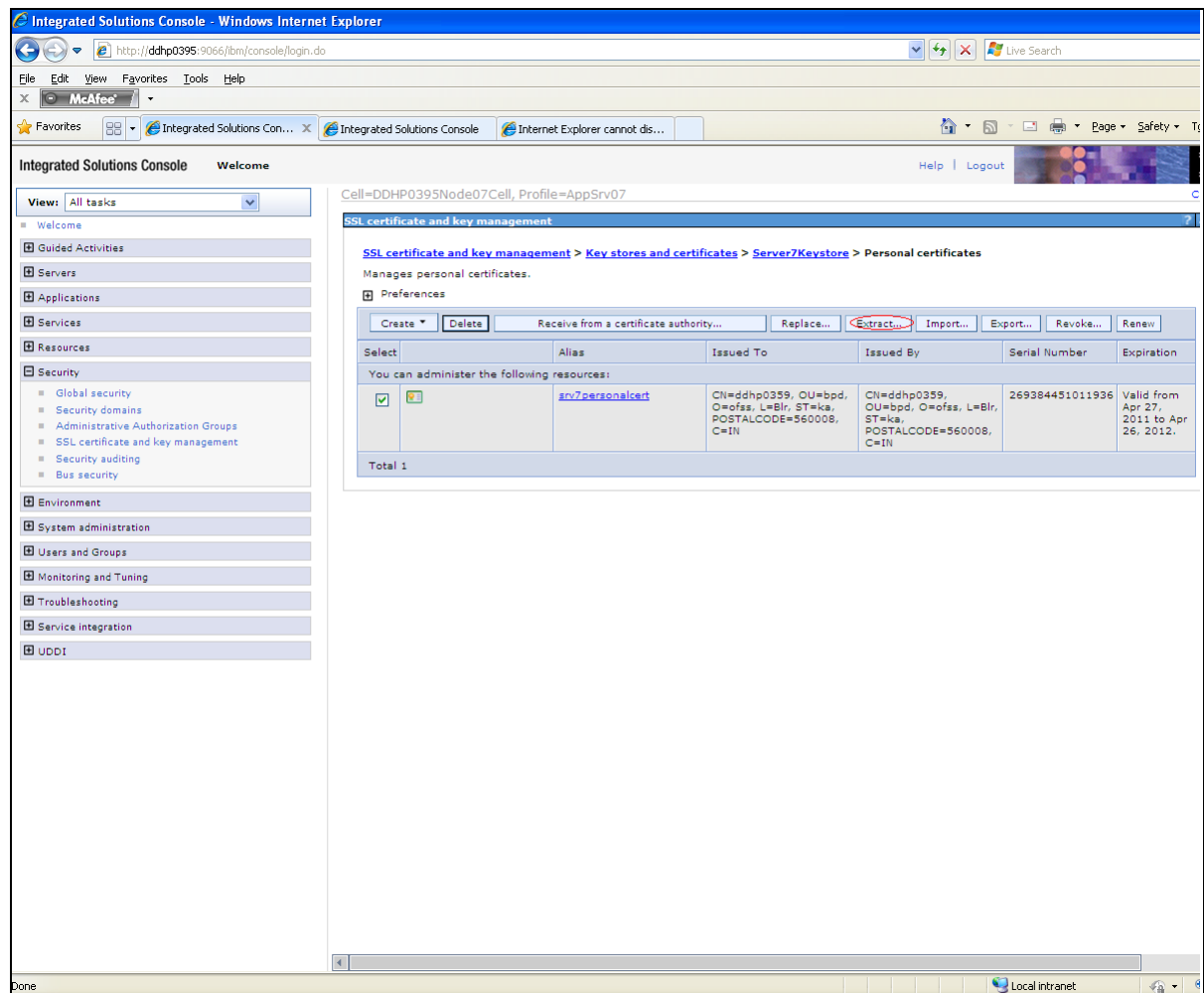
To run the application with SSL, use the following syntax:

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

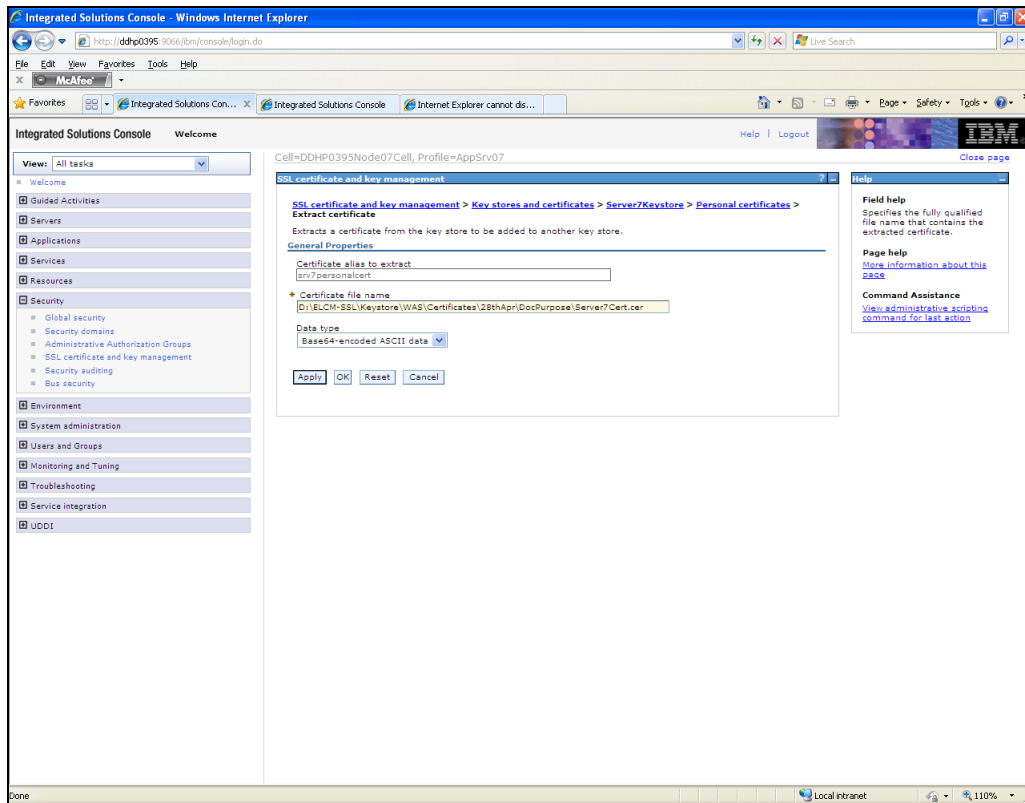
1.8 Certificate Exchange for Two Ways SSL

1.8.1 Extracting Certificate for Server1

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



1. On the left pane of the screen, expand 'Security'. Go to 'SSL certificate and key management > Key stores and certificates > ELCMKeyStore > Personal certificates'.
2. Select the installed certificate and click 'Extract' button.



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.

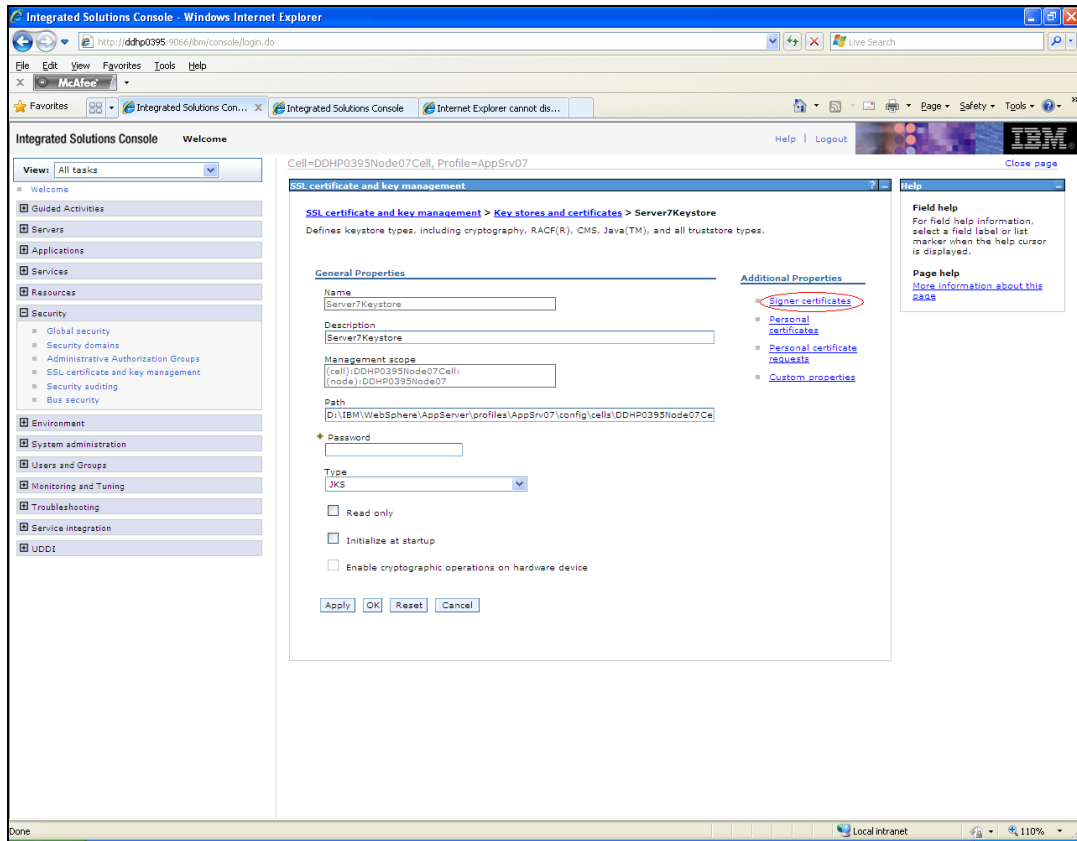
Eg: \<localfolder>\<server2.cer>

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.

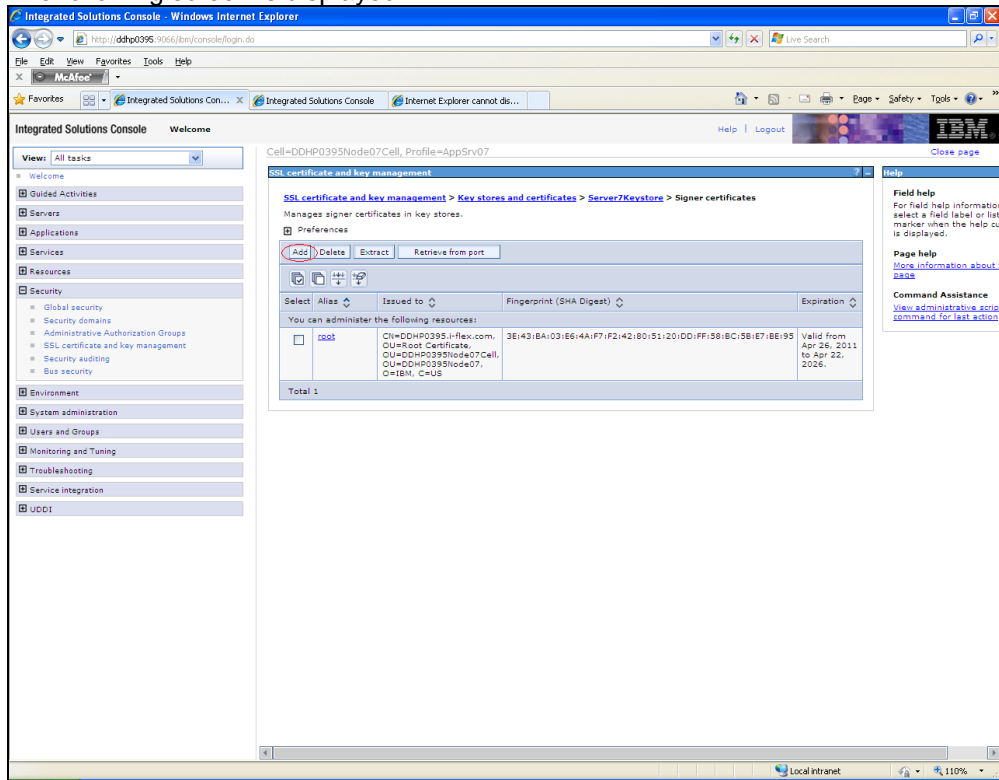
1.8.3 Importing Certificate into Keystore for Server1

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



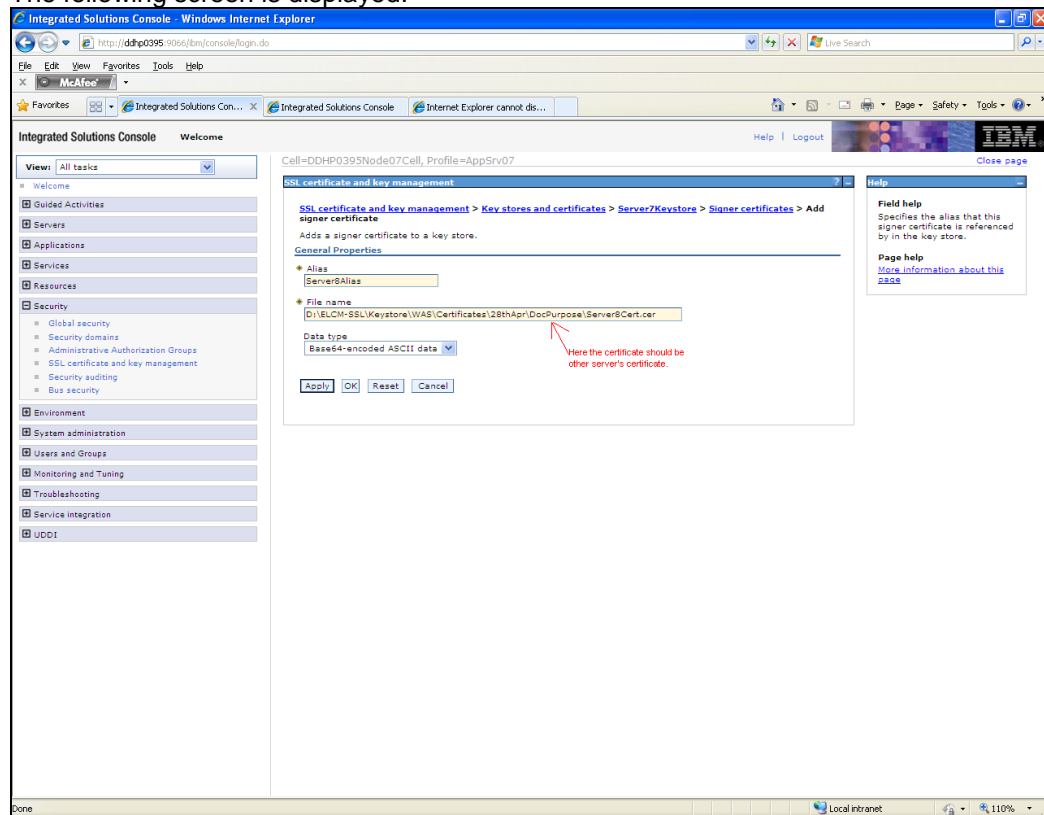
1. Click 'Signer Certificates'.

The following screen is displayed:



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

The following screen is displayed:



3. The extracted certificate of the second server has to be imported to the key-store and trust-store of first server. This has to be done using the same local path where the extract certificate was generated for the first server.

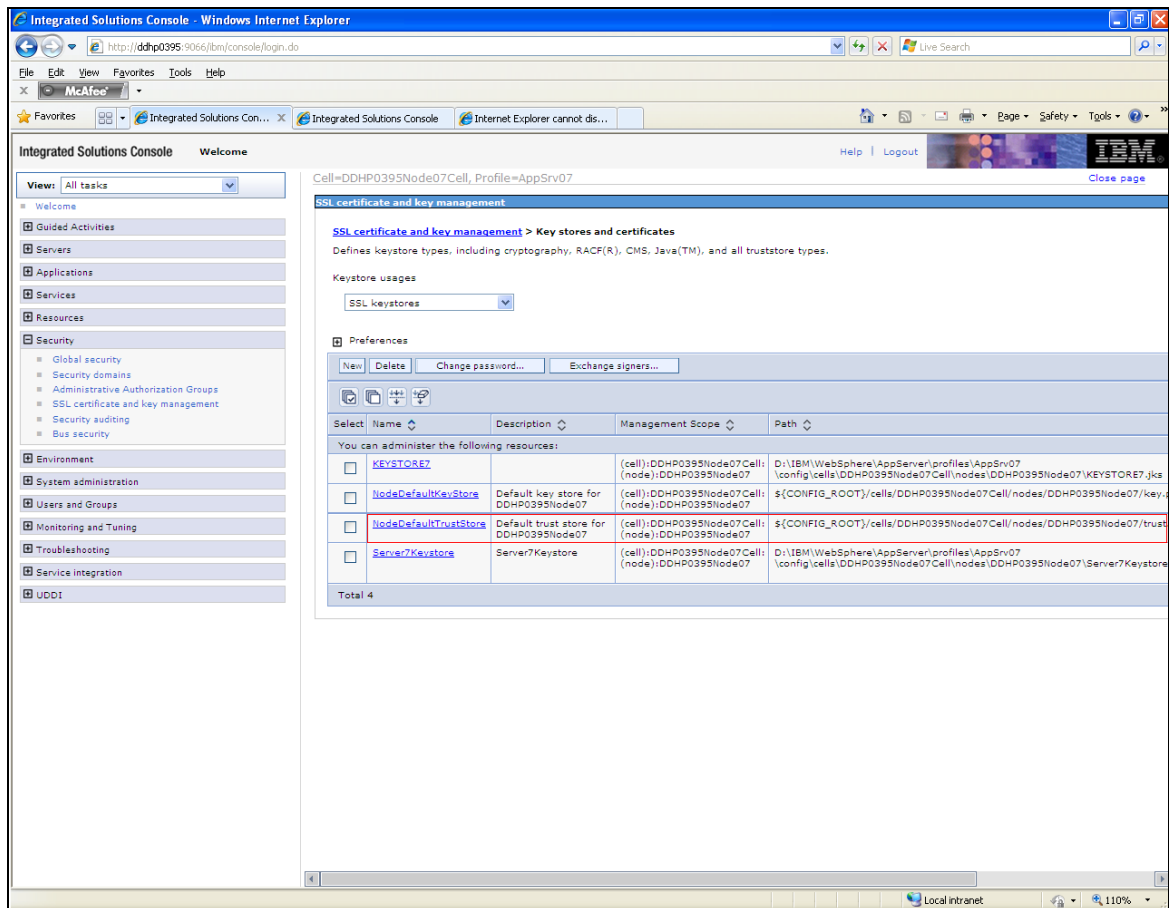
Eg: \<localfolder>\<server1.cer>

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'.

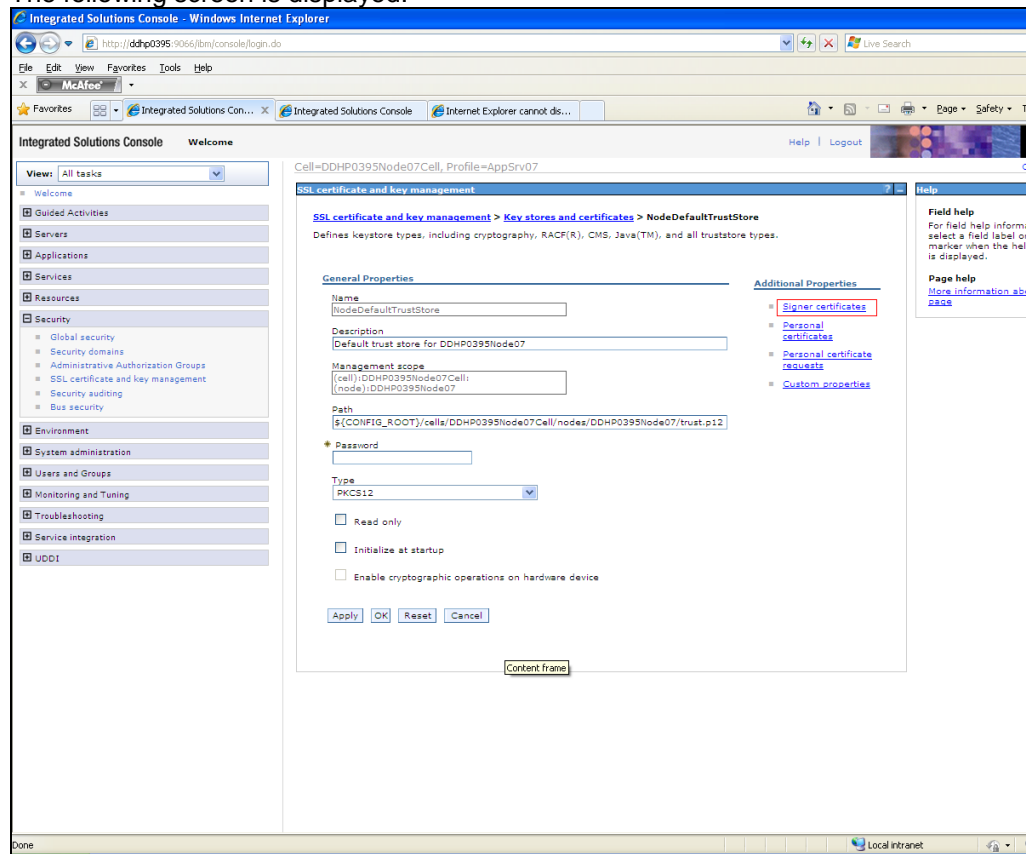


The screenshot shows the Integrated Solutions Console in a Windows Internet Explorer browser. The left sidebar contains a navigation tree with categories like Welcome, Guided Activities, Servers, Applications, Services, Resources, Security, Environment, System administration, Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. The 'Security' category is expanded, showing sub-items like Global security, Security domains, Administrative Authorization Groups, SSL certificate and key management, Security auditing, and Bus security. The main content area is titled 'SSL certificate and key management' and includes a 'Key store usages' dropdown set to 'SSL keystores'. Below this is a 'Preferences' section with buttons for 'New', 'Delete', 'Change password...', and 'Exchange signers...'. A table lists the resources that can be administered:

Select	Name	Description	Management Scope	Path
<input type="checkbox"/>	KEYSTORE7		(cell):DDHP0395Node07Cell:(node):DDHP0395Node07	D:\IBM\WebSphere\AppServer\profiles\AppSrv07\config\cells\DDHP0395Node07Cell\nodes\DDHP0395Node07\keystore7.jks
<input type="checkbox"/>	NodeDefaultKeyStore	Default key store for DDHP0395Node07	(cell):DDHP0395Node07Cell:(node):DDHP0395Node07	\${CONFIG_ROOT}/cells/DDHP0395Node07Cell/nodes/DDHP0395Node07/keystore7.jks
<input type="checkbox"/>	NodeDefaultTrustStore	Default trust store for DDHP0395Node07	(cell):DDHP0395Node07Cell:(node):DDHP0395Node07	\${CONFIG_ROOT}/cells/DDHP0395Node07Cell/nodes/DDHP0395Node07/truststore7.jks
<input type="checkbox"/>	Server7KeyStore	Server7 KeyStore	(cell):DDHP0395Node07Cell:(node):DDHP0395Node07	D:\IBM\WebSphere\AppServer\profiles\AppSrv07\config\cells\DDHP0395Node07Cell\nodes\DDHP0395Node07\Server7KeyStore.jks

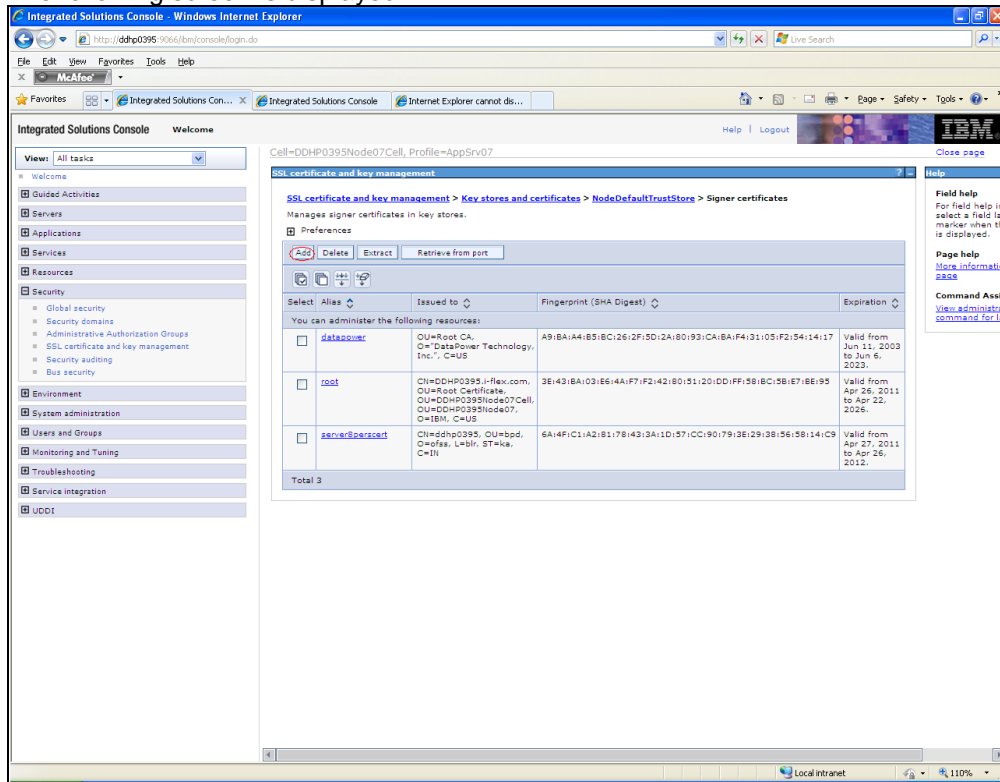
Total 4

The following screen is displayed.



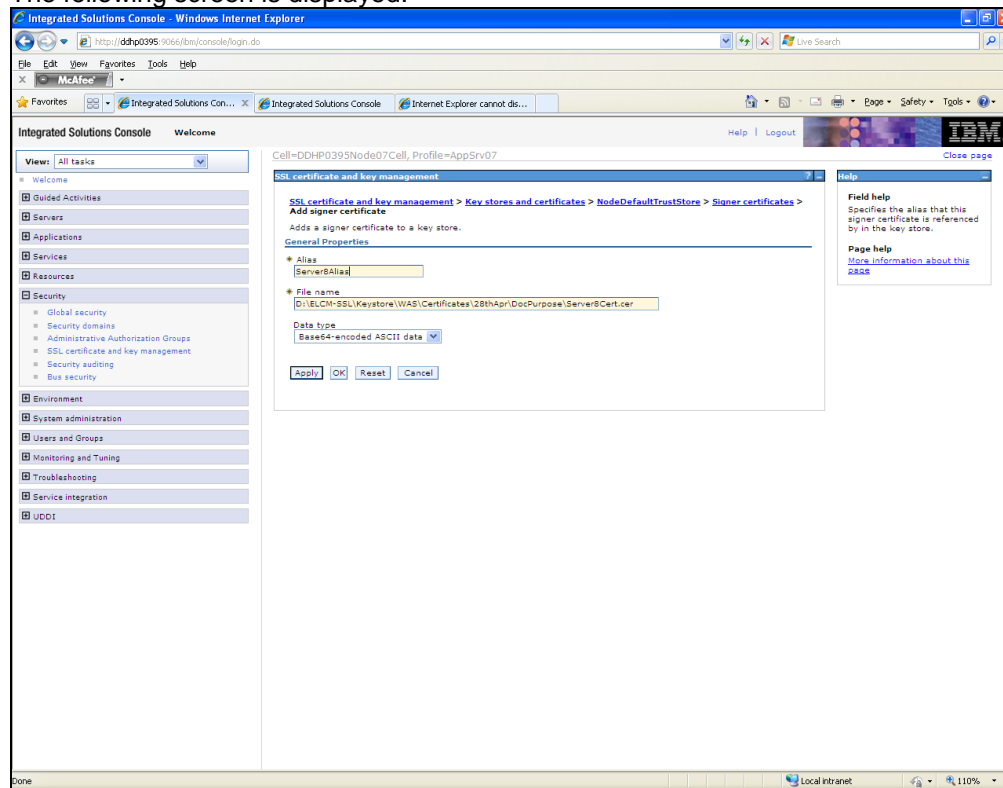
4. Click 'Signer Certificates'.

The following screen is displayed.



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

The following screen is displayed.



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

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

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

1.8.6 Importing Certificate into Truststore for Server2

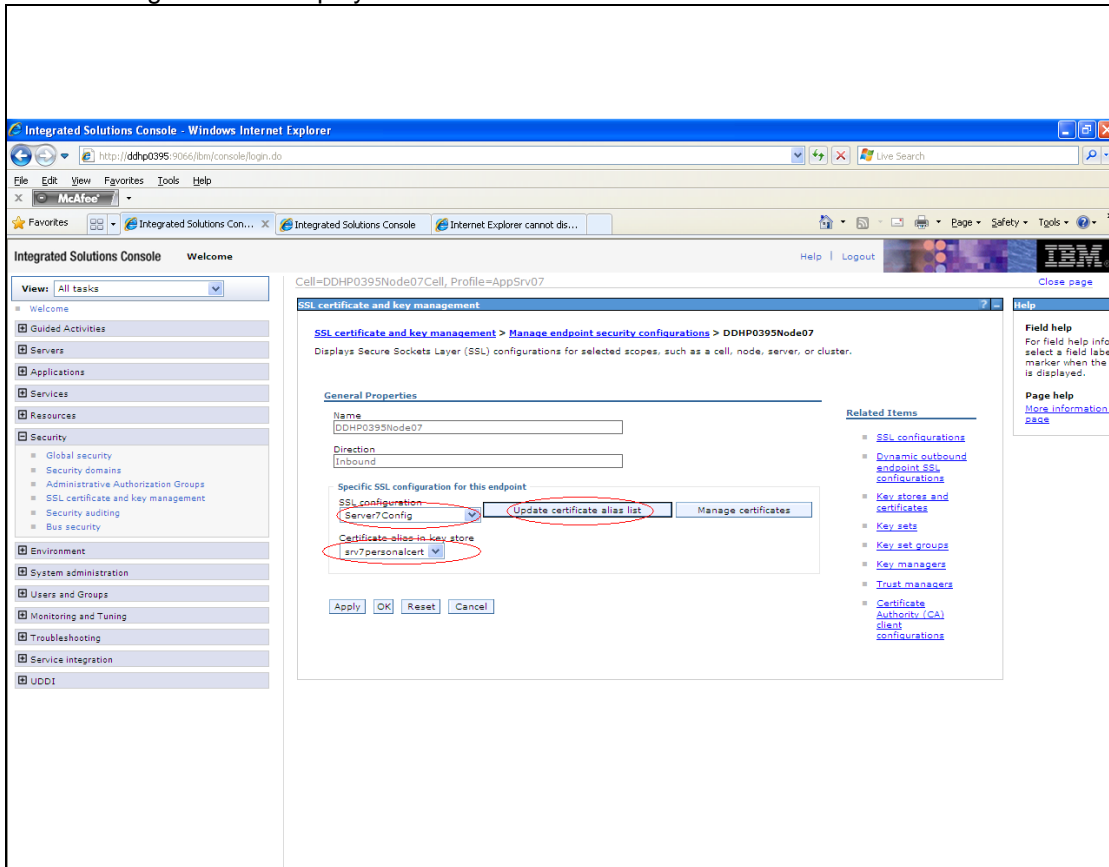
You can follow the steps for server 1 described under 'Importing Certificate into Truststore for Server2' to import the certificate into Truststore for Server2.

1.9 Managing Endpoint Security Configurations

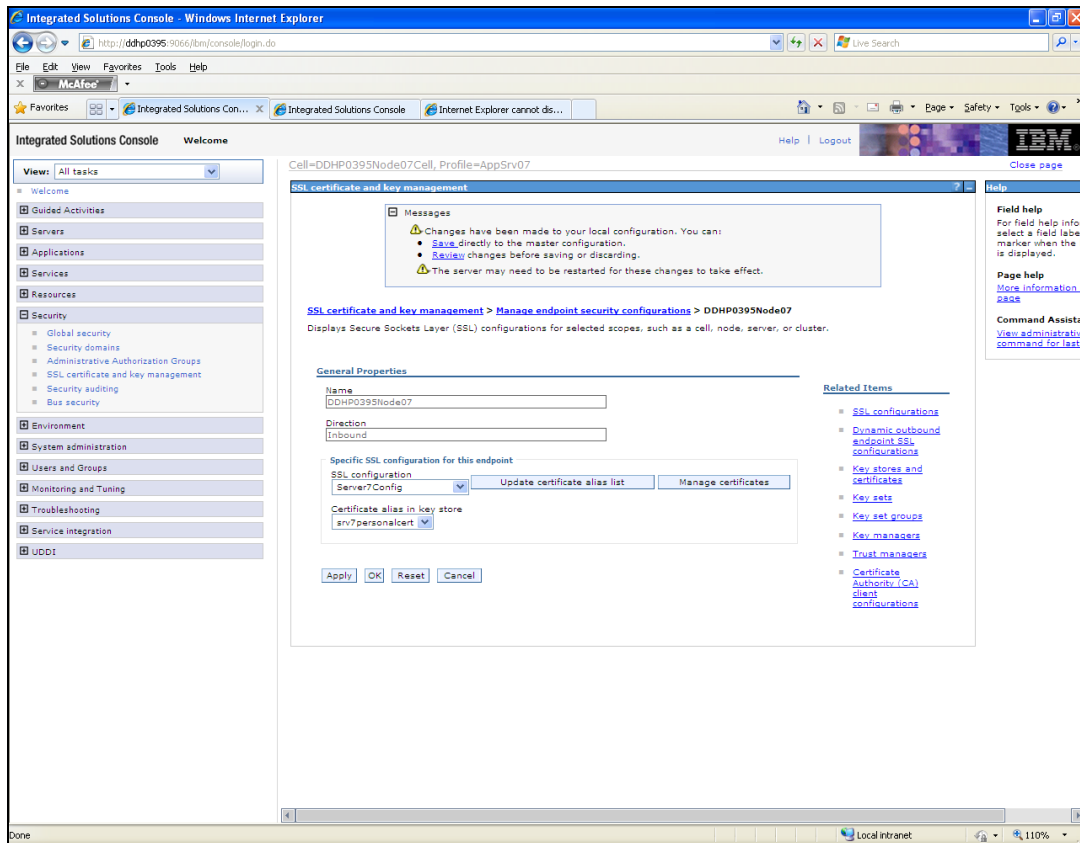
To manage the endpoint security configurations, follow the instructions given below.

2. Change the inbound node settings. Expand 'Inbound' and click 'DDHP0395Node07(NodeDefaultSSLSettings,default)'.

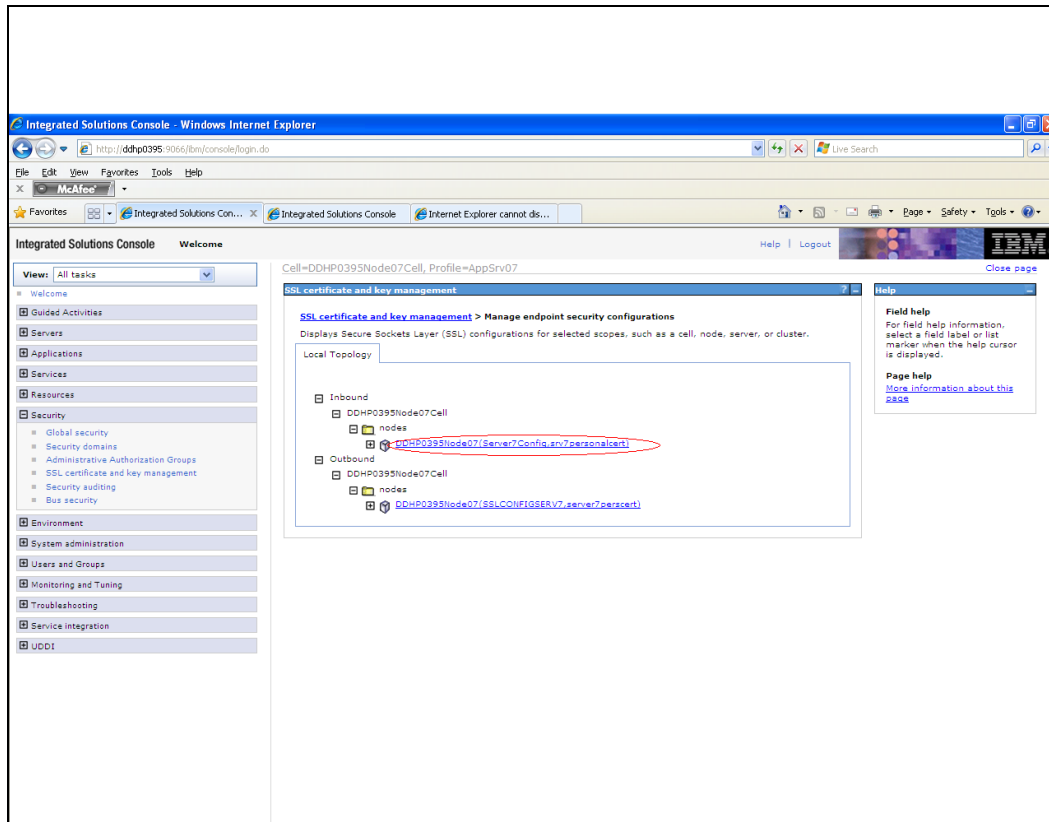
The following screen is displayed.



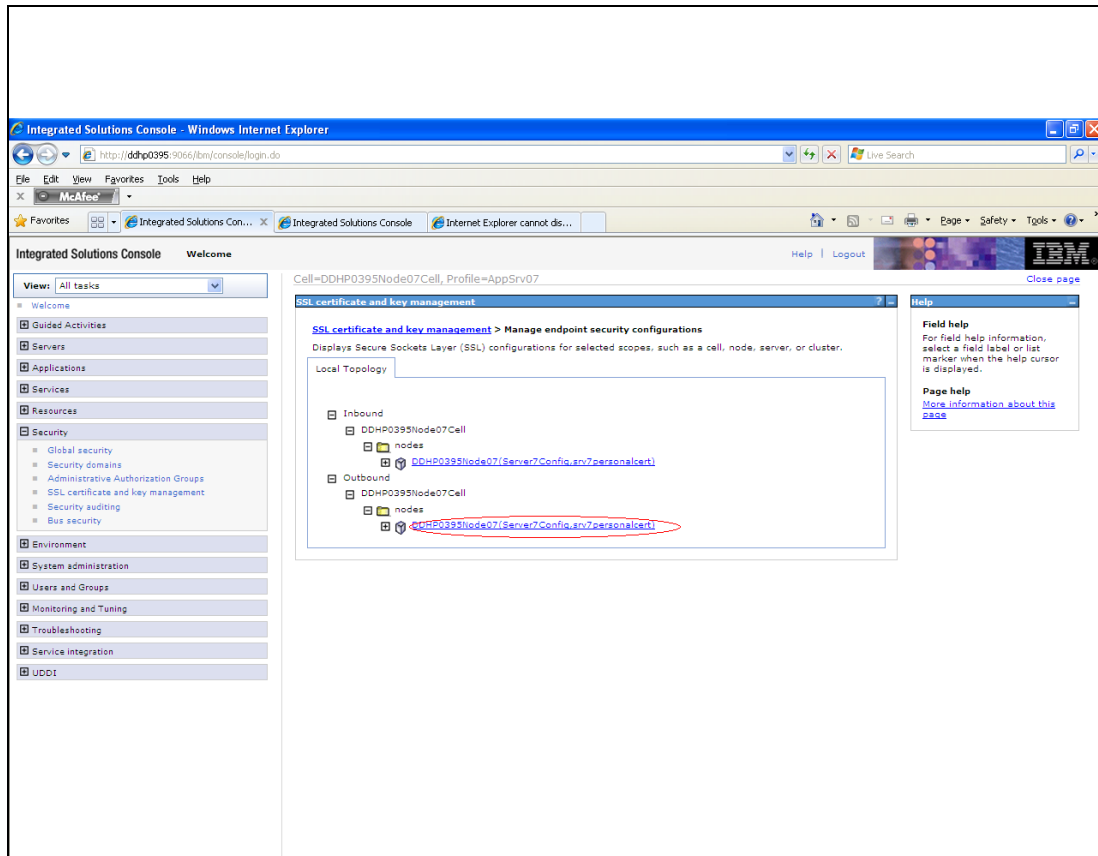
3. Select the 'SSL Configuration' created which you just created. Click 'Update certificate alias list' button.
4. Ensure that the proper certificate and SSL configuration are selected. Further, click 'Apply' and save the settings.



You can view the settings under 'Inbound'.



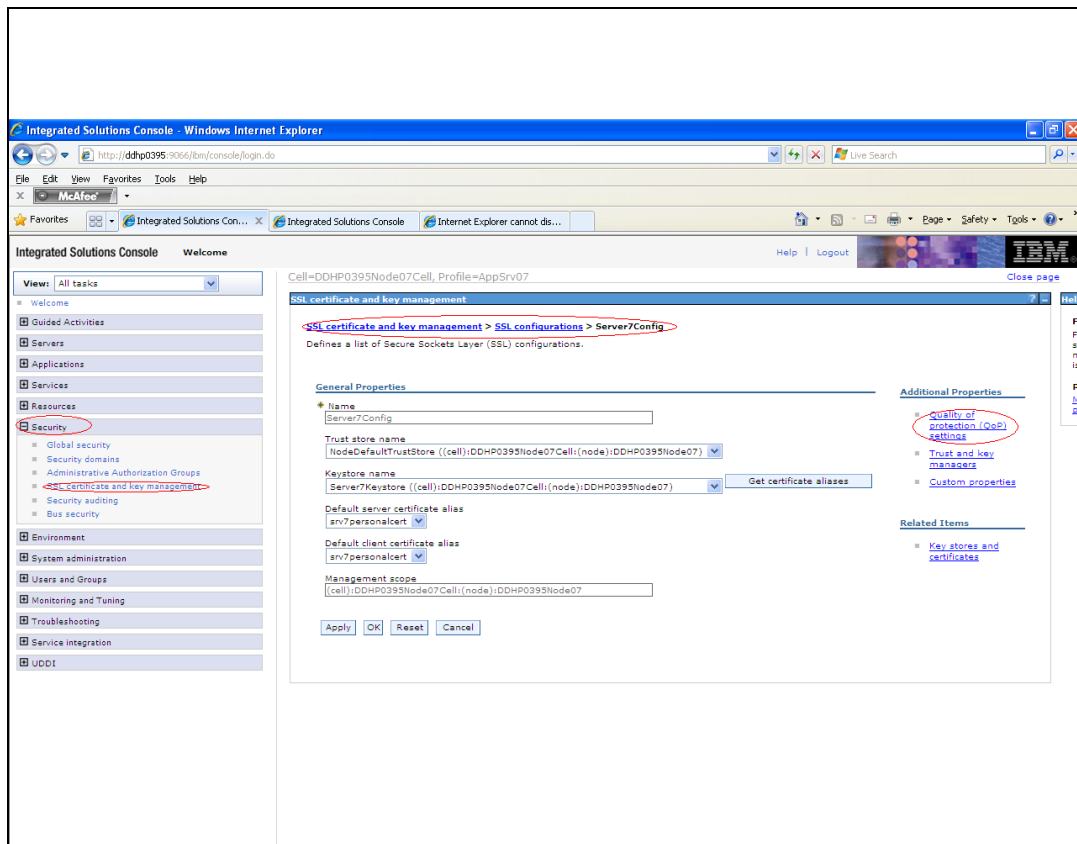
5. Repeat the above steps for 'Outbound' as well.



6. You need to repeat the above steps for server2 also.

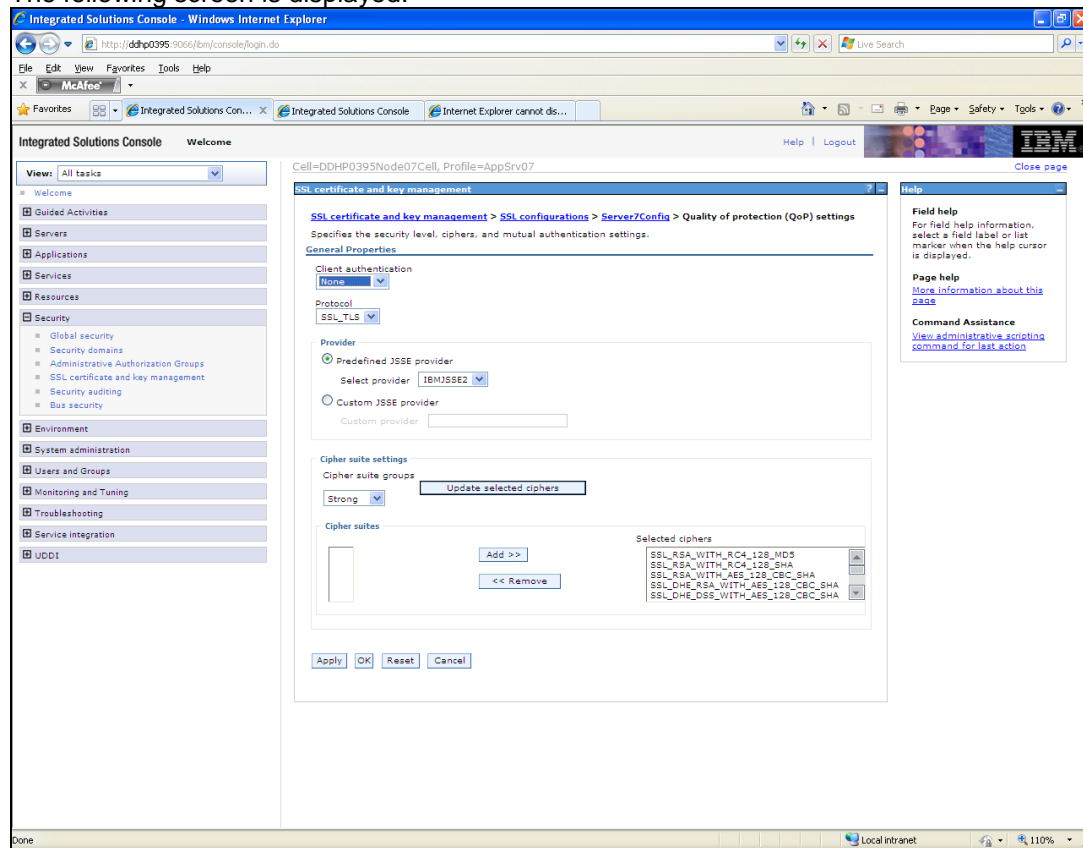
1.10 Protection Quality

1. Expand 'SSL certificate and key management > SSL configurations > Server7Config'.



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

The following screen is displayed.



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

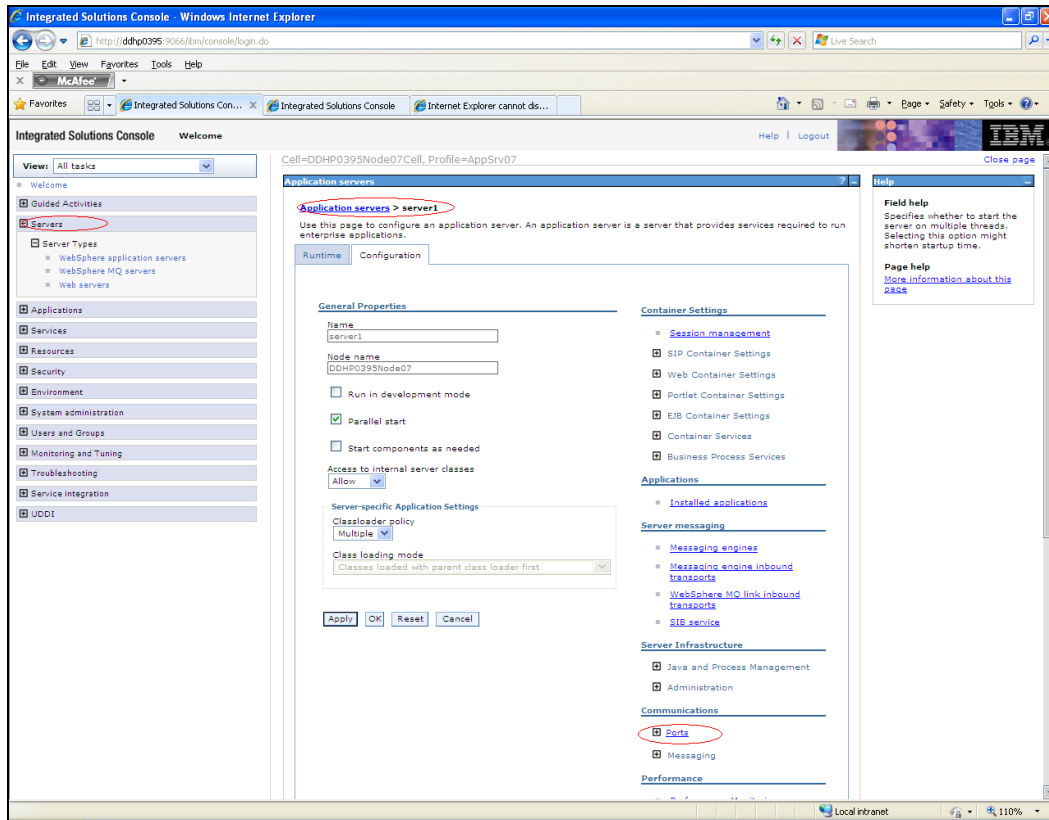
1.11 Importing or Adding Server Certificates using Batch

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.

Integrated Solutions Console - Windows Internet Explorer

http://ddrp0395-9006/ibm/console/login.do

File Edit View Favorites Tools Help

McAfee

Integrated Solutions Console

Integrated Solutions Console

Internet Explorer cannot display this page

Page Safety Tools

Integrated Solutions Console

Welcome

Help | Logout

IBM

Views: All tasks

Guided Activities

Servers

Server Types

- WebSphere application servers
- WebSphere MQ servers
- Web servers

Applications

Services

Resources

Security

Environment

System administration

Users and Groups

Monitoring and Tuning

Troubleshooting

Service integration

UDDI

Application Settings

Global server classes

Global server classes

mode

Load with parent class loader first

Reset Cancel

Business Process Services

Applications

Installed applications

Server messaging

- Messaging engine
- Messaging engine inbound transports
- WebSphere MQ link inbound transports
- SIB service

Server Infrastructure

Java and Process Management

Administration

Communications

Ports

Port Name	Port	Details
BOOTSTRAP_ADDRESS	2813	
SOAP_CONNECTOR_ADDRESS	8886	
ORB_LISTENER_ADDRESS	9106	
SAS_SSL_SERVERAUTH_LISTENER_ADDRESS	9421	
CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS	9420	
CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS	9419	
WC_adminhost	9066	
WC_defaulthost	9086	
DCS_UNICAST_ADDRESS	9359	
WC_adminhost_secure	9049	
WC_defaulthost_secure	9449	
SIP_DEFAULTHOST	5073	
SIP_DEFAULTHOST_SECURE	5072	
SIB_ENDPOINT_ADDRESS	7292	
SIB_ENDPOINT_SECURE_ADDRESS	7292	
SIB_MQ_ENDPOINT_ADDRESS	5564	
SIB_MQ_ENDPOINT_SECURE_ADDRESS	5564	
IPC_CONNECTOR_ADDRESS	9639	

Messaging

Field help

For field help information, select a field label or its marker when the help is displayed.

Page help

More information about SSS

Local intranet

110%

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.

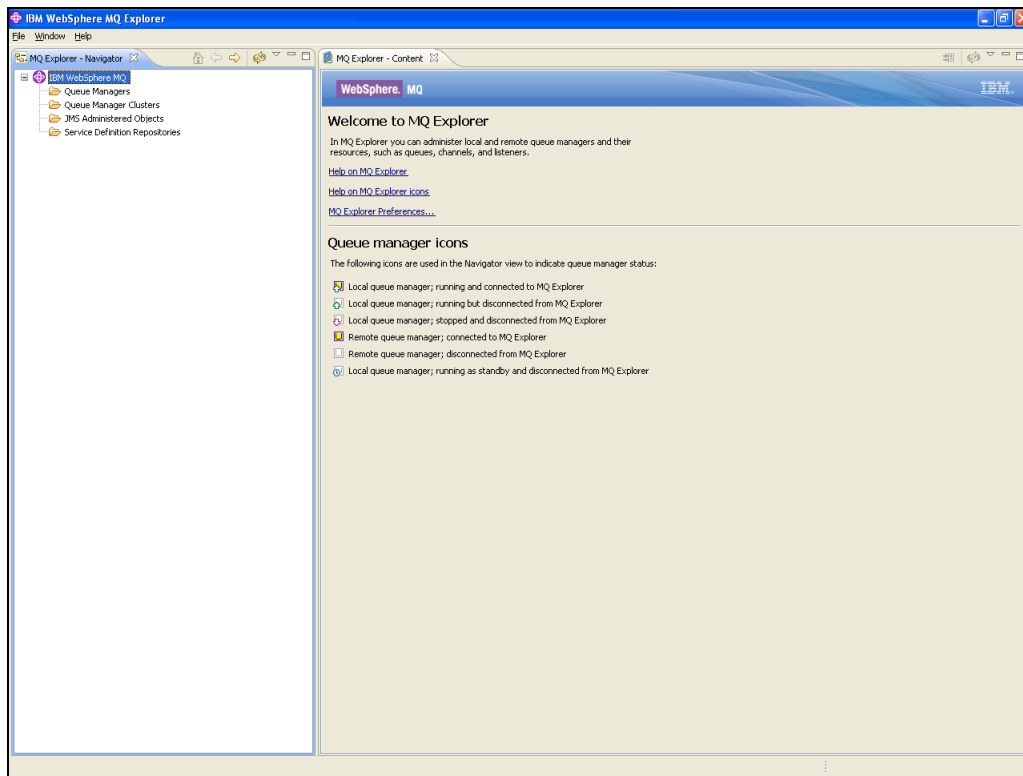
2.2 Creating Queues on Websphere MQ Server

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

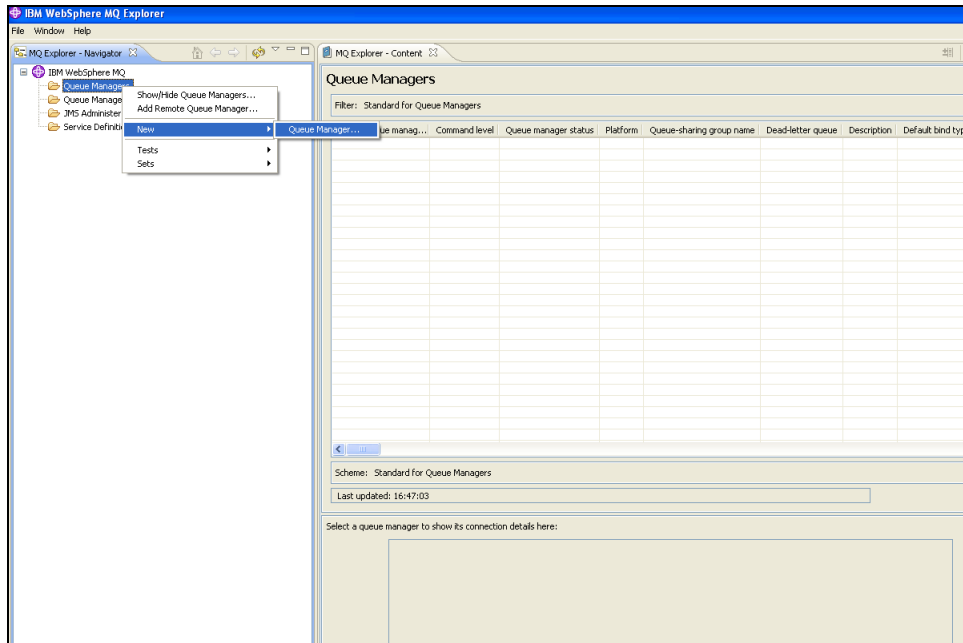
2.2.1 Creating Queue Manager through Console

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

1. Start MQ server console.



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



The following screen is displayed:

Create Queue Manager

Queue Manager
Enter basic values

Queue manager name: QM_DDHP0520

☒ Make this the default queue manager

Default transmission queue:

Dead-letter queue:

Max handle limit: 256

Trigger interval: 999999999

Max uncommitted messages: 10000

? < Back Next > Finish Cancel

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

Create Queue Manager

Queue Manager
Enter data and log values

Queue manager name: QM_DDHP0520

☒ Use circular logging
☐ Use linear logging

Log file size: (x4KB) 4096

Log primary files: 3

Log secondary files: 2

Data and Log paths

☒ Use default paths:

Data path: D:\Program Files\IBM\WebSphere MQ\qmgrs Browse...

Log path: D:\Program Files\IBM\WebSphere MQ\log Browse...

? < Back Next > Finish Cancel

5. Click 'Next'.

The following screen is displayed:

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)

☐ 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

? < Back Next > Finish Cancel

6. Click 'Next'.

The following screen is displayed:

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

? < Back Next > Finish Cancel

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

The following screen is displayed:

Create Queue Manager

Queue Manager
Enter explorer options

Queue manager name: QM_DDHP0520

☒ Autoreconnect

Automatic Refresh

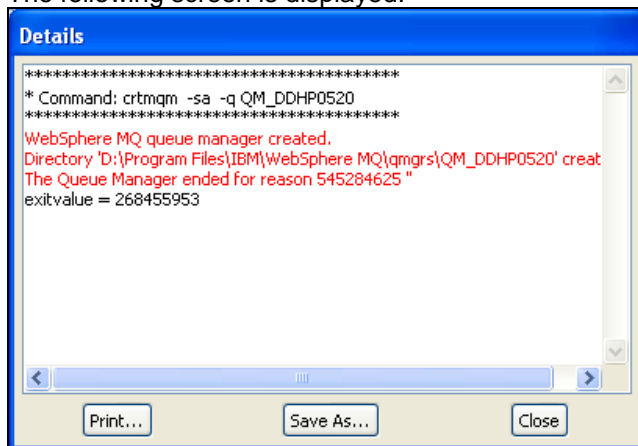
☒ Automatically refresh information shown for this queue manager

Interval (seconds): 15

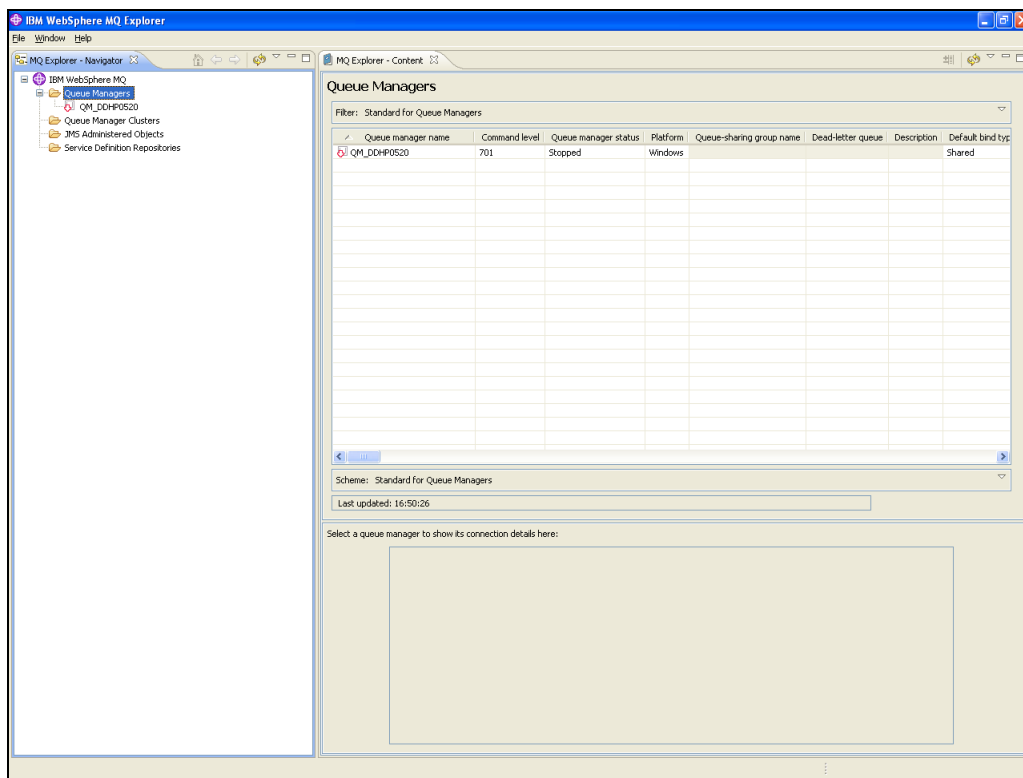
? < Back Next > Finish Cancel

8. Click 'Finish'.

The following screen is displayed:

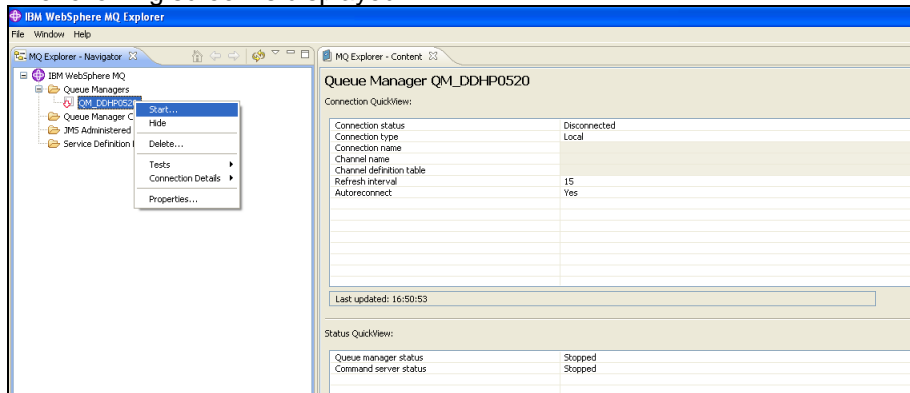


9. Close the message. The following screen is displayed:

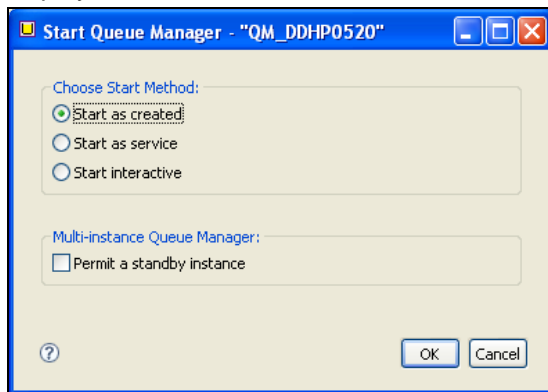


10. Right click 'Queue Manager' and select 'Start'.

The following screen is displayed:

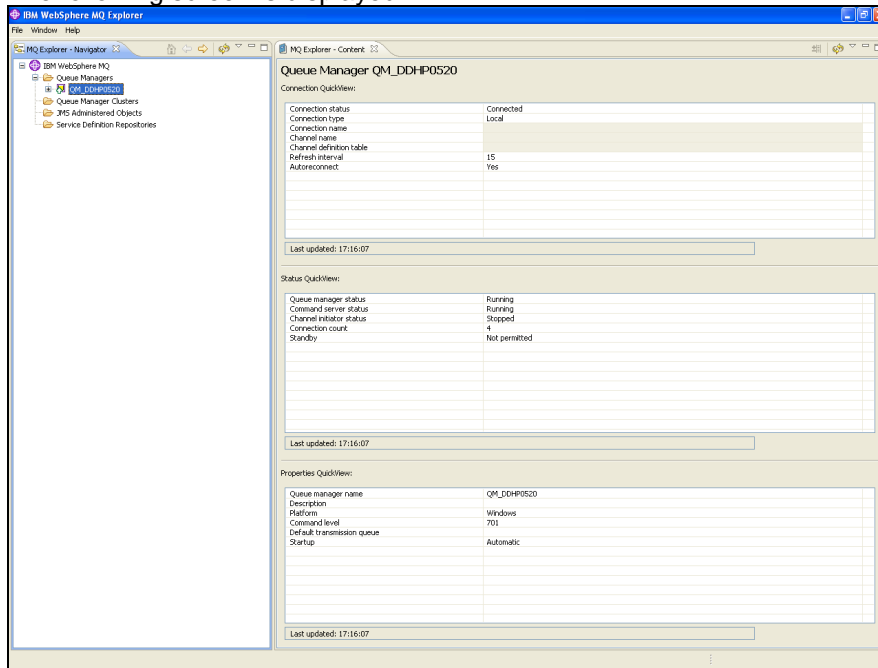


11. Right click 'Queue Manager QM_DDHP0520' and select 'Start'. The following screen is displayed:



12. Click 'OK'.

The following screen is displayed:

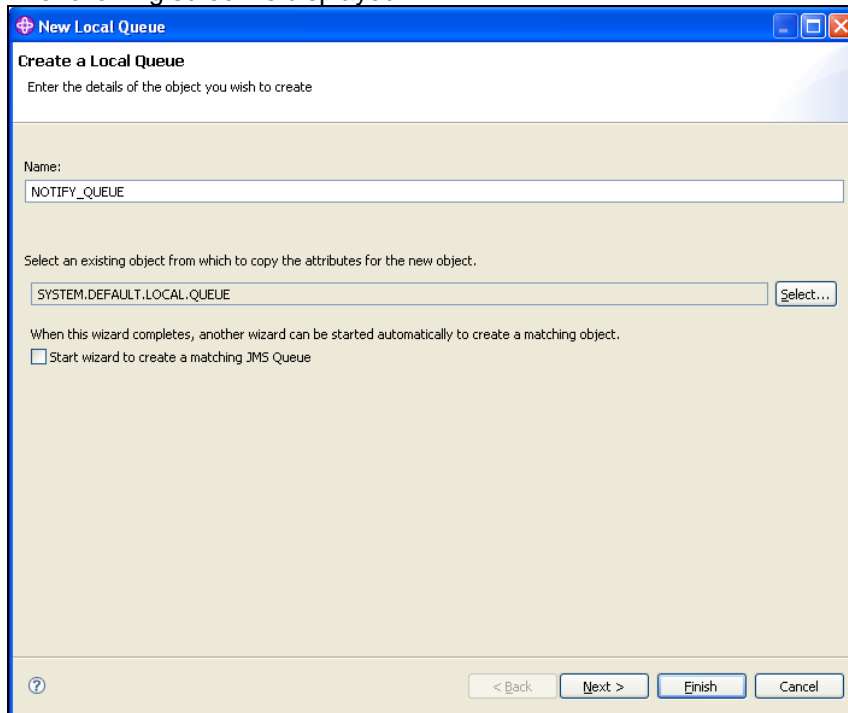


2.2.2 Creating Queues

To create queues, follow the steps given below:

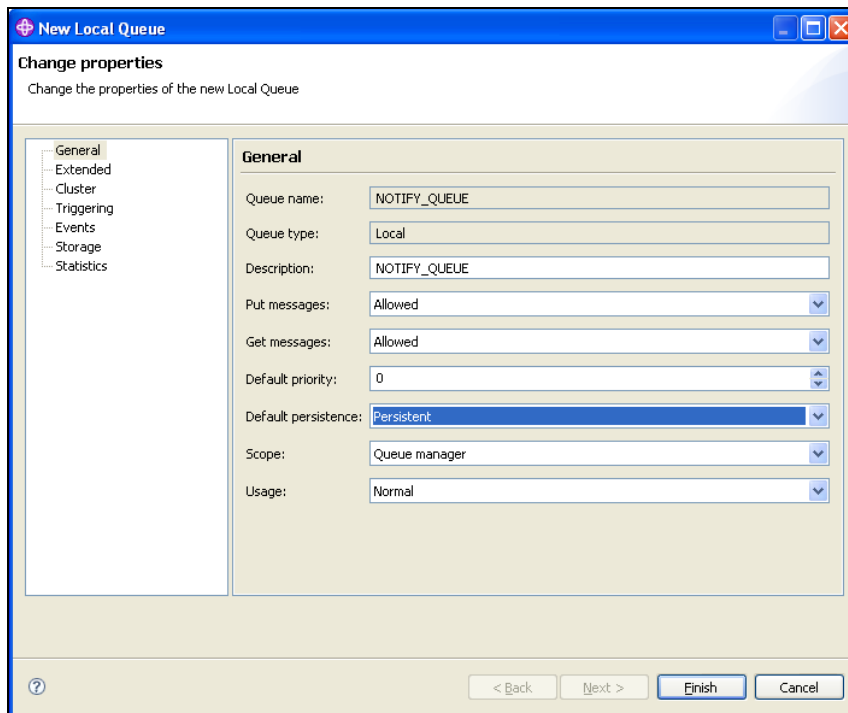
1. Start MQ server console.

The following screen is displayed:



The dialog box titled "New Local Queue" has a subtitle "Create a Local Queue" and the instruction "Enter the details of the object you wish to create". It contains a text field for "Name:" with the value "NOTIFY_QUEUE". Below this is a section "Select an existing object from which to copy the attributes for the new object." with a text field containing "SYSTEM.DEFAULT.LOCAL.QUEUE" and a "Select..." button. A checkbox labeled "Start wizard to create a matching JMS Queue" is present and unchecked. At the bottom are buttons for "< Back", "Next >", "Finish", and "Cancel".

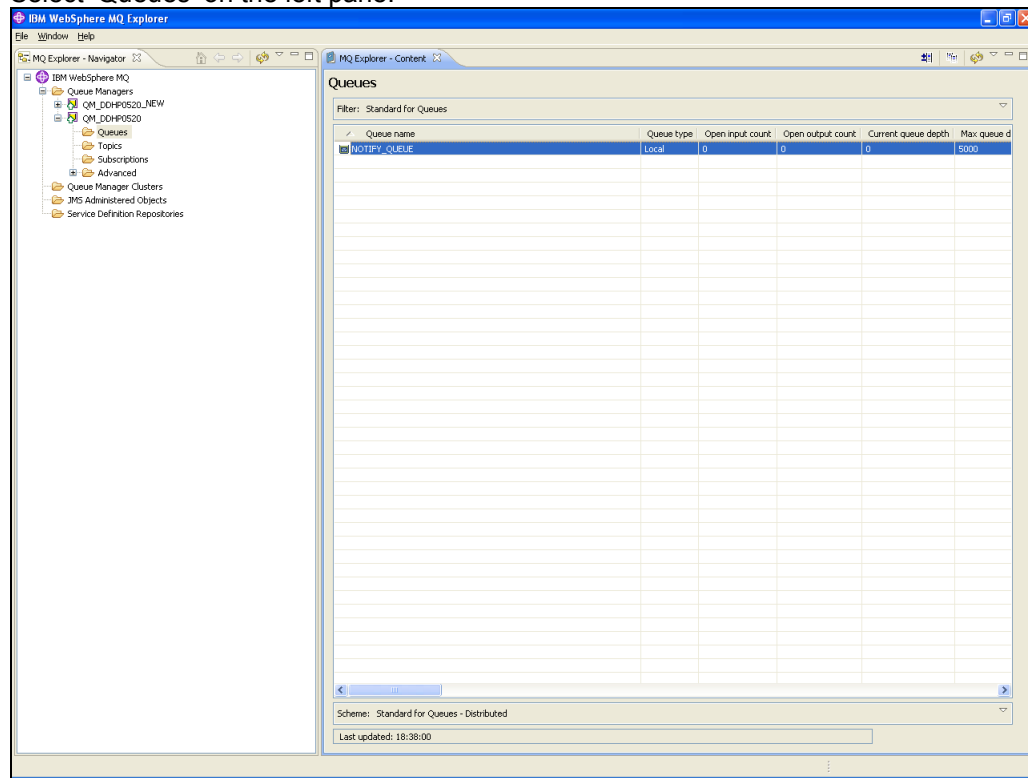
3. Specify the queue name. Click 'Next'. The following screen is displayed:



The dialog box titled "New Local Queue" has a subtitle "Change properties" and the instruction "Change the properties of the new Local Queue". On the left is a tree view with "General" selected. The main area is titled "General" and contains several fields: "Queue name:" (NOTIFY_QUEUE), "Queue type:" (Local), "Description:" (NOTIFY_QUEUE), "Put messages:" (Allowed), "Get messages:" (Allowed), "Default priority:" (0), "Default persistence:" (Persistent), "Scope:" (Queue manager), and "Usage:" (Normal). At the bottom are buttons for "< Back", "Next >", "Finish", and "Cancel".

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

Select 'Queues' on the left pane.



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

2.3 Creating Queue Manager and Queue using UNIX Commands

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>
```

Example

```
strmqm FC_QMGR
```

This command starts the 'FC_QMGR' queue manager.

2.3.3 **Starting MQ Service to Create Queues under FC_QMGR**

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

```
runmqsc <queue_manager_name>
```

Example

```
runmqsc FC_QMGR
```

This command starts the MQ service for 'FC_QMGR'.

2.3.4 **Creating Queues**

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

```
DEFINE QLOCAL (<QUEUE_NAME>)
```

Example

```
DEFINE QLOCAL (EMSOUT_QUEUE)
```

This command creates all the necessary queues.

2.3.5 **Creating Channel**

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

```
DEFINE CHANNEL (<CHNL_NAME>) CHLTYPE(<CHANNEL_TYPE>)
```

Here, 'CHNL_NAME' is the name of the channel and 'CHANNEL_TYPE' is the type of channel such as server connection, sender, receiver, etc. You can create the server connection channel using the following command:

```
DEFINE CHANNEL (FC_CNL) CHLTYPE (SVRCONN)
```

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

2.3.6 **Ending MQSC**

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

2.3.7 Creating Bindings

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

Move to the directory '<Websphere_MQ_HOME>/java/bin'. Here, 'Websphere_MQ_HOME' is the MQ server software installation path.

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

PROVIDER_URL=file: <Websphere_MQ_HOME>/JNDI

Example

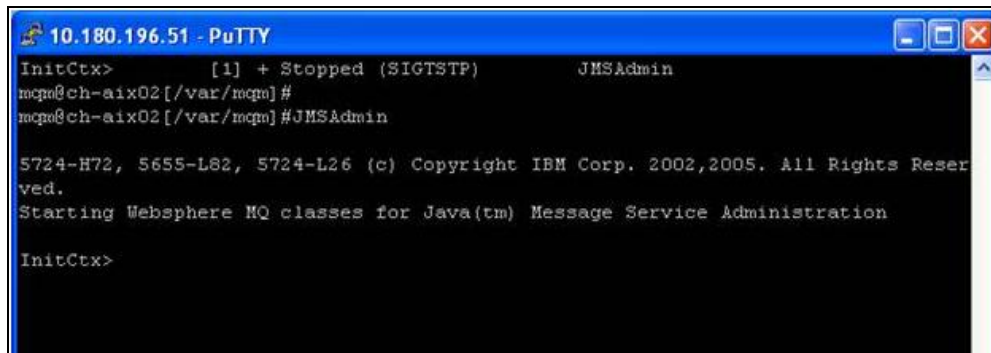
PROVIDER_URL=file: /var/mqm/JNDI



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.



```
10.180.196.51 - PuTTY
InitCtx> [1] + Stopped (SIGTSTP) JMSAdmin
mqpn@ch-aix02 [/var/mqm] #
mqpn@ch-aix02 [/var/mqm] # JMSAdmin

5724-H72, 5655-L82, 5724-L26 (c) Copyright IBM Corp. 2002,2005. All Rights Reserved.
Starting Websphere MQ classes for Java(tm) Message Service Administration

InitCtx>
```

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

```
define qcf (<qcf_name>) qmgr(<queue_mgr_name>) host (<ip-address>) port(1010)
tran(CLIENT)
```

Example

```
define qcf (fc_qcf) qmgr(FC_QMGR) host (10.10.10.10) port(1010) tran(CLIENT)
```

This creates the queue connection factory for the queue manager 'FC_QMGR' in 10.10.10.10 server.

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

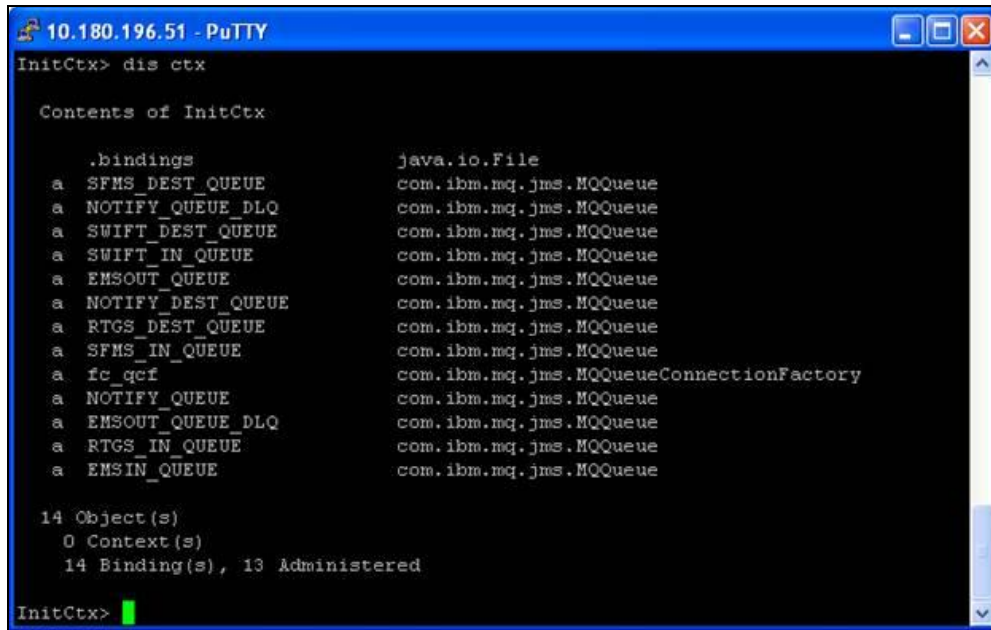
```
DEFINE Q(EMSOUT_QUEUE) QUEUE(EMSOUT_QUEUE) QMGR(FC_QMGR)
```

Use the same command for other queues also.

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

```
InitCtx> display ctx
```

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



```
10.180.196.51 - PuTTY
InitCtx> dis ctx

Contents of InitCtx

    .bindings                                java.io.File
a  SFMS_DEST_QUEUE                         com.ibm.mq.jms.MQQueue
a  NOTIFY_QUEUE_DLQ                       com.ibm.mq.jms.MQQueue
a  SWIFT_DEST_QUEUE                       com.ibm.mq.jms.MQQueue
a  SWIFT_IN_QUEUE                         com.ibm.mq.jms.MQQueue
a  EMSOUT_QUEUE                           com.ibm.mq.jms.MQQueue
a  NOTIFY_DEST_QUEUE                     com.ibm.mq.jms.MQQueue
a  RTGS_DEST_QUEUE                       com.ibm.mq.jms.MQQueue
a  SFMS_IN_QUEUE                         com.ibm.mq.jms.MQQueue
a  fc_qcf                                com.ibm.mq.jms.MQQueueConnectionFactory
a  NOTIFY_QUEUE                           com.ibm.mq.jms.MQQueue
a  EMSOUT_QUEUE_DLQ                     com.ibm.mq.jms.MQQueue
a  RTGS_IN_QUEUE                         com.ibm.mq.jms.MQQueue
a  EMSIN_QUEUE                           com.ibm.mq.jms.MQQueue

14 Object(s)
  0 Context(s)
 14 Binding(s), 13 Administered

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.

Example

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
DEFERRED_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
NOTIFY_QUEUE	Local	1	0	0
NOTIFY_QUEUE_DLQ	Local	0	0	0
RTGS_INQUEUE	Local	1	0	0
SFMS_INQUEUE	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.

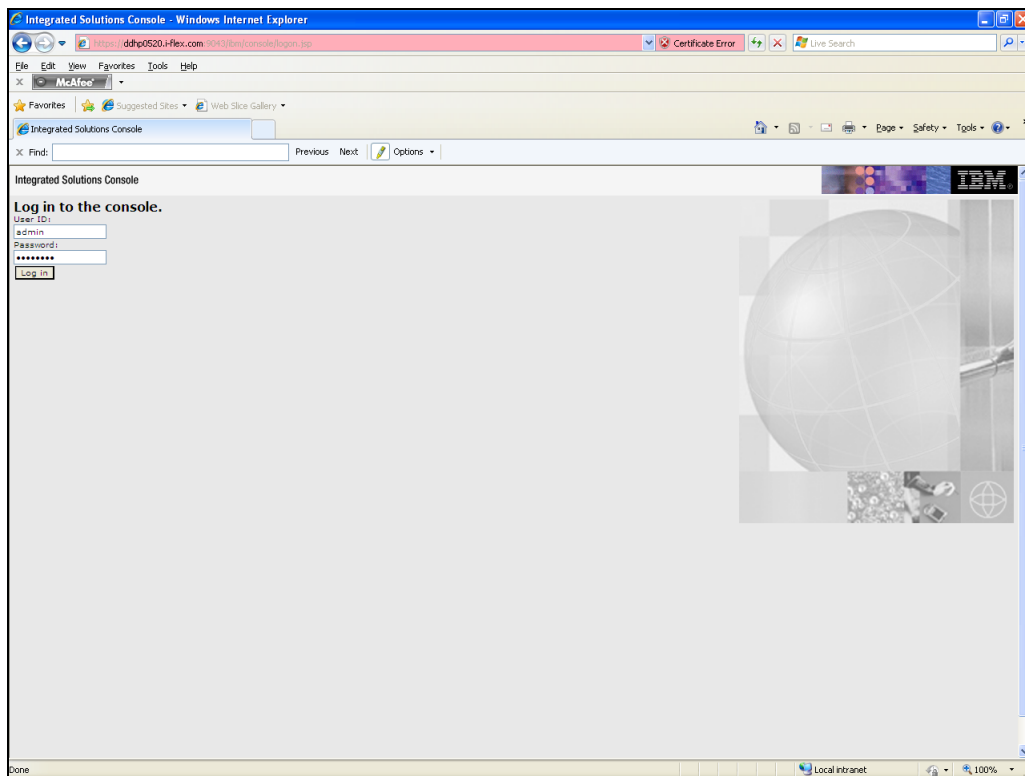
Queue name	Queue type	Definition type	Open input count	Open output count	Current queue depth	Max queue depth	Put messages
EMSGIN_QUEUE	Local	Predefined	1	0	0	5000	Allowed
EMSGOUT_QUEUE	Local	Predefined	1	0	12	5000	Allowed
EMSGOUT_QUEUE_DLQ	Local	Predefined	0	0	0	5000	Allowed
FCQINQ	Local	Predefined	0	0	0	5000	Allowed
MDB_QUEUE	Local	Predefined	1	0	0	999999999	Allowed
MDB_QUEUE_DLQ	Local	Predefined	0	0	6	999999999	Allowed
MDB_QUEUE_RESPONSE	Local	Predefined	0	0	12	999999999	Allowed
NOTIFY_DEST_QUEUE	Local	Predefined	0	0	1	5000	Allowed
NOTIFY_QUEUE	Local	Predefined	3	0	0	5000	Allowed
NOTIFY_QUEUE_DLQ	Local	Predefined	0	0	19	5000	Allowed
RTGS_DEST_QUEUE	Local	Predefined	0	0	0	5000	Allowed
RTGS_IN_QUEUE	Local	Predefined	1	0	0	5000	Allowed
SFMS_DEST_QUEUE	Local	Predefined	0	0	32	5000	Allowed
SFMS_IN_QUEUE	Local	Predefined	1	0	3	5000	Allowed
SFMS_OUT_QUEUE	Local	Predefined	1	0	3	5000	Allowed

3. Creating JDBC Resources on Web Sphere

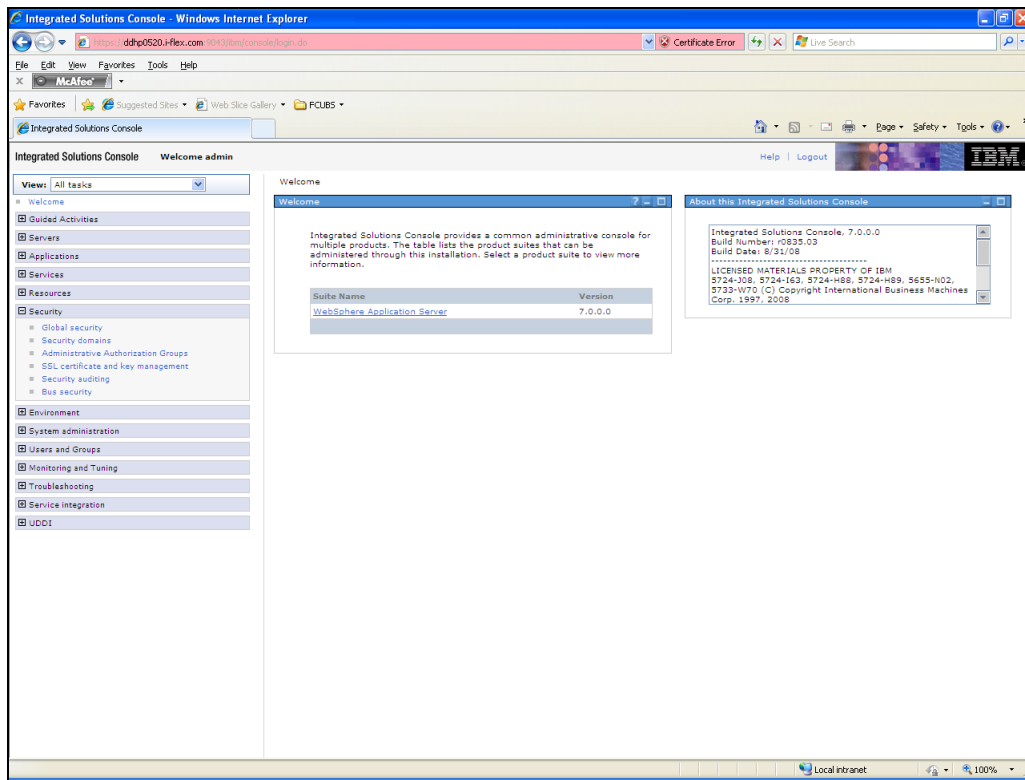
3.1 Introduction

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

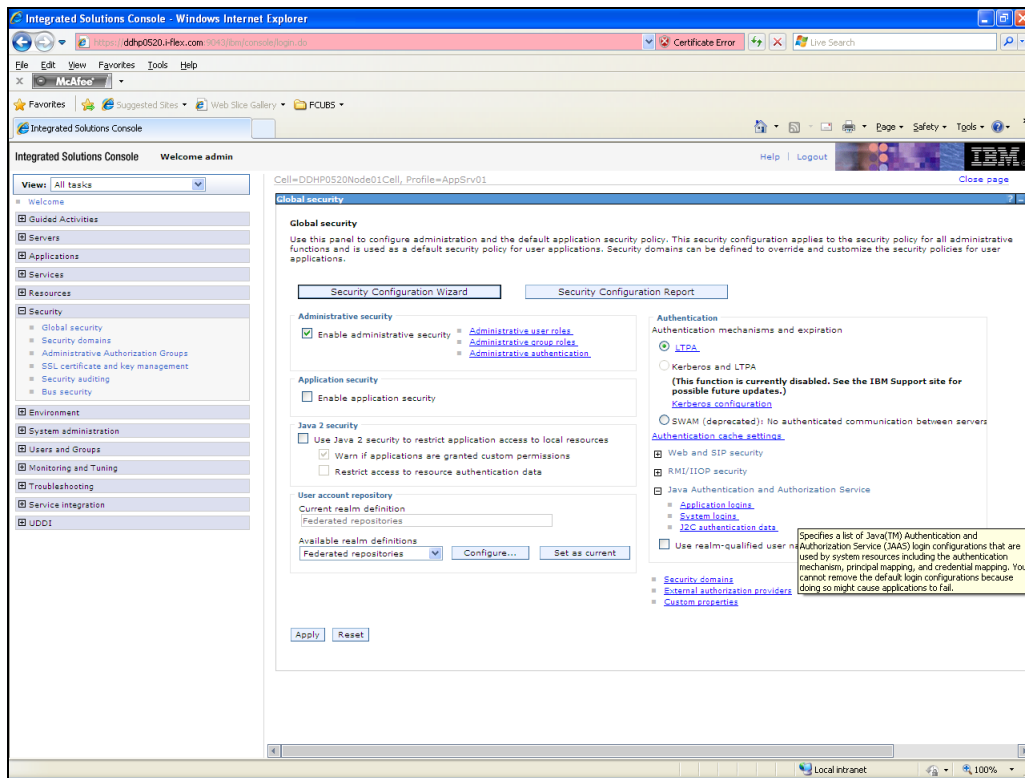
3.2 Creating JDBC Sources



1. Specify the Websphere administrator username and password.
2. Click 'Log In'.
3. Navigate to Websphere home page.

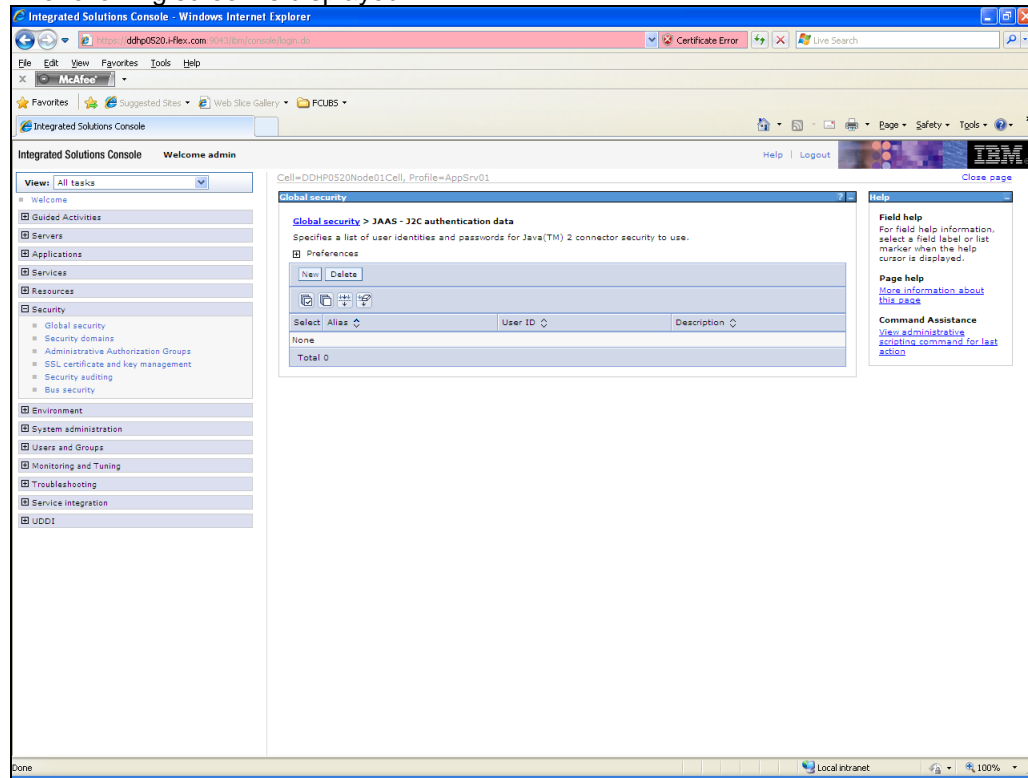


4. Expand 'Security' and select 'Global Security'. The following screen is displayed.



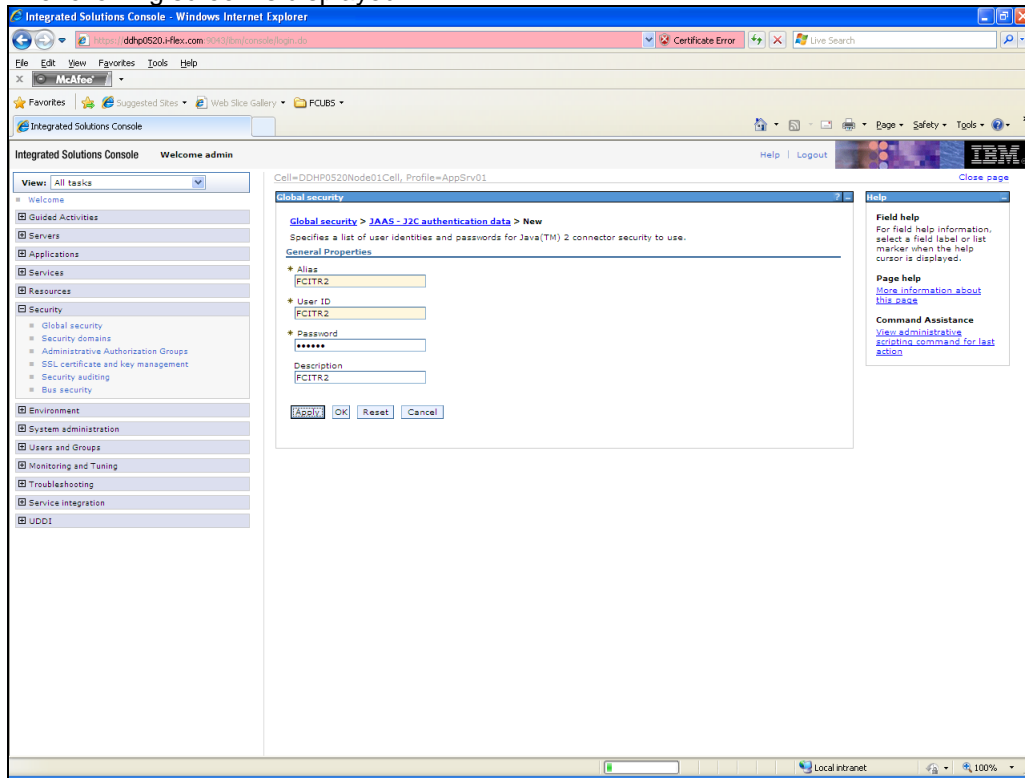
5. Expand 'Java Authentication', go to 'Authorization Service' and click 'J2C authentication data'.

The following screen is displayed.



6. Click 'New'.

The following screen is displayed.

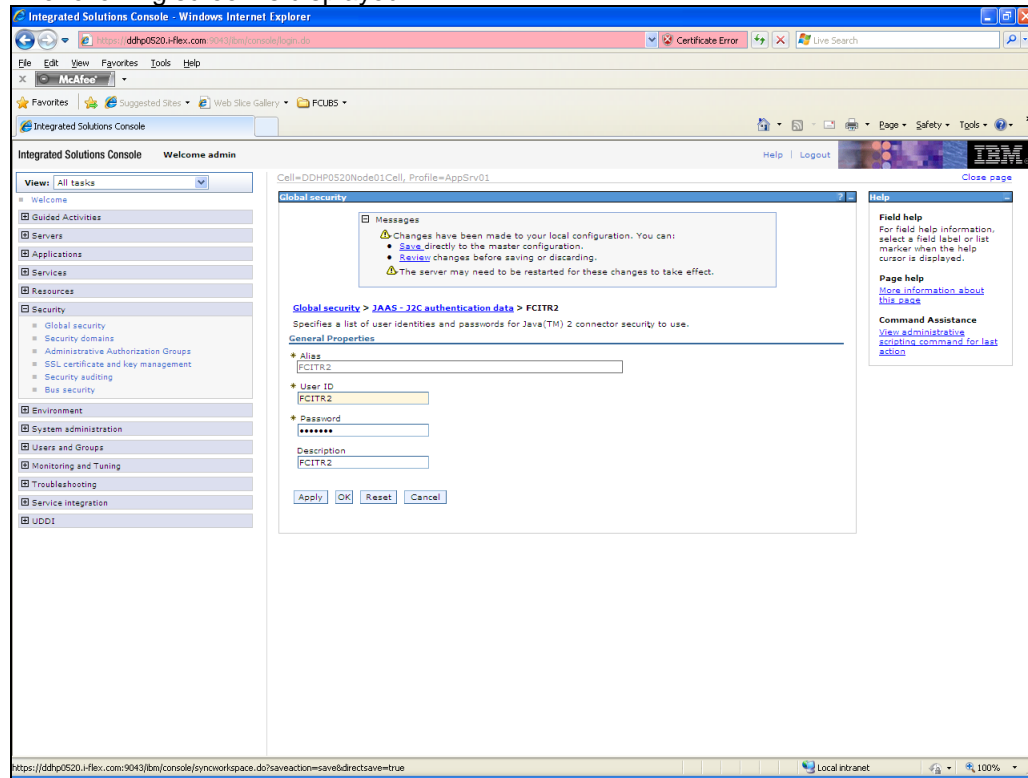


7. You need to define the connection properties. Specify the following details.

- Alias
- User ID of the Database
- Password of the Database
- Description

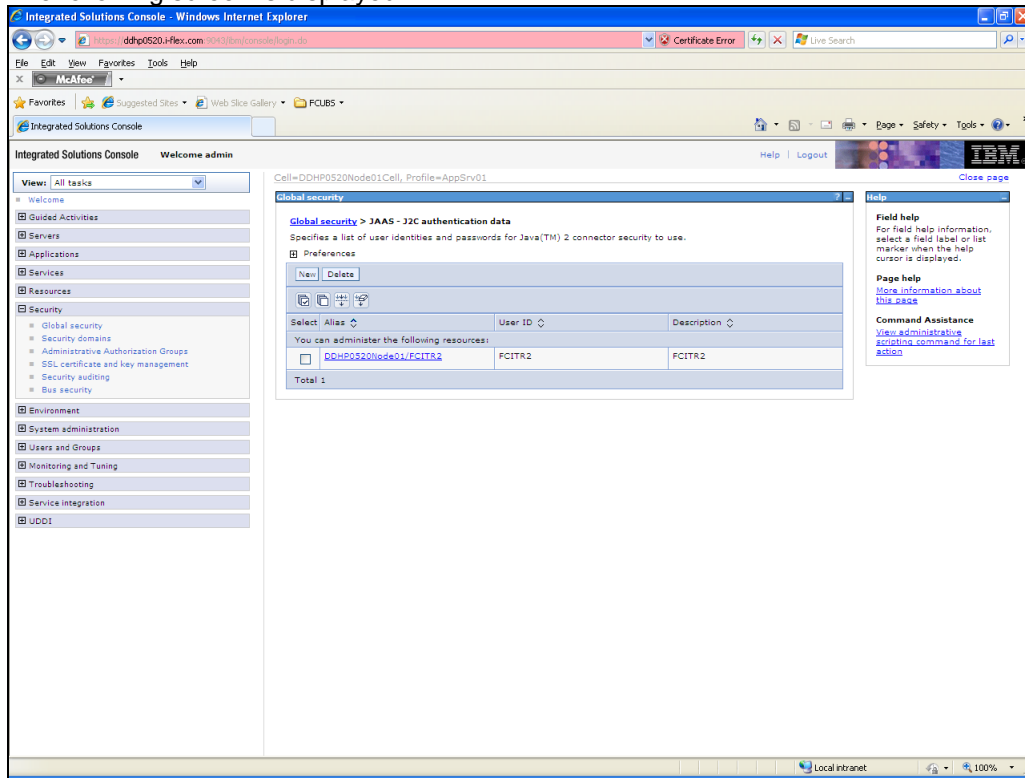
8. Once you have specified the above details, click 'Apply'.

The following screen is displayed.



9. Click 'Save'.

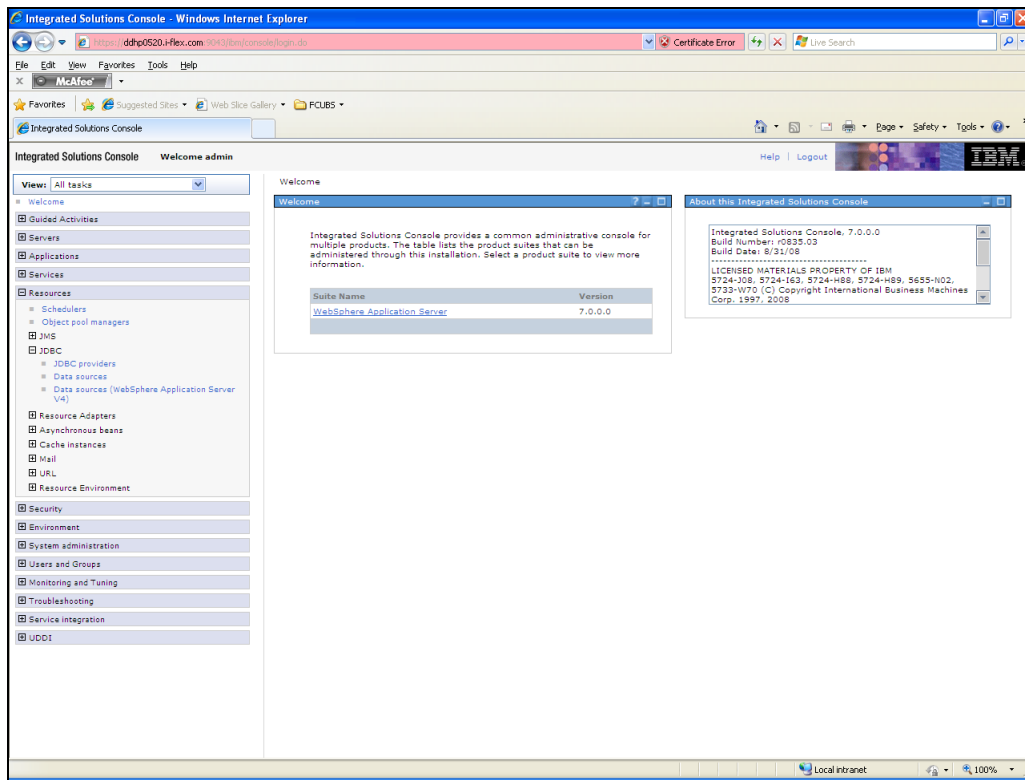
The following screen is displayed.



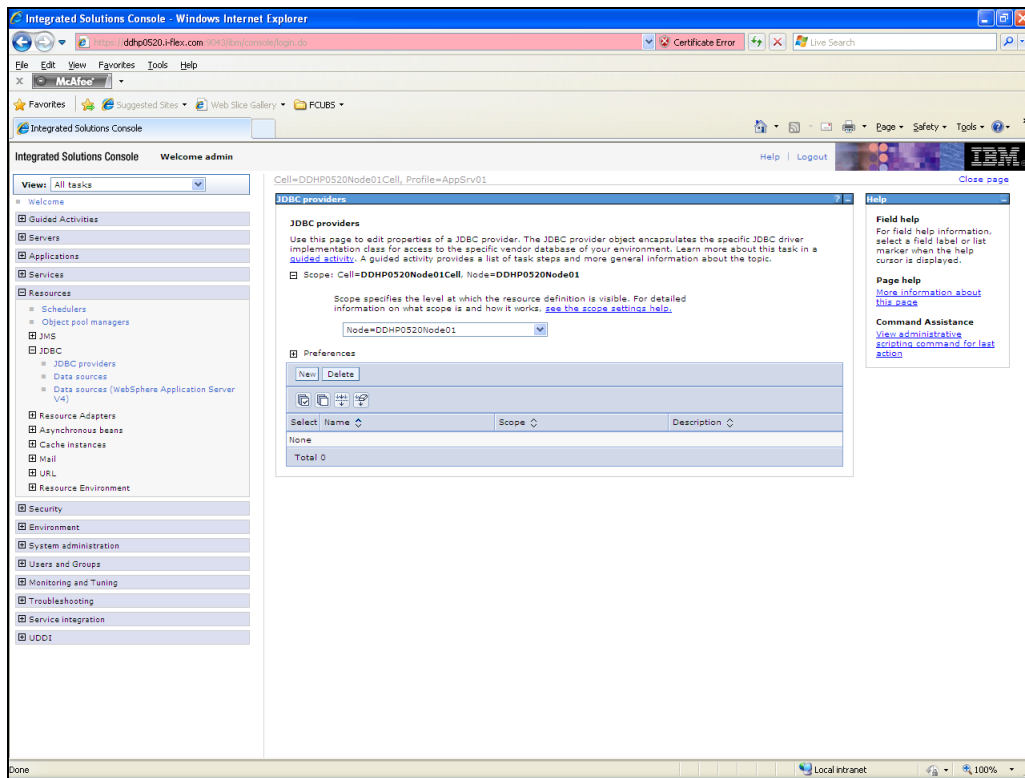
3.2.1 JDBC Provider for Non XA Data Source

Follow the steps given below:

10. Login to the application server administration console.
11. Expand 'Resources > JDBC' and select 'JDBC Providers'.

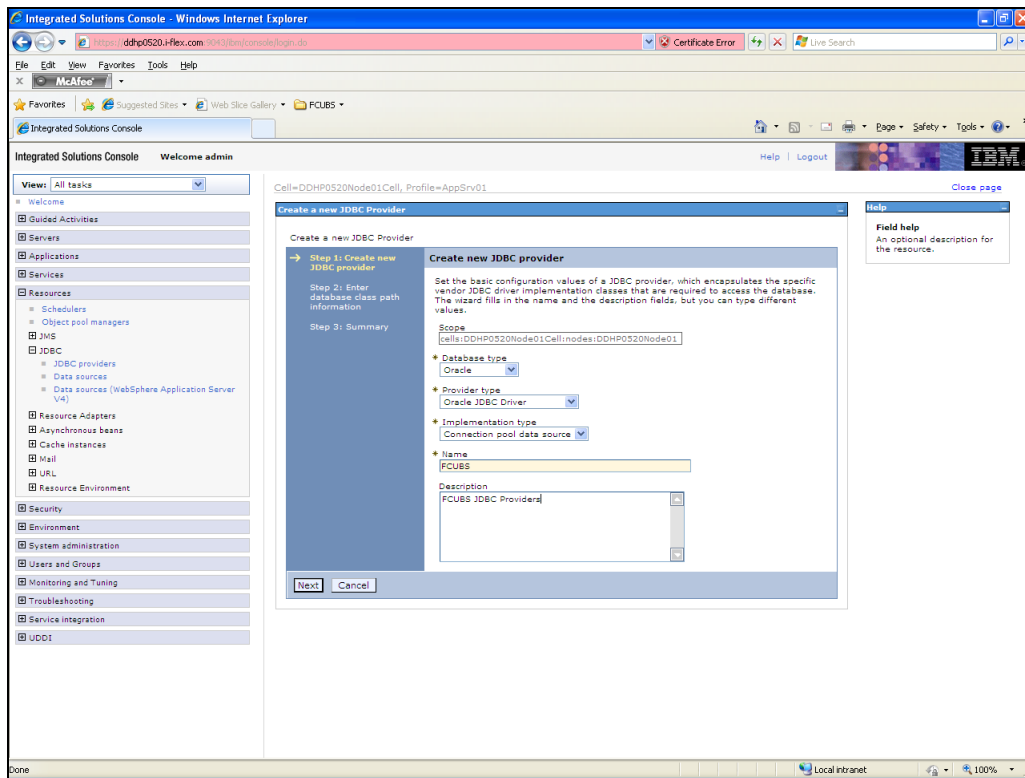


12. The following screen is displayed:



13. Select 'Node' from the dropdown list.

14. The following screen is displayed:

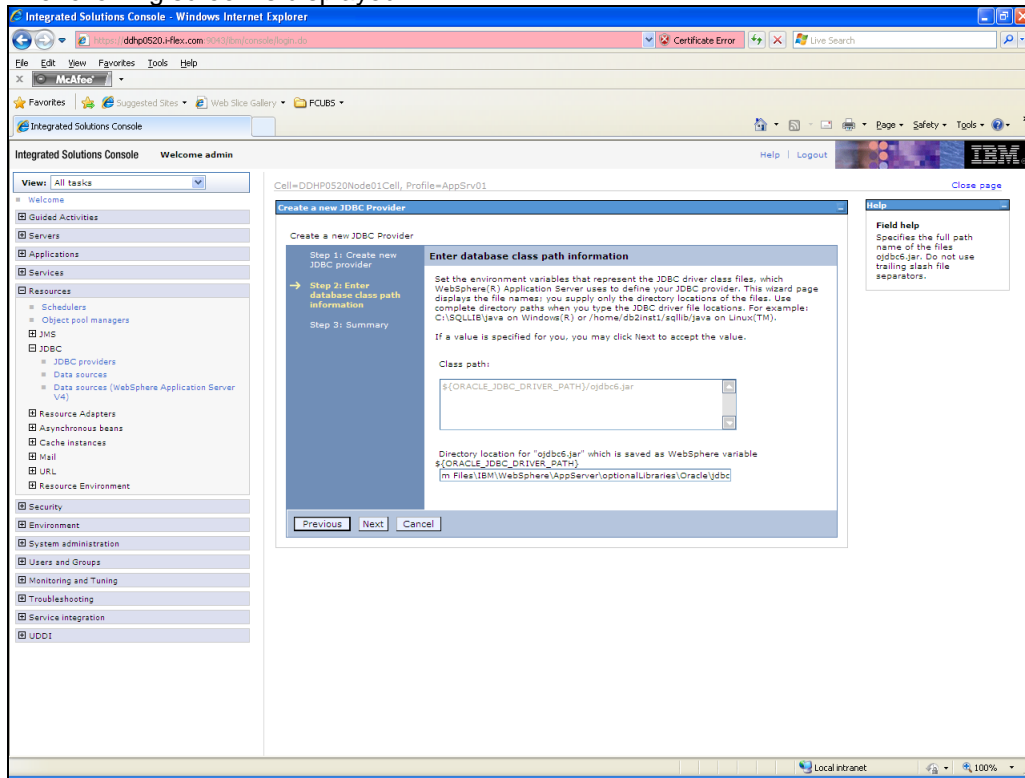


15. Specify the following details:

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

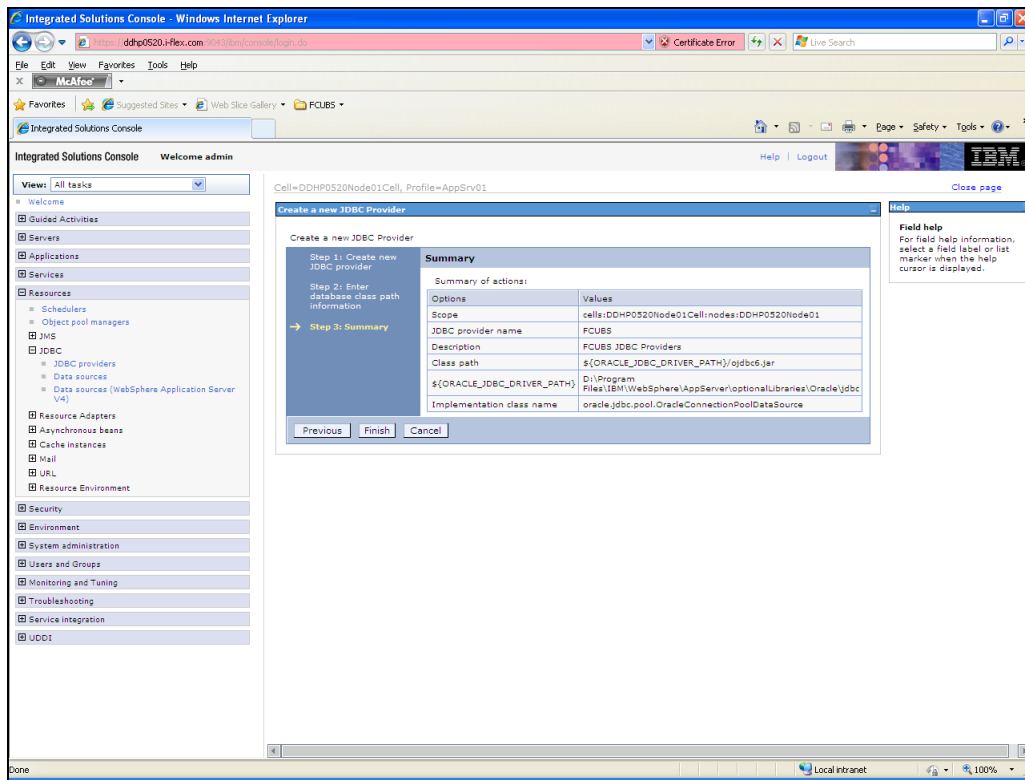
16. Click 'Next'.

The following screen is displayed:



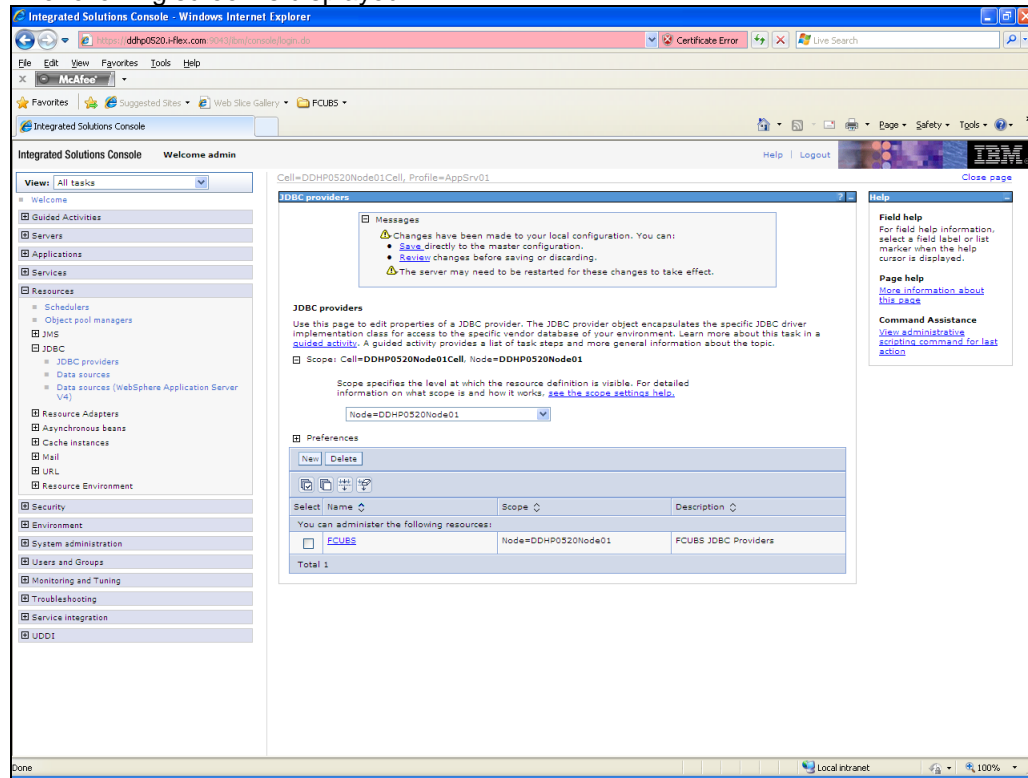
17. Provide the location of ojdbc6.jar. Click 'Next'.

The following screen is displayed.



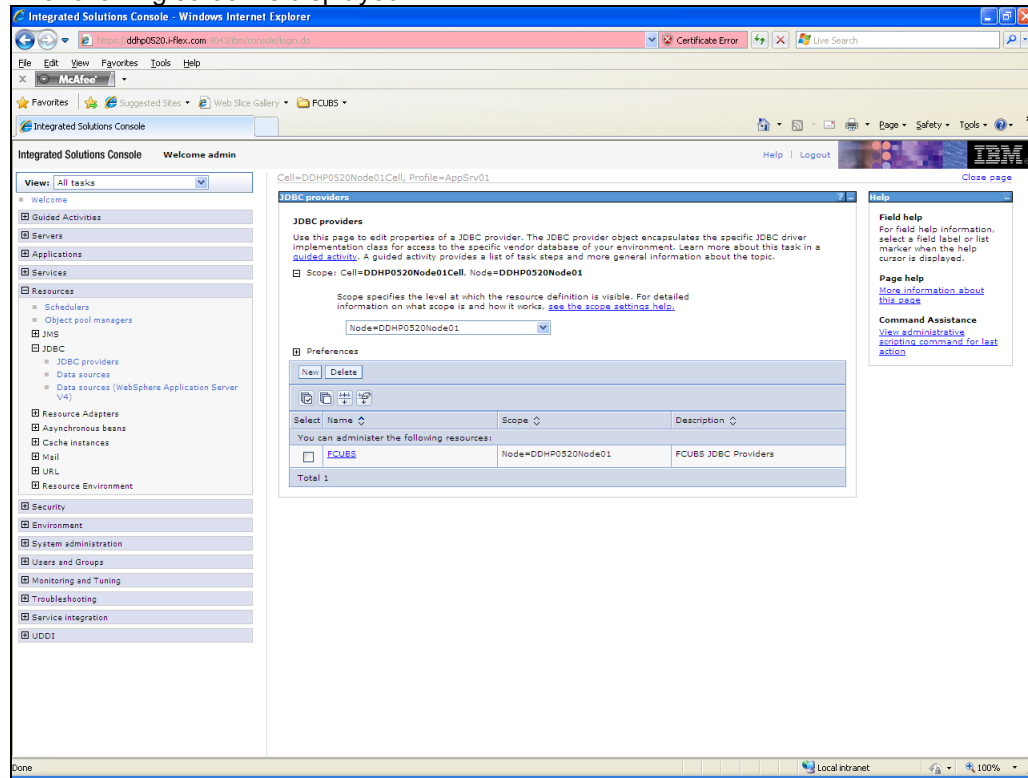
18. Click 'Finish'.

The following screen is displayed.



19. Click 'Save'.

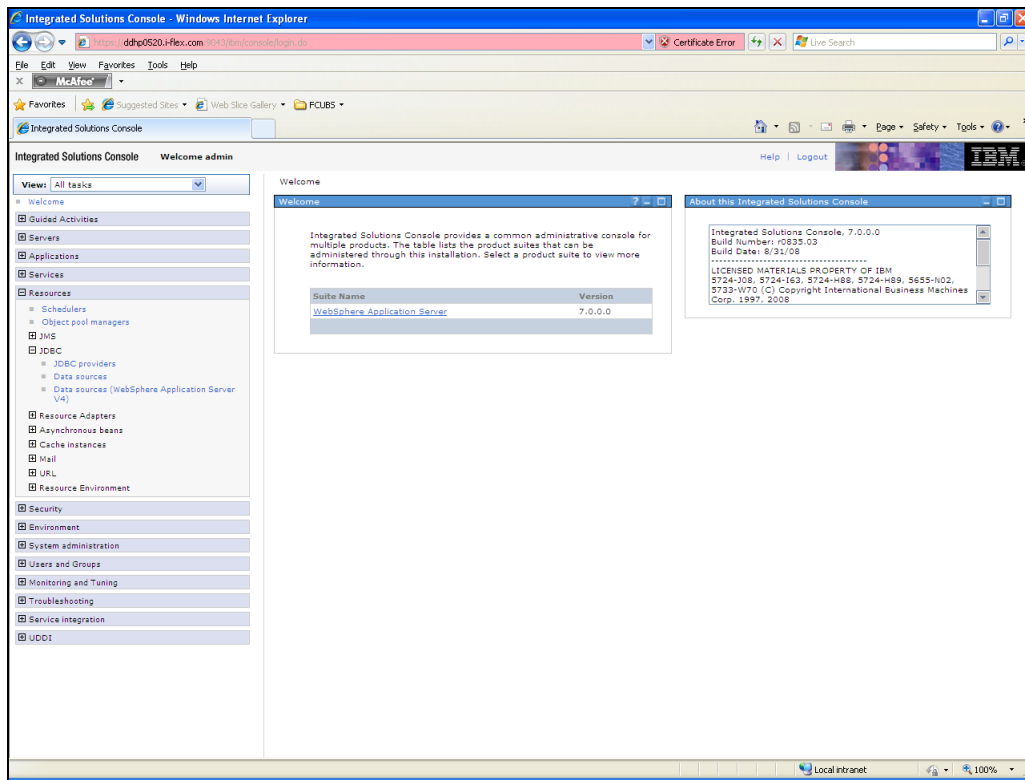
The following screen is displayed.



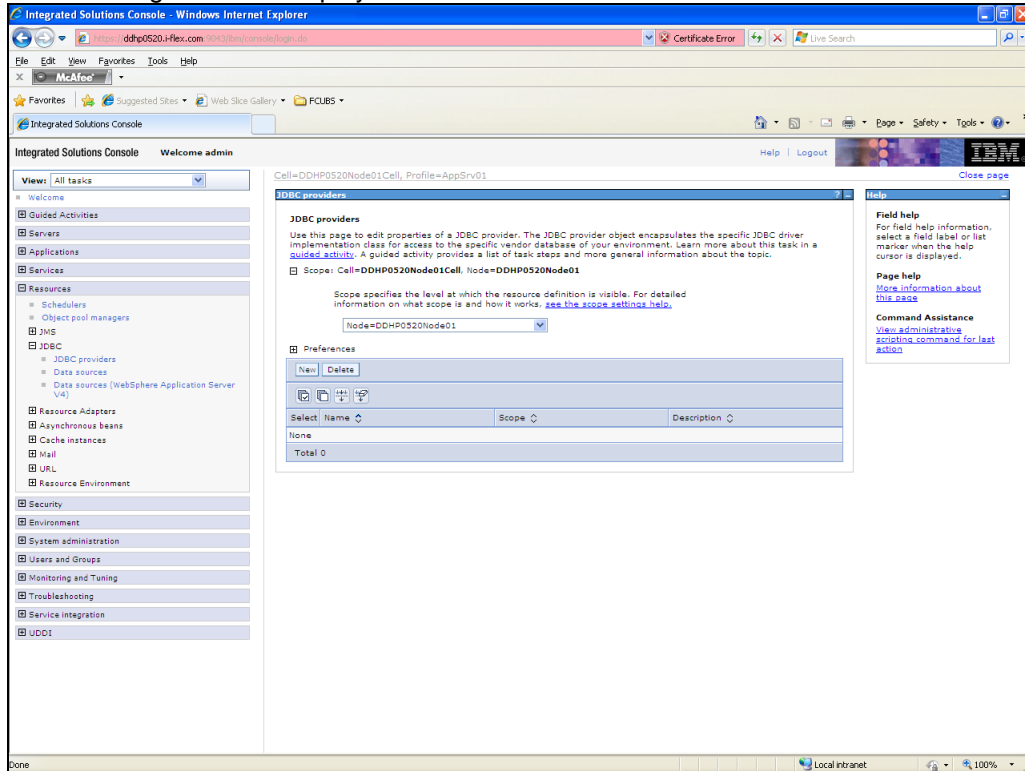
3.2.2 Creating Non XA Data Source

Follow the steps given below:

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

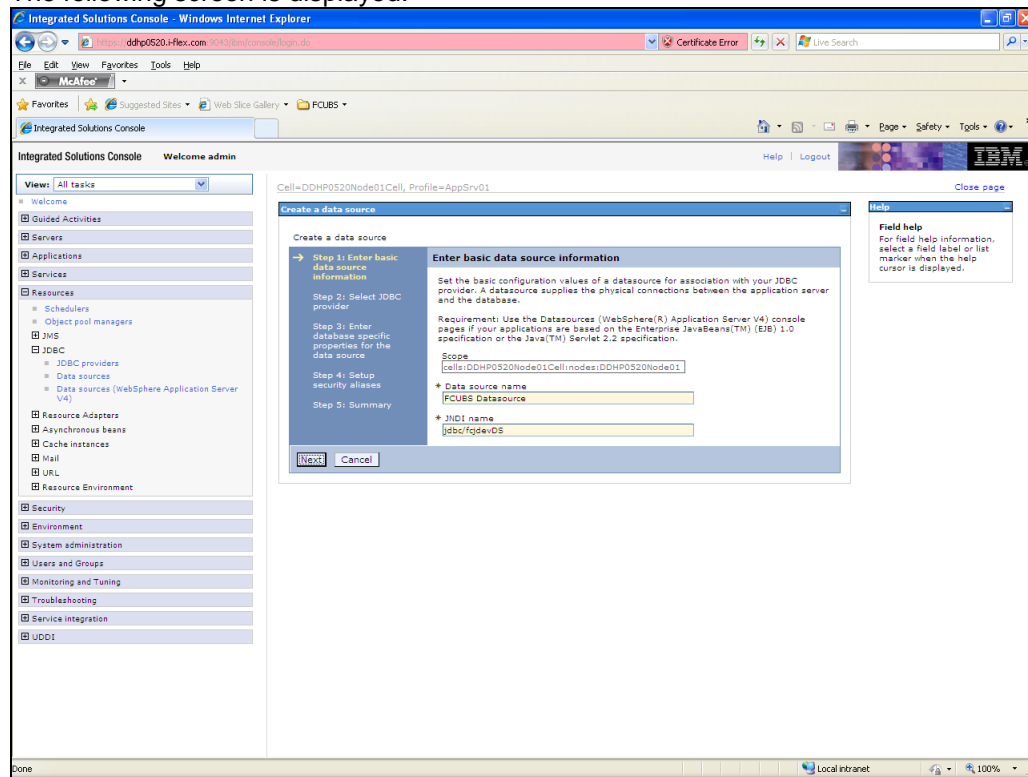


The following screen is displayed.



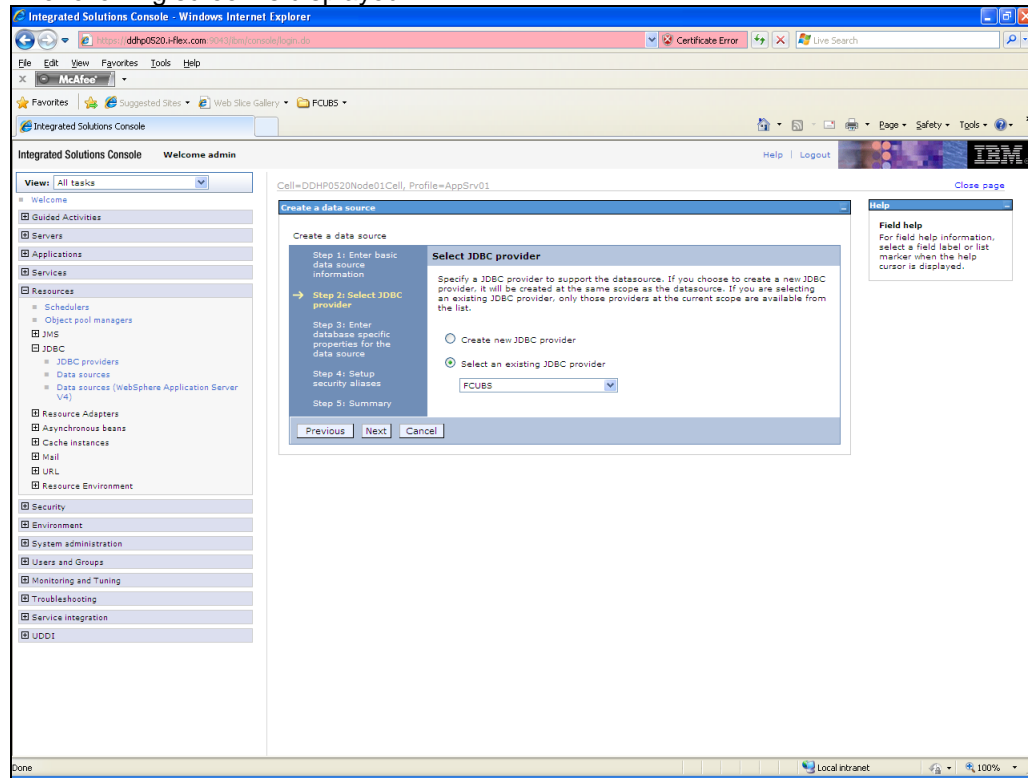
3. Select 'Node' from the drop-down list.

The following screen is displayed.



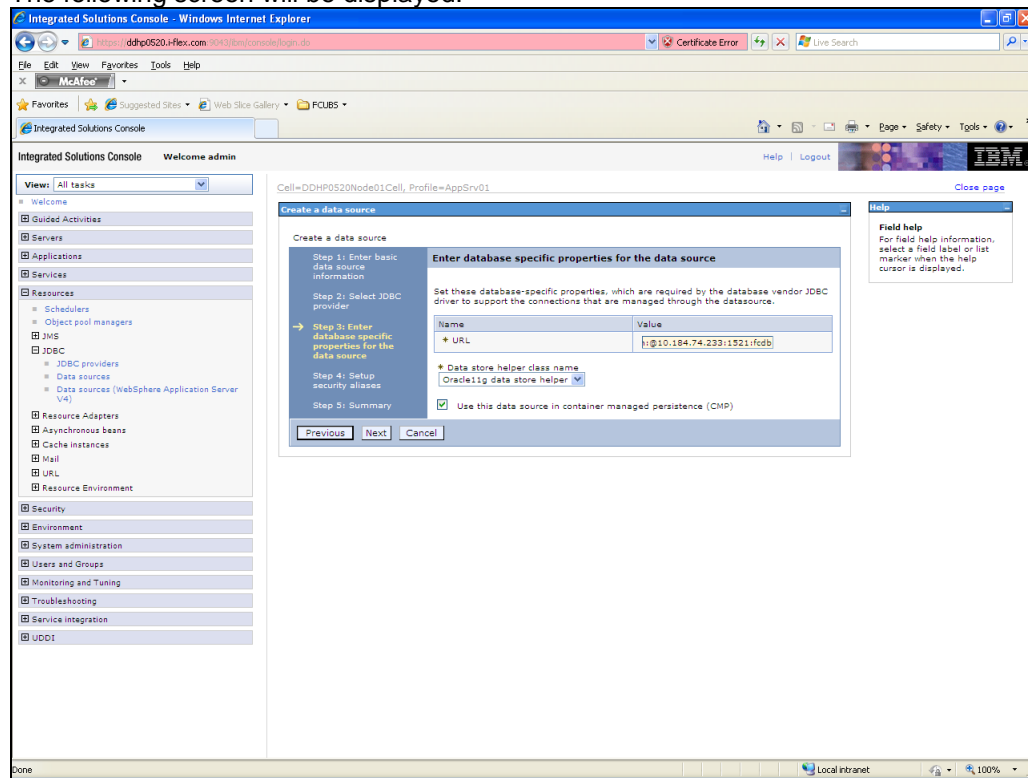
4. Specify the data source name as 'FCUBS Data source'.
5. Specify the JNDI name as 'jdbc/fcdevDS'.
6. Click 'Next'.

The following screen is displayed.



7. Select the option 'Select an existing JDBC provider'. From the drop-down list, choose 'FCUBS'.

The following screen will be displayed:



8. Specify the URL of the Database

Example

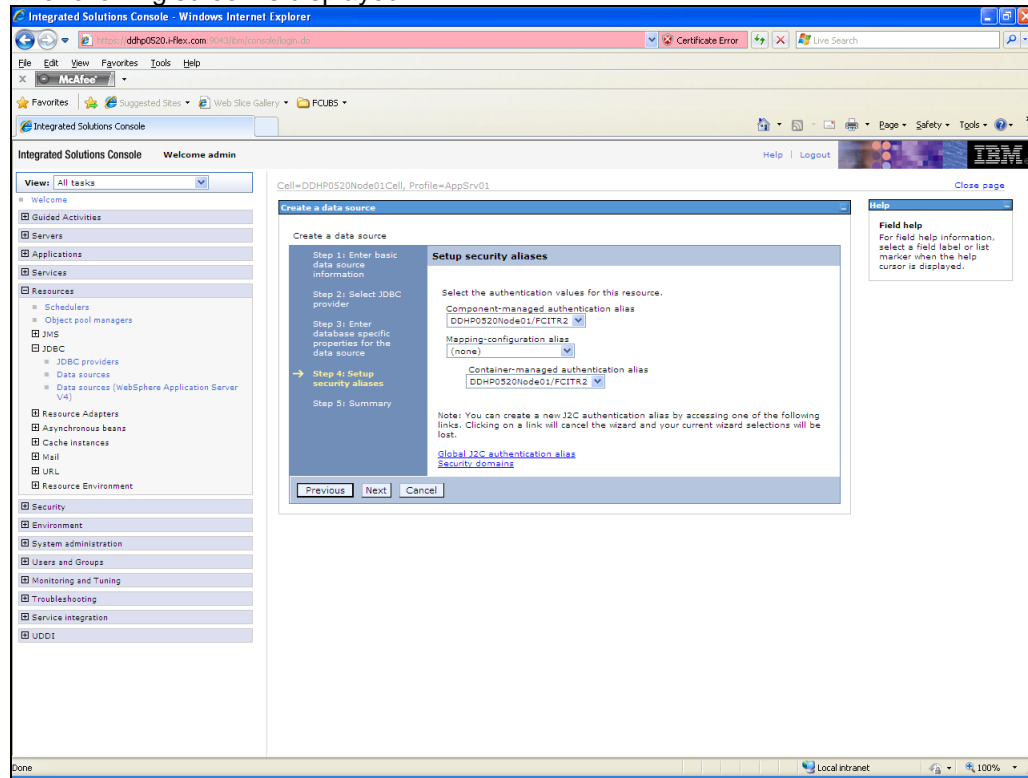
`jdbc:oci:@10.10.10.10:1010:KERDEV2`

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

9. Select the data store helper class as 'Oracle11g data store helper'.

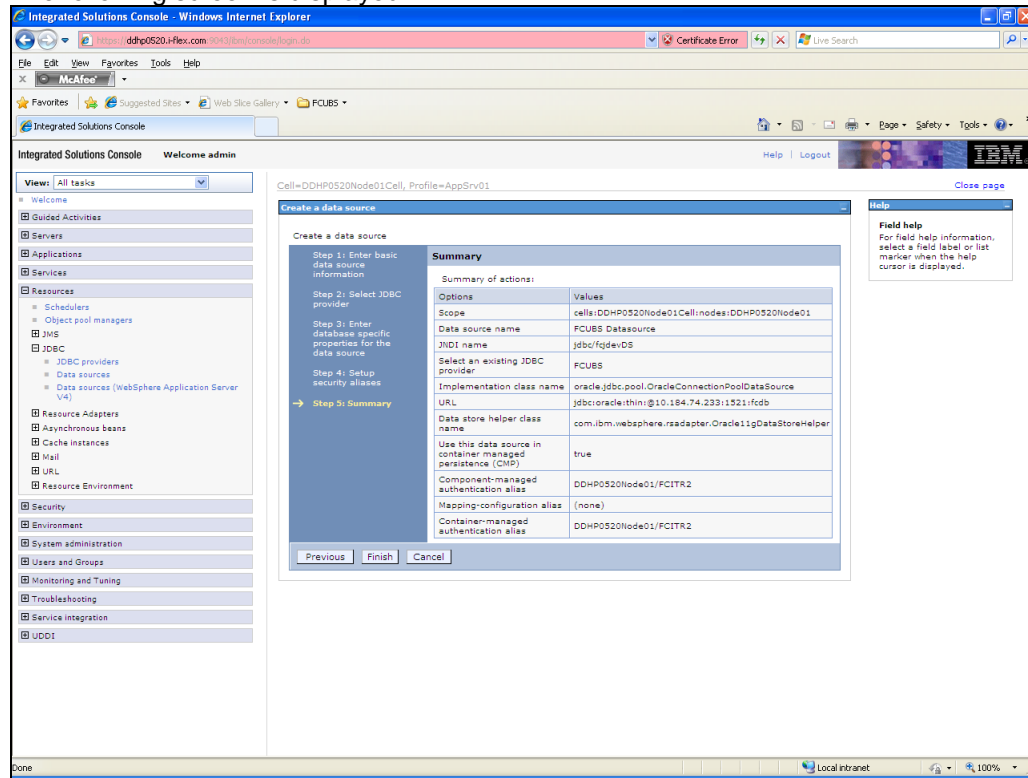
10. Click 'Next'.

The following screen is displayed.



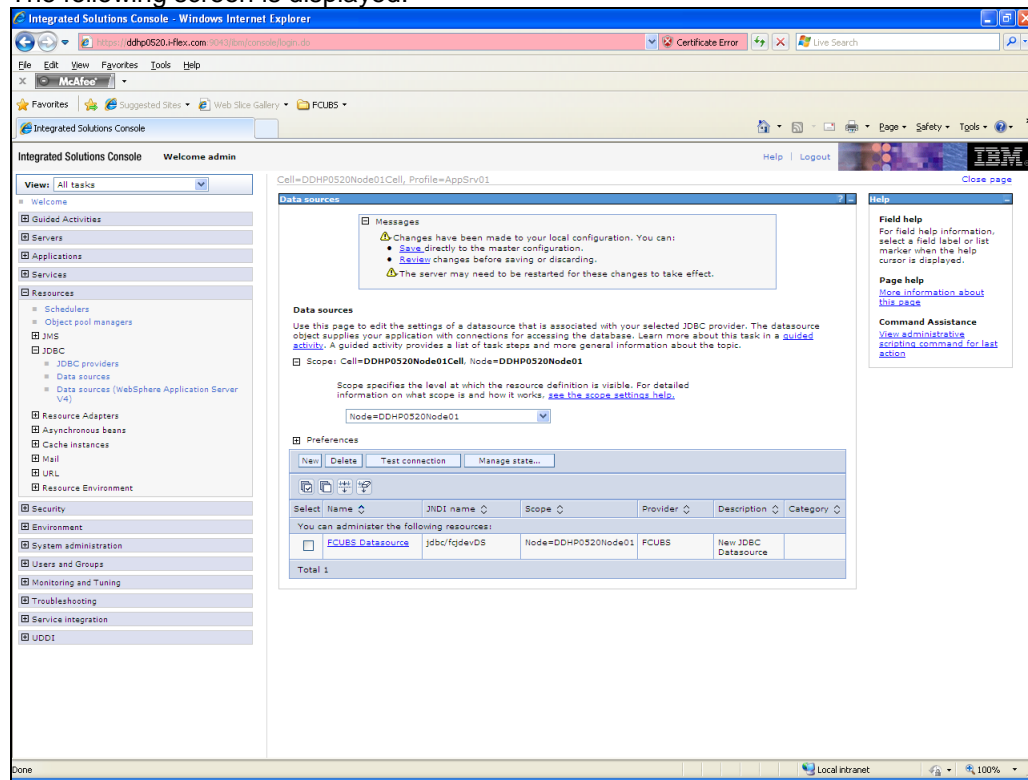
11. Click 'Next'.

The following screen is displayed.



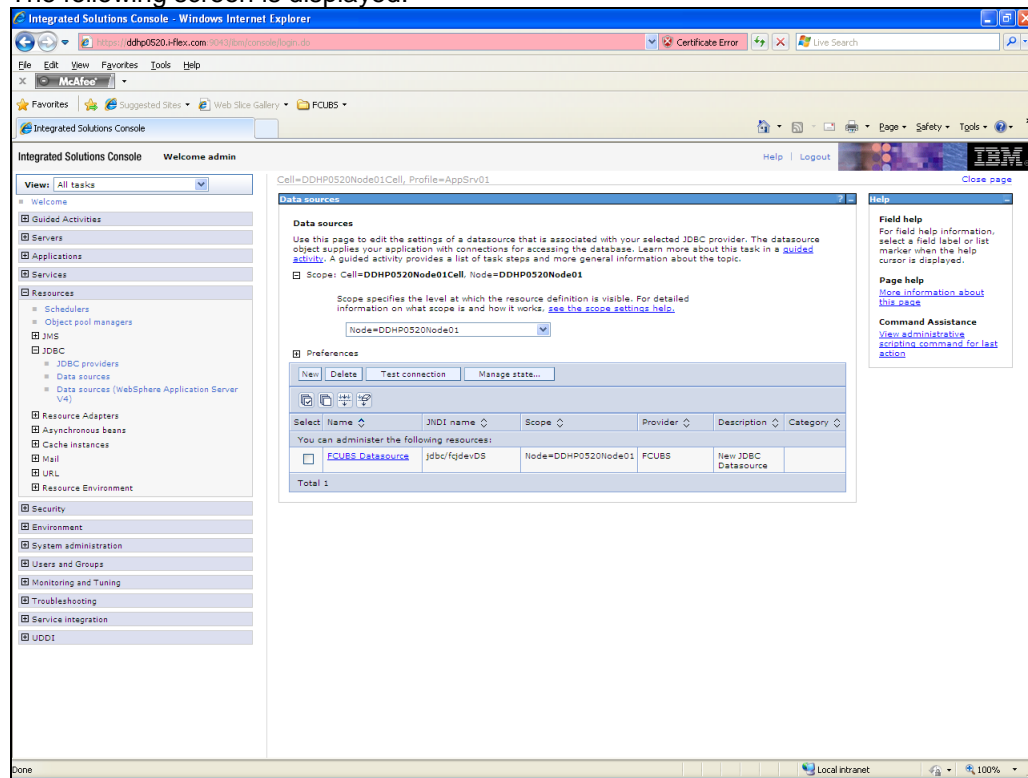
12. Click 'Finish'.

The following screen is displayed.



13. Click 'Save'.

The following screen is displayed.



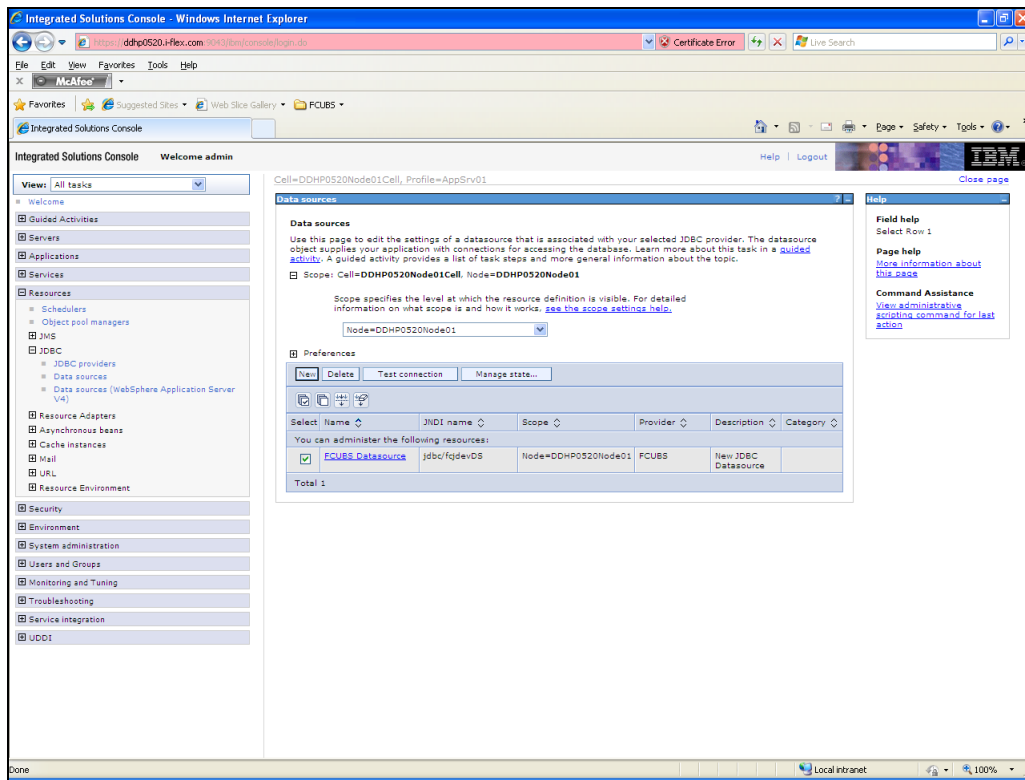
Note the following

- You need to create another data source for Oracle FCIS with the JNDI name '<Non-XA FCIS HOST JNDI name>_ASYNC'. For example, if the Oracle FCIS HOST Non XA data source JNDI name is 'jdbc/fcdevDS', then you need to create another data source for FCIS with the JNDI name 'jdbc/fcdevDS_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 FCIS BRANCH JNDI name>_ASYNC'.

3.2.3 Testing Data Source

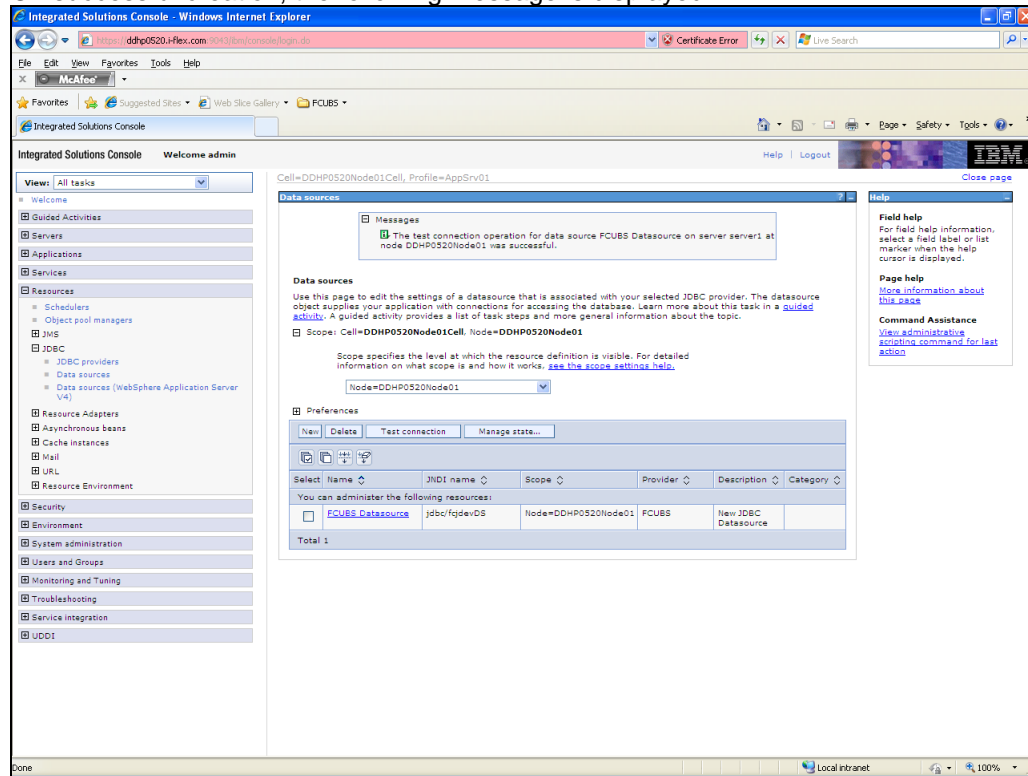
Follow the steps given below:

- Select the data source as shown in the figure.



2. Click 'Test connection' button.

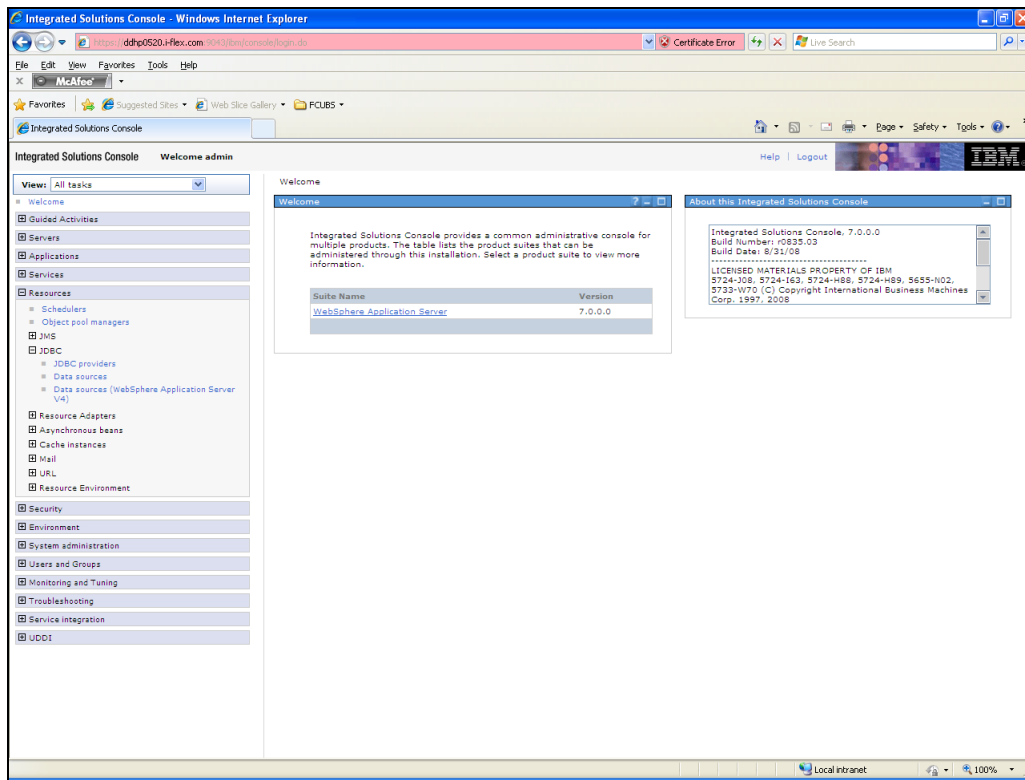
On successful creation, the following message is displayed.



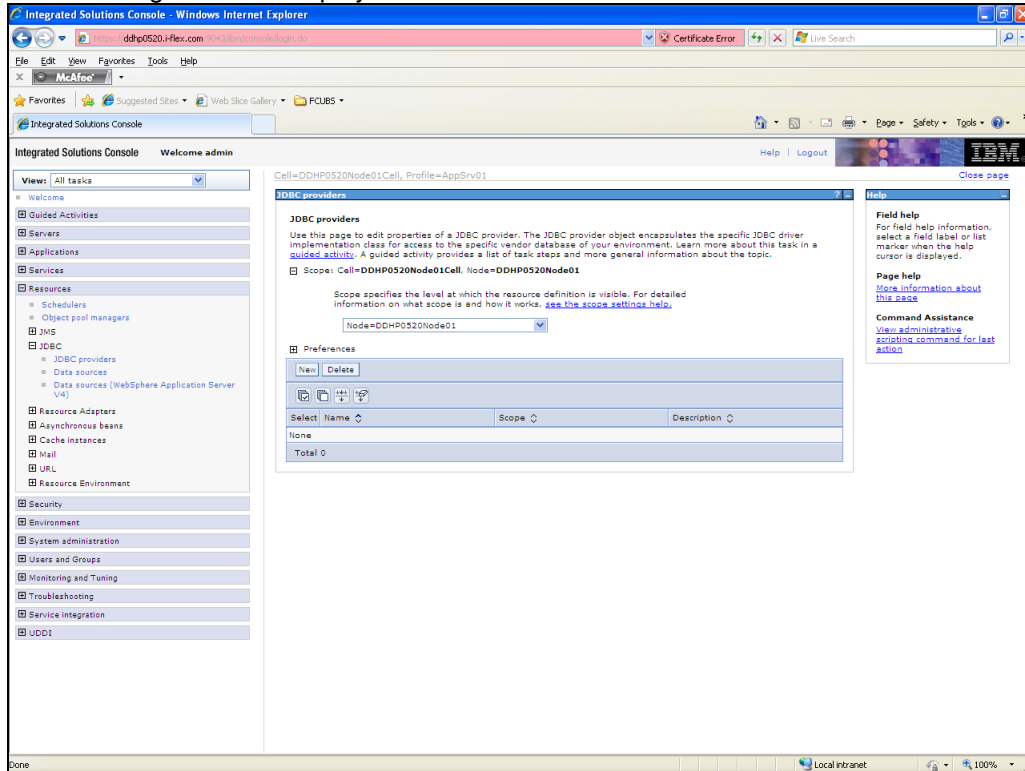
3.2.4 JDBC Provider for XA Data Source

Follow the steps given below:

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

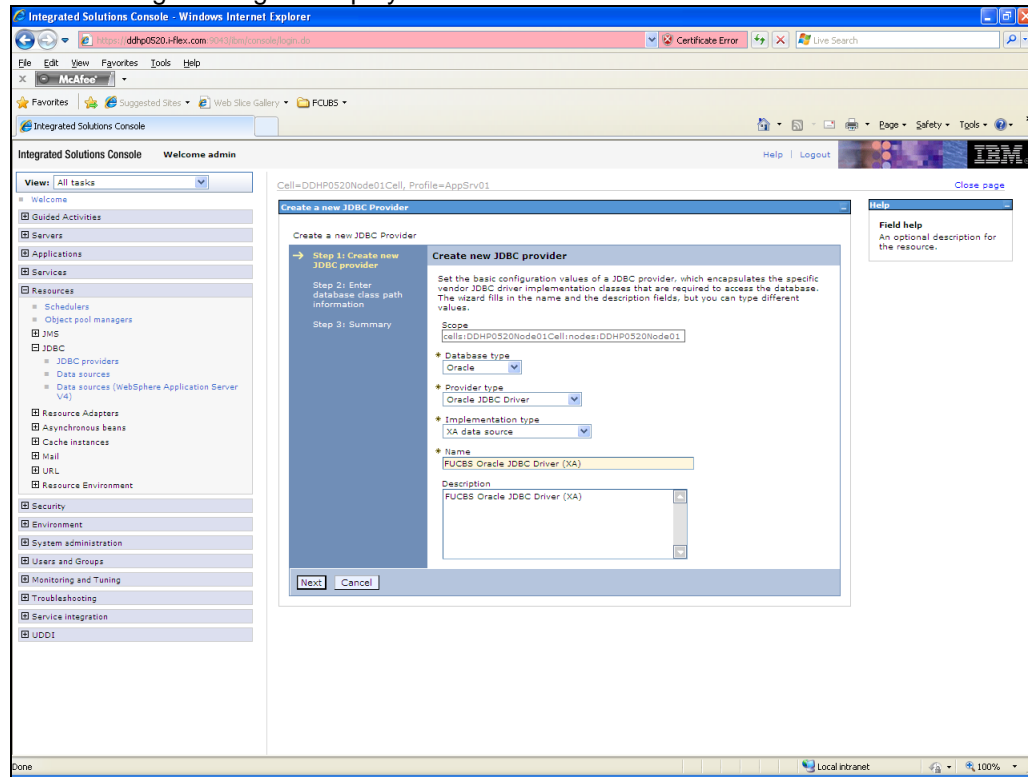


The following screen is displayed.



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

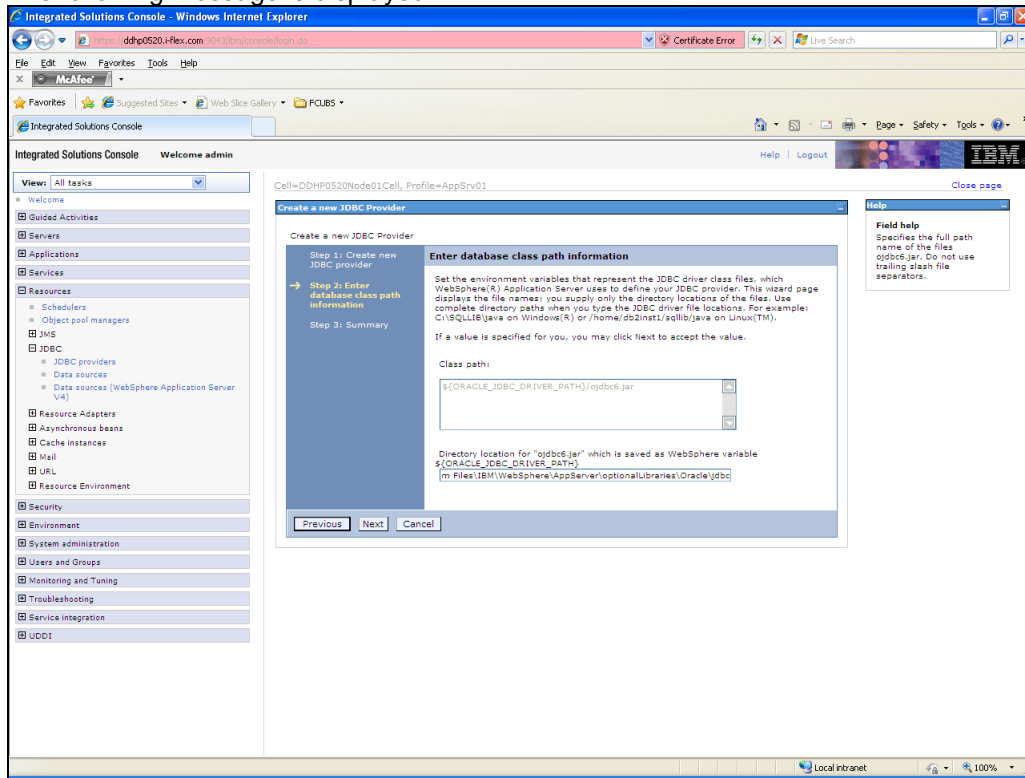
The following message is displayed.



4. Specify the following details:

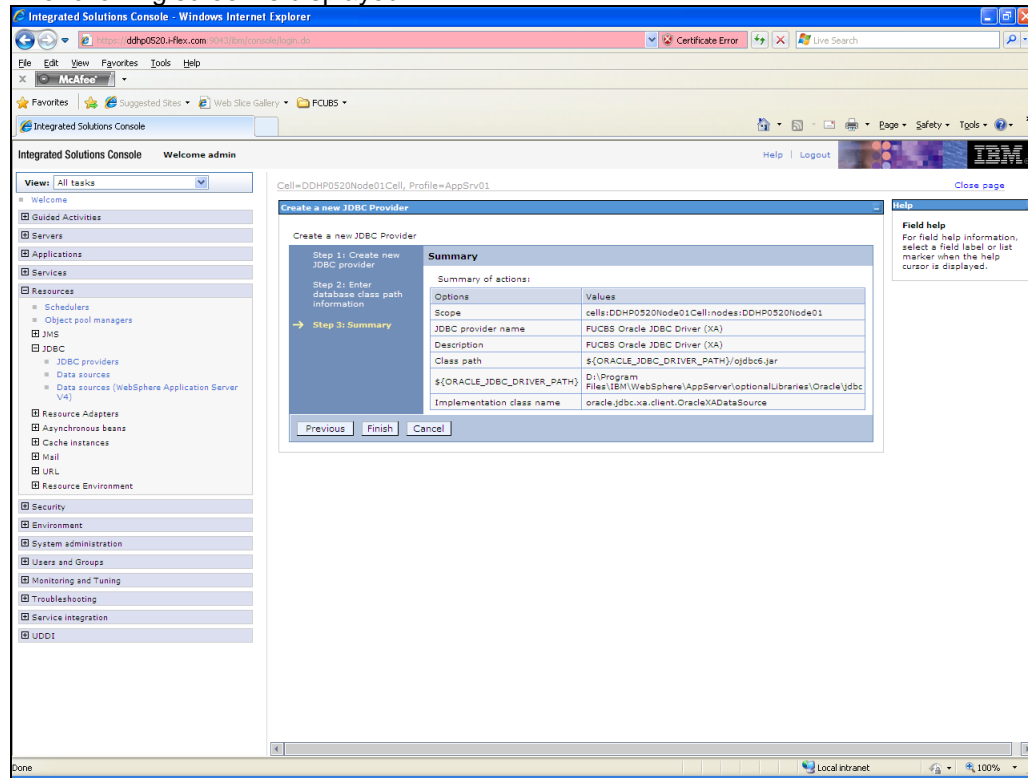
Database Type	Oracle
Provider Type	Oracle JDBC Driver
Implementation Type	XA data source
Name	FCUBS Oracle JDBC Driver (XA)
Description	FCUBS Oracle JDBC Driver (XA)

The following message is displayed.



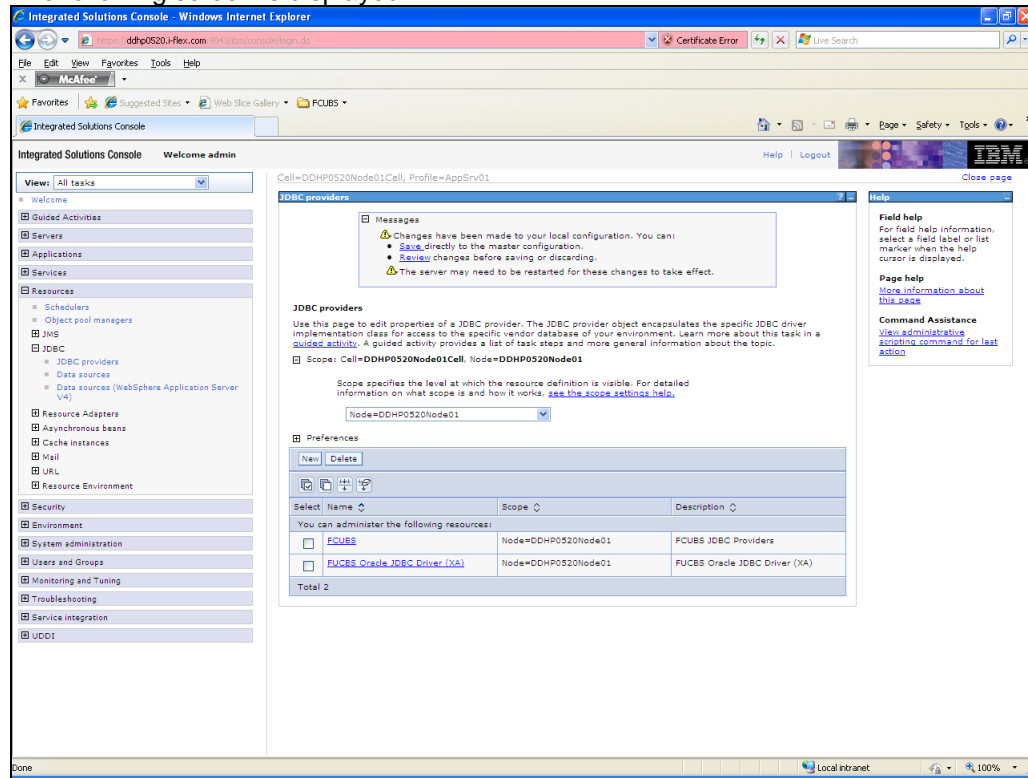
5. Specify the location of ojdbc6.jar.

The following screen is displayed.



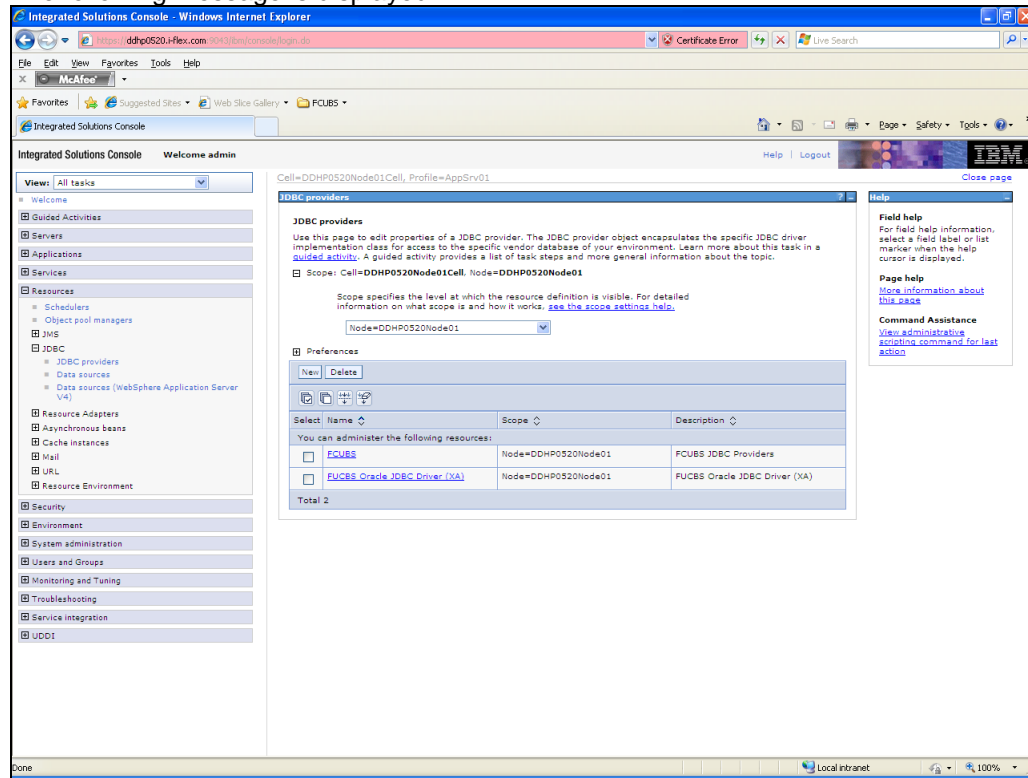
6. Click 'Finish'.

The following screen is displayed.



7. Click 'Save'.

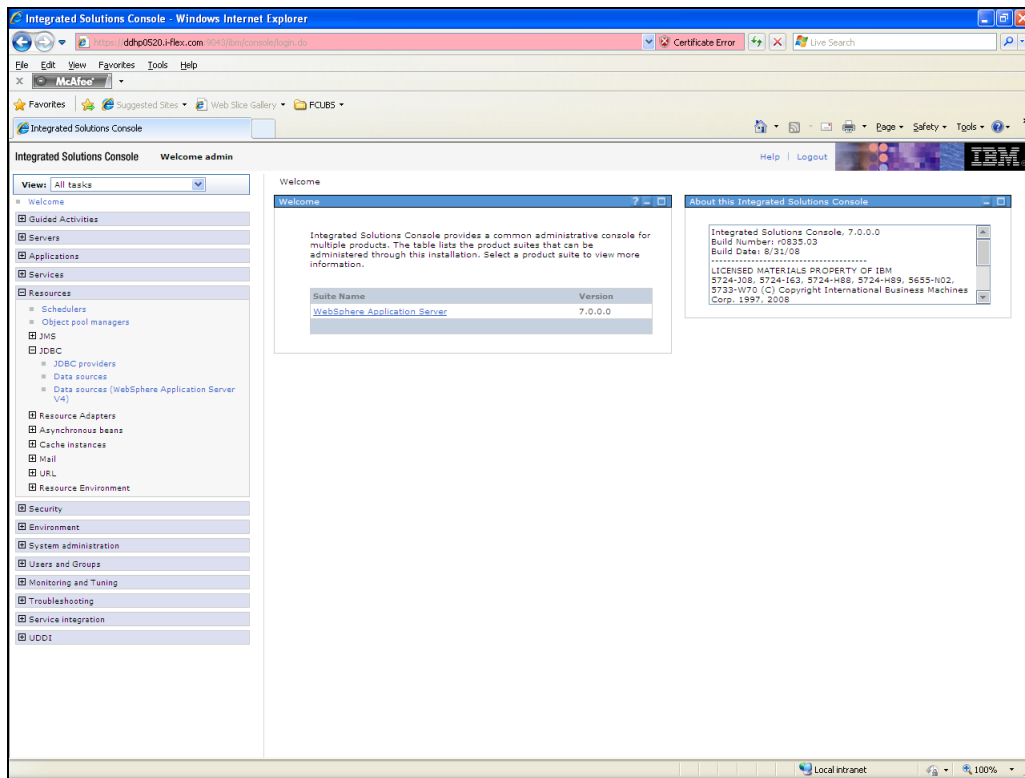
The following message is displayed.



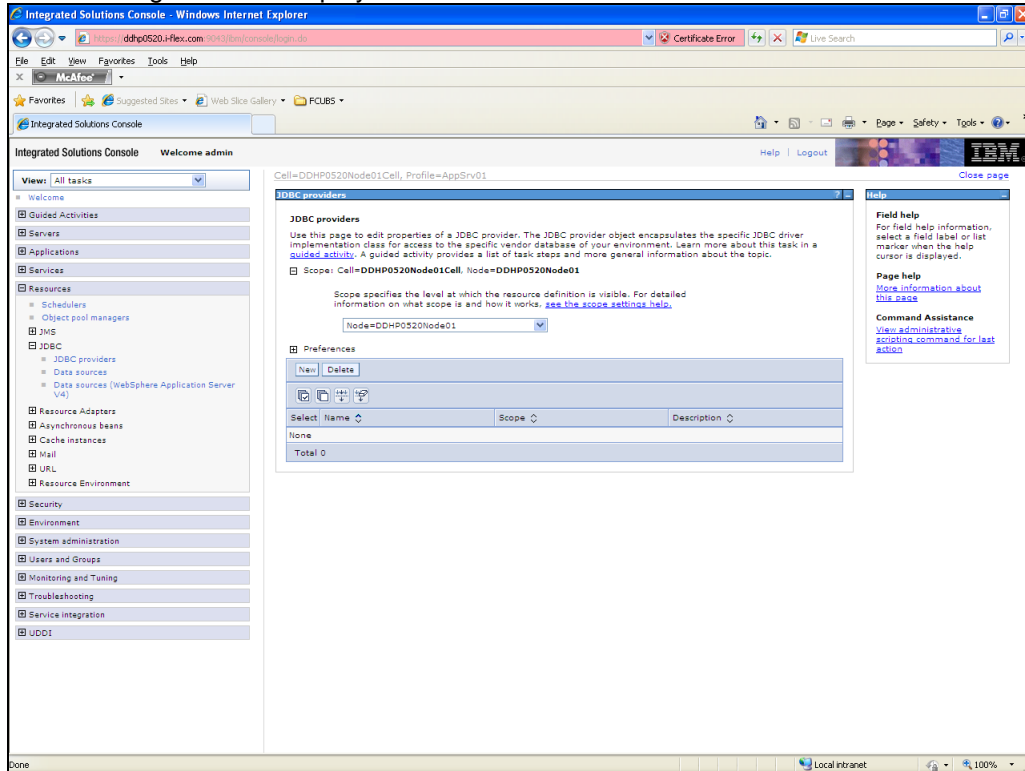
3.2.5 Creating XA Data Source

Follow the steps given below:

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

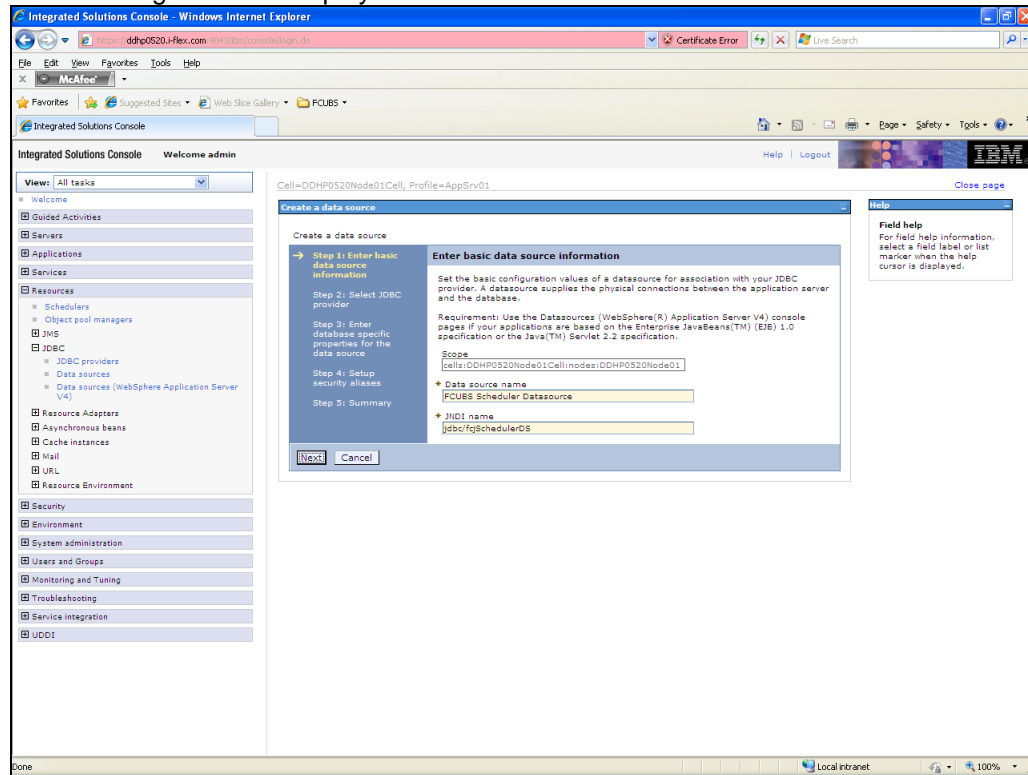


The following screen is displayed.



3. Select 'Node' from the dropdown list.

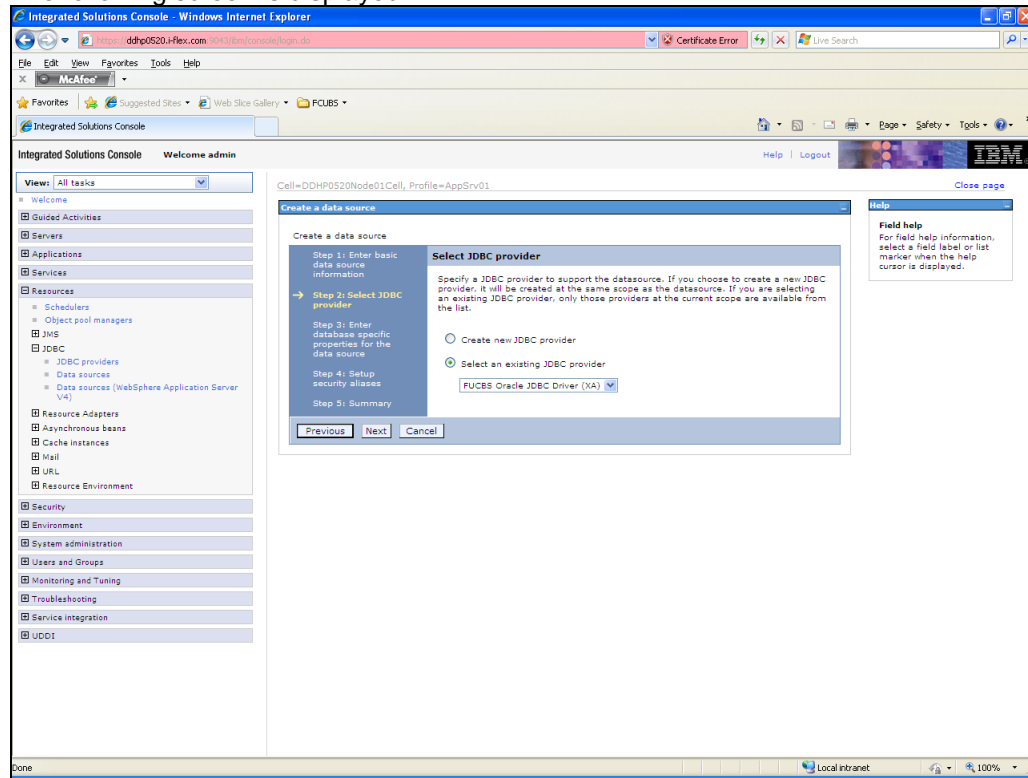
The following screen is displayed.



4. Specify the following details:

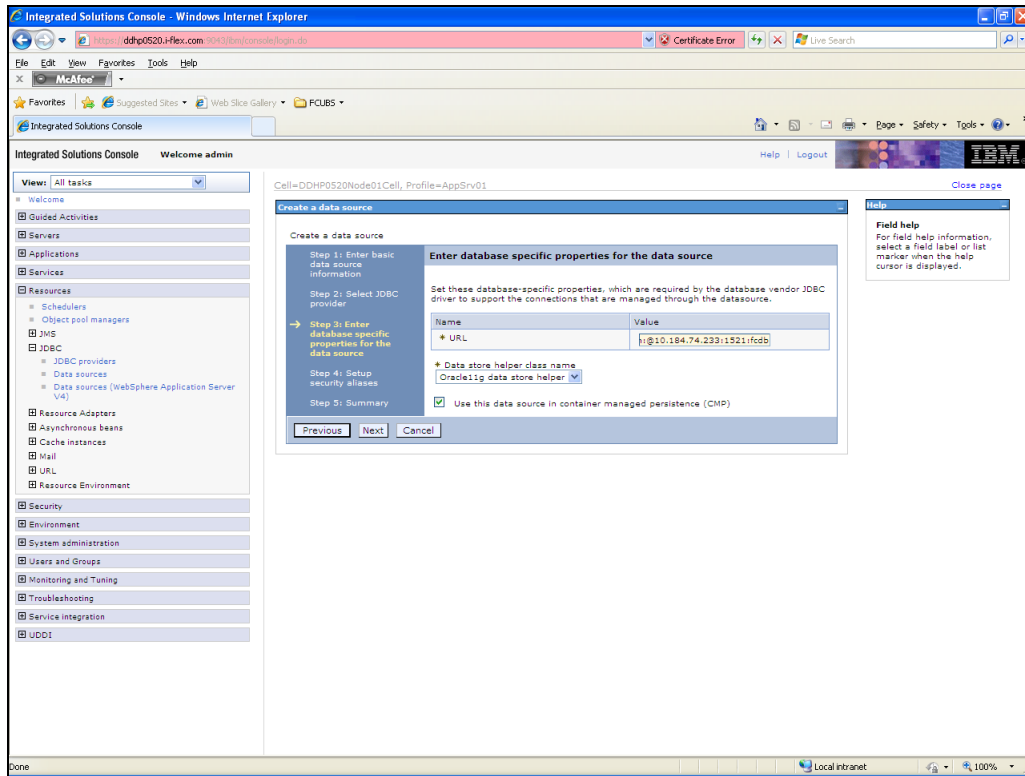
Data source name	FCUBS Scheduler Data source
JNDI Name	jdbc/fcjSchedulerDS

The following screen is displayed.



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

The following screen is displayed.



6. Specify the URL.

Example

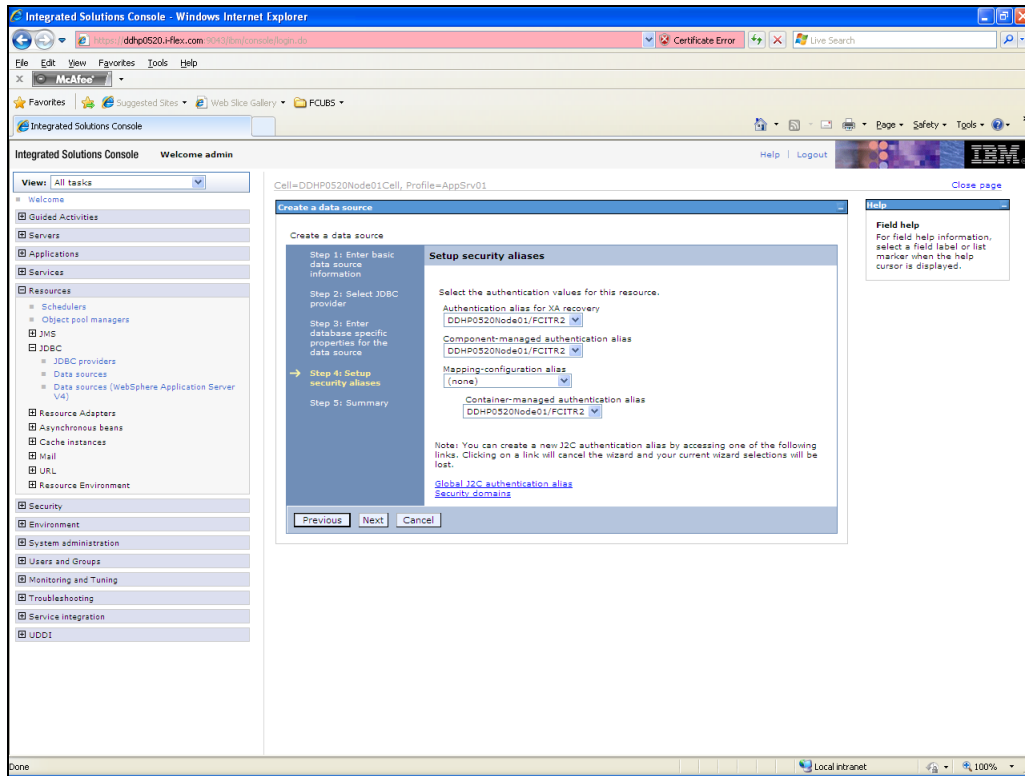
`jdbc:oracle:oci:@10.10.10.10:1010:KERDEV2`

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

7. Select the 'Data store helper class' as 'Oracle11g data store helper'.

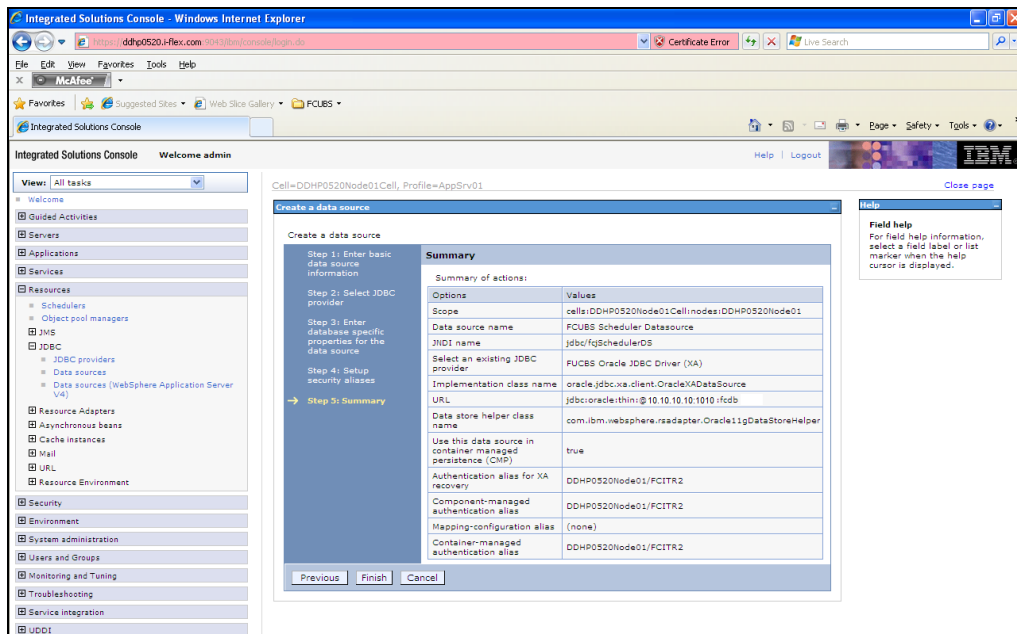
8. Click 'Next'.

The following screen is displayed.

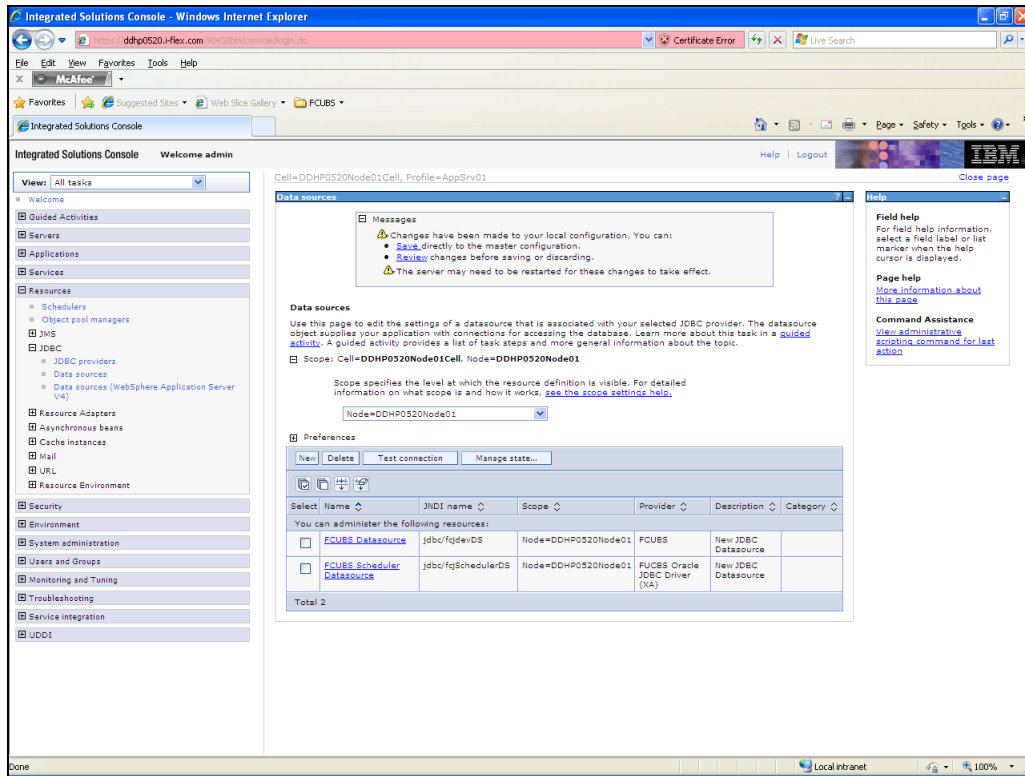


9. Click 'Next'.

The following screen is displayed.

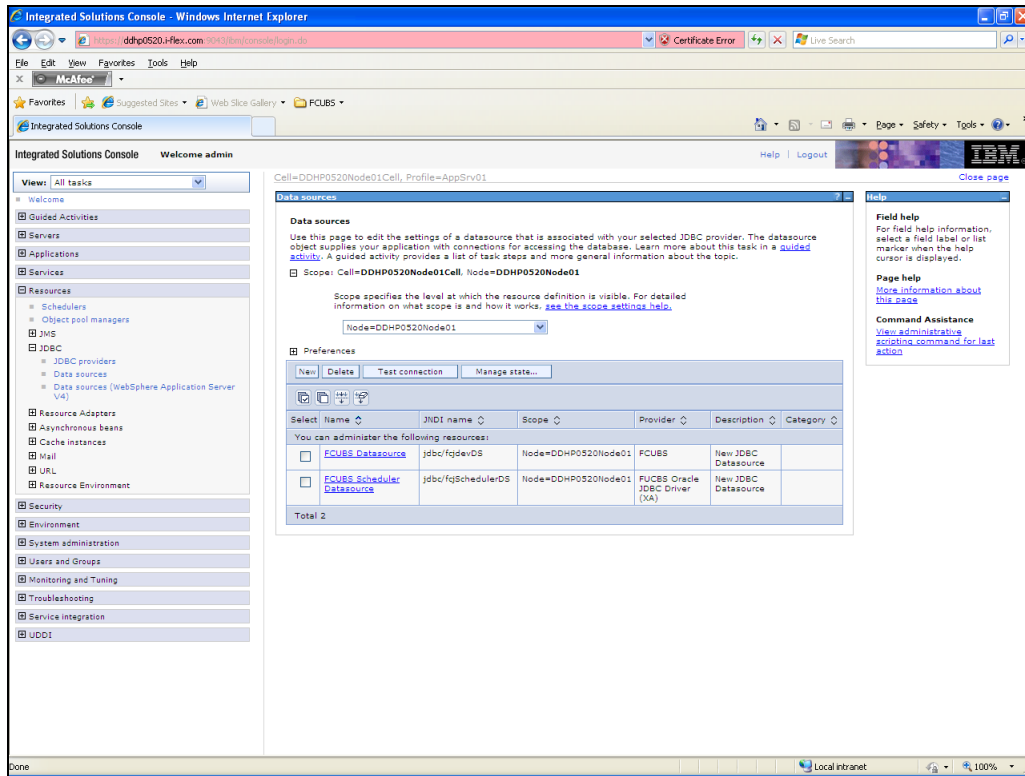


The following screen is displayed.



10. Click 'Save'.

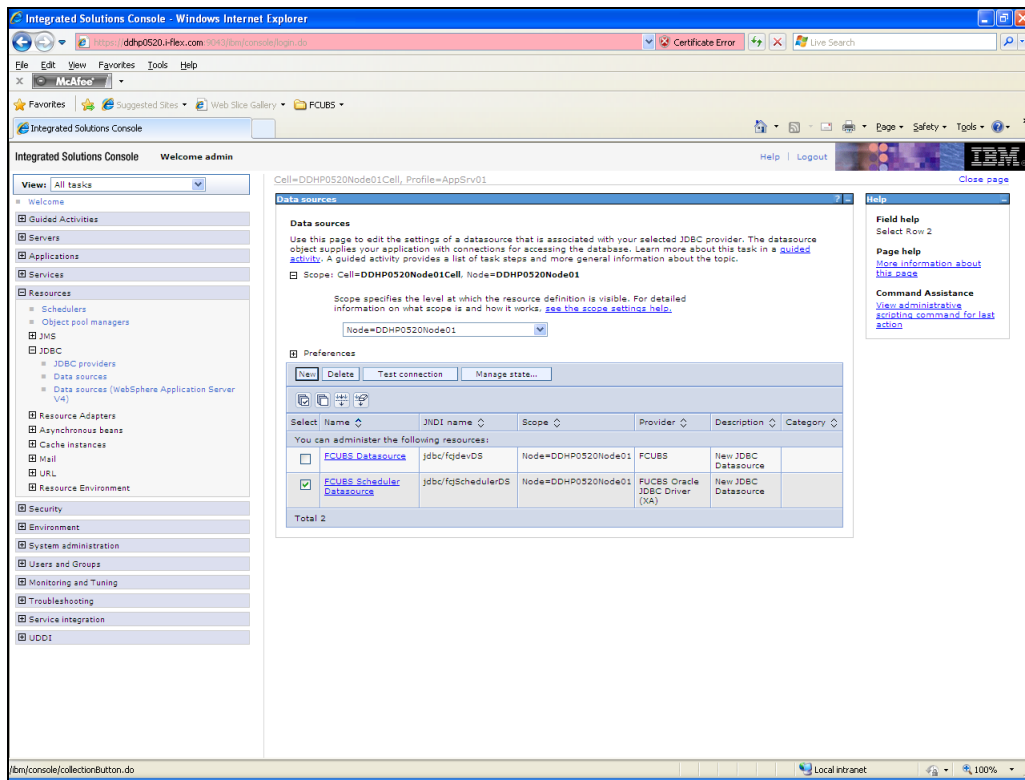
The following screen is displayed.



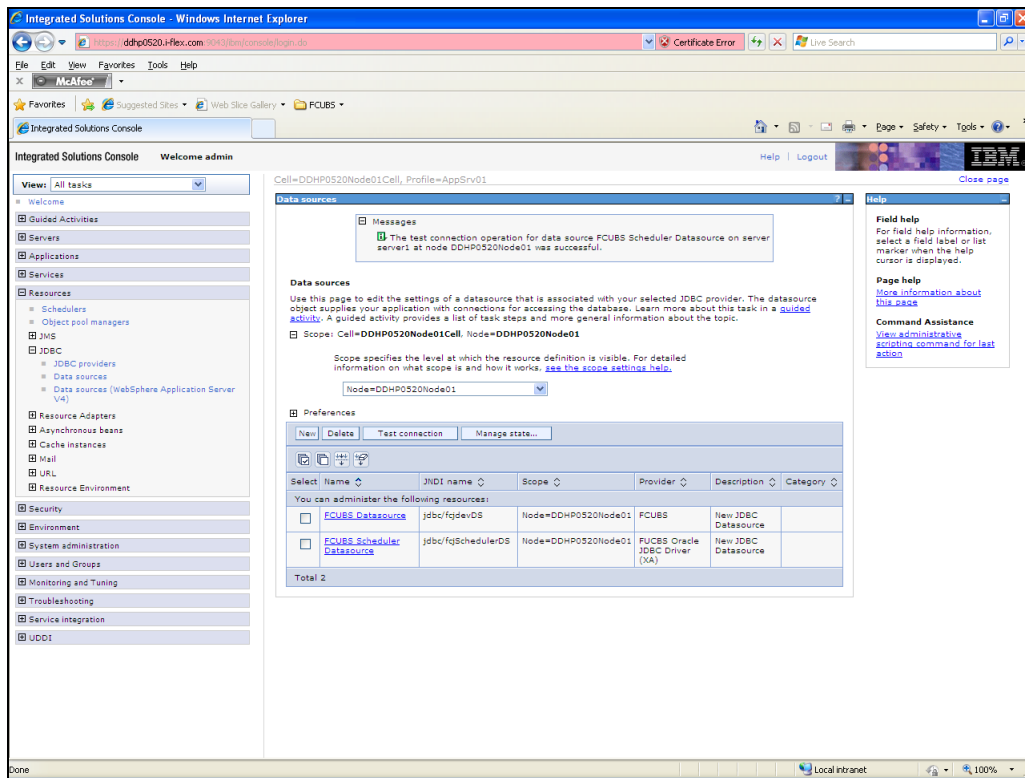
3.2.6 Testing Data Source

Follow the steps given below:

1. Select data source as given below.



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



3.3 Creating JMS Resources

3.3.1 Creating Queue Connection Factory

Follow the steps given below:

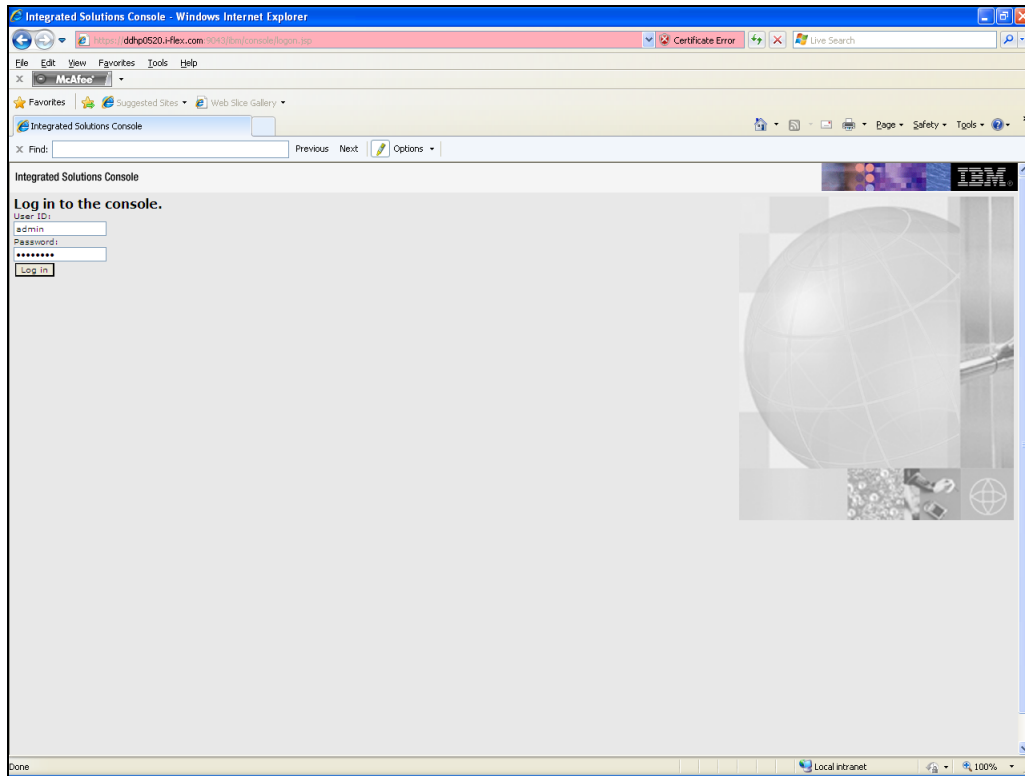
1. Start the administrative console of Websphere application server. Open an internet browser and enter the Websphere admin console URL.

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

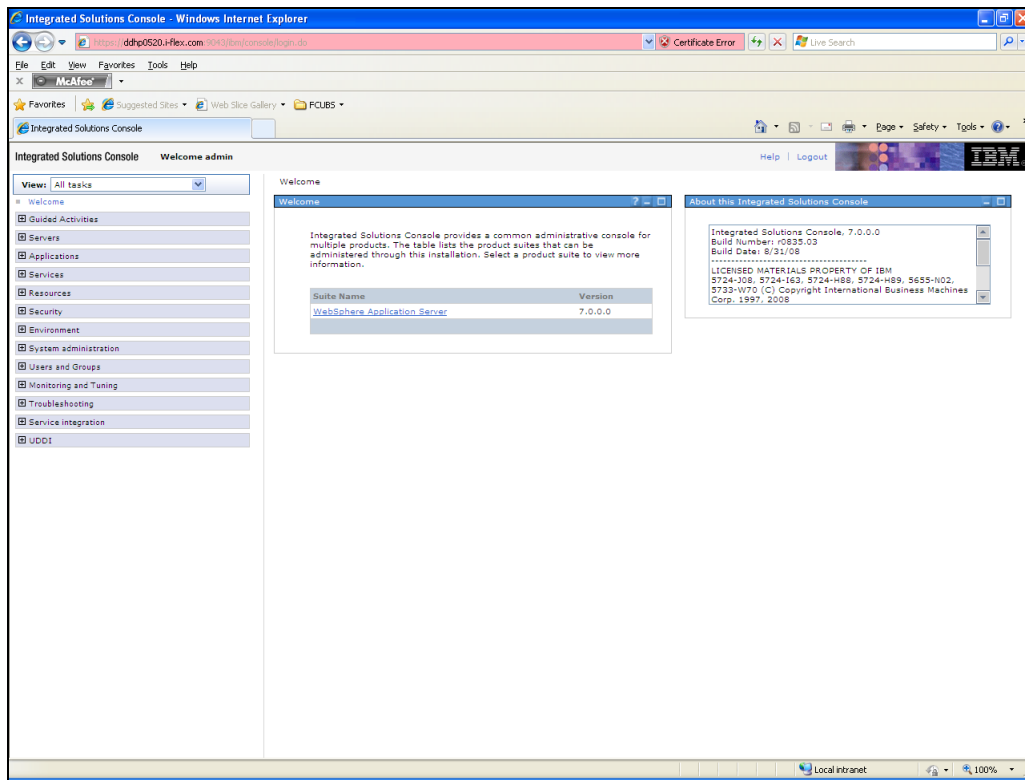
Eg: `https://10.10.10.10:1010/console`

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

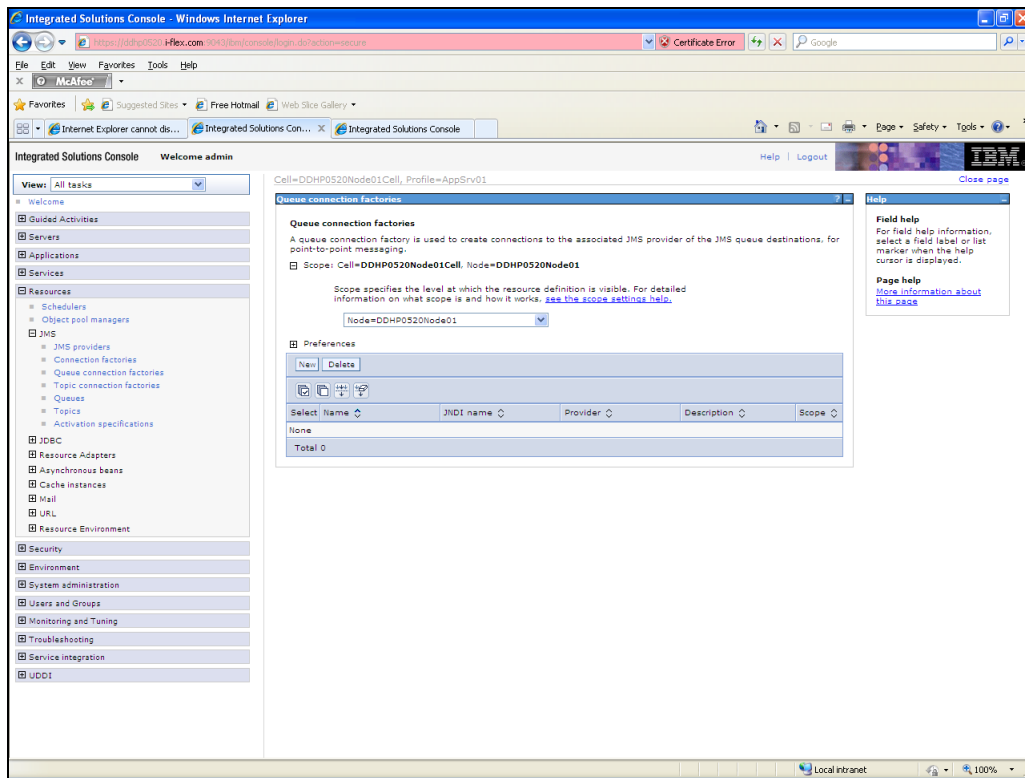
The following screen is displayed:



2. Specify the Websphere administrator username and password.
3. Click 'Log In'.
4. Navigate to Websphere home page.

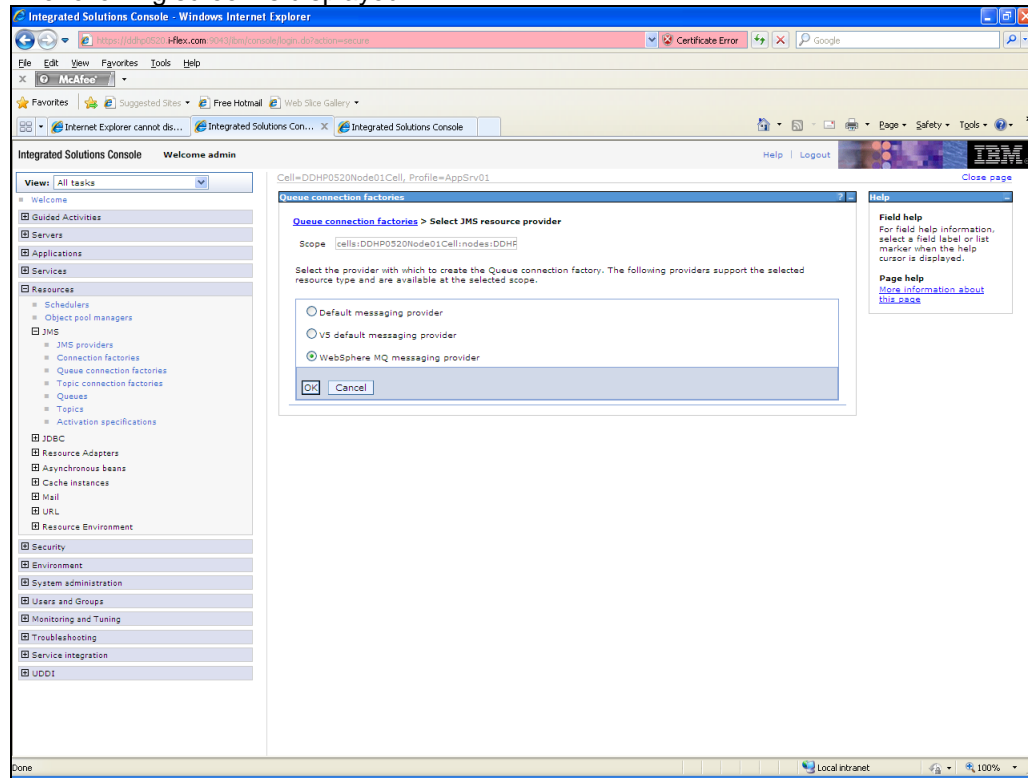


- Expand 'Resources' and select 'JMS'. Click 'Queue Connection Factories'. The following screen is displayed.



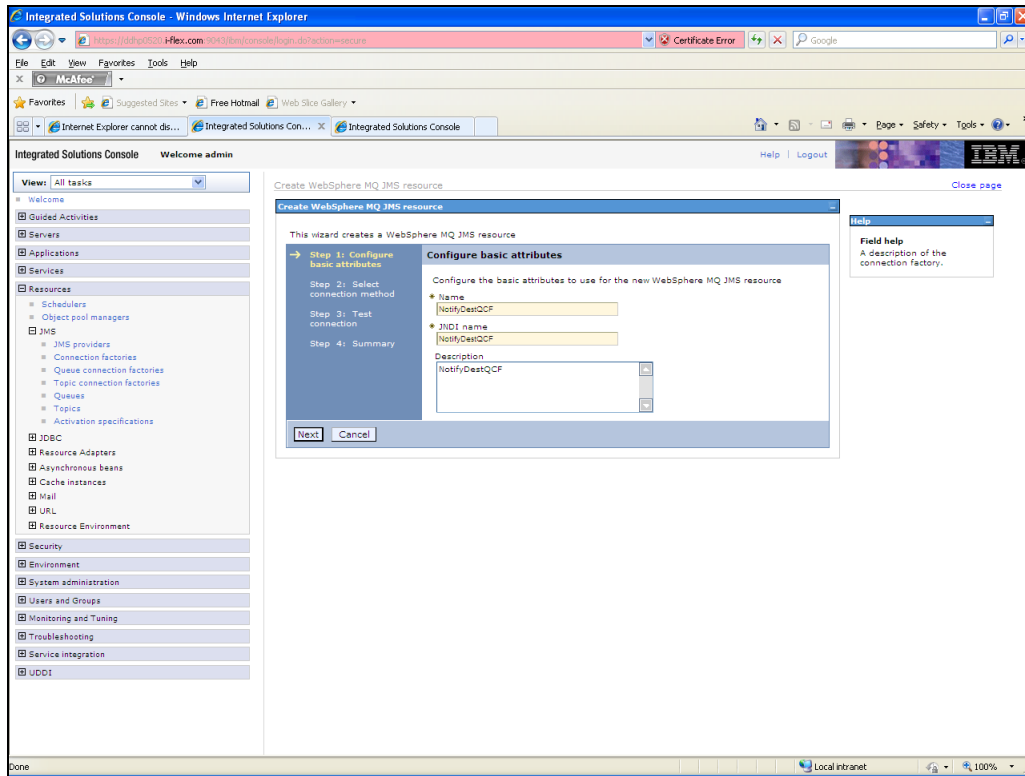
6. Select 'Node' from the drop down list.

The following screen is displayed.



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

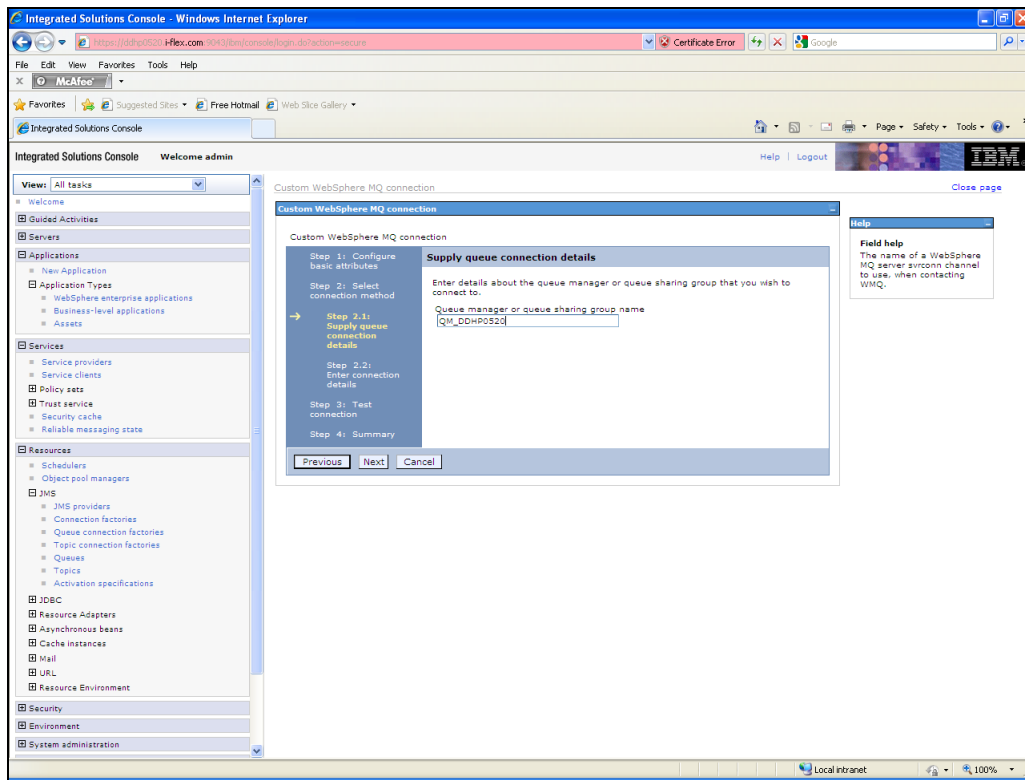
The following screen is displayed.



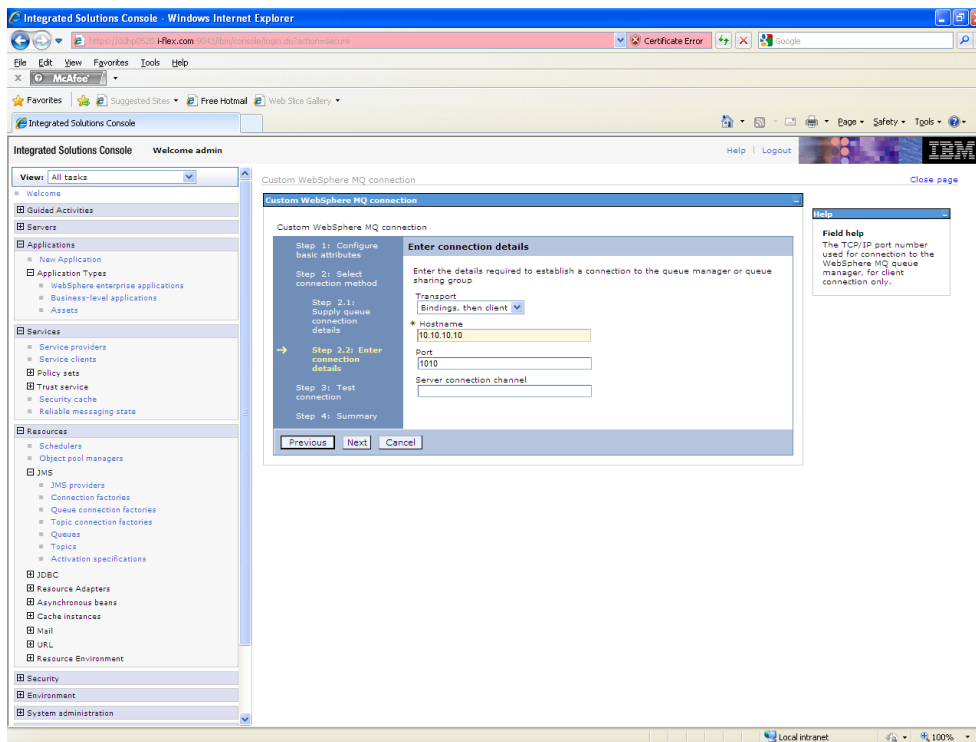
8. Specify the following details:

Name	NotifyDestQCF
JNDI Name	NotifyDestQCF
Description	NotifyDestQCF

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



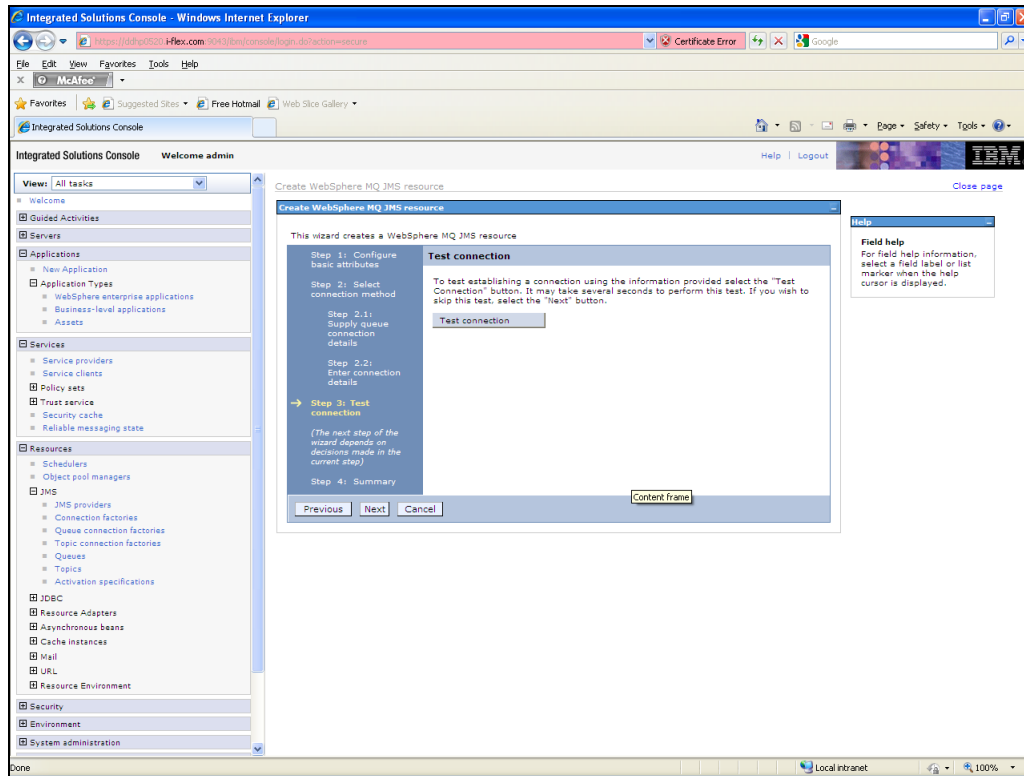
12. Specify the queue manager name 'QM_DDHP0520'. Click 'Next'.



13. Specify the following details:

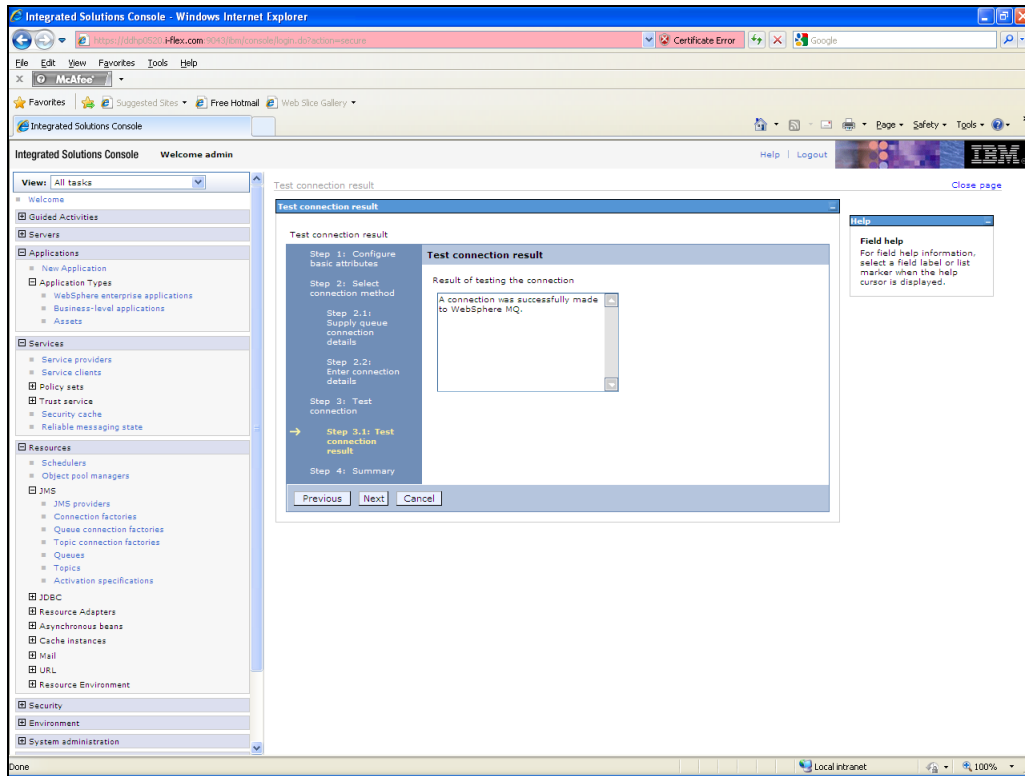
Host Name	10.10.10.10 (Host where Websphere MQ is installed)
Port	1010 (Web sphere MQ port)
Server Connection Channel	SYSTEM.DEF.SVRCONN

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

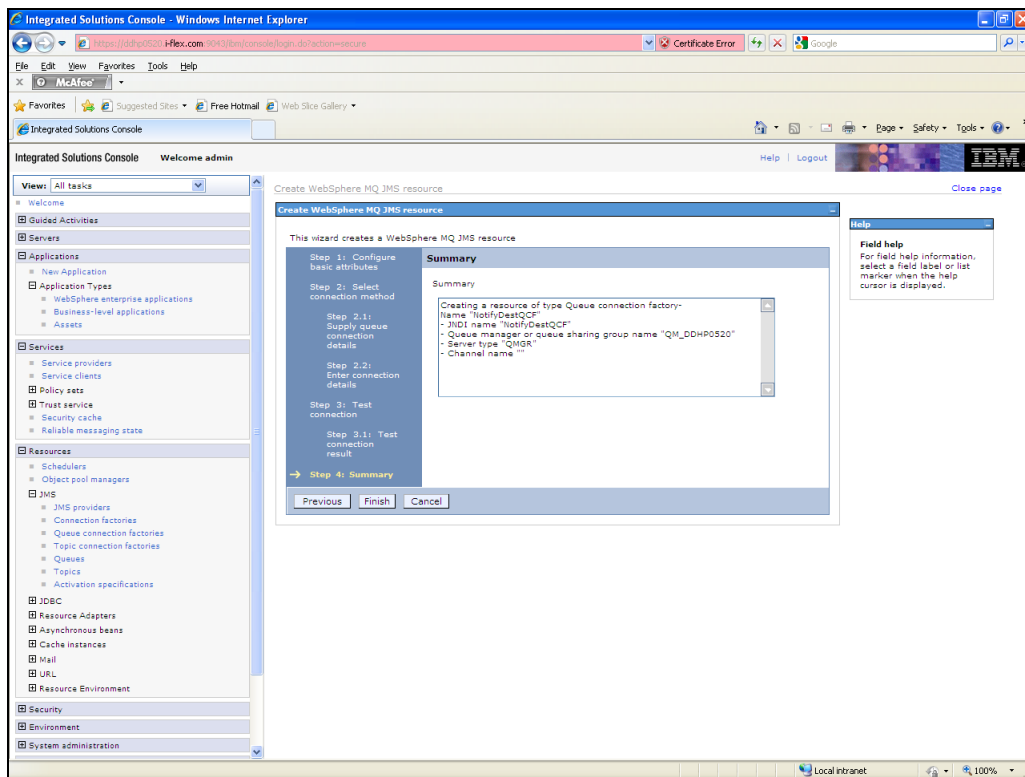


15. Click 'Test Connection' button.

The following screen is displayed:

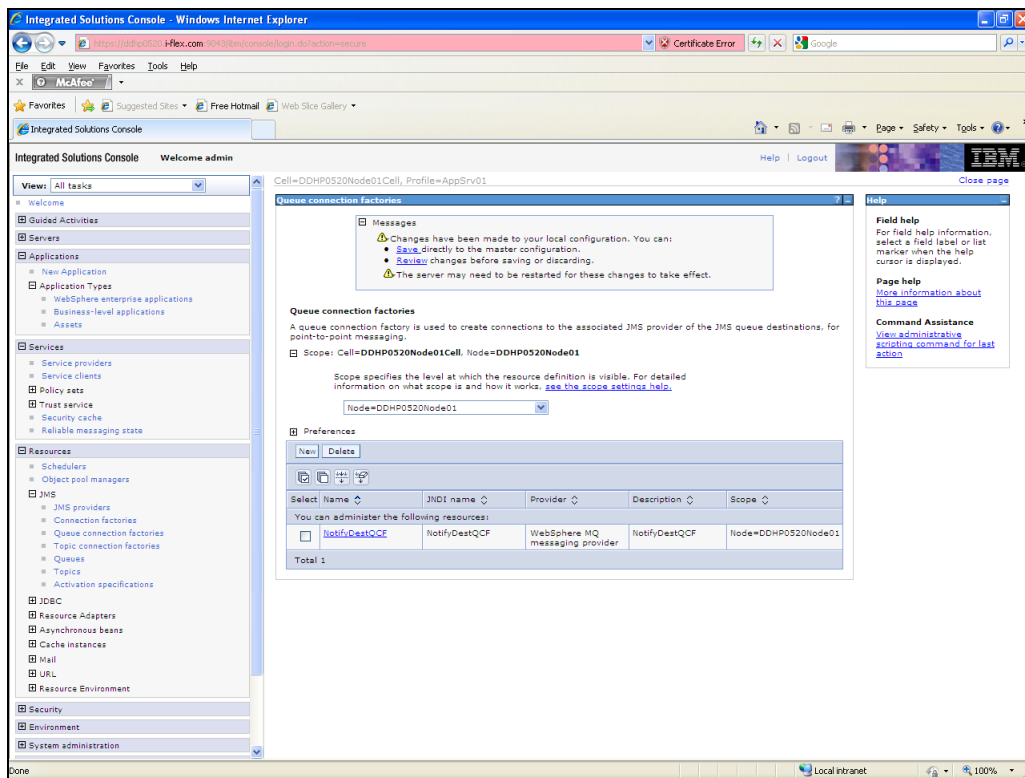


16. Click 'Next'. The following screen is displayed with a message in the summary field.



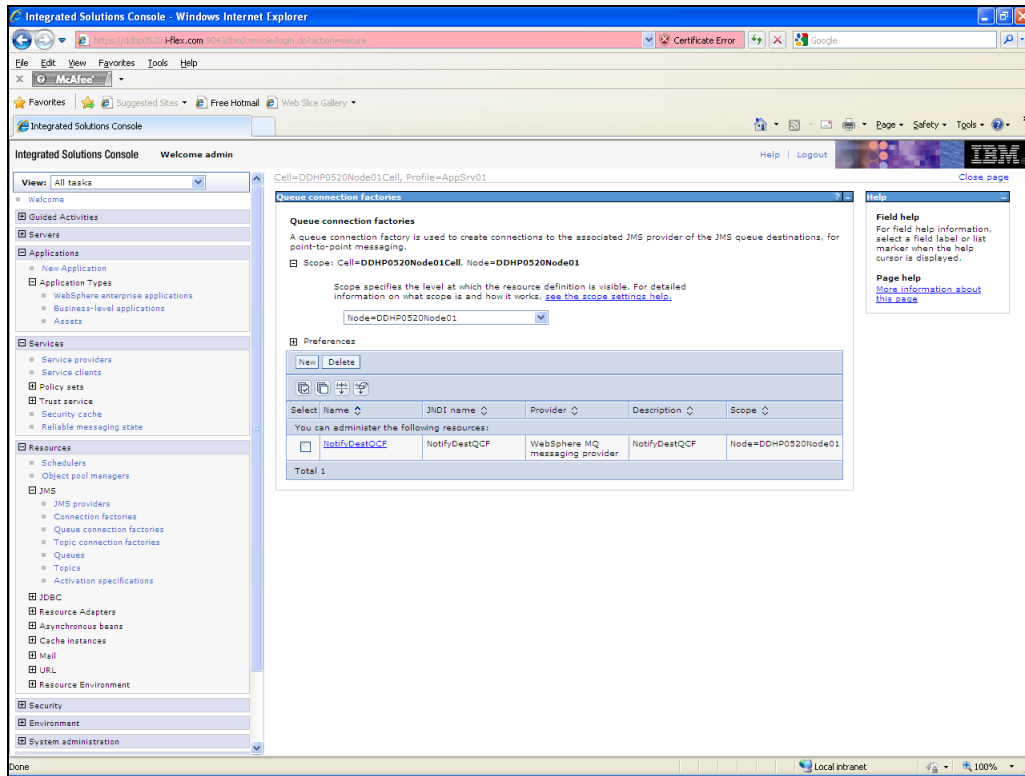
17. Click 'Finish'.

The following screen is displayed.



18. Click 'Save'.

The following screen is displayed.



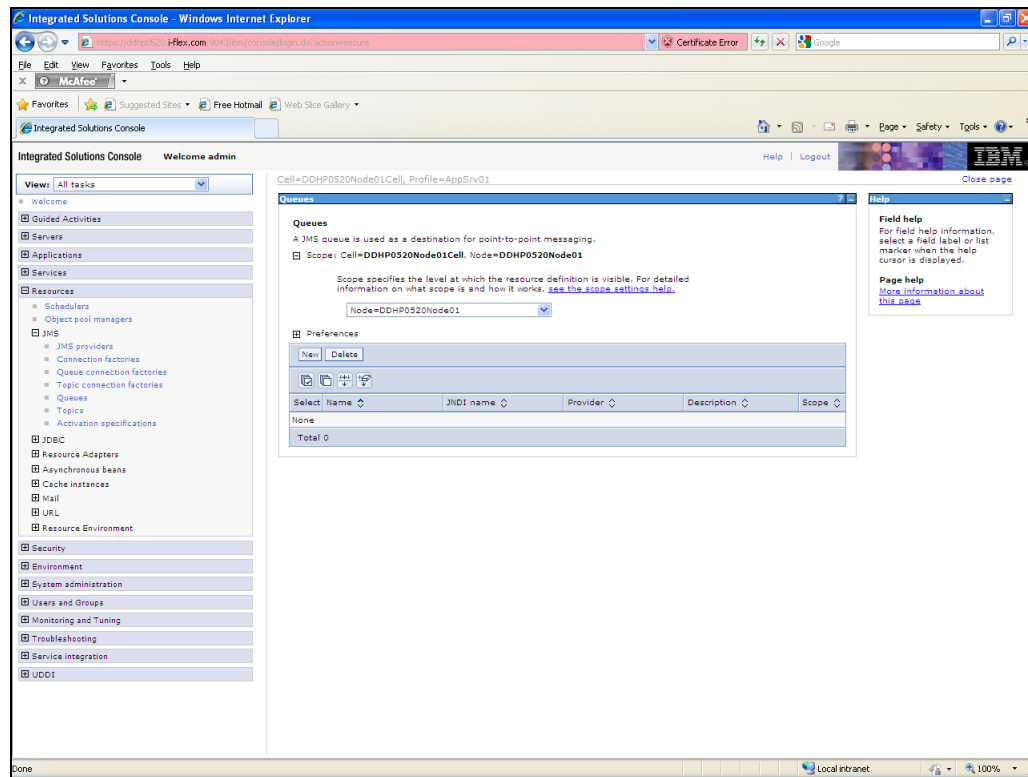
19. Similarly, you need to create the following queue connection factories:

MDBQCF
NOTIFY_MDB_QCF
NotifyDestQCF
DeferredDestQCF
RTGSQCF
SFMSQCF
ELMDBQCF
EL_NOTIFY_QCF
EmsQcf
BIPQCF
GI_UPLOAD_QCF

3.3.2 **Creating Queues**

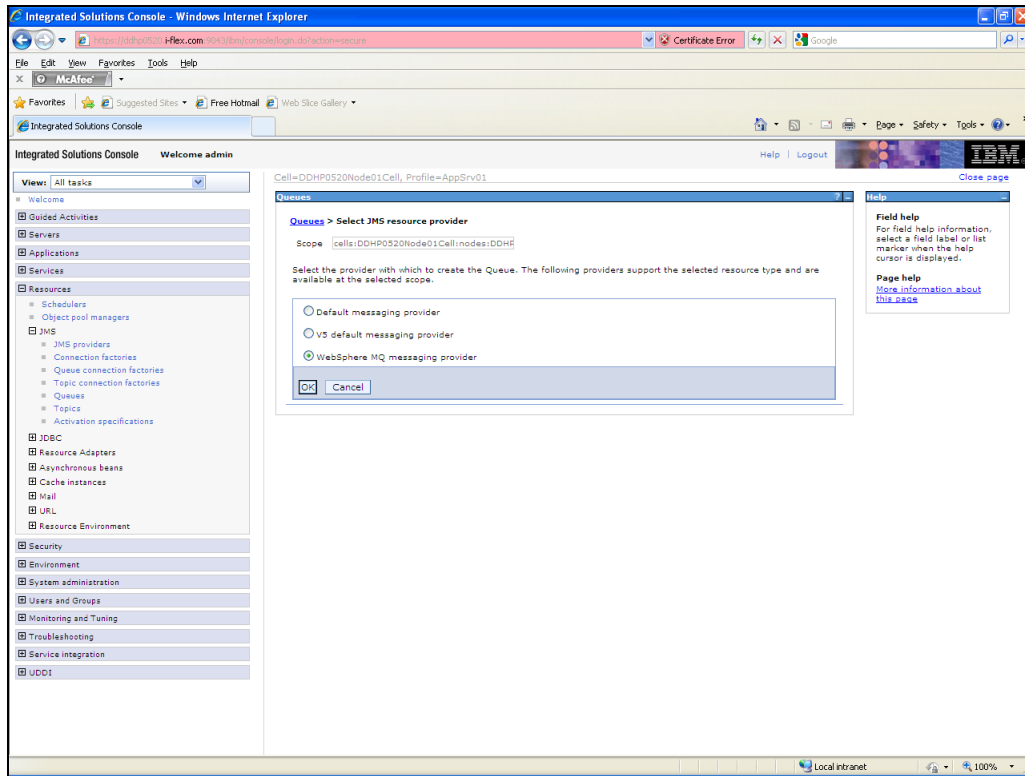
Follow the steps given below:

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



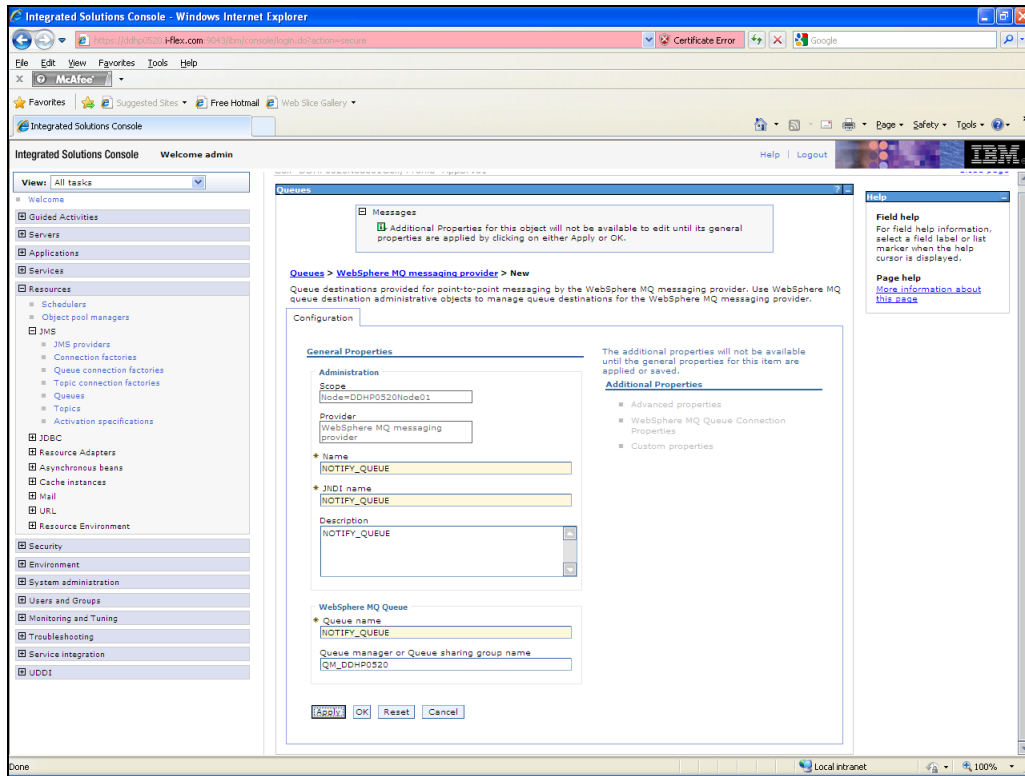
2. Select 'Node' from the drop down list. Click 'New'.

The following screen is displayed:



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

The following screen is displayed.

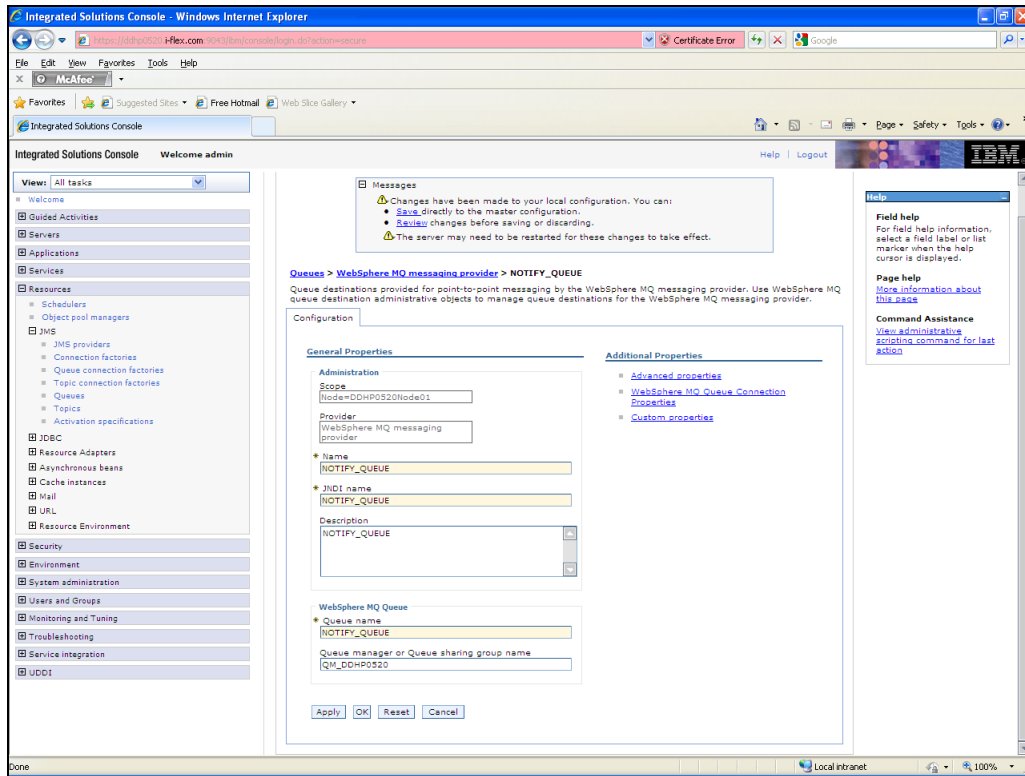


Specify the following details:

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

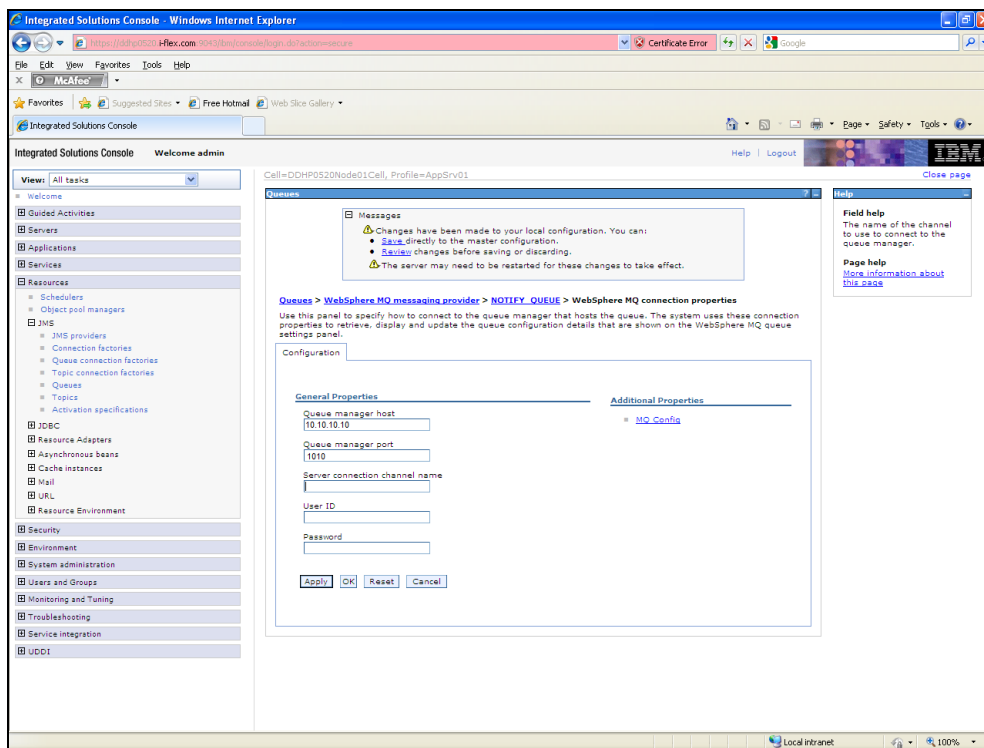
4. Click 'Apply'.

The following screen is displayed.



5. Click 'WebSphere MQ Queue Connection Properties'.

The following screen is displayed.

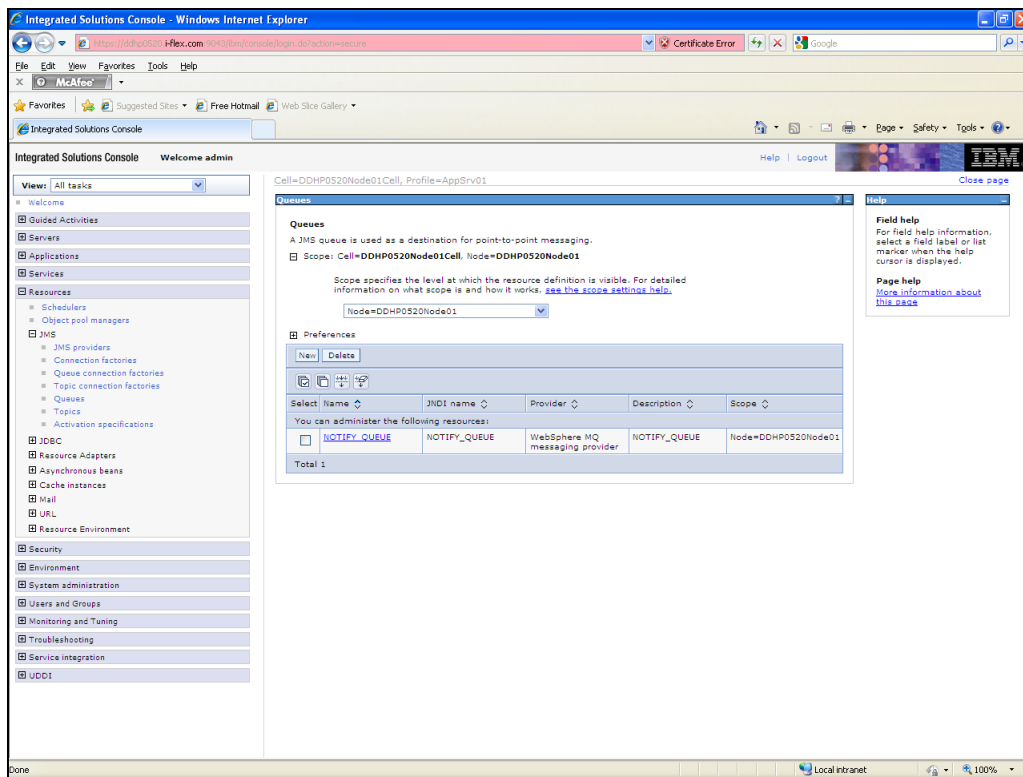


6. Specify the following details:

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.



8. Similarly, you need to create the following queues.

MDB_QUEUE
MDB_QUEUE_DLQ
MDB_QUEUE_RESPONSE
NOTIFY_QUEUE
NOTIFY_DEST_QUEUE
NOTIFY_QUEUE_DLQ
DEFERRED_DEST_QUEUE

RTGS_INQUEUE
SFMS_INQUEUE
ELMDB_REQ_Q
ELMDB_RES_Q
ELMDB_DLQ
EL_NOTIFY_REQ_Q
EL_NOTIFY_RES_Q
EL_NOTIFY_DLQ
EMS_INQUEUE
EMS_OUTQUEUE
EMS_EXTQUEUE
INTERNAL_BIPREPORT_QUEUE
INTERNAL_BIPADVREPORT_QUEUE
INTERNAL_GI_UPLOAD_QUEUE
EMS_QUEUE_DLQ

3.4 **Creating Message Listener**

Follow the steps given below:

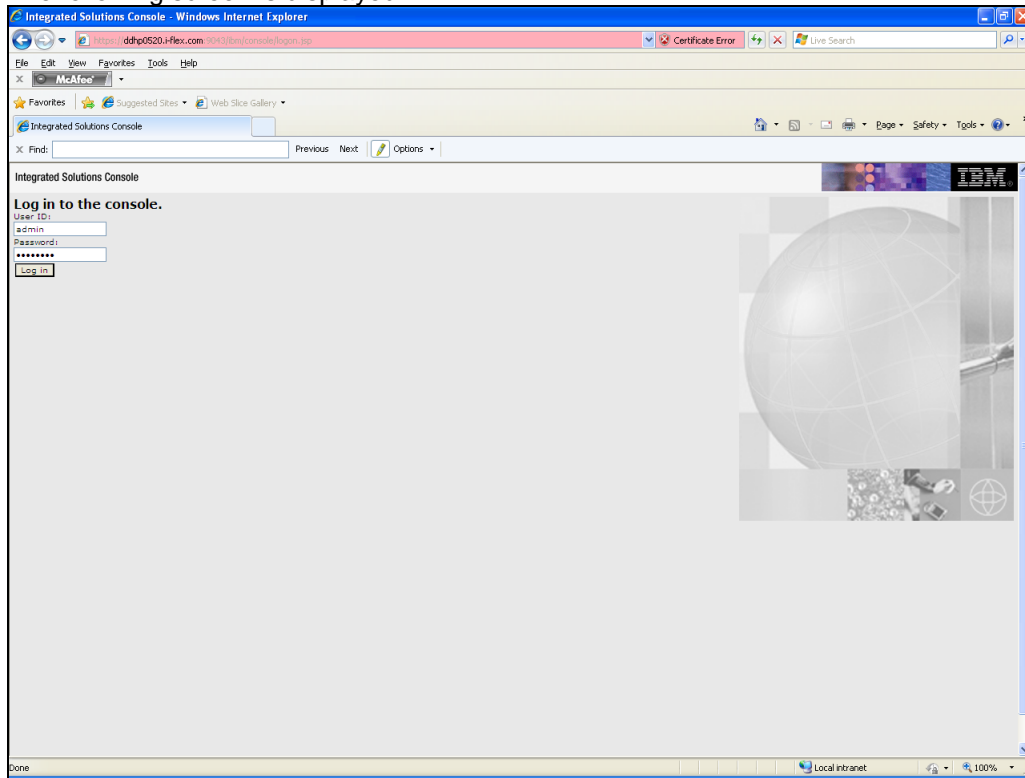
1. Start the administrative console of Websphere application server. Open an internet browser and enter the Websphere admin console URL.

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

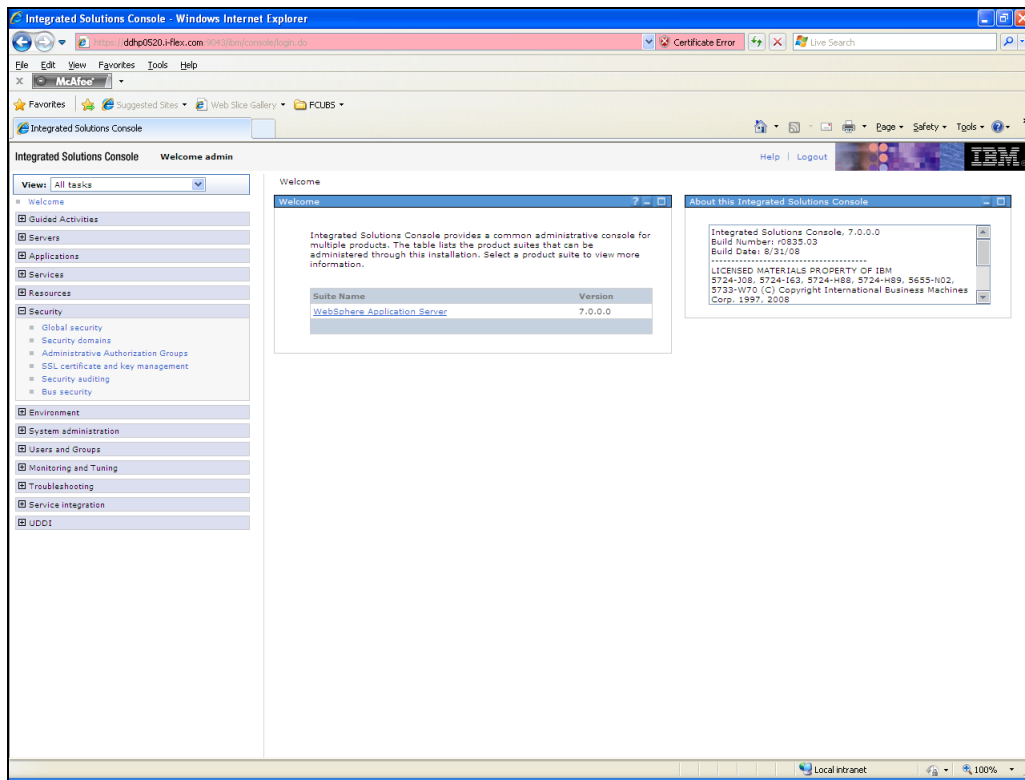
Eg: `https://10.10.10.10:1010/console`

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

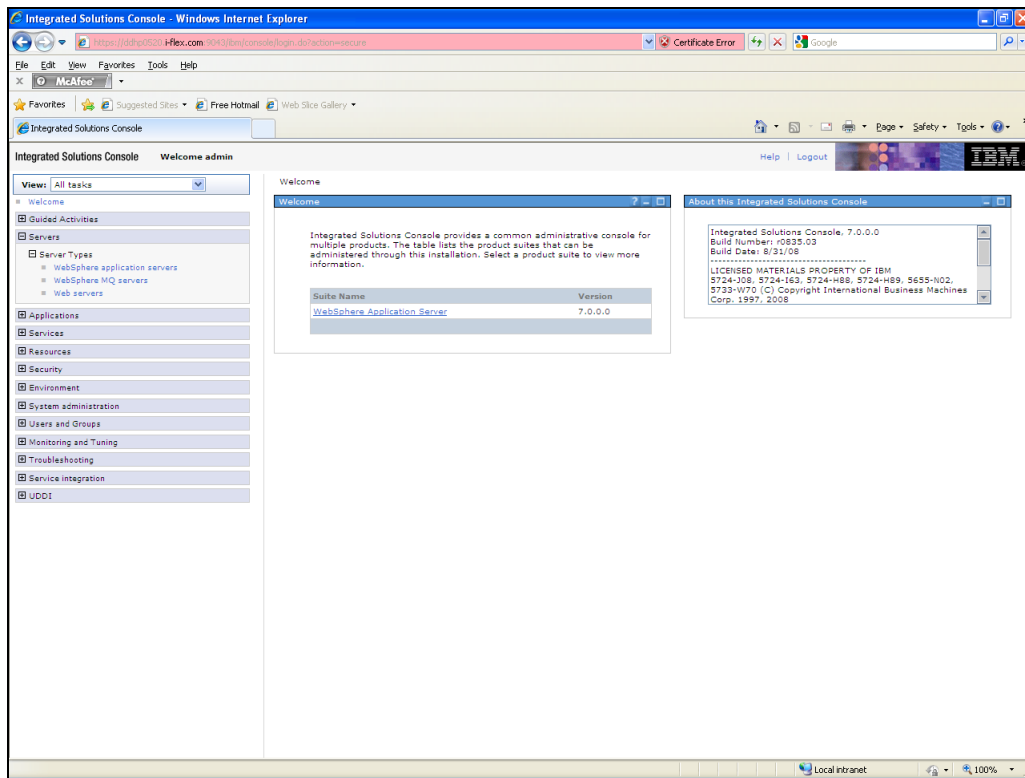
The following screen is displayed:



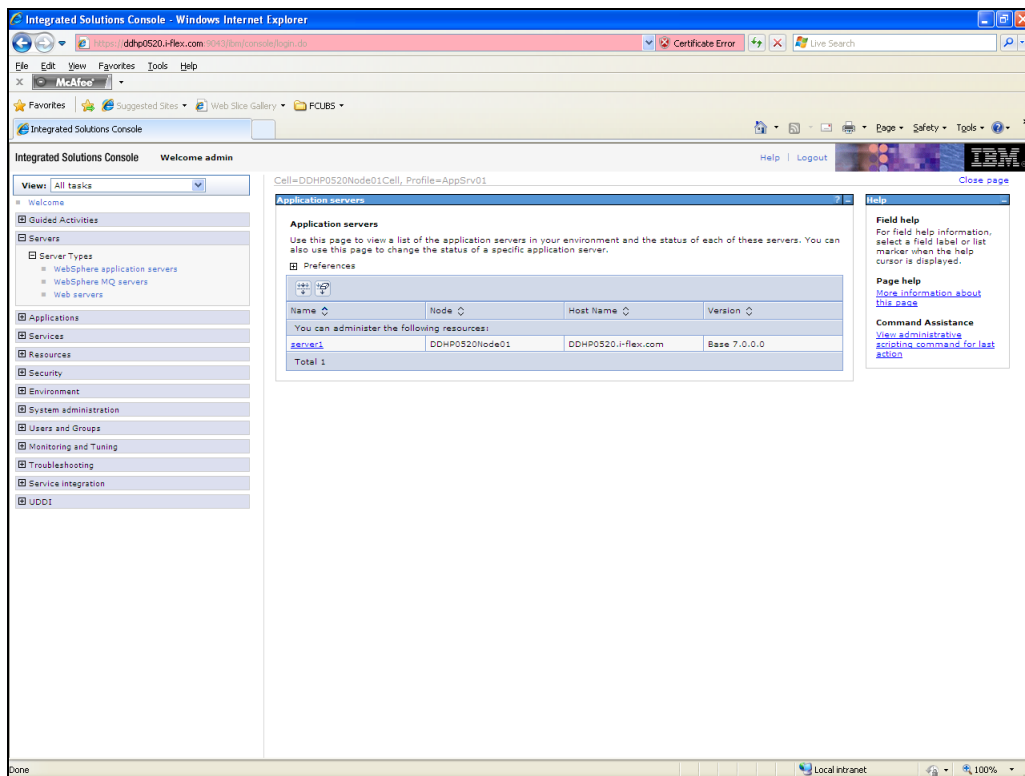
2. Specify the Websphere administrator username and password.
3. Click 'Log In'.
4. Navigate to Websphere home page.



5. Expand 'Servers > Server Types' and click 'Websphere application servers'.

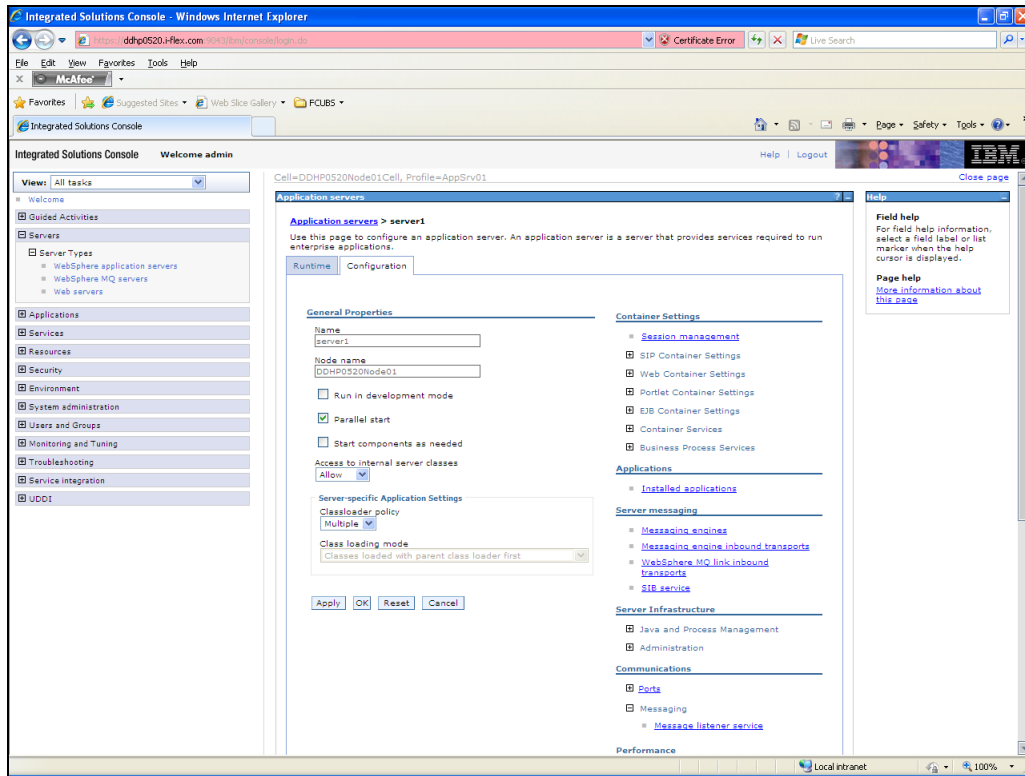


The following screen is displayed.



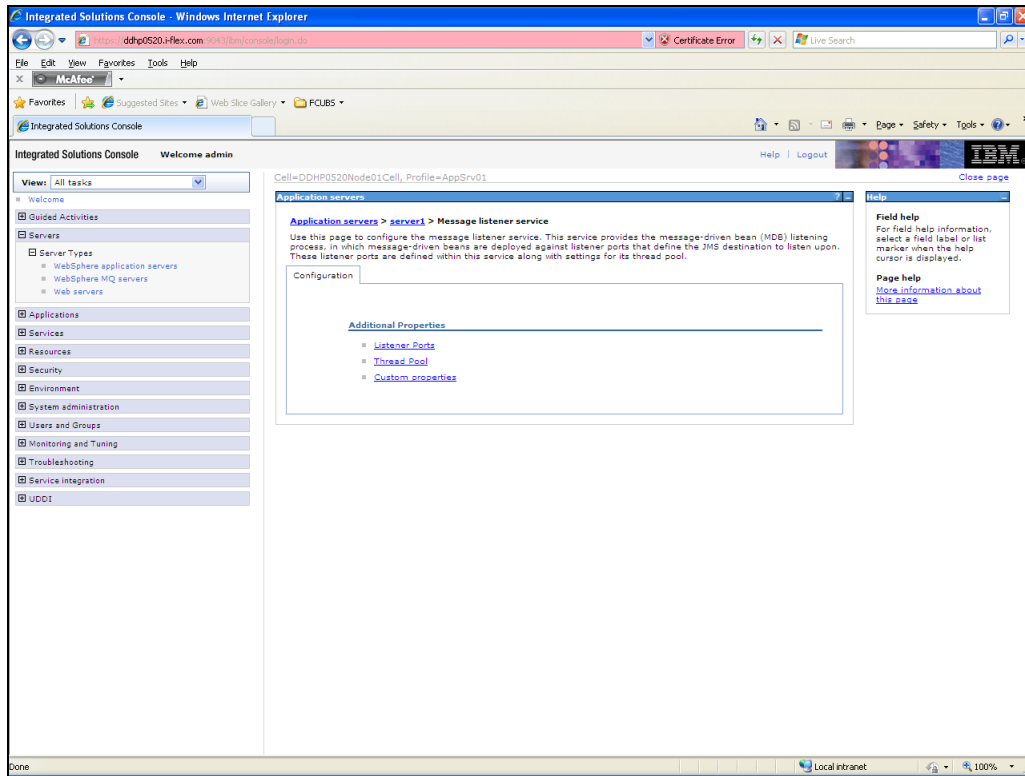
6. Click 'server1'.

The following screen is displayed.



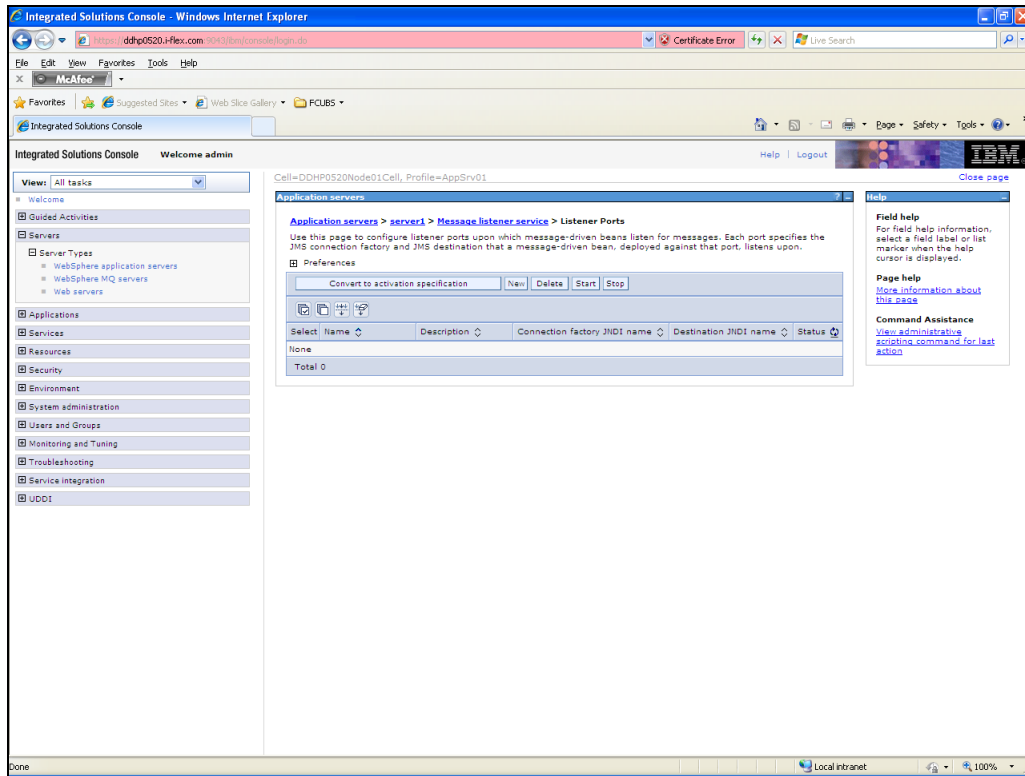
7. Expand 'Messaging' and select 'Message listener service'.

The following screen is displayed.



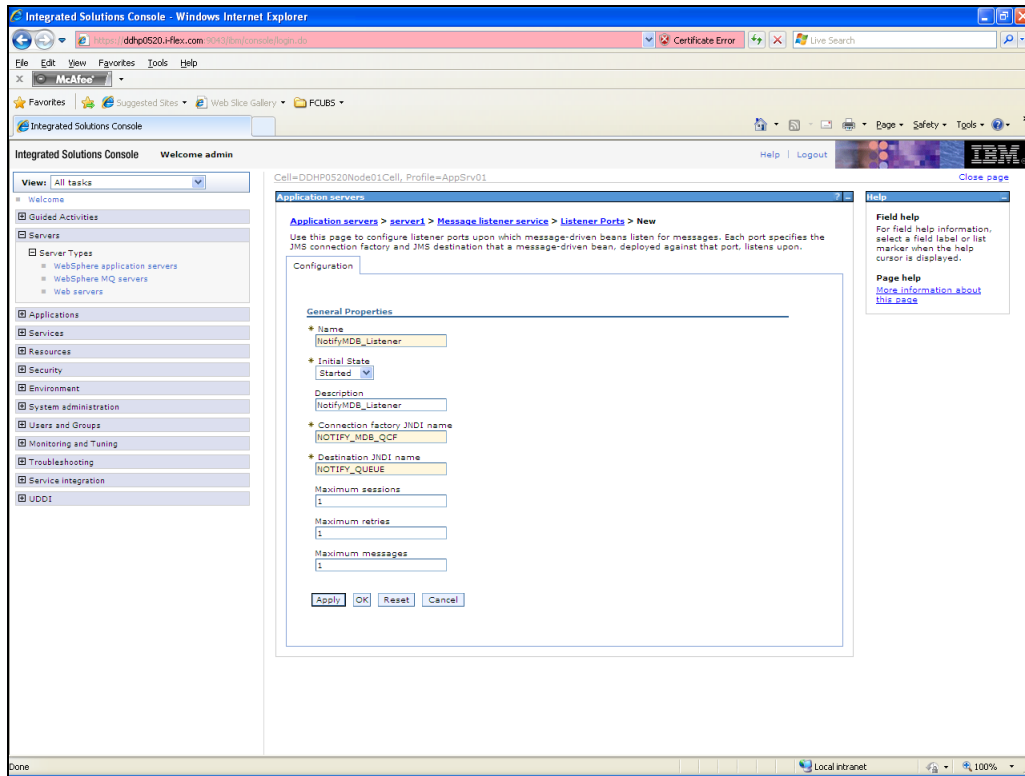
8. Click 'Listener Ports'.

The following screen is displayed.



9. Click 'New'.

The following screen is displayed.

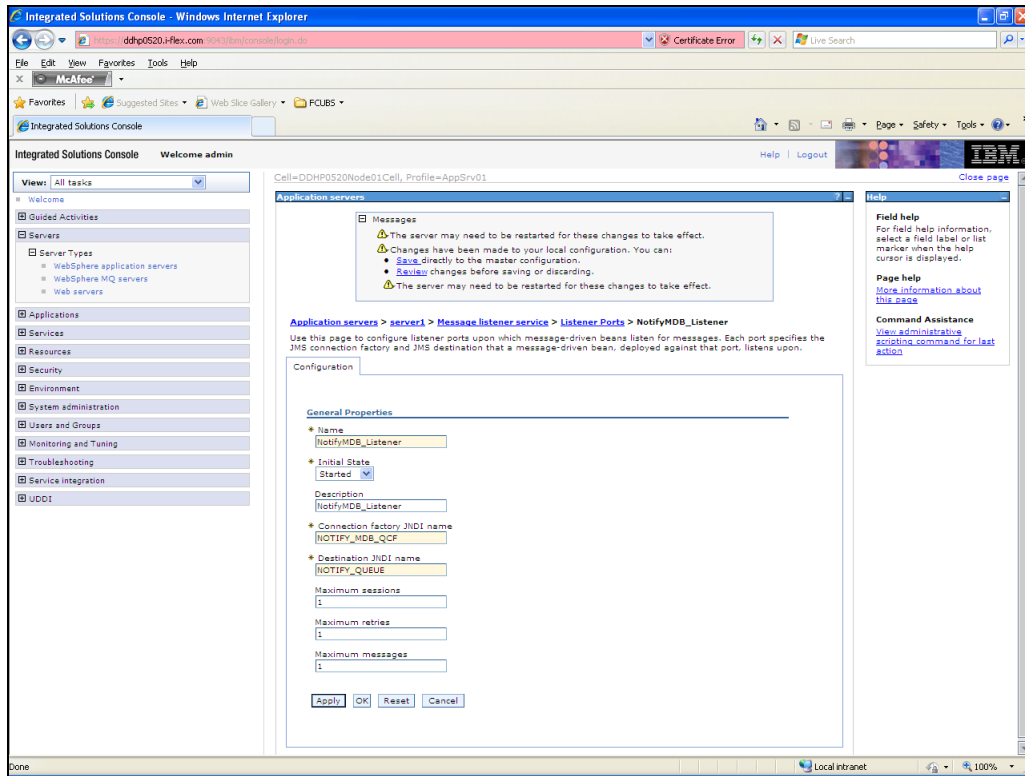


10. Specify the following details:

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

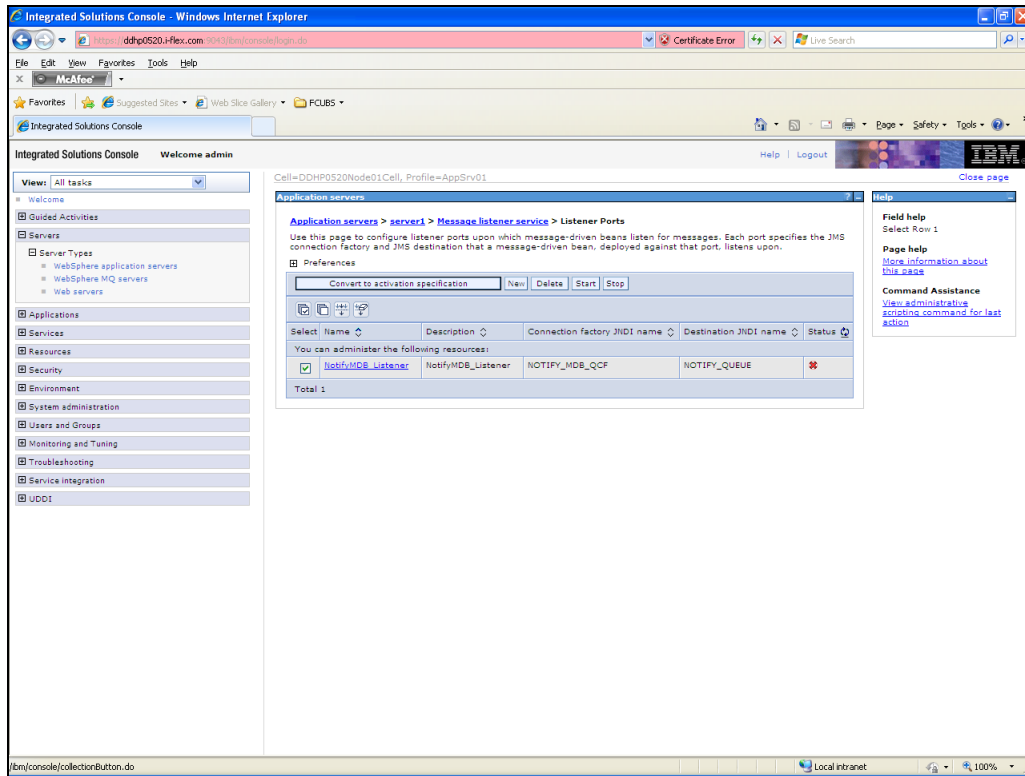
11. Click 'Apply'.

The following screen is displayed.



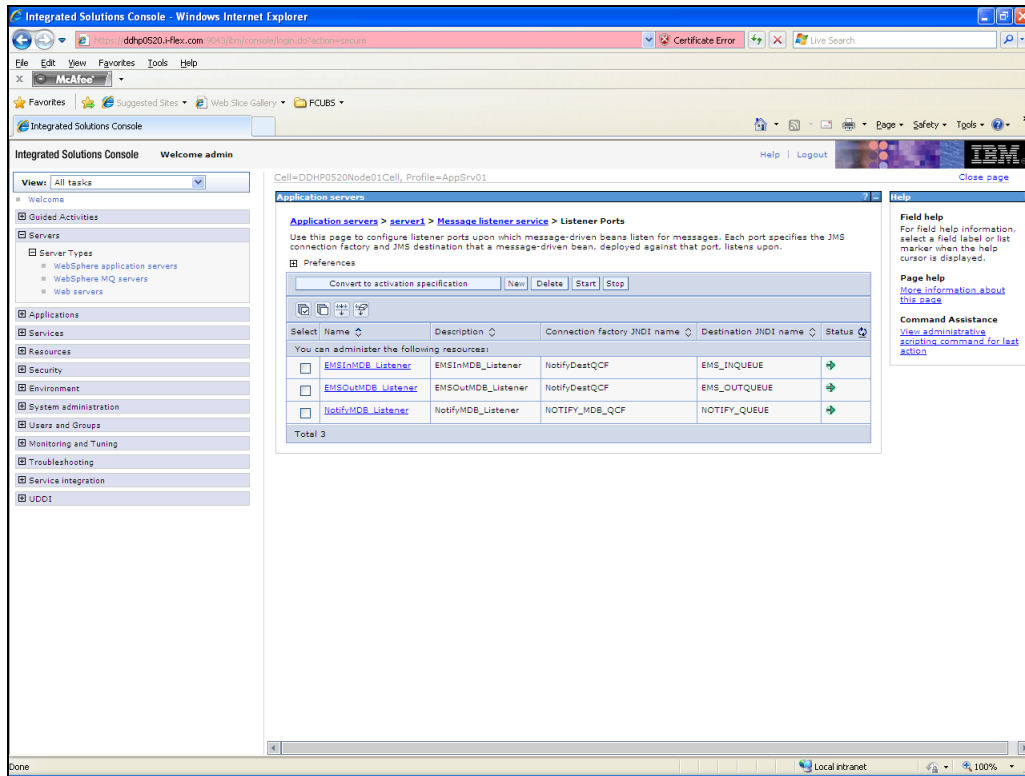
12. Click 'Save'.

The following screen is displayed.



13. Select 'NotifyMDB_Listener'. Click 'Start'.

The following screen is displayed.



14. Similarly, you need to create the following listeners:

MDB_Listener
NotifyMDB_Listener
RTGS_Listener
SFMS_Listener
ELMDB_Listener
ELNotifyMDB_Listener
EmsIn_Listener
EmsOut_Listener
BipReport_Listener
BipAdvReport_Listener
Gi_Upload_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
GWNotifyMDBBean	NotifyMDB_Listener	NOTIFY_MDB_QCF	NOTIFY_QUEUE
RTGSInMDB	RTGS_Listener	RTGSQCF	RTGS_INQUEUE
SFMSInMDB	SFMS_Listener	SFMSQCF	SFMS_INQUEUE
ELGWMDBBean	ELMDB_Listener	ELMDBQCF	ELMDB_REQ_Q
ELNotifyMDBBean	ELNotifyMDB_Listener	EL_NOTIFY_QCF	EL_NOTIFY_REQ_Q
EMSinMDB	EmsIn_Listener	EmsQcf	EMS_INQUEUE
EMSOOutMDB	EmsOut_Listener	EmsQcf	EMS_OUTQUEUE
BipReportMDB	BipReport_Listener	BIPQCF	INTERNAL_BIPREPORT_QUEUE
BipAdviceMDB	BipAdvReport_Listener	BIPQCF	INTERNAL_BIPADVREPORT_QUEUE
GIUploadMDB	Gi_Upload_Listener	GI_UPLOAD_QCF	INTERNAL_GI_UPLOAD_QUEUE

Here,

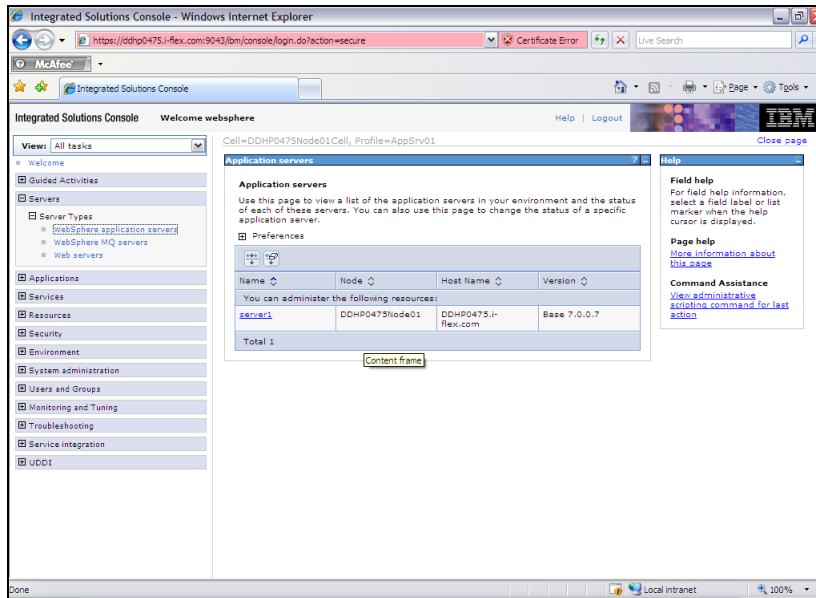
- MDB_Listener is mandatory for Gateway MDB applications
- All others are required for FCJ Applications embedded with Scheduler and ELCM

4. Default Settings for Web Sphere

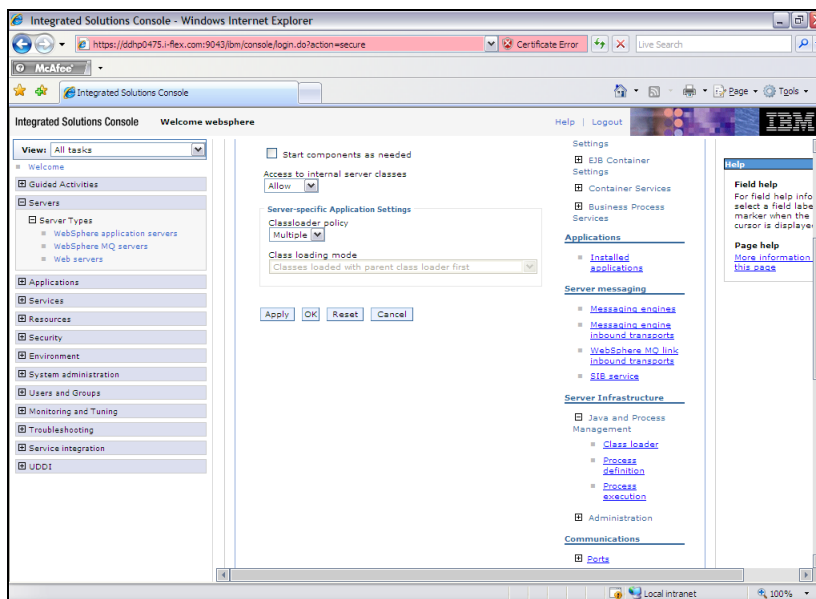
4.1 JVM Custom Toplink Property

To set the JVM toplink properties, follow the steps below:

1. Navigate to 'Application servers > {Configured Server} > Java and Process Management> Process Definition > Java Virtual Machine > Custom Properties >'.

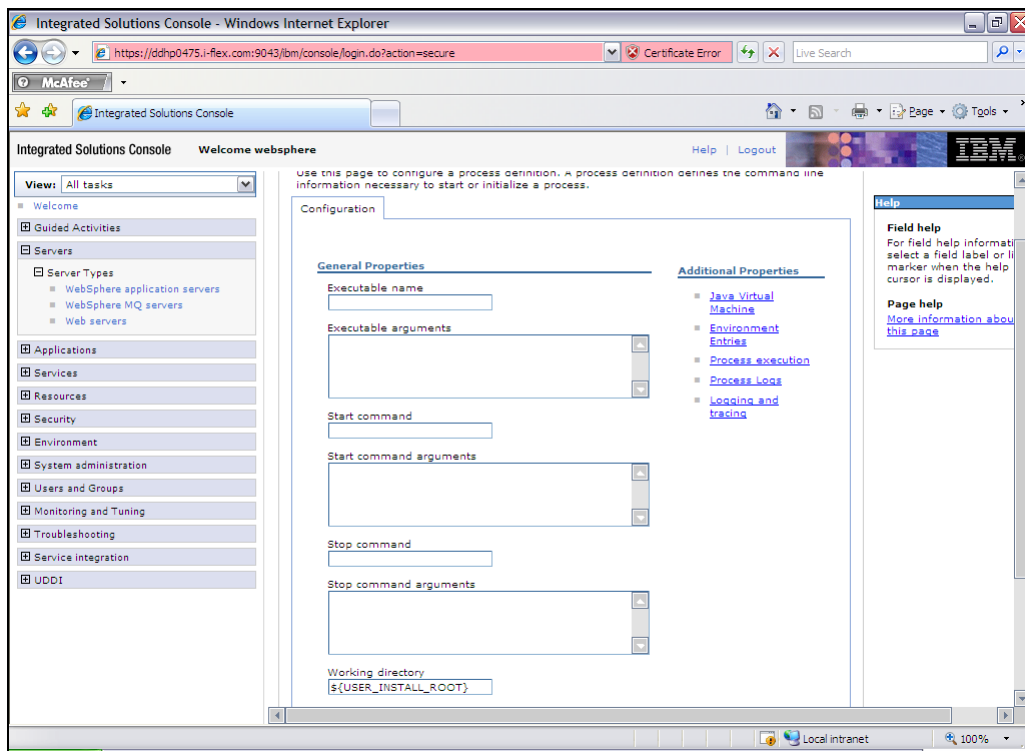


2. Expand 'Java and Process Management'.

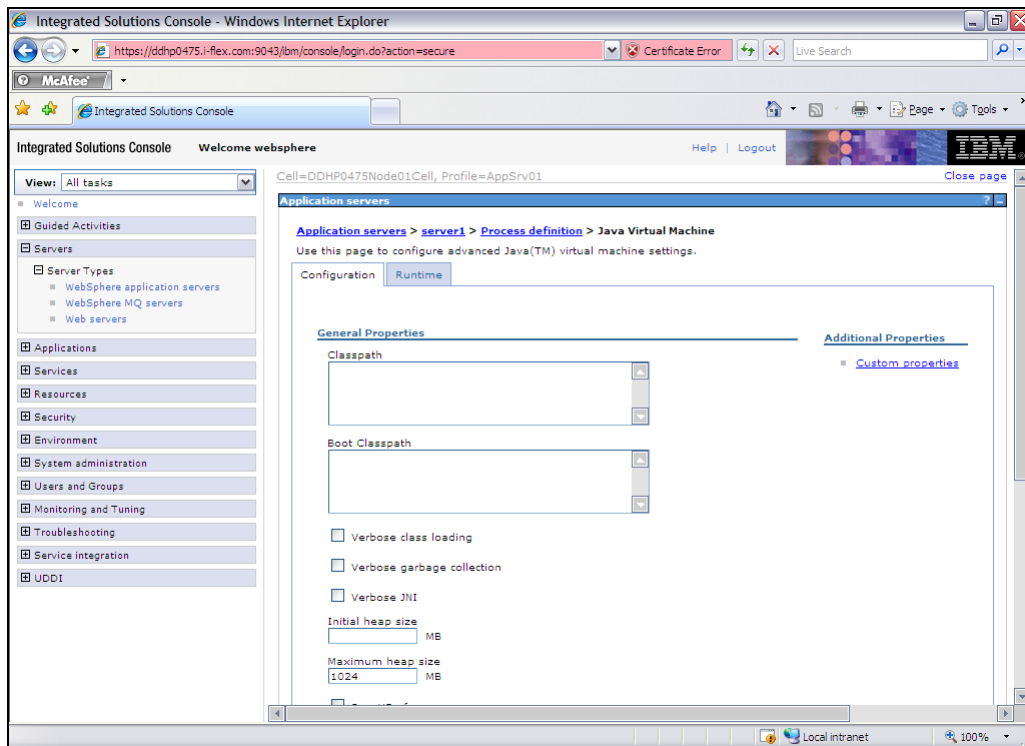


3. Click on 'Process definition'.

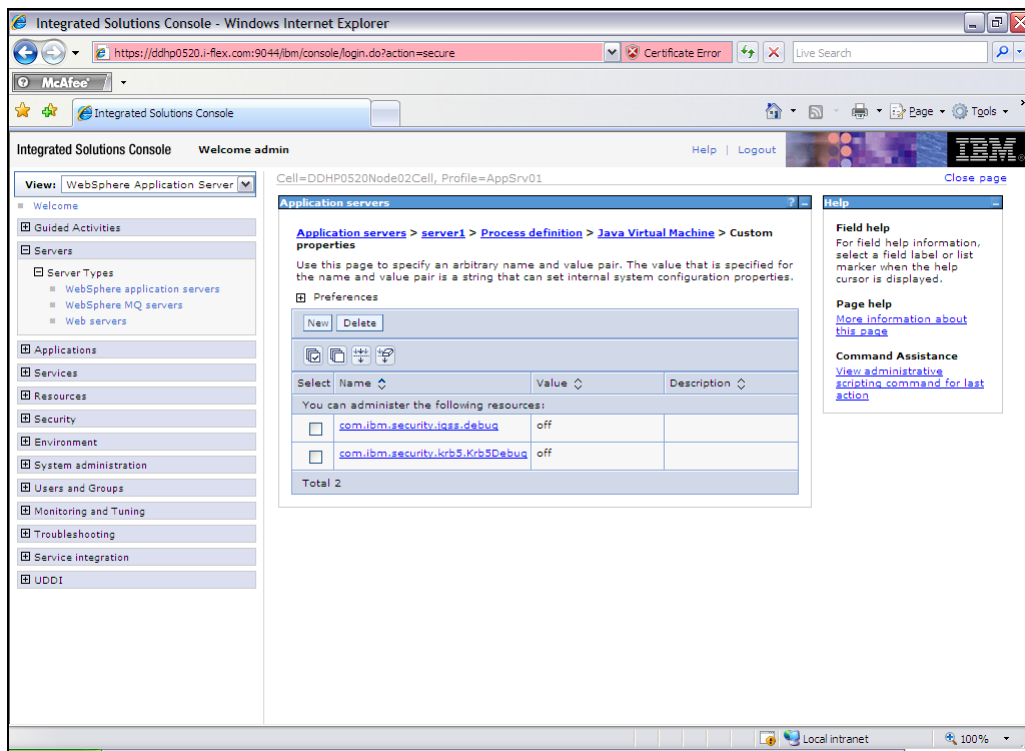
The following screen is displayed:



4. Click 'Custom Properties'.

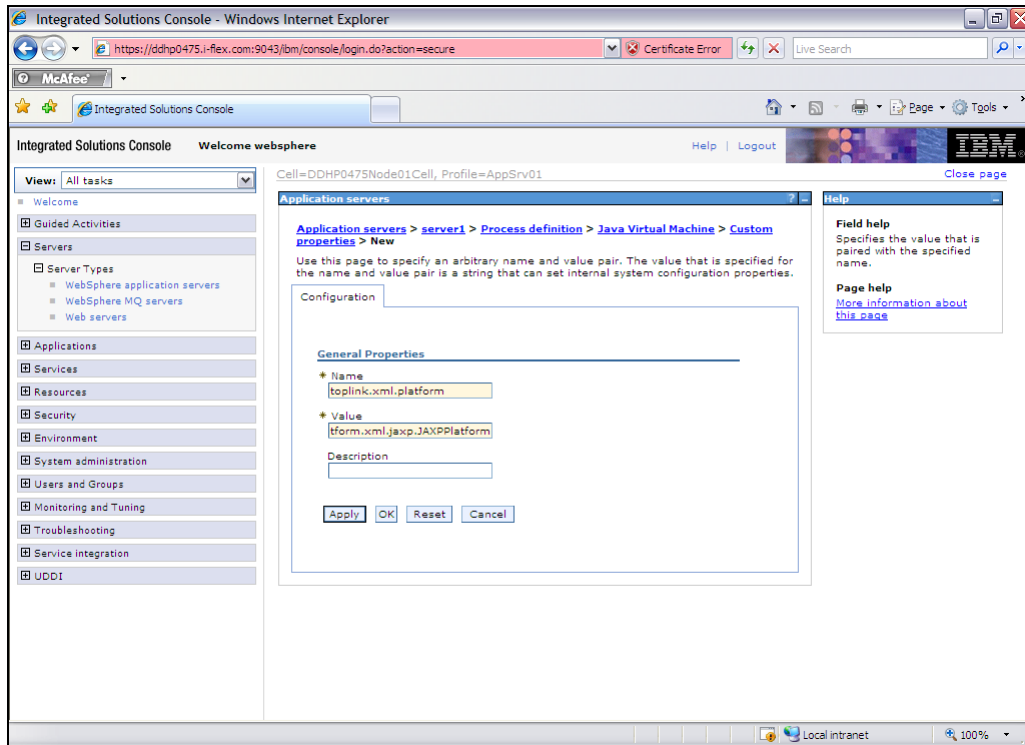


The following screen is displayed:



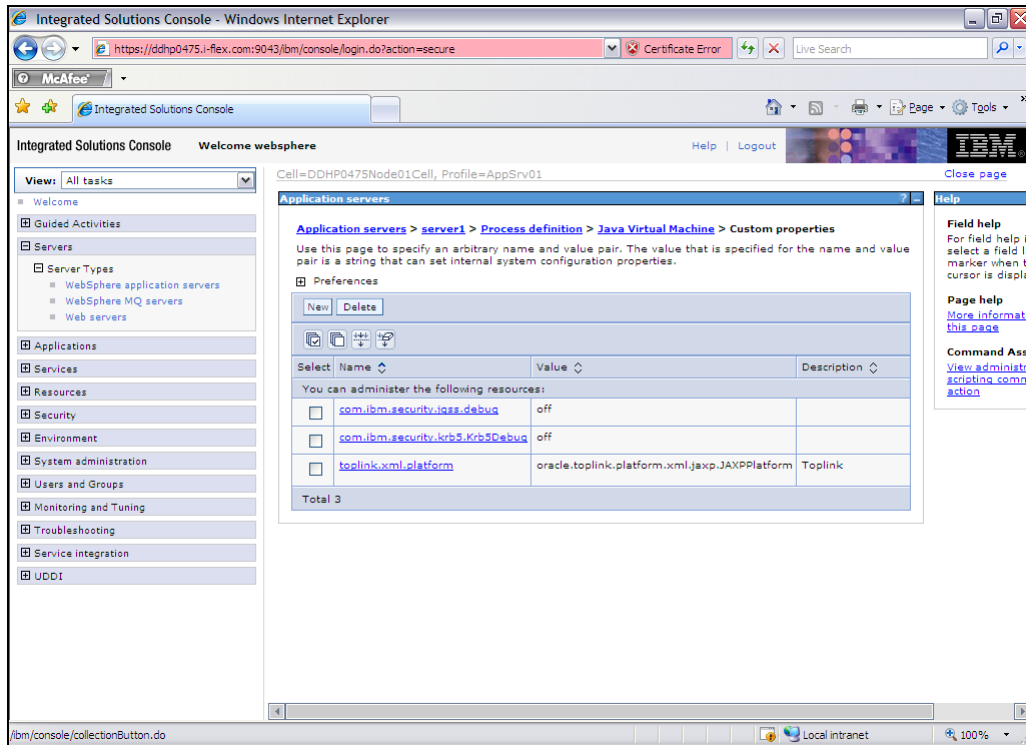
5. Click 'New'.

The following screen is displayed:



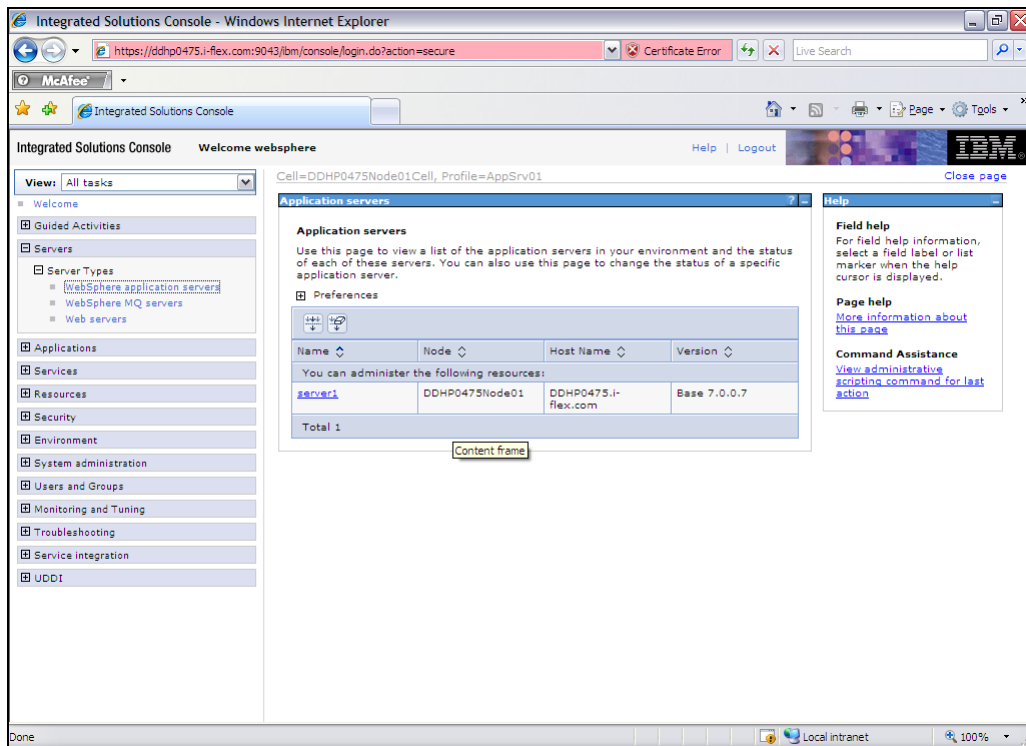
6. Specify the Name 'toplink.xml.platform'.
7. Specify the value 'tform.xml.jaxp.JAXPPlatform'.
8. Click 'Apply'.

The following screen is displayed:



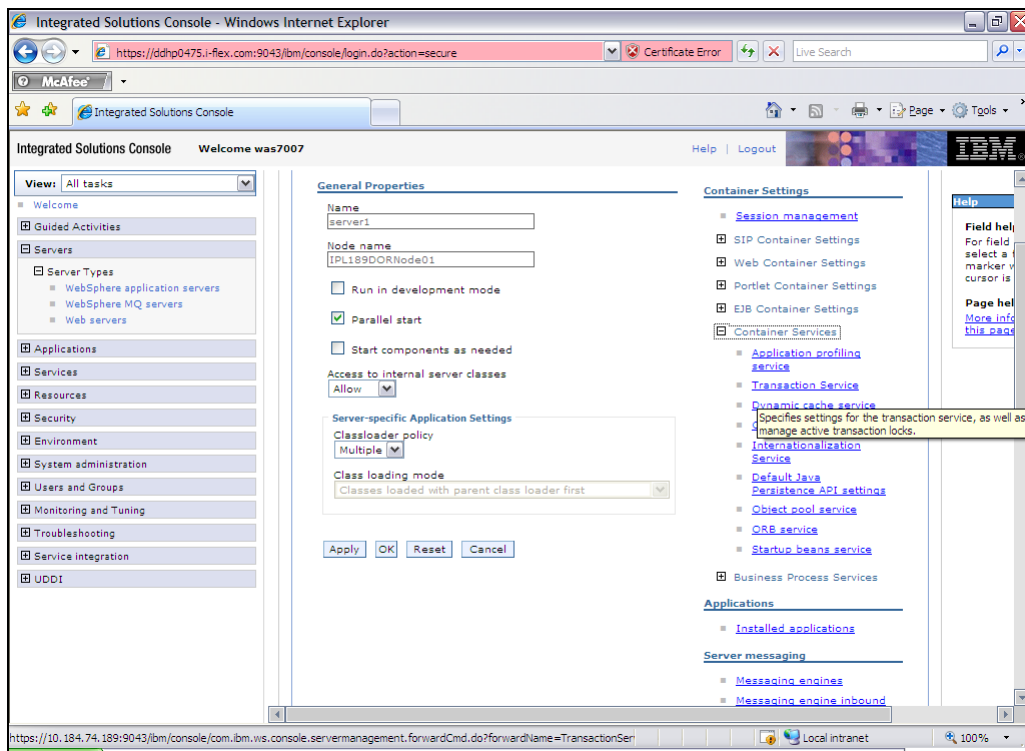
Transaction Services Changes

9. Navigate to Application servers > {Configured Server}.



10. On the right, expand 'Container services' and click on 'Transaction service'.

The following screen is displayed:

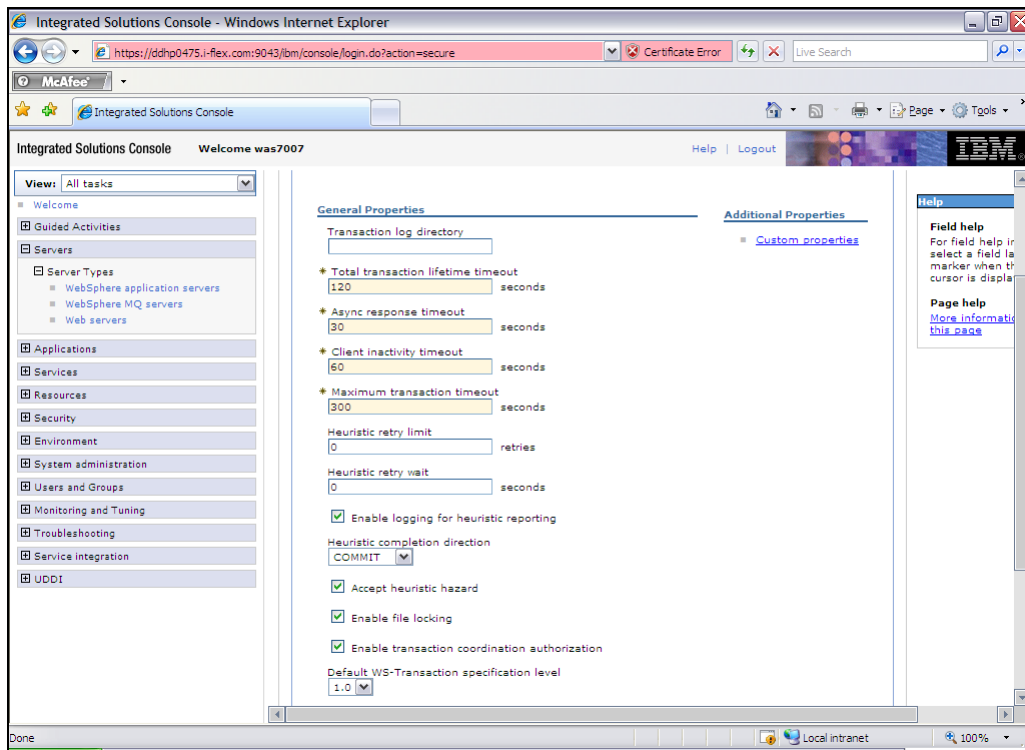


11. Specify the following details.

Against 'Heuristic completion direction', select COMMIT from the drop down list.

Check the option 'Accept heuristic hazard'.

12. It is optional to check 'Enable logging for heuristic reporting'. This will enable logging of heuristic reporting.



5. Configuring Mail Session on Websphere

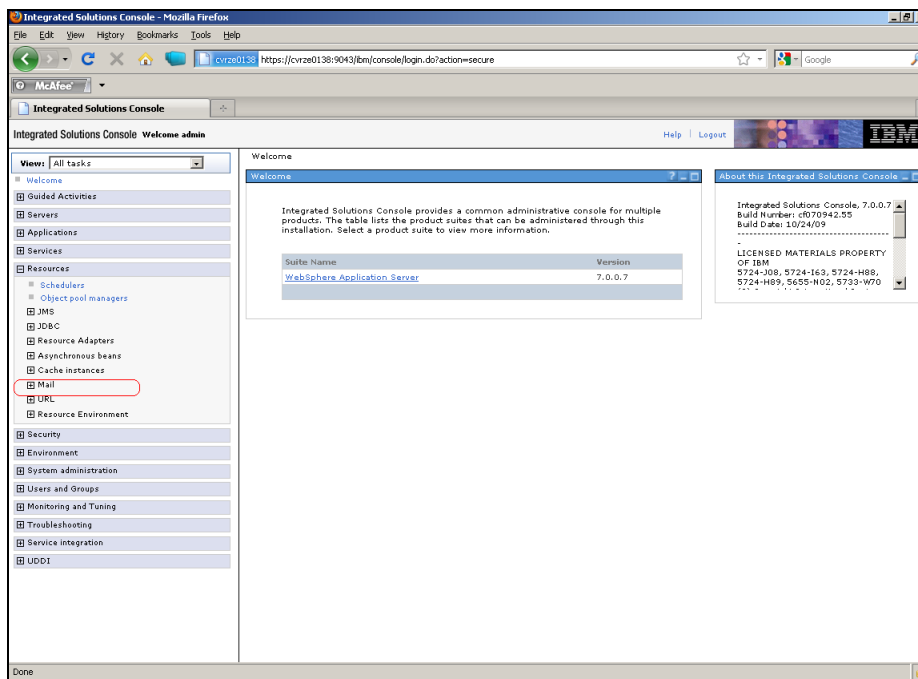
5.1 Introduction

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

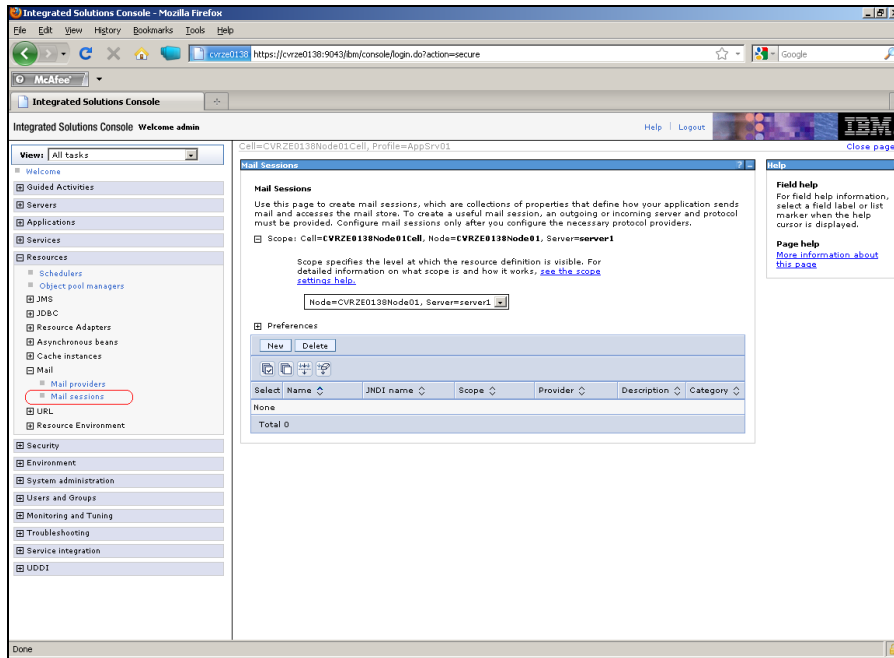
To create Java mail session, follow the steps given below:

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



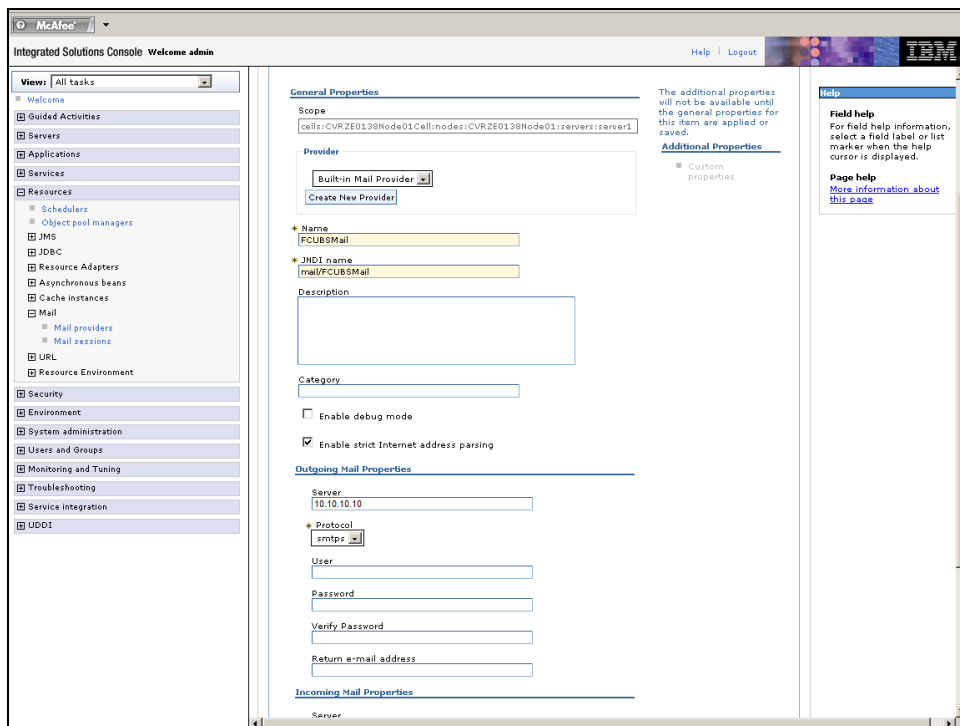
14. Click 'Mail Sessions' to invoke the 'Mail sessions' screen.

The following screen is displayed:



15. Click 'New' button to create a new mail session.

The following screen is displayed:

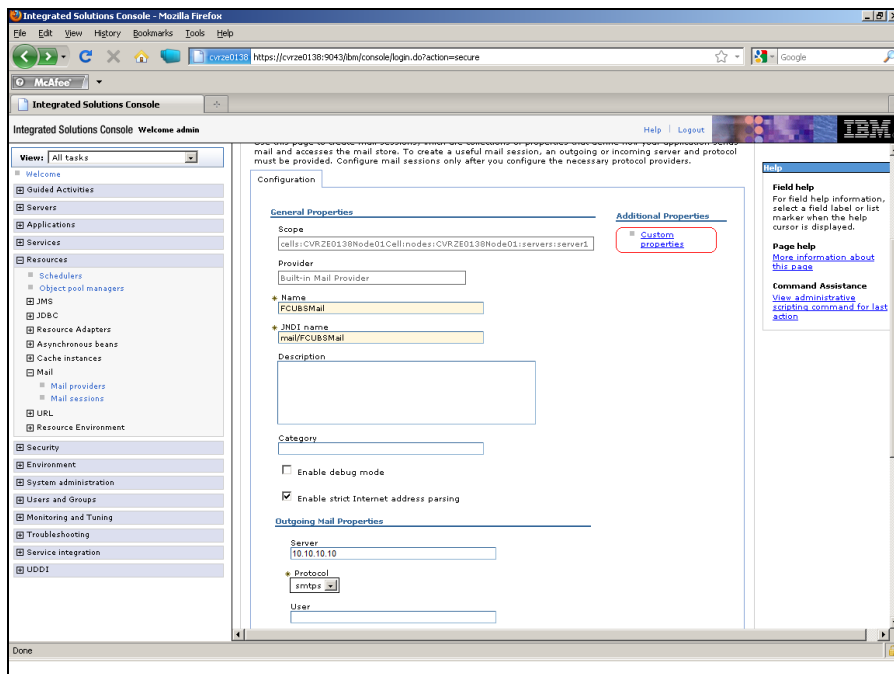


16. Provide the required information. Sample details are given below for your reference.

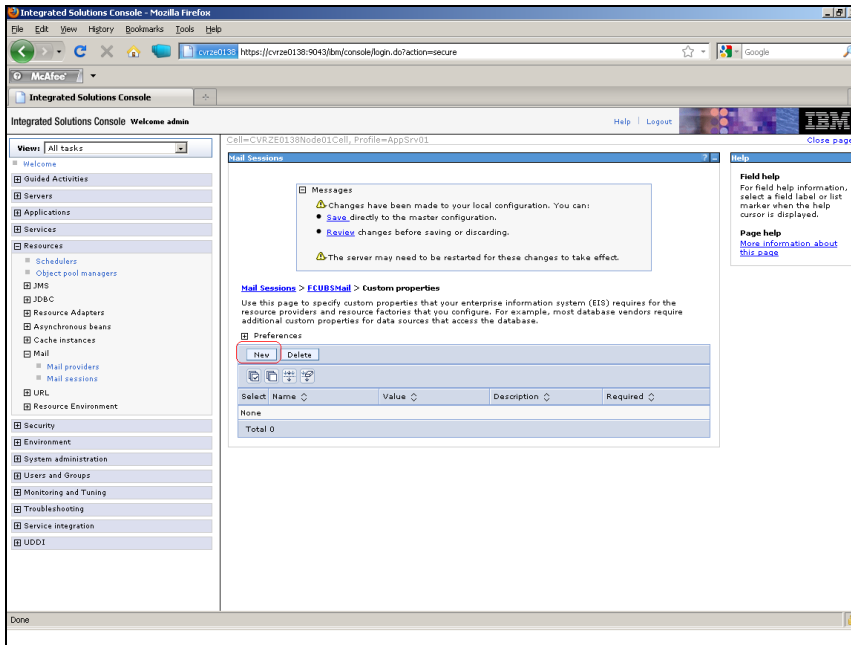
General Properties

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

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

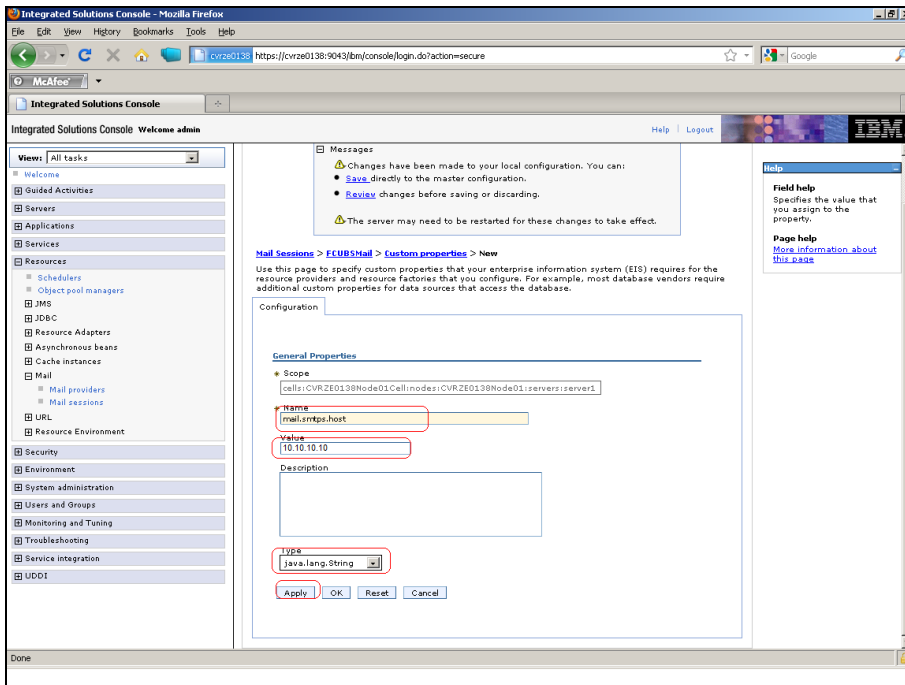


The following screen is displayed.



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

The following screen is displayed.



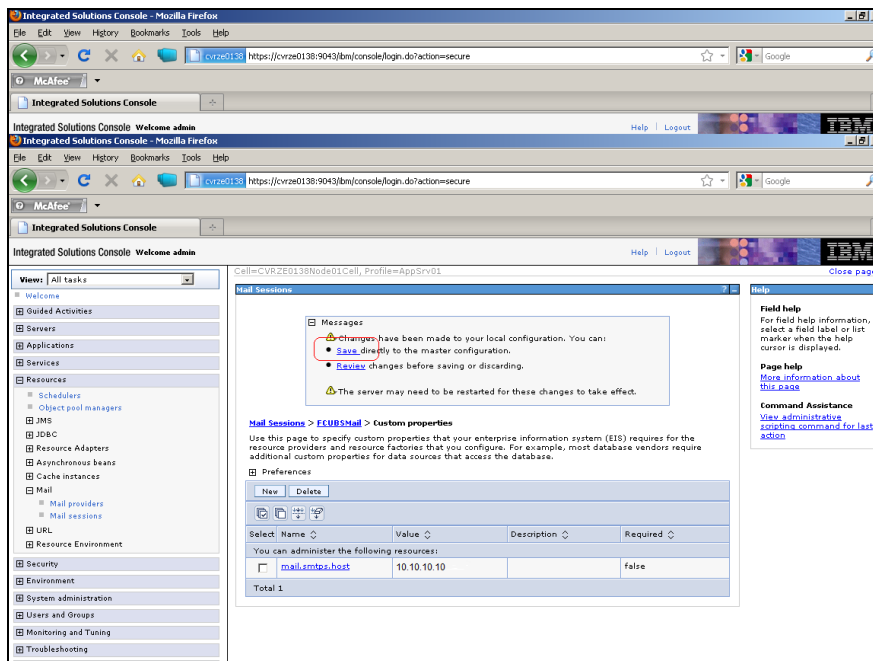
19. Specify the information required for creating custom properties. Sample details are given below:

Name	mail.smtps.host
------	-----------------

Value	<HOST_SMTPS_MAIL_SERVER>
Type	java.lang.String

The custom properties are given below:

Name	Value	Type
mail.smtp.host	<HOST_SMTPS_MAIL_SERVER>	java.lang.String
mail.smtp.port	<SMTPS_SERVER_PORT>	java.lang.String
mail.host	<HOST_MAIL_SERVER>	java.lang.String
mail.smtps.auth	TRUE	java.lang.String



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 INVESTOR SERVICING 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.



SSL Configuration on Websphere
[April] [2014]
Version 12.0.3.0.0

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