

Oracle FLEXCUBE Direct Banking

Installation Manual On
Weblogic Application Server

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ORACLE®

Installation Manual On Weblogic Application Server

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1. Preface

1.1. Intended Audience

This document is primarily targeted at

- Oracle FLEXCUBE Direct Banking Development Teams
- Oracle FLEXCUBE Direct Banking Implementation Teams
- Oracle FLEXCUBE Direct Banking Implementation Partners

1.2. Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

1.3. Access to OFSS Support

<https://support.us.oracle.com>

1.4. Structure

This manual is organized into the following categories:

Preface gives information on the intended audience. It also describes the overall structure of the User Manual

Application Server Configuration provides information on Creating and Managing a JMS Servers etc.

Chapters post Application server configuration are dedicated to Setup JDBC data source and Connection Pooling and JMS queue creation on Weblogic server, Module Installation and Encryption and Decryption of property files.

1.5. Related Information Sources

For more information on Oracle FLEXCUBE Direct Banking Release 12.0.3.0.0, refer to the following documents:

- Oracle FLEXCUBE Direct Banking Licensing Guide

2. Abbreviations

| | |
|---------------|--------------------------------|
| FCDB | Oracle FLEXCUBE Direct Banking |
| Java EE / JEE | Java Enterprise Edition |
| Java SE / JSE | Java 2 Standard Edition |
| DBA | Database Administrator |
| JDK | Java Development Kit |

3.Pre- requisites

All the software requirements mentioned in the sheet

“Oracle_FLEXCUBE_Direct_Banking_Software_Stack” must be installed.

Oracle FLEXCUBE Direct Banking application is installed successfully using Oracle FCDB Installer.

4.Application Server Configuration

4.1.Creating and Managing a Server Instance

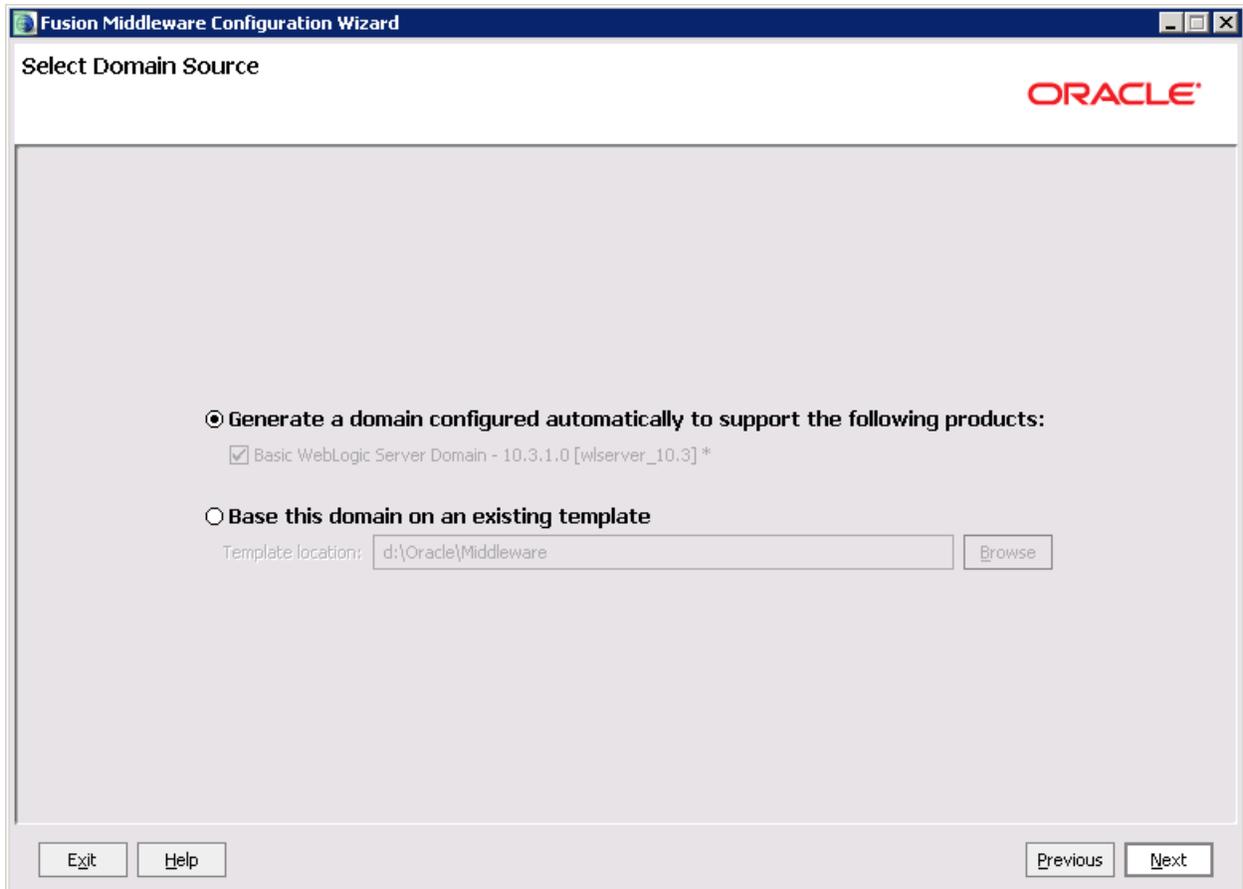
4.1.1.Creating a WebLogic domain

A domain consists of one or more server instances that can be managed with a single administration server. When the administration server is used to perform a configuration task, the changes made apply only to the domain managed by that administration server. To manage another domain, the administration server for that domain must be used.

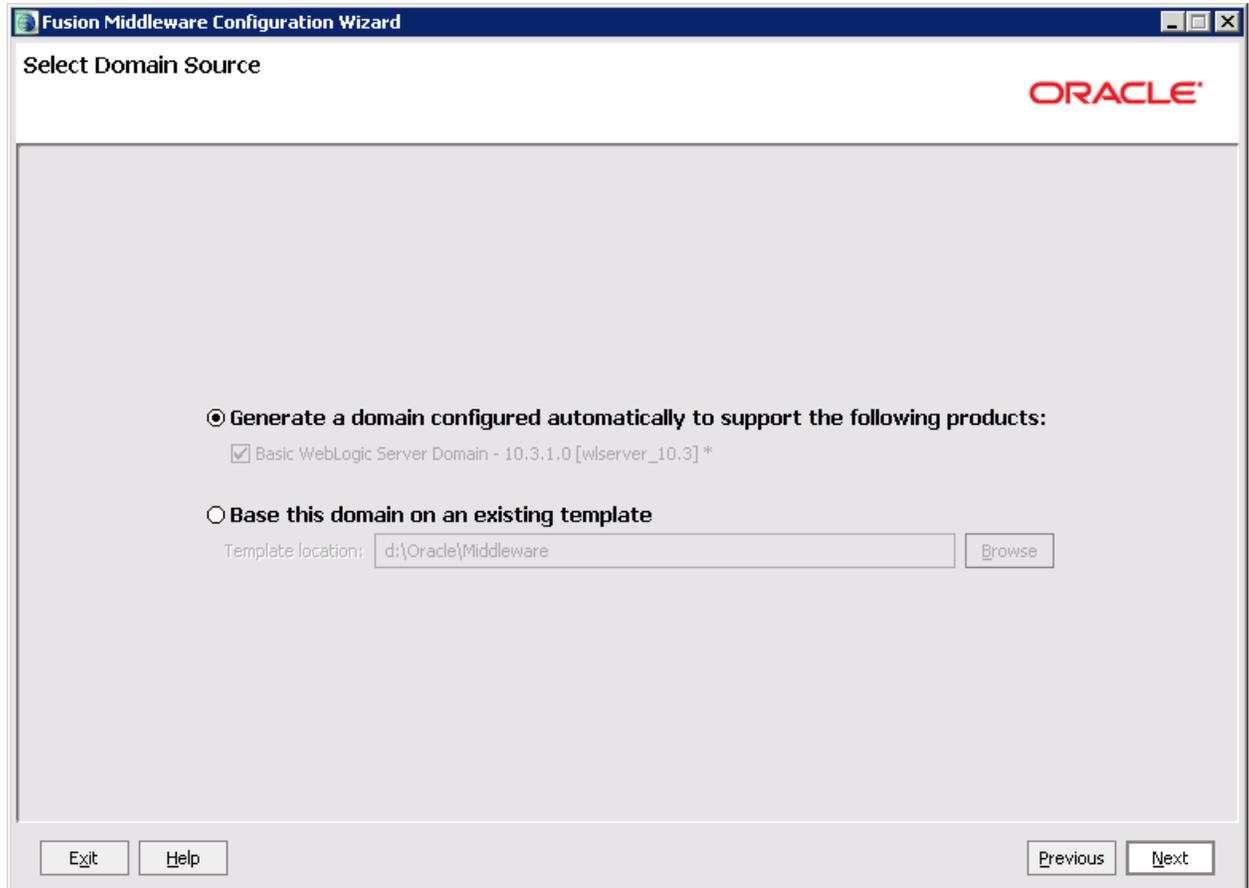
Through Wizard:

1. Go to Start Menu →Oracle WebLogic →WebLogic Server 11g R1 →Tools →Configuration Wizard in Windows.

Select “Create a new WebLogic Domain” and click “Next”.



Select "Generate a domain configured automatically to support the following Products" and click "Next"



Specify Domain Name and Location

Enter the name and location for the domain:

Domain name:

Domain location:

Enter the following values and click “Next”

| Field | Value |
|-----------------------|------------------------|
| User Name | <Enter username> |
| User password | <Enter password> |
| Confirm user password | <Repeat same password> |

Fusion Middleware Configuration Wizard

Configure Administrator User Name and Password

ORACLE

Disgard Changes

*User name:

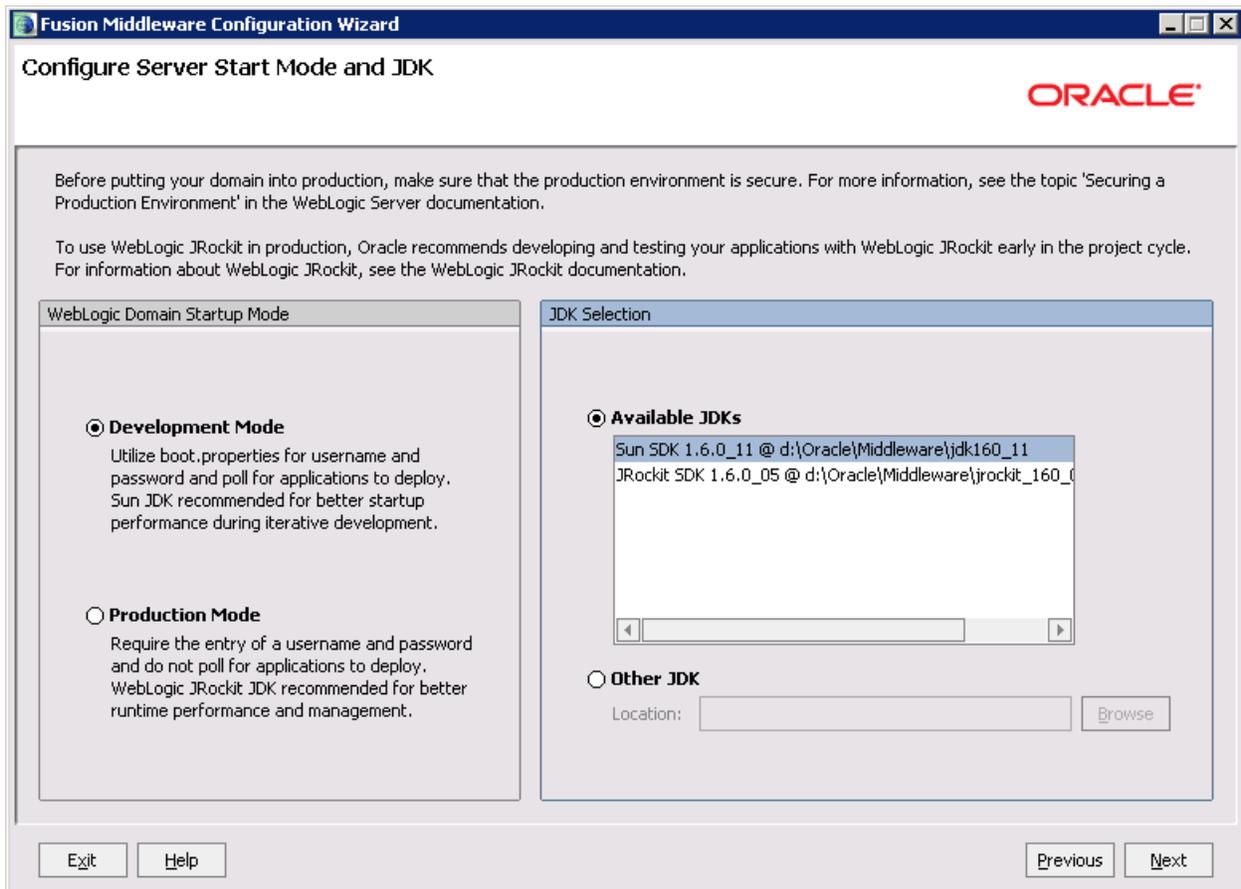
*User password:

*Confirm user password:

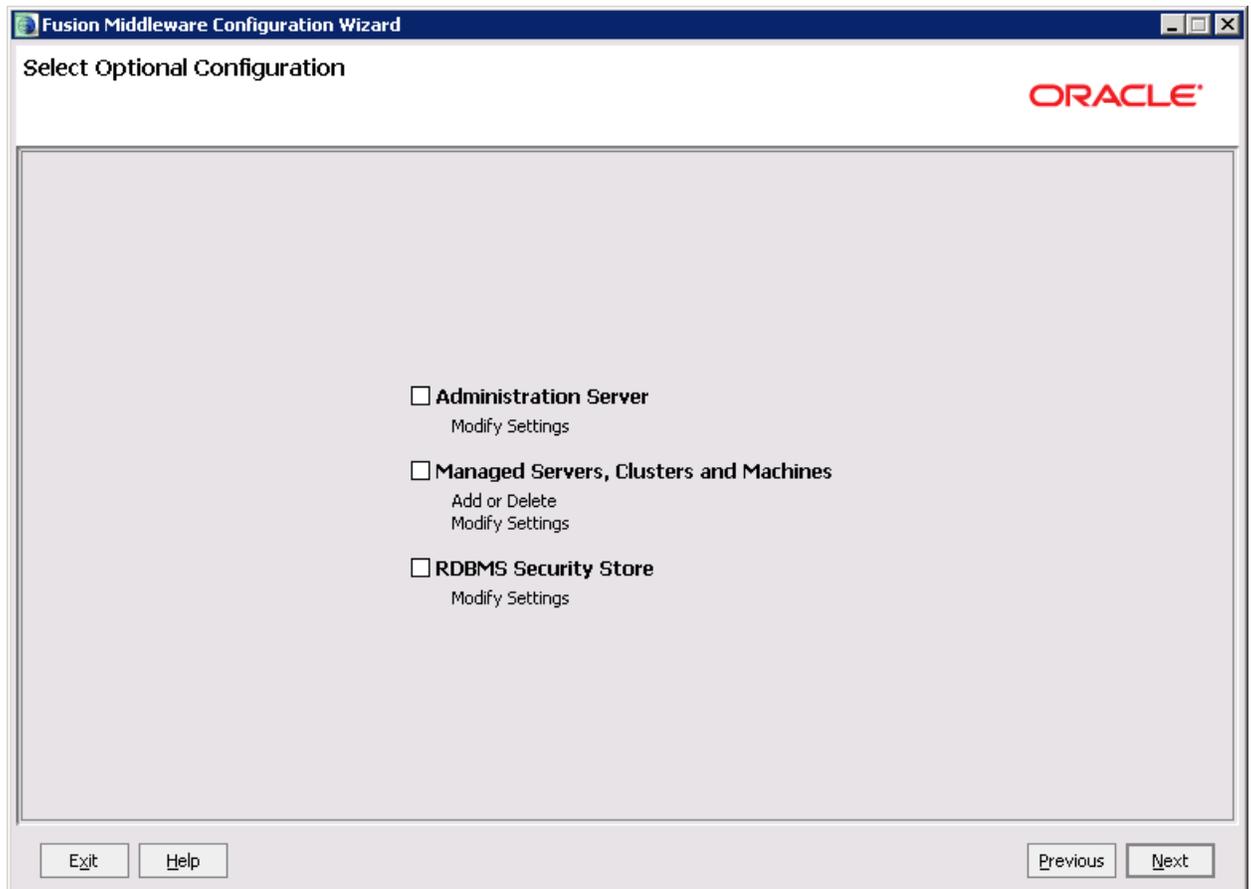
Description:

Exit Help Previous Next

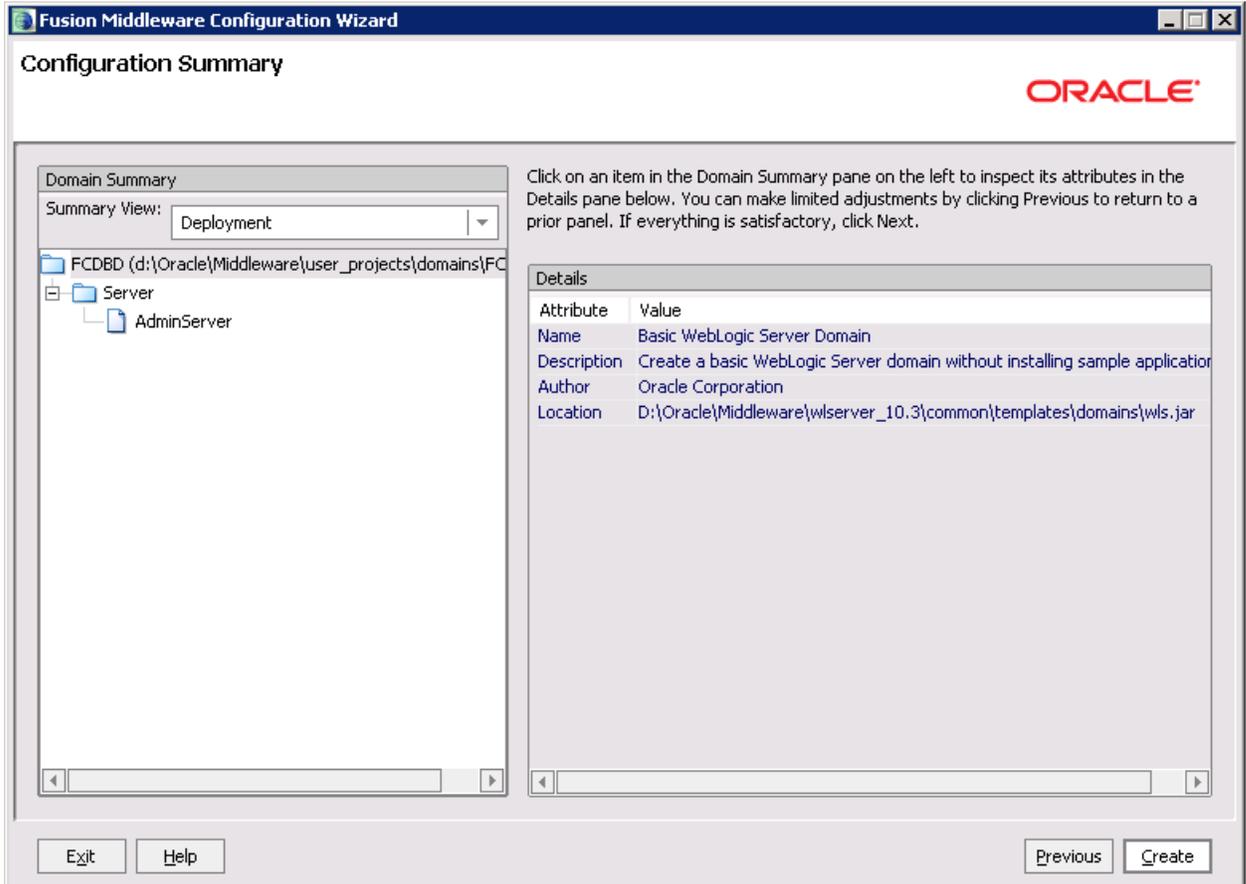
Select “Development Mode” under “Web Logic Domain Startup Mode”,
Select “Available JDKs” in JDK selection and select “Sun SDK 1.6.0_11” and click “Next”



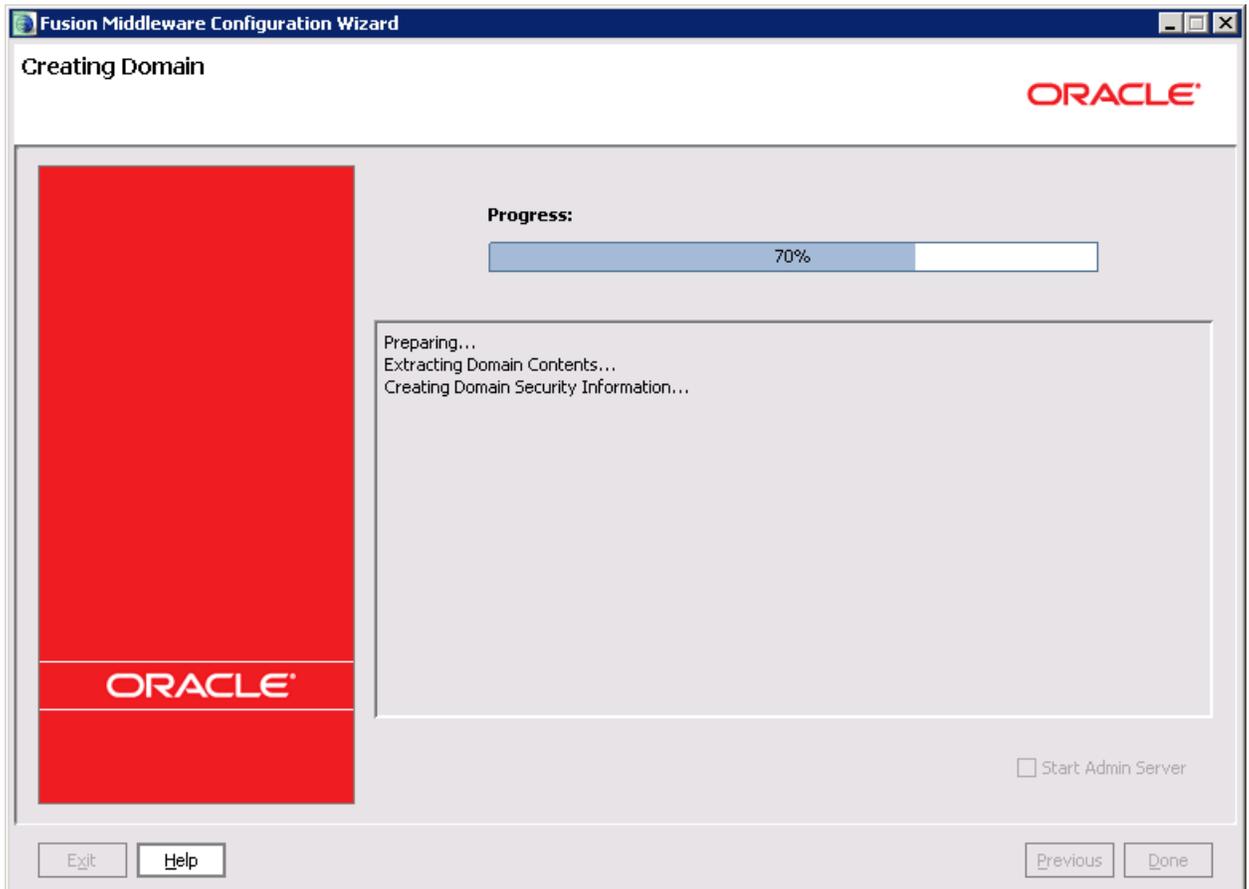
Do not select any of the check boxes and click "Next"



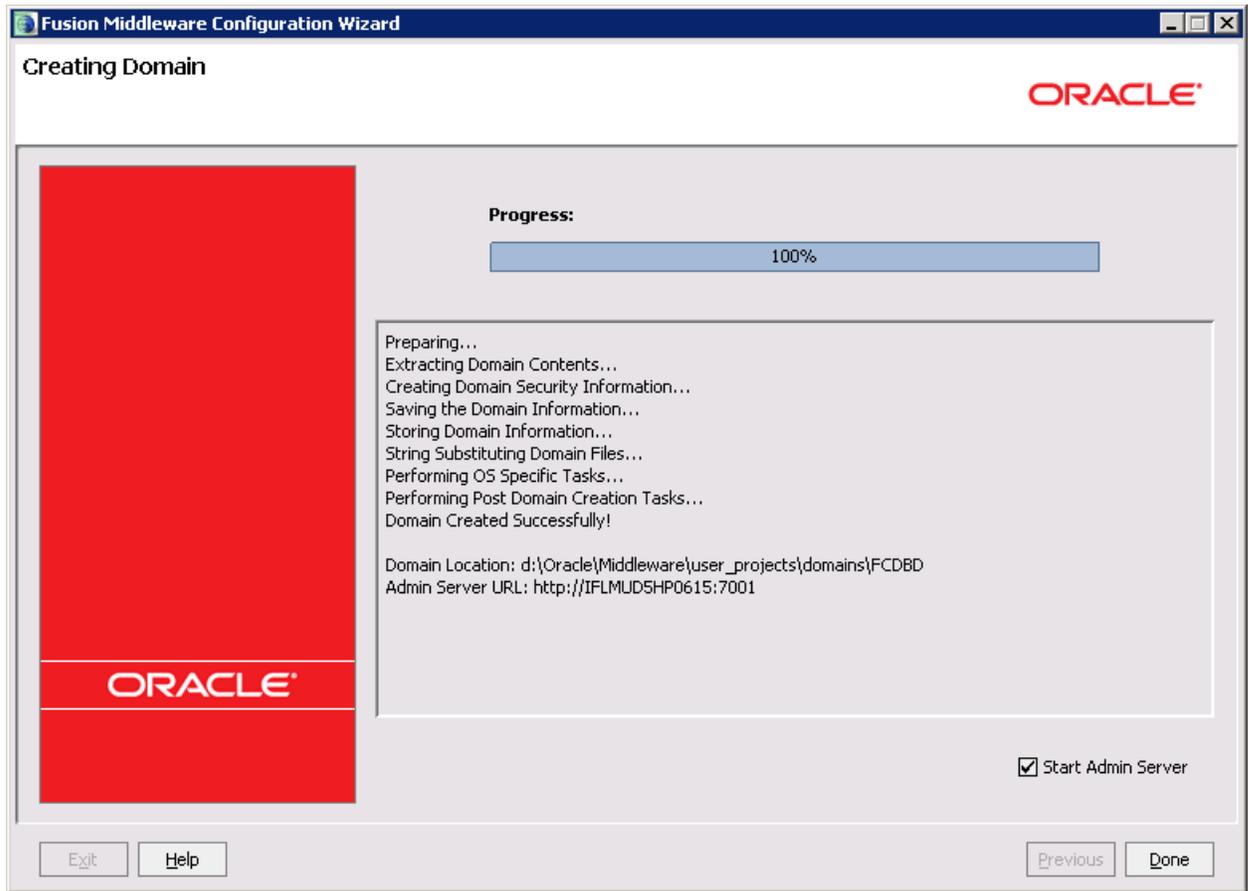
Click on "Create"



The screen displayed below show the progress



Click "Done"



Using commands.

a) Through the command prompt go to the <Oracle Base Folder>/<WLS home directory>/common/bin

e.g If the base folder is **oracle** , the path will be D:\oracle\wlserver_10.0\common\bin

b) Execute the batch file inside it wlst.bat (on Windows) or wlst.sh(on Unix)

c) The environment will be set and the prompt changes to wls:/offline>

d) Give the following command to create the domain.

```
createDomain(domainTemplate, domainDir, user, password)
```

| Argument | Definition |
|----------------|--|
| domainTemplate | Name and location of the domain template from which you want to create a domain. |
| domainDir | Name of the directory to which you want to write the domain configuration information. |
| user | Name of the default user. |
| password | Password of the default user. |

For e.g.:

```
createDomain('D:/oracle/wlserver_10.0/common/templates/domains/wls.jar','D:/oracle/user_projects/domains/trial', '<user_name>', '<password>')
```

This will create a domain under the location D:/oracle/user_projects/domains.

4.1.2.SSL Configuration

For the SSL configurations kindly refer to the doc

“Oracle_FLEXCUBE_Direct_Banking_Configure_Apache_HTTP_and_Weblogic“

4.1.3.Create Cluster

For configuration of clusters kindly refer to the doc

“Oracle_FLEXCUBE_Direct_Banking_Clustering_on_Weblogic“

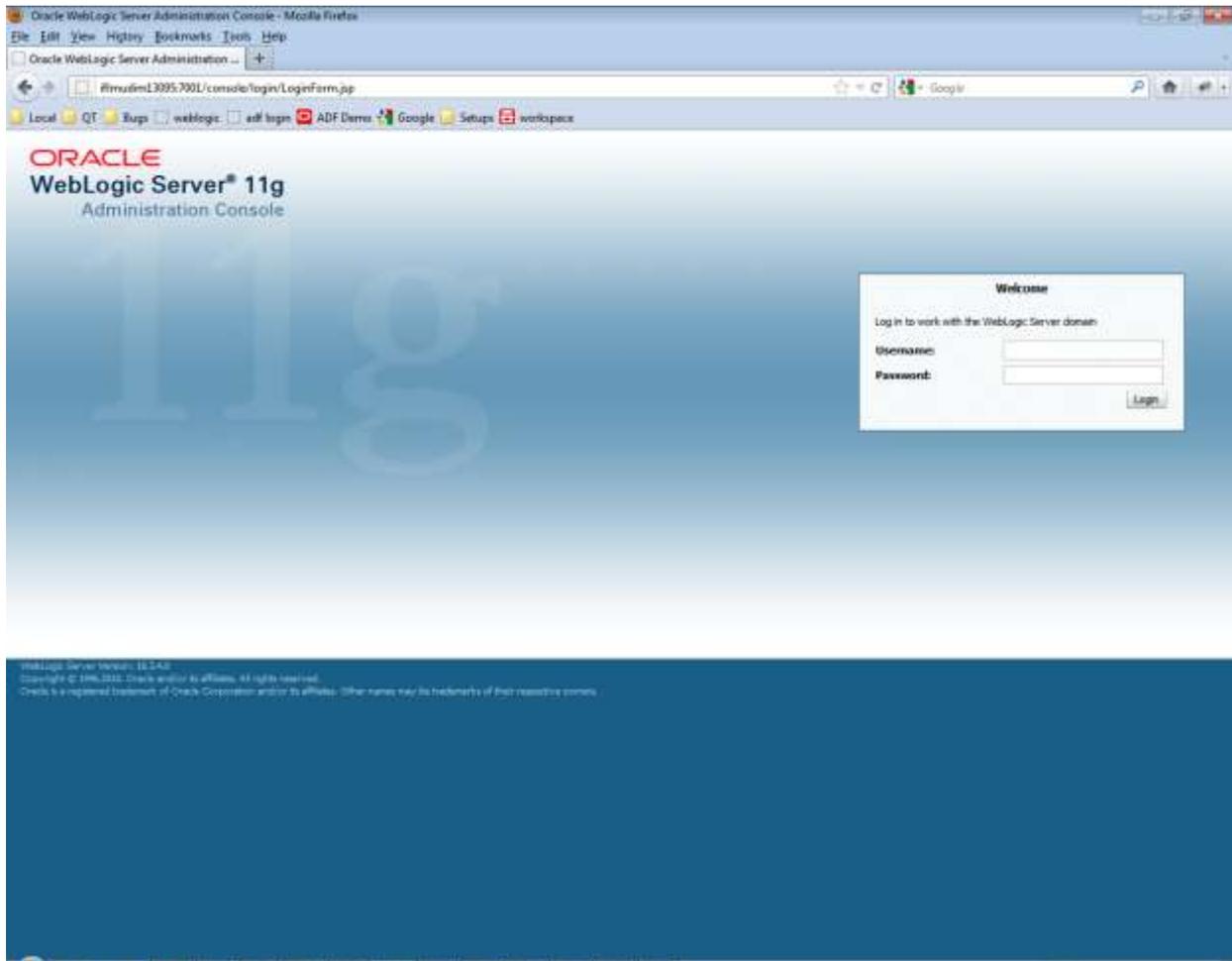
4.1.4. ORACLE WebLogic server administrative console.

The Administration Console facilitates in creating, starting, suspending, resuming and stopping servers; deploying applications and other administration facilities.

1. To start the ORACLE WebLogic Server Administration Console in Windows ,click ORACLE Products →User Projects →<domain_name>

To open Administration Console, type `http://<hostname OR IP>:<port>/console` in browser window.

Enter User Id and Password set during domain creation and click Log In.



1.5.5. Enable Archived Real Path

1. In the ORACLE Weblogic Server Administration Console, click Domain Name → Web Applications

The screenshot displays the Oracle WebLogic Server Administration Console interface. On the left, there are navigation panels for 'Change Center', 'Domain Structure', 'How do I...', and 'System Status'. The main area shows the 'Settings for FCDBD' page, specifically the 'Web Applications' configuration. The 'General' sub-tab is active, and several settings are visible: 'Relogin Enabled' (checked), 'Allow All Roles' (checked), 'Filter Dispatched Requests' (checked), and 'Overload Protection Enabled' (checked). Below these are input fields for 'Powered-By Header' (set to 'Servlet/2.4 JSP/2.0') and 'Mime Mapping File' (set to './config/mimemappings.properties'). Each setting includes a descriptive text block and a 'More Info...' link.

2. Scroll down and Check *Archived Real Path Enabled* and click *Save*

| | | |
|-------------------------------------|--|--|
| <input type="checkbox"/> | Error on Name request time value | Global property which determines the behavior of the JSP compiler when a program attribute "name" has a request time value. Without this property set to "true", the JSP compiler throws an error for a JSP using a request time value for the "name" attribute as mandated by the JSP 2.0 spec. This property exists for backward compatibility. More Info... |
| <input type="checkbox"/> | Client Cert Proxy Enabled | Specifies whether or not to honor the WL Proxy-Client-Cert header coming with the request. More Info... |
| <input type="checkbox"/> | Http Trace Support Enabled | Returns the value of HttpTraceSupportEnabled. More Info... |
| <input type="checkbox"/> | WebLogic Plugin Enabled | Specifies whether or not the proprietary WL Proxy-Client-IP header should be honored. (This is needed only when WebLogic plugins are configured.) More Info... |
| <input checked="" type="checkbox"/> | Auth Cookie Enabled | Whether autcookie feature is enabled or not. More Info... |
| <input type="checkbox"/> | WAP Enabled | Indicates whether the session ID should include J2M information. (Checking this box may be necessary when using URL rewriting with WAP devices that limit the size of the URL to 128 characters, and may also affect the use of replicated sessions in a cluster.) When this box is selected, the default size of the URL will be set at 52 characters, and it will not contain any special characters. More Info... |
| Post Timeout: | <input type="text" value="30"/> | The amount of time the server waits between receiving chunks of data in an HTTP POST data before it times out. (This is used to prevent denial-of-service attacks that attempt to overload the server with POST data.) More Info... |
| Maximum Post Time: | <input type="text" value="-1"/> | Max Post Time (in seconds) for reading HTTP POST data in a servlet request. MaxPostTime < 0 means unlimited. More Info... |
| Maximum Post Size: | <input type="text" value="-1"/> | The maximum post size this server allows for reading HTTP POST data in a servlet request. A value less than 0 indicates an unlimited size. More Info... |
| <input checked="" type="checkbox"/> | Work Context Propagation Enabled | Indicates whether or not WorkContextPropagation is enabled. By default it is turned on. There is a little overhead involved in propagating WorkContexts. Therefore, if you don't care about WorkContext propagation, turn this value off in production environments. More Info... |
| P3P Header Value: | <input type="text"/> | Returns the P3P Header value that will be sent with all responses for http requests (if non-null). The value of this header points to the location of the policy reference file for the web site. More Info... |
| <input type="checkbox"/> | JSP Compiler Backwards Compatible | Global property to determine the behavior of the JSP compiler. When this property set to "true", the JSP compiler throws a translation error for JSPs that do not conform to the JSP2.0 specification. This property exists for backward compatibility. More Info... |
| <input checked="" type="checkbox"/> | Archived Real Path Enabled | Global property to determine the behavior of getRealPath() for archived web applications. When this property set to "true", getRealPath() will return the canonical path of the resource files. More Info... |
| <input type="button" value="Save"/> | | |

WebLogic Server Version: 12.1.2.0
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4.1.6. Creating a Managed Server

1. In the ORACLE Weblogic Server Administration Console, click Environment → Servers

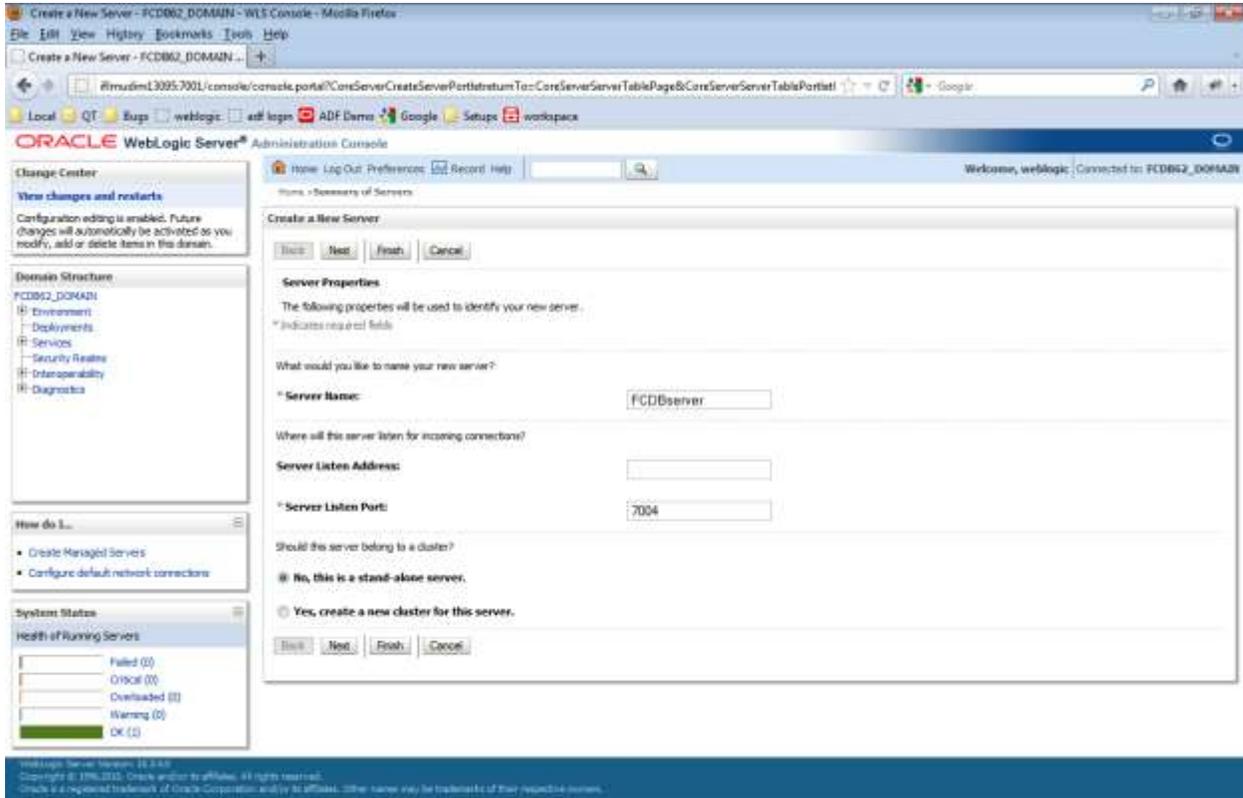
Click “New”

The screenshot displays the Oracle WebLogic Server Administration Console interface. The main content area is titled "Summary of Servers" and includes a "New" button. Below this, a table lists the servers in the domain. The table has the following columns: Name, Cluster, Machine, State, Health, and Listen Port. The table contains one entry: "AdminServer (admin)" with a state of "RUNNING" and a health of "OK".

| Name | Cluster | Machine | State | Health | Listen Port |
|---------------------|---------|---------|---------|--------|-------------|
| AdminServer (admin) | | | RUNNING | OK | 7001 |

Enter the “Server Name” as “FCDBServer”, set the Server listen Port to “7002” or any free port that is not in use.

Select the radio button against **No**, this is a stand-alone server and click “Finish”



Server created successfully is displayed and summary of servers is shown.

The screenshot shows the Oracle WebLogic Server Administration Console interface. At the top, a message states: "All changes have been activated. No restarts are necessary." and "Server created successfully." Below this, the "Summary of Servers" page is displayed, featuring a table with the following data:

| Name | Cluster | Machine | State | Health | Listen Port |
|---------------------|---------|---------|----------|--------|-------------|
| AdminServer (Admin) | | | RUNNING | OK | 7001 |
| FCDServer | | | SHUTDOWN | | 7004 |

The interface also includes a left-hand navigation pane with sections like "Change Center", "Domain Structure", "How do I...", and "System Status". The bottom of the page contains copyright information for Oracle Corporation.

4.1.7. Configurations to Start/Stop managed server from Administrative Console

Creating Machine

It is required to create a machine in order to Start/Suspend/Resume/Stop the Managed Servers in Weblogic using Administration Console.

1. Click Environment → Machines

Click “New” button

Summary of Machines - FCDB62_DOMAIN - WLS Console - Mozilla Firefox

Summary of Machines - FCDB62_DOMAIN

http://localhost:7001/console/console.portal?_afpl=true&_pageLabel=CoreMachineMachineTablePage

Local QT Eugs weblogic adf login ADF Demo Google Setup workspace

ORACLE WebLogic Server Administration Console

Welcome, weblogic | Connected to: FCDB62_DOMAIN

Home Log Out Preferences Record Help

Summary of Machines

A machine is the logical representation of the computer that hosts one or more WebLogic Server instances (Servers). WebLogic Server uses configured machine names to determine the optimum server in a cluster to which certain tasks, such as HTTP session replication, are delegated. The Administration Server uses the machine definition in conjunction with Node Manager to start remote servers.

This page displays key information about each machine that has been configured in the current WebLogic Server domain.

Customize this table

| Name | Type |
|-----------------------------------|------|
| Showing 0 to 0 of 0 Previous Next | |
| There are no items to display | |
| Showing 0 to 0 of 0 Previous Next | |

New Close Delete

How do I...

- Create and configure machines
- Assign server instances to machines
- Clone machines
- Delete machines

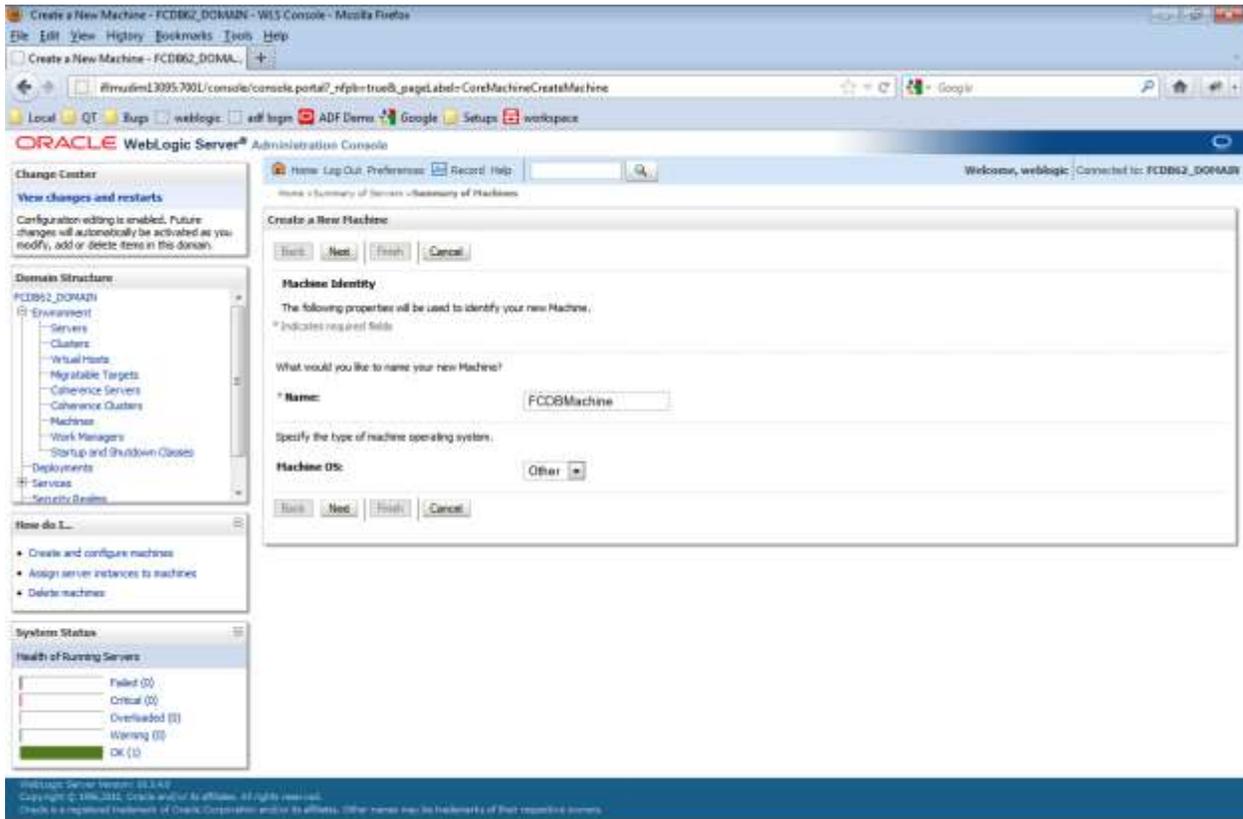
System Status

Health of Running Servers

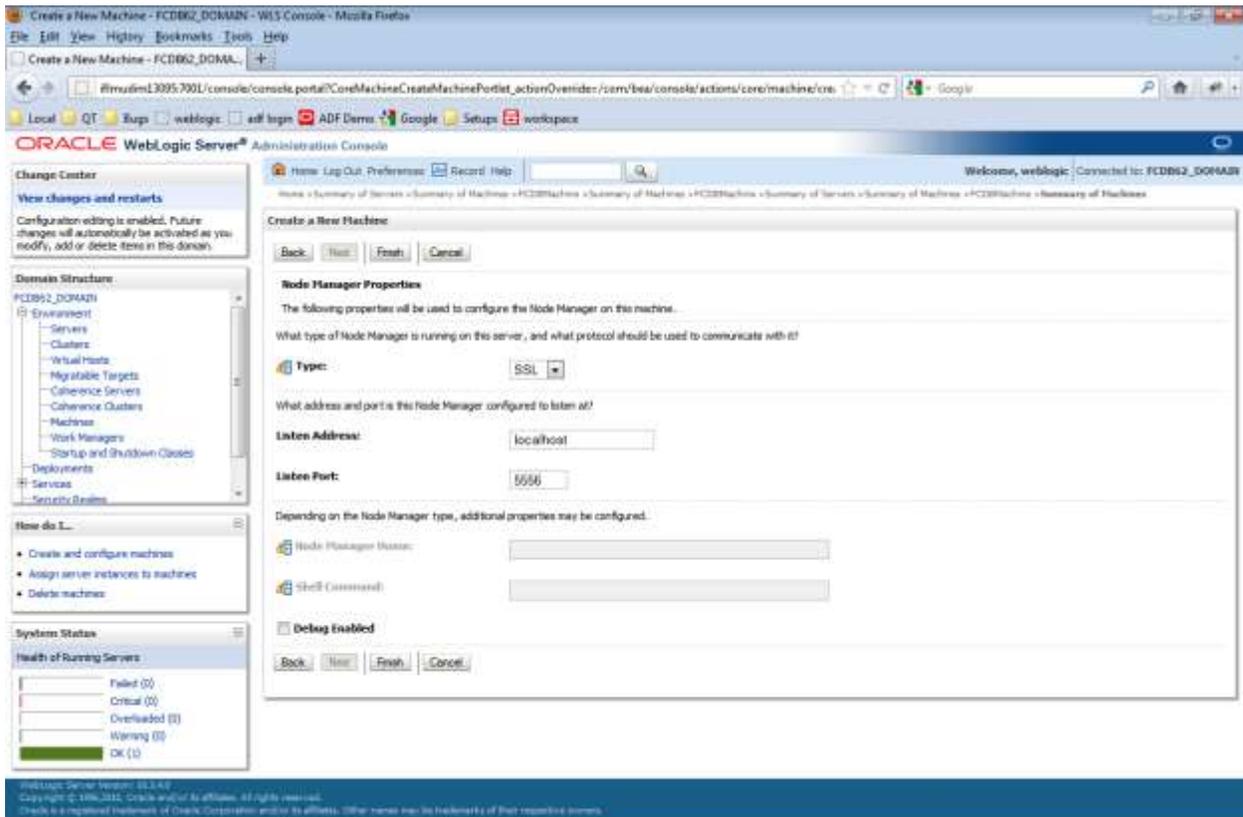
- Failed (0)
- Critical (0)
- Overloaded (0)
- Warning (0)
- OK (1)

WebLogic Server Version 12.1.4.0
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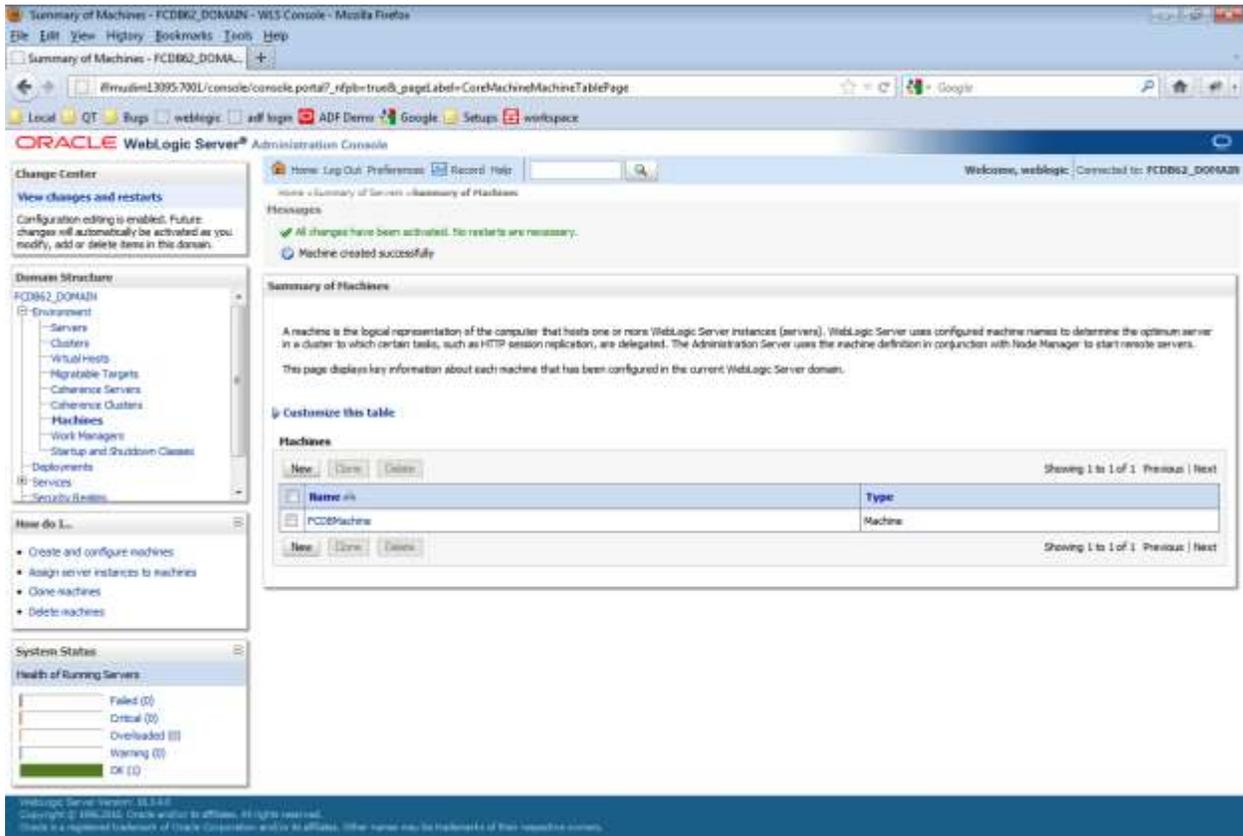
Enter the Name as “FCDBMachine” and click “Next”



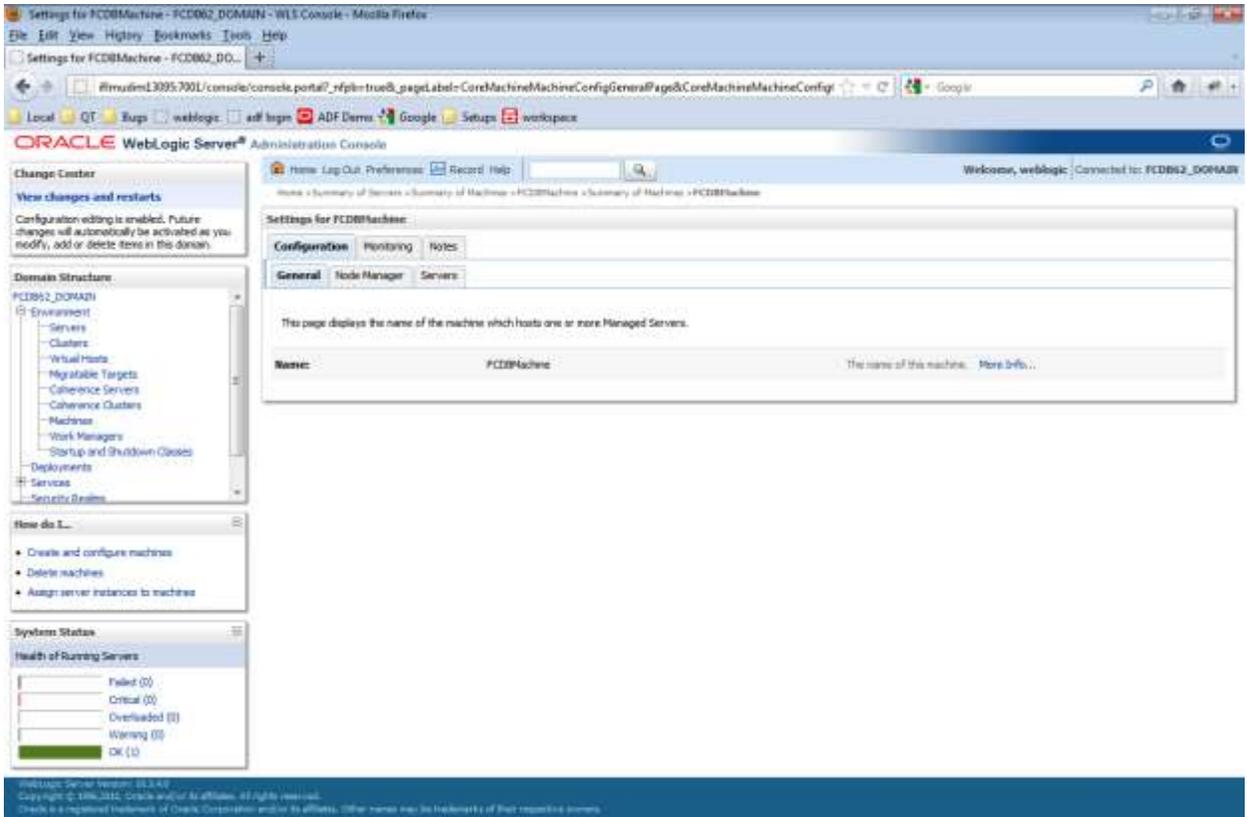
Select "Type" as "Plain" from the drop down list and click Finish.



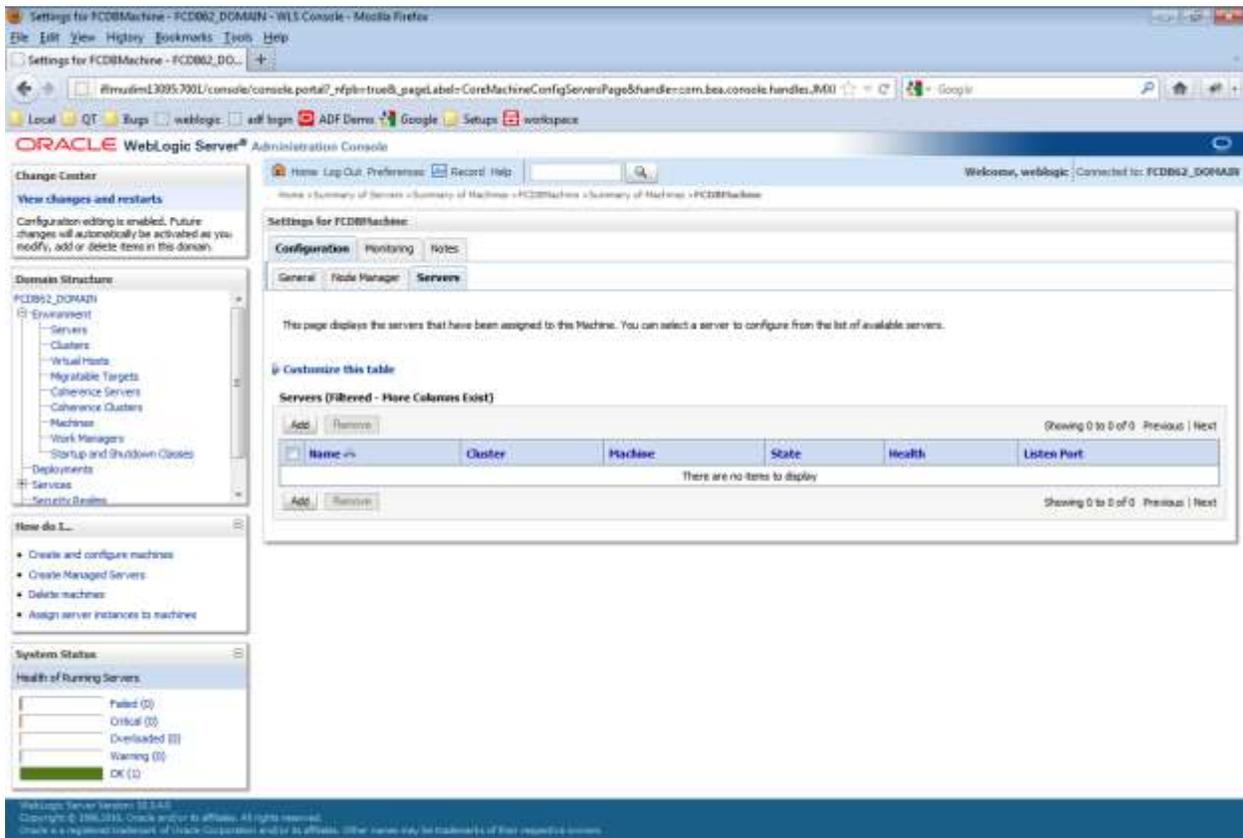
Machine created successfully message is displayed.



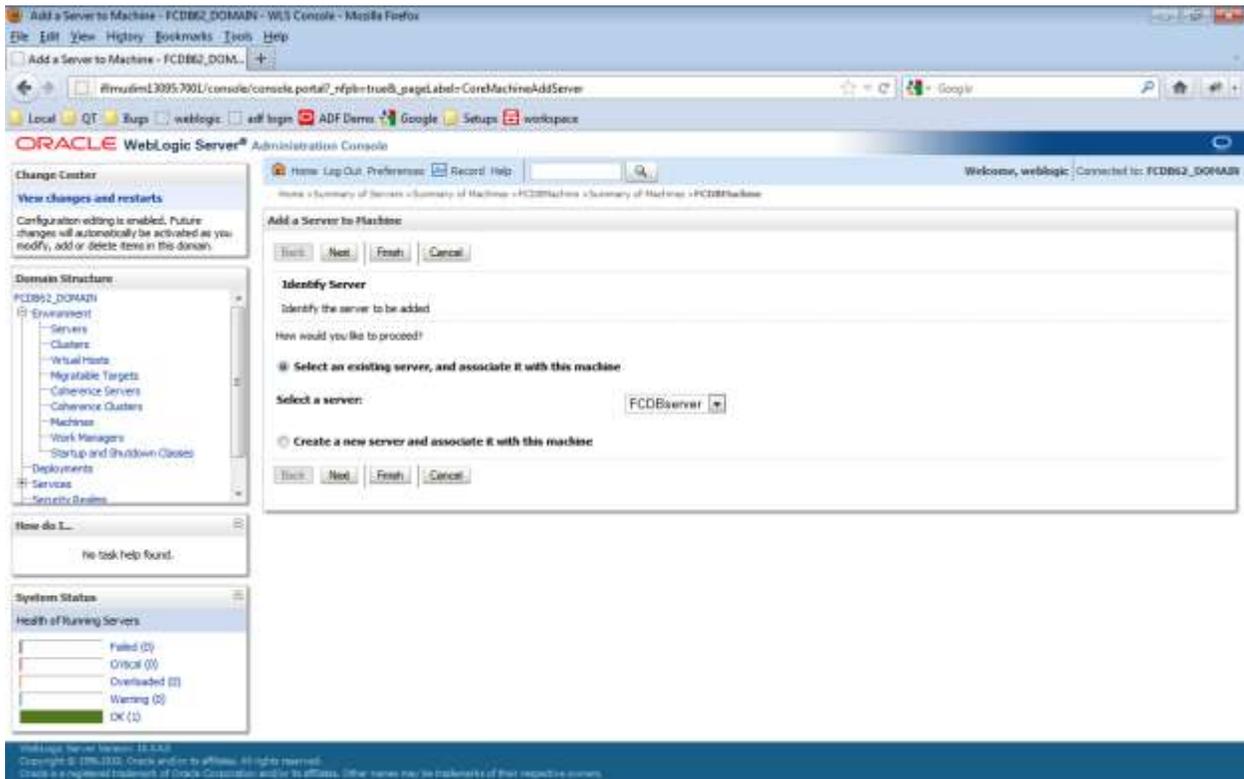
Click on Newly created FCDBMachine.



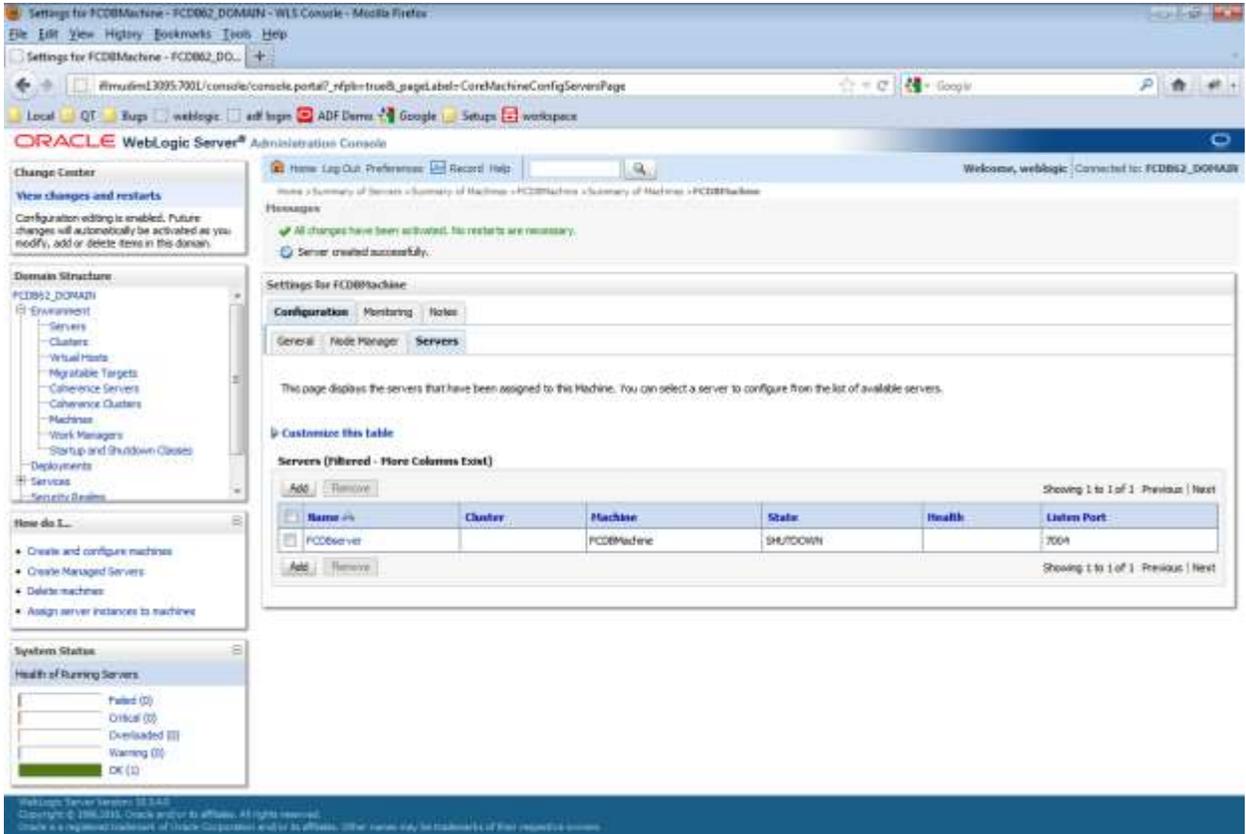
Click Servers under the "Configuration tab.



Click Add button to add a server to machine



Check the radio button against “Select an existing server, and associate it with this machine”.
 Select FCDBServer from the “Select a Server” drop down and click on “Finish”. Server created successfully message is displayed



Configuring Managed Server

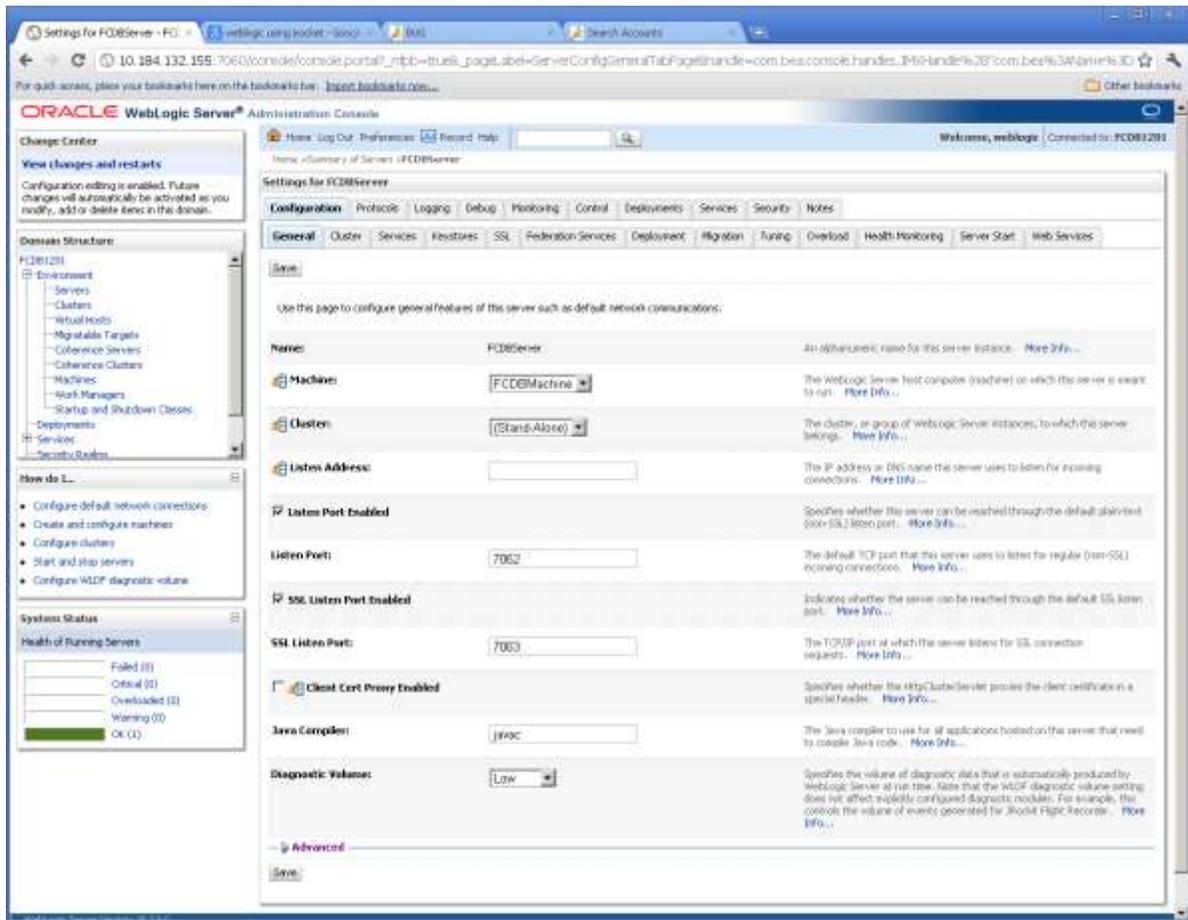
1. Click on Environment→Server in the left menu.

The screenshot displays the Oracle WebLogic Server Administration Console interface. The left-hand navigation pane shows the 'Domain Structure' for 'PCDB62_DOMAIN', with 'Environment' expanded to show 'Servers'. The main content area is titled 'Summary of Servers' and includes a 'Configuration' tab. Below this, there is a table of servers with the following data:

| Name | Cluster | Machine | State | Health | Listen Port |
|---------------------|---------|-------------|----------|--------|-------------|
| AdminServer (admin) | | | RUNNING | OK | 7001 |
| PCDBServer | | PCDBMachine | SHUTDOWN | | 7004 |

The table also includes 'New', 'Clone', and 'Delete' buttons for each row. The status bar at the bottom indicates 'Showing 1 to 2 of 2 Previous / Next'.

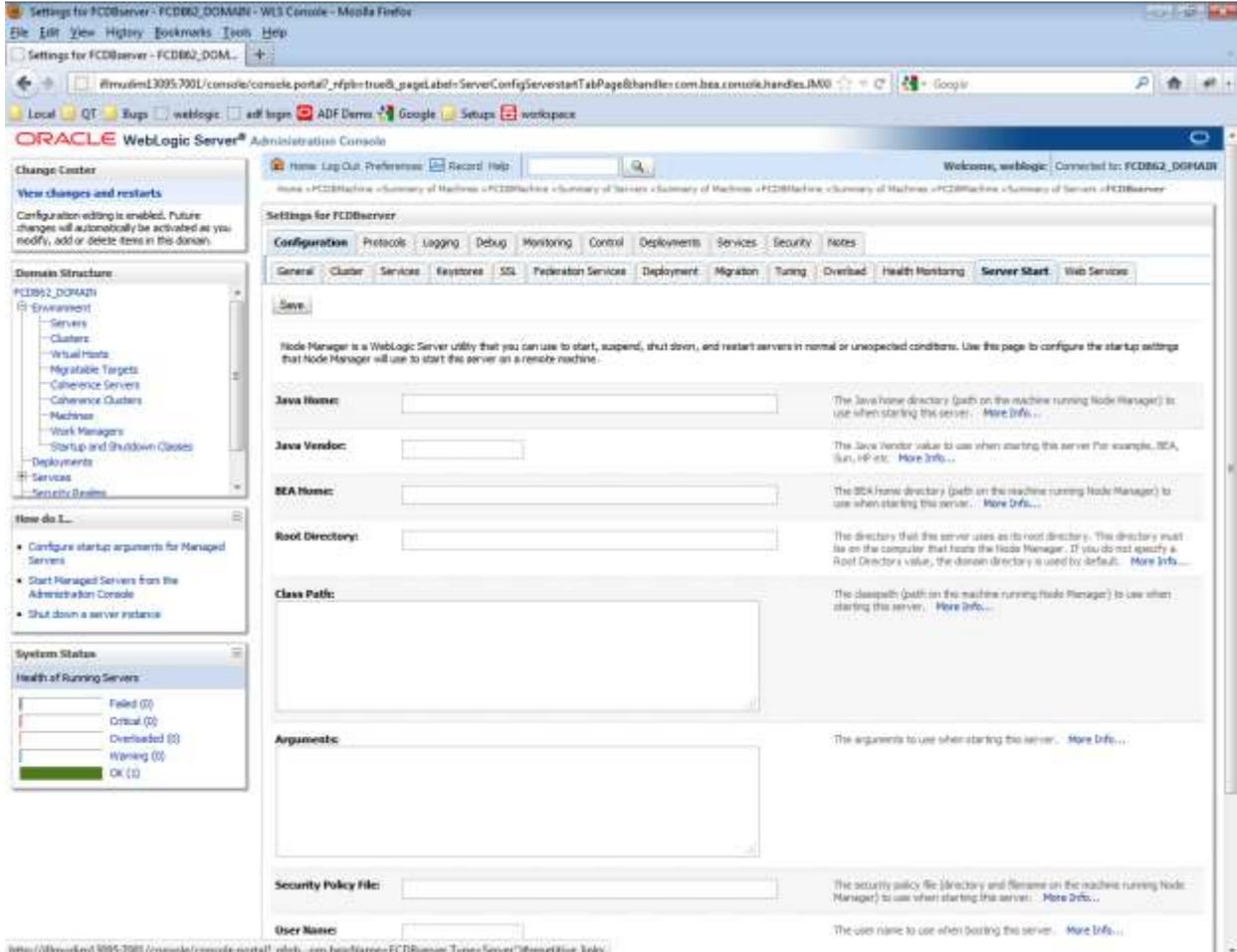
Click on server name with *FCDBServer*



On General tab, please ensure that the 'SSL Listen Port Enabled' feature is enabled (as it is mandatory). And the Listen Address should be "App Server IP"

Note: If you are using APACHE HTTP server then kindly refer Oracle_FLEXCUBE_Direct_Banking_Configure_Apache_HTTP_and_Weblogic manual for more details.

Click on Server Start under Configuration tab.



Enter the following values and click “Save”

Assuming the <FCDB BASE DIR> as Base Working Directory specify the path for all the jars from the following location.

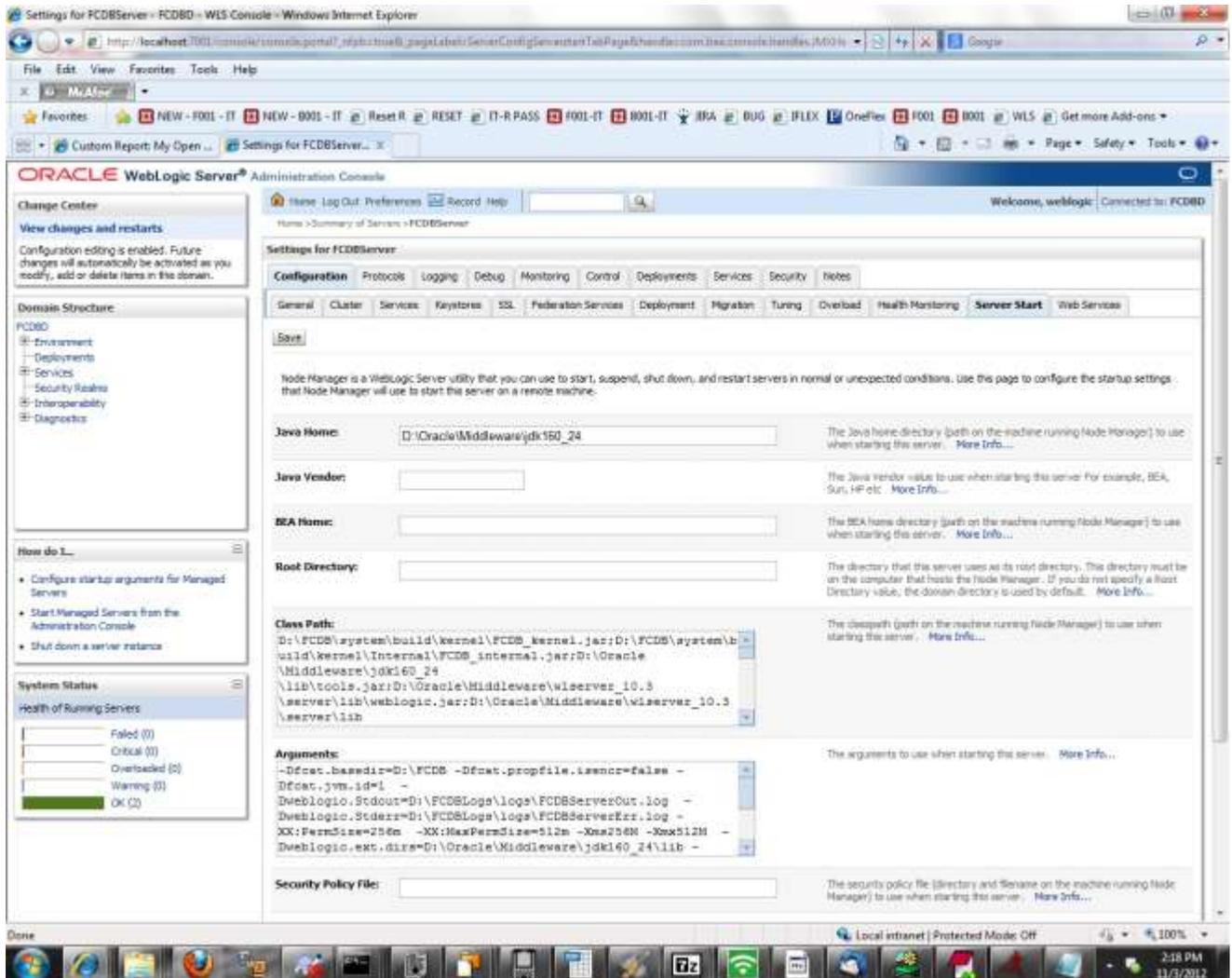
| Location | Description |
|--|---|
| <FCDB BASE DIR>\system\build\kernel | Select the release jar FCDB_kernel.jar kept at this location. |
| <FCDB BASE DIR>\system\build\extclasses\jars | Select all the external or third-party jars within this folder. |

Also mention the path for the home folder and logs.

Example configure the following properties.

| Property Name | Value | Description |
|-------------------------------------|---|--|
| Java Home | <Oracle Base Folder>\jrockit-jdk1.6.0_22-R28.1.1-4.0.1 | The Java home directory |
| Class Path | <FCDB BASE DIR>\system\build\kernel\FCDB_kernel.jar;<Oracle Base Folder>\jdk150_11\lib\tools.jar;<Oracle Base Folder>\wlserver_10.0\server\lib\weblogic.jar;<Oracle Base Folder>\wlserver_10.0\server\lib\webservices.jar;<FCDB BASE DIR>\system\build\extclasses\jars\<Include all jars residing in this path>;%classpath%; | Set the Classpath, in case of windows environment use (;) as separator and in case of Unix use (:). There Shouldn't be any space between variables. |
| Arguments (When JRockit is used) | -Dfcat.basedir=<BASE FOLDER> -Dfcat.propfile.isencr=false -Dfcat.jvm.id=1 -Dweblogic.Stdout=<FCAT.LOGFILE.PATH>\logs\FCDBServerOut.log - Dweblogic.Stderr=<FCAT.LOGFILE.PATH>\logs\FCDBServerErr.log -Xms1024M -Xmx1536M - Dweblogic.ext.dirs= < Oracle Base Folder>\jdk150_11\ lib - Dweblogic.security.SSL.ignoreHostnameVerification=true -Dweblogic.security.TrustKeyStore=DemoTrust -Dweblogic.security.SSL.enforceConstraints=off - Xmanagement:ssl=false,authenticate=false,port=7091 | Path to all folders holding application relevant jar files , location of class files generated, logs and home folder which will be used when starting the server. Note: Property "fcat.propfile.isencr" indicates the properties file's encryption status. Set as 'true' if files are encrypted, else set as 'false'. Refer to point 8 in this document for more details. |
| Arguments (When SUN JDK is used) | -Dfcat.basedir=<BASE FOLDER> -Dfcat.propfile.isencr=false -Dfcat.jvm.id=1 -Dweblogic.Stdout=<FCAT.LOGFILE.PATH>\logs\FCDBServerOut.log - Dweblogic.Stderr=<FCAT.LOGFILE.PATH>\logs\FCDBServerErr.log -XX:PermSize=512m -Xms1024M -Xmx1536M - Dweblogic.ext.dirs= < Oracle Base Folder>\jdk150_11\ lib | |

| | | |
|--------|--|--|
| | <ul style="list-style-type: none"> - Dweblogic.security.SSL.ignoreHostnameVerification=true -Dweblogic.security.TrustKeyStore=DemoTrust -Dweblogic.security.SSL.enforceConstraints=off - | |
| Note:- | Username and Password should be blank. | |



Please Note that kernel.jar should precede all the external jars

Configuring the Node Manager in Windows using command prompt

1. Open the file "WL_HOME\common\nodemanager\nodemanager.properties" e.g. D:\Oracle\wlserver_10.0\common\nodemanager\nodemanager.properties
Change the value of the property "SecureListener" to "false" in the file.

Execute the file installNodeMgrSvc in WL_Home\server\bin

Verify the configuration by following these steps

- a. Find the service with the name “Oracle Products NodeManager through services.msc.
- b. Make sure that the “Startup Type” is “Automatic”
- c. Click on the Start link to start the service.

Configuration to Start/Stop Servers as a windows Service.

Admin Server

1. Copy the installAdminServerSvc.cmd file from the list of files provided in the following location.
< Oracle Base Folder>user_projects\domains\DOMAIN_NAME

Execute the following command at the command prompt under the directory where the installAdminServerSvc.cmd file has been copied to.

```
installAdminServerSvc <username> <password>
```

FCDBServer

Copy the installFCDBServerSvc.cmd to the following location.

< Oracle Base Folder>user_projects\domains\DOMAIN_NAME

Execute the following command at the command prompt under the directory where the installFCDBServerSvc.cmd file has been copied to.

```
installFCDBServerSvc <username> <password>
```

| Property | Description |
|-------------|---|
| DOMAIN_NAME | Name of the domain as specified in domain creation. |
| username | The user name specified at domain creation. |
| password | The password specified at domain creation. |

Check the path in My Computer→Environment Variables→Path (Variable). It must not contain any spaces. This can be verified by giving the command at the command prompt

```
echo %PATH%
```

Starting Admin Server and Managed Server using command prompt

1. In a command prompt, set up the required environment variables by running the following script:

```
WL_HOME\server\bin\setWLSEnv.cmd (on Windows)
```

```
WL_HOME/server/bin/setWLSEnv.sh (on UNIX)
```

where WL_HOME is the home directory for WebLogic.

In the command prompt, change to the root of the domain directory, usually

<ORACLE_HOME>user_projects\domains\<DOMAIN_NAME>

To start an Administration Server, enter the following command:

```
java weblogic.Server
```

You can start a Managed Server as follows:

```
java -Dweblogic.Name=<managed-server-name>
```

```
Dweblogic.management.server=<url-for-Administration-Server> weblogic.Server
```

For example, if you create a Managed Server named FCDBSerevr in the fcdb_domain, you can enter the following command:

```
java -Dweblogic.Name= FCDBServer
```

```
Dweblogic.management.server=localhost:7001 weblogic.Server
```

Starting the Node Manager through Windows

Start the Node Manager from the Program Files→< ORACLE Folder>→Tools→Node Manager.

Starting Managed Server using Administrative Console

1. Click on “Environment→ Servers.”

Click on the server that is to be started.

Note: Only those servers which have been assigned a machine can be controlled through Administration console

Click on “Control” tab.

Select the checkbox against the server name and click on the “Start” button.

Click “Yes” in the confirmation screen.

4.2. Deploying Applications

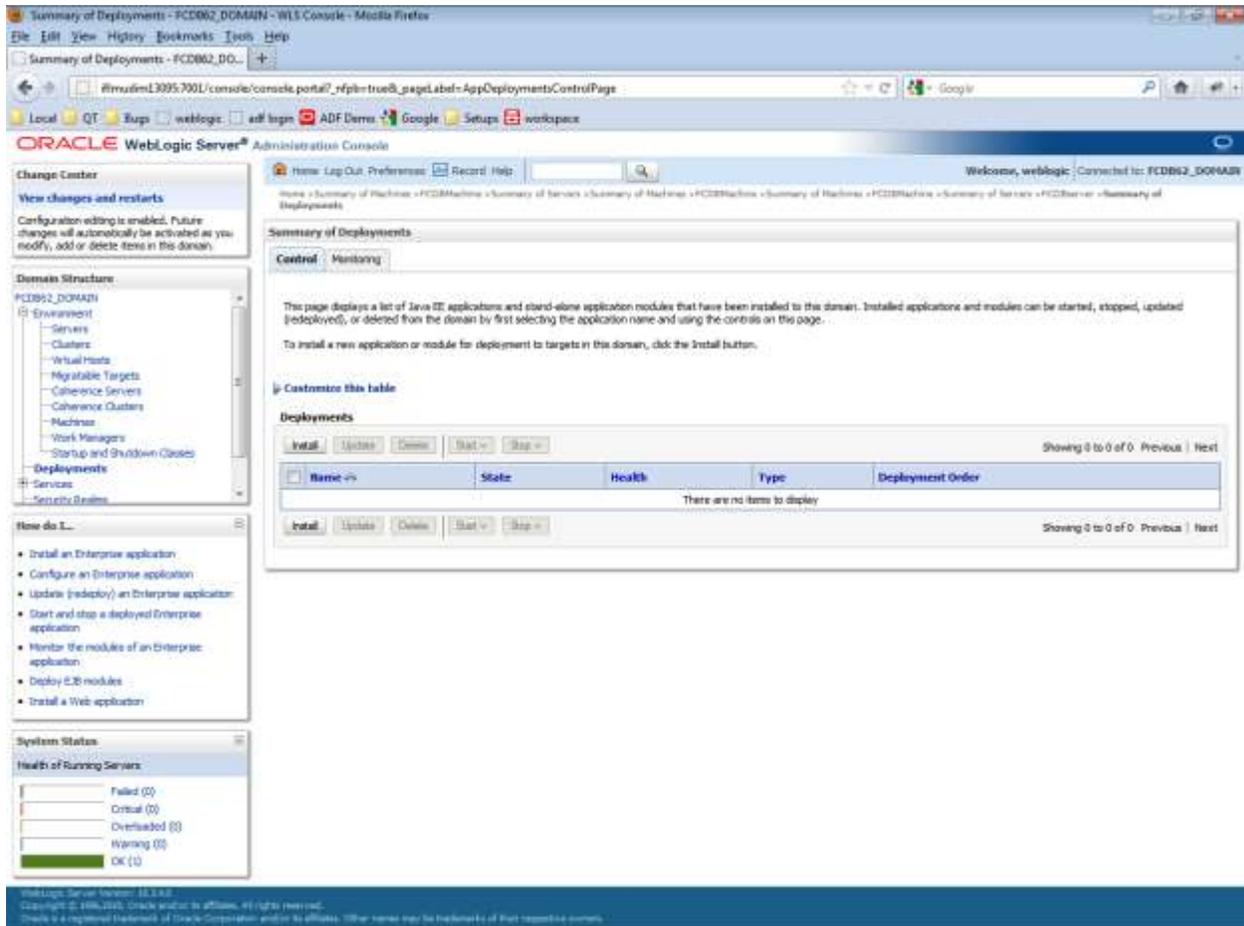
Web Application Deployment

Following section explains deploying Web application on Weblogic. For details and different options of deployment refer to documentations provided by ORACLE Weblogic .

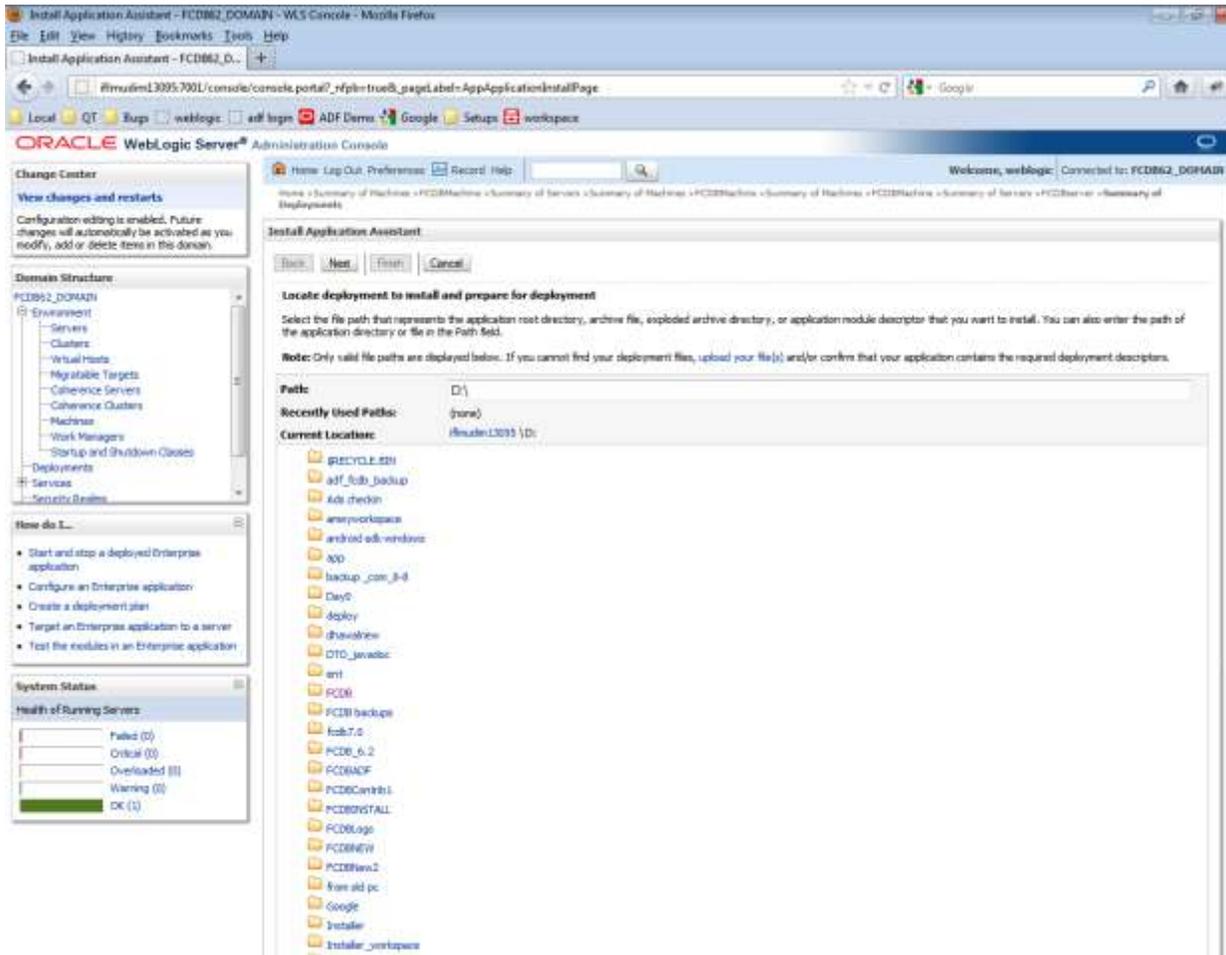
These steps should be carried out for each FCDB web application mentioned below.

| Deployable | Suggested Context | Path Location | Description |
|-------------------|--------------------------|----------------------------|--|
| F001.war | F001 | <FCDB BASE DIR>\deploy | Application for Super entity F001 |
| B001.war | B001 | < FCDB BASE DIR>\deploy | Application for Bank entity B001. This is available only for Base release. |
| T001.war | T001 | < FCDB BASE DIR>\deploy | Application for Model Third Party Bank entity T001. This is applicable only for Third party Accelerator Pack release. |
| V001.war | V001 | < FCDB BASE DIR>\deploy | Application for Model Virtual Bank entity V001. This is applicable only for Virtual Bank Accelerator Pack release. |
| SMS.war | SMS | < FCDB BASE DIR>\deploy | Required for SMS Banking. |
| help.war | B001 | < FCDB BASE DIR>\deploy | Required for help |

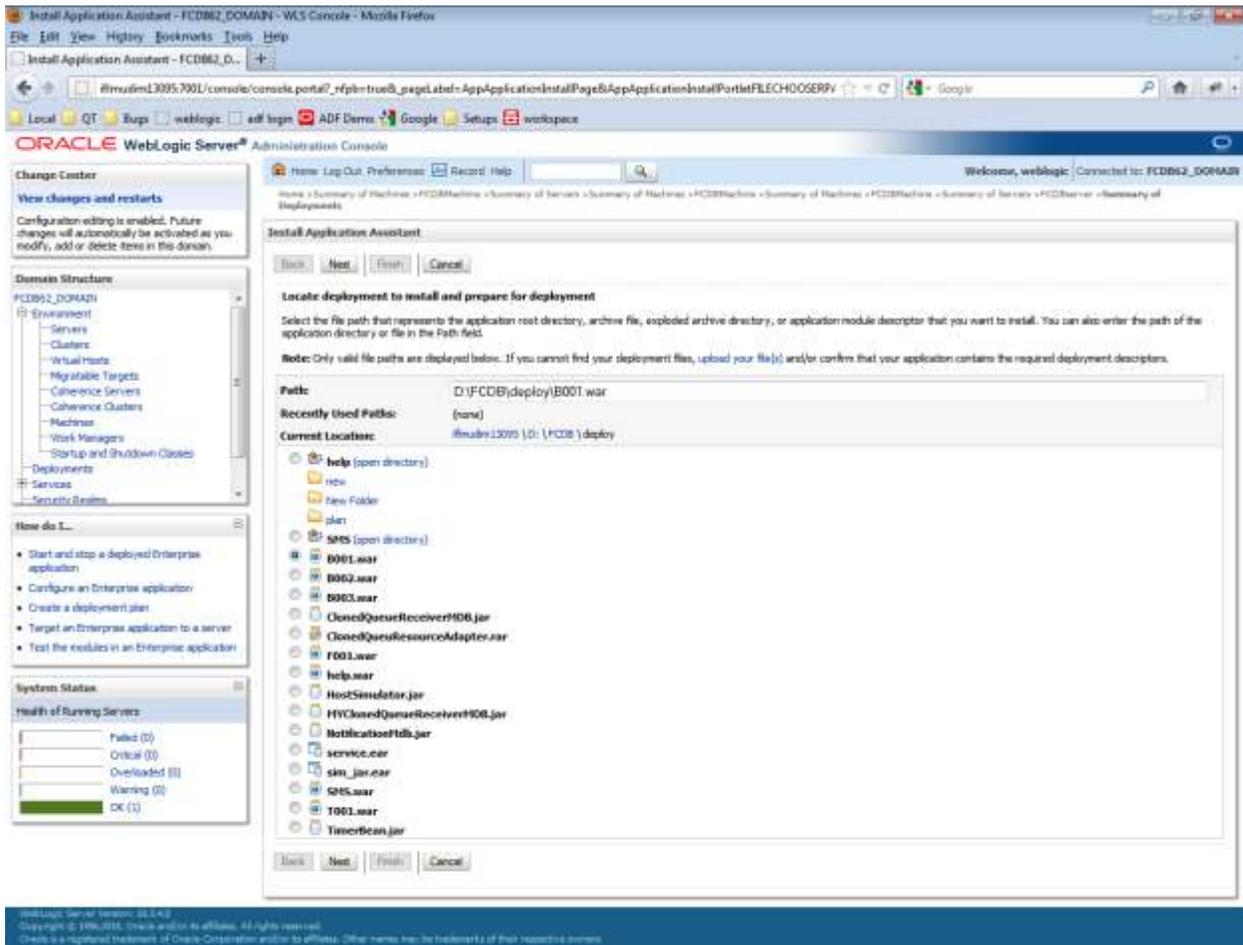
1. Click “Deployments” in the left menu.



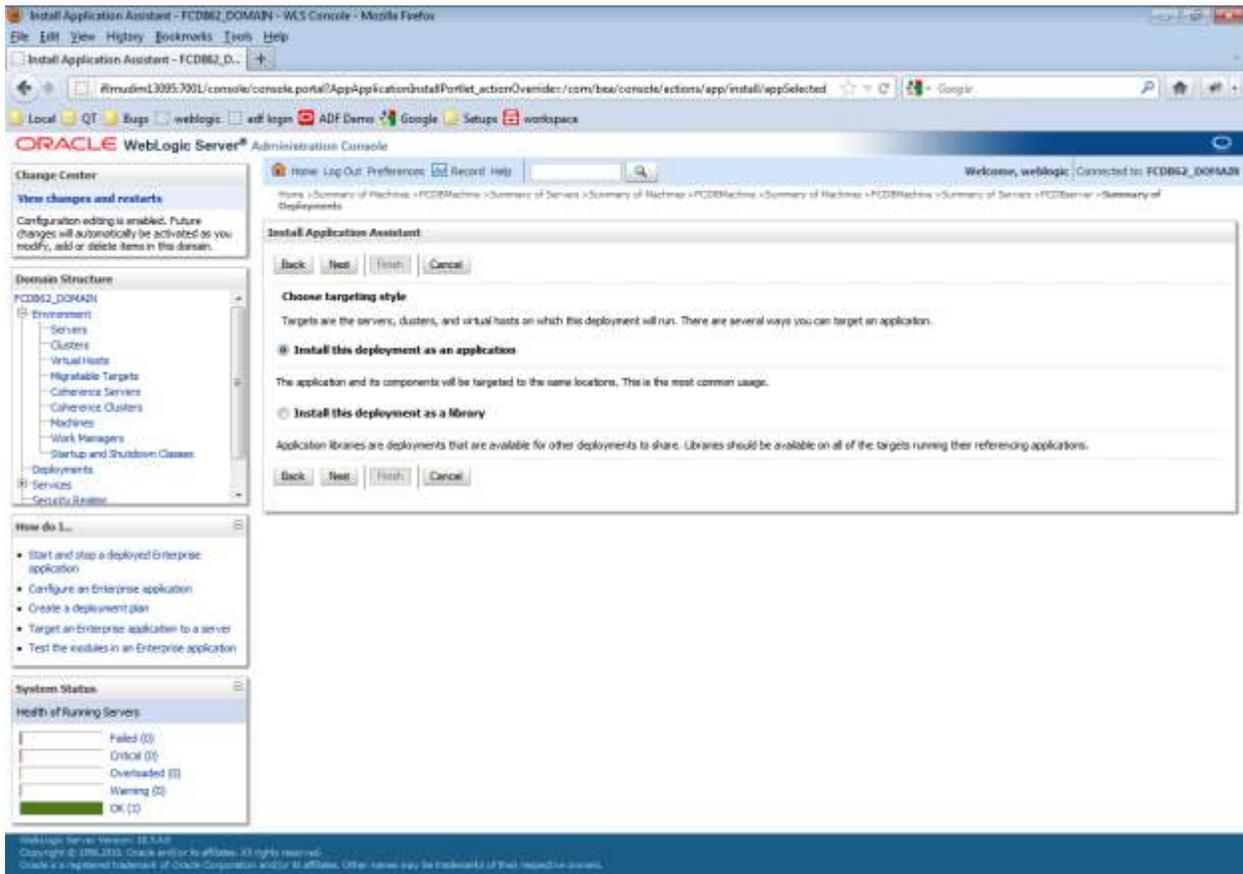
Click "Install" button.



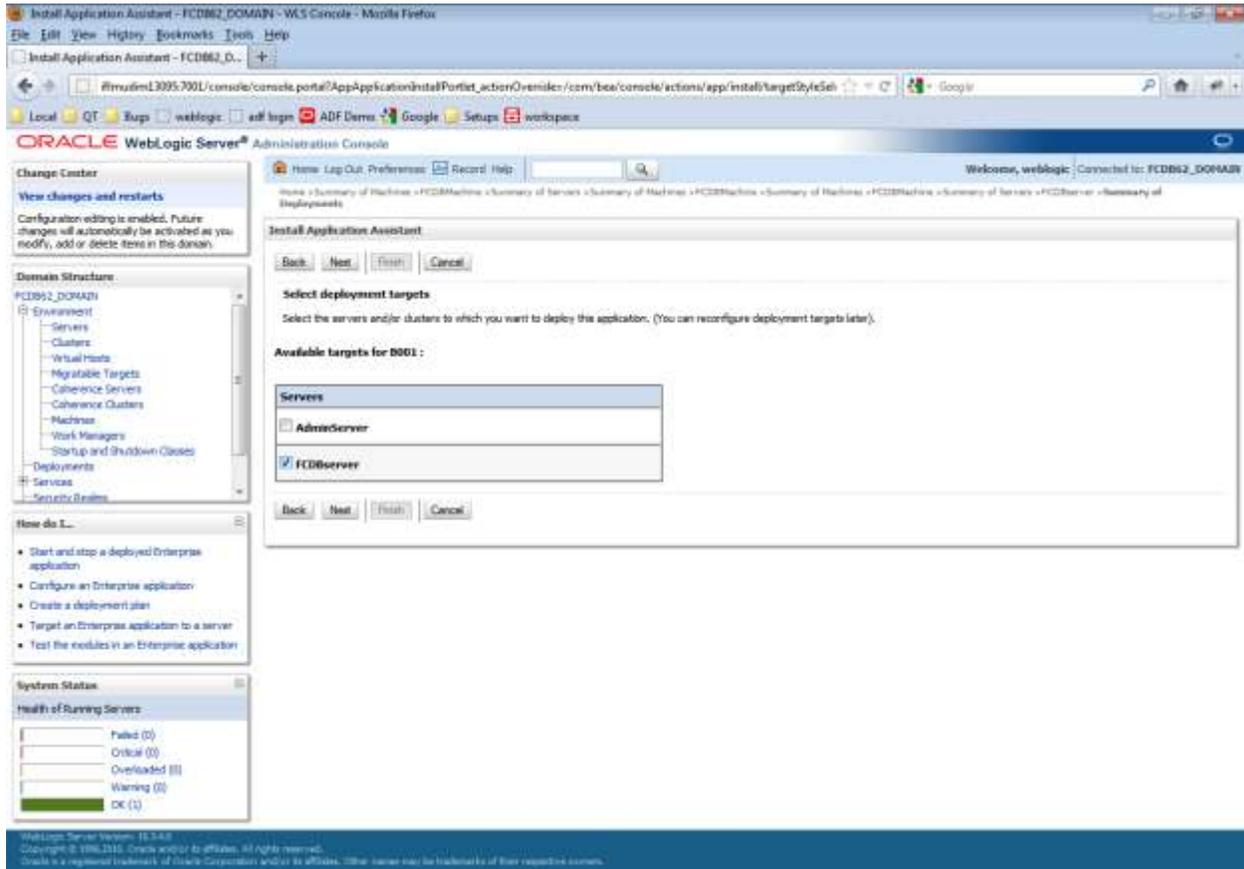
Navigate to the location where the war is stored on the machine and select the radio button against the deployable .war file. Click “Next”



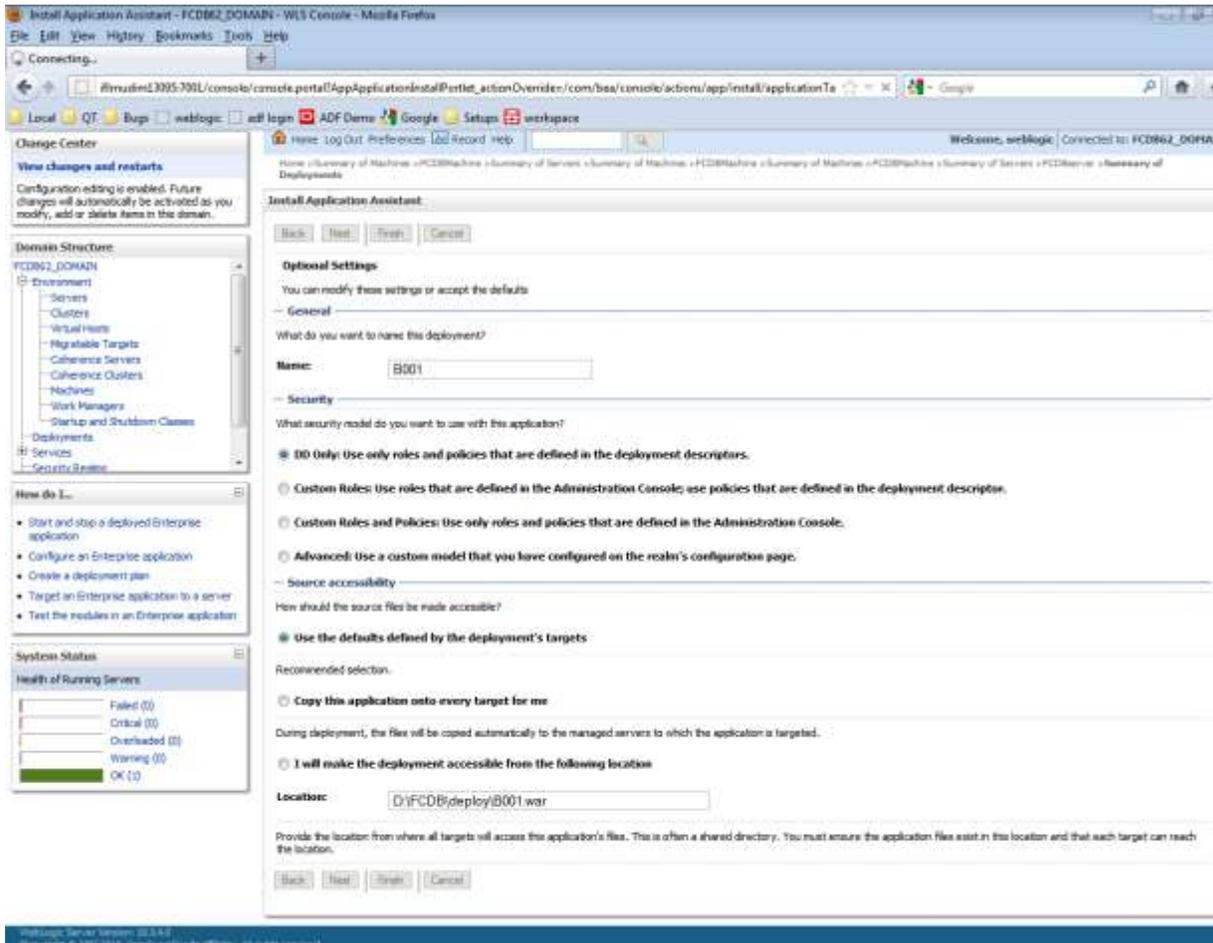
Check the radio button against “Install this deployment as an application” and click Next.



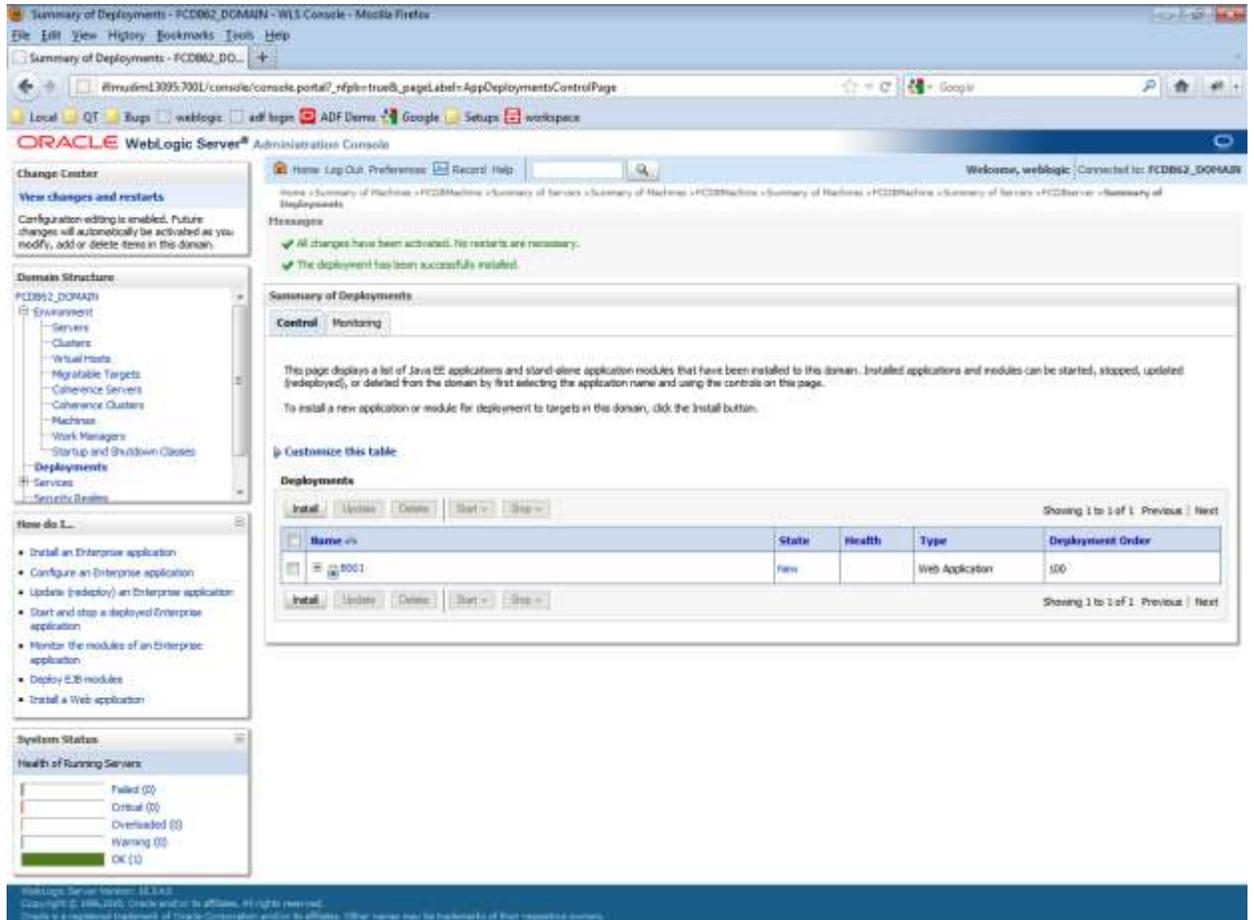
Select the server FCDBserver to be mapped and click on Next



Click Finish.



Confirmation Page is displayed



Deploy all the deployable mentioned in the [Appendix](#) depending upon the invocation mode set.

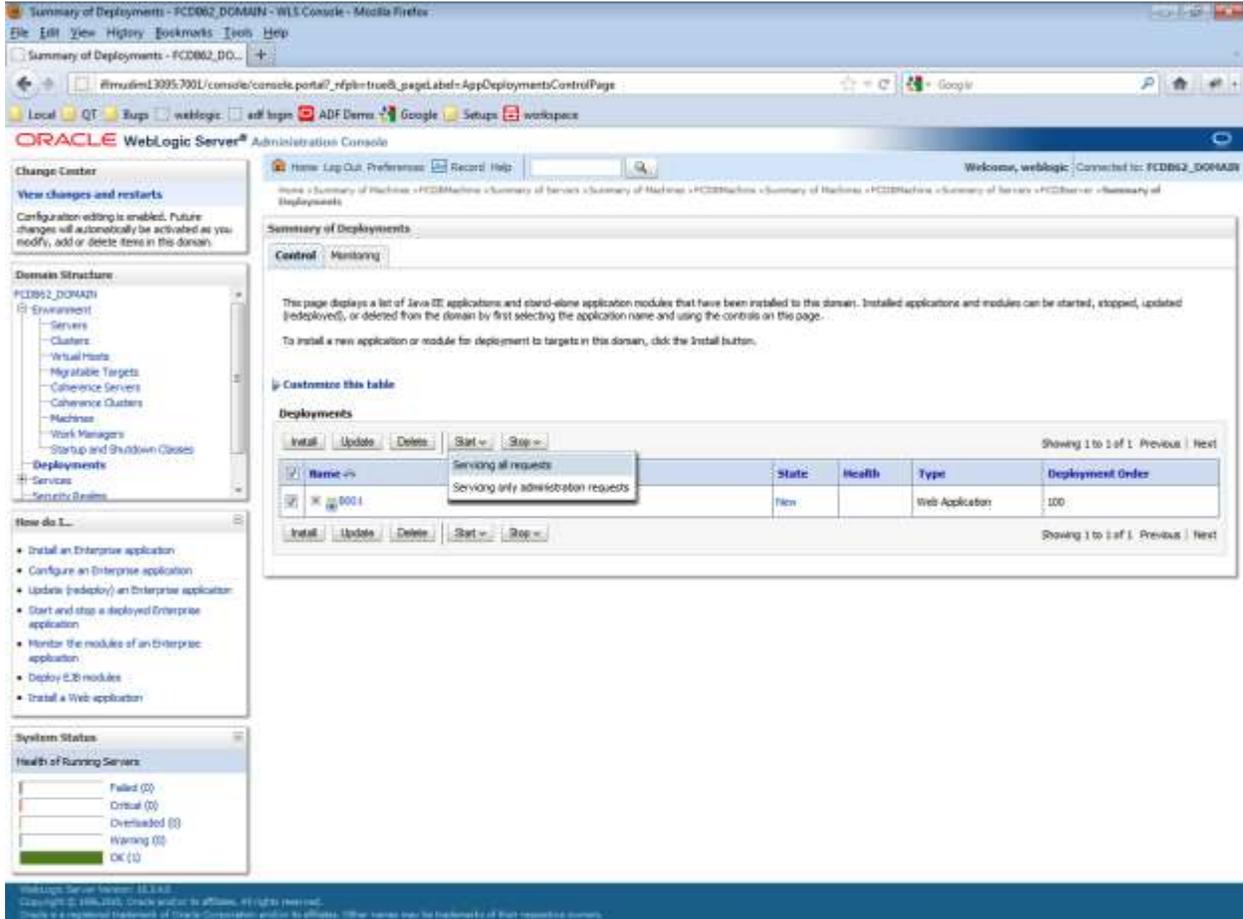
4.2.1. Starting Application

1. Click “Deployments” in the left menu
Select the applications that are to be started.

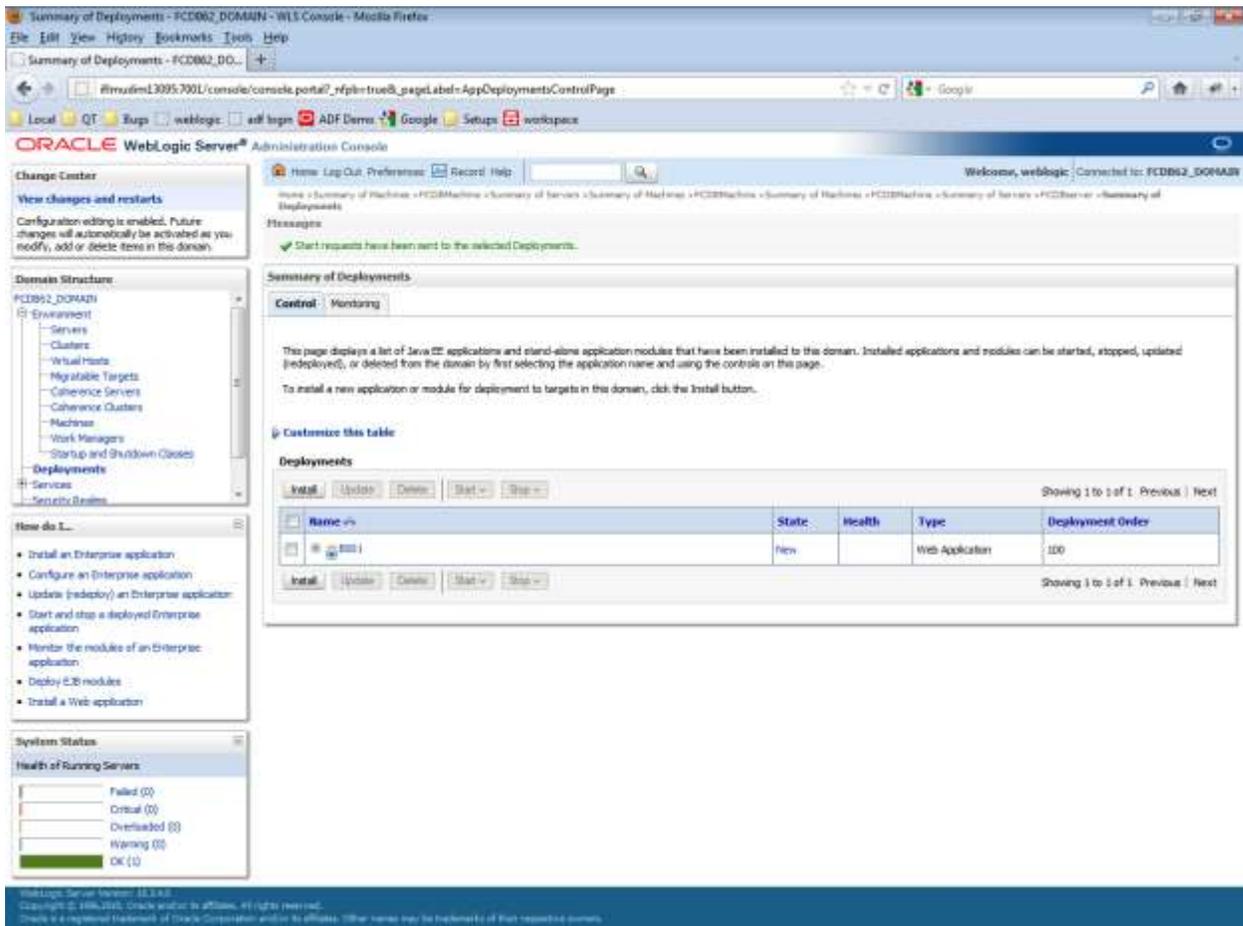
The screenshot displays the Oracle WebLogic Server Administration Console interface. The main content area is titled "Summary of Deployments" and includes a "Control" tab. Below the tab, there is a table of deployments. The table has columns for Name, State, Health, Type, and Deployment Order. One deployment is listed with the name "P001", a state of "New", and a type of "Web Application".

| Name | State | Health | Type | Deployment Order |
|------|-------|--------|-----------------|------------------|
| P001 | New | | Web Application | 100 |

Click "Servicing all requests" in the drop down list under "Start" tab



Confirmation screen displayed



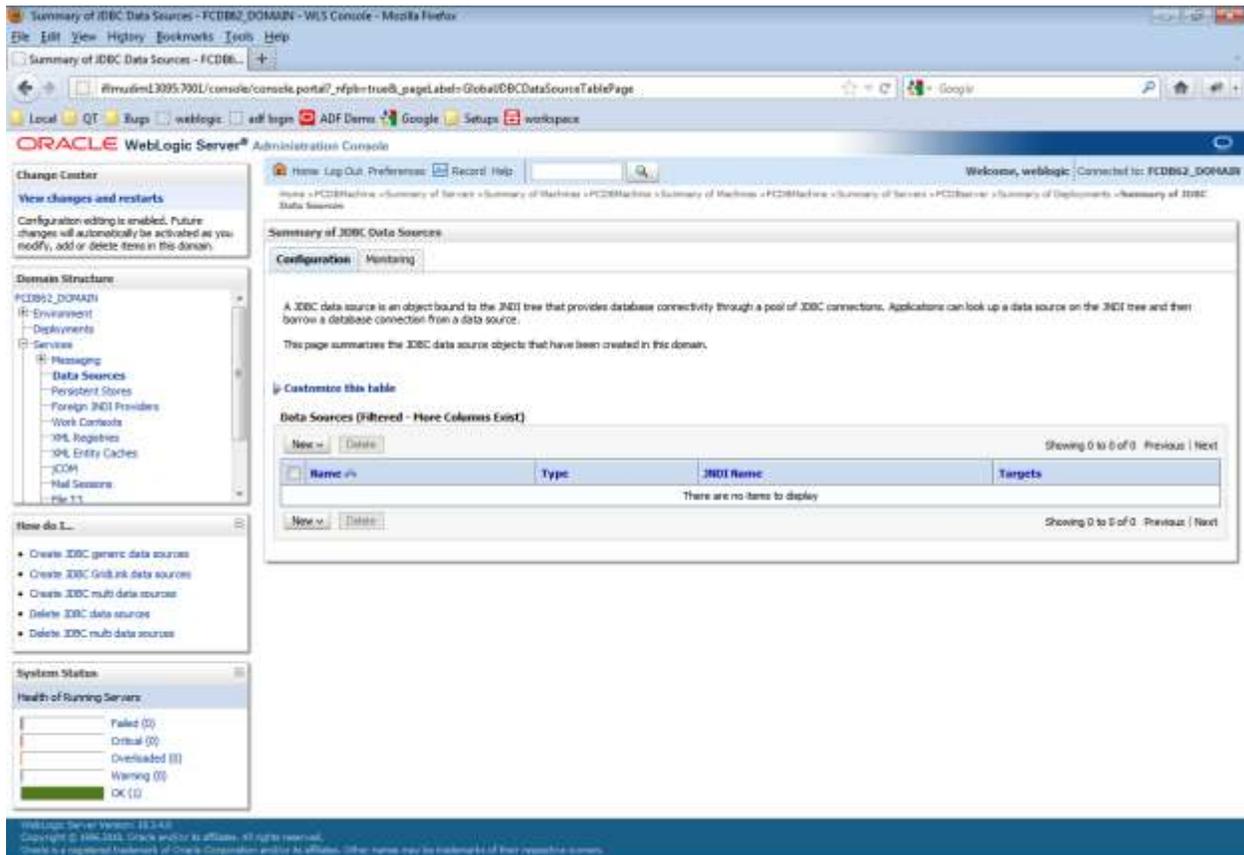
5.Setup JDBC data source and Connection Pooling

XA Enabled Data Source:

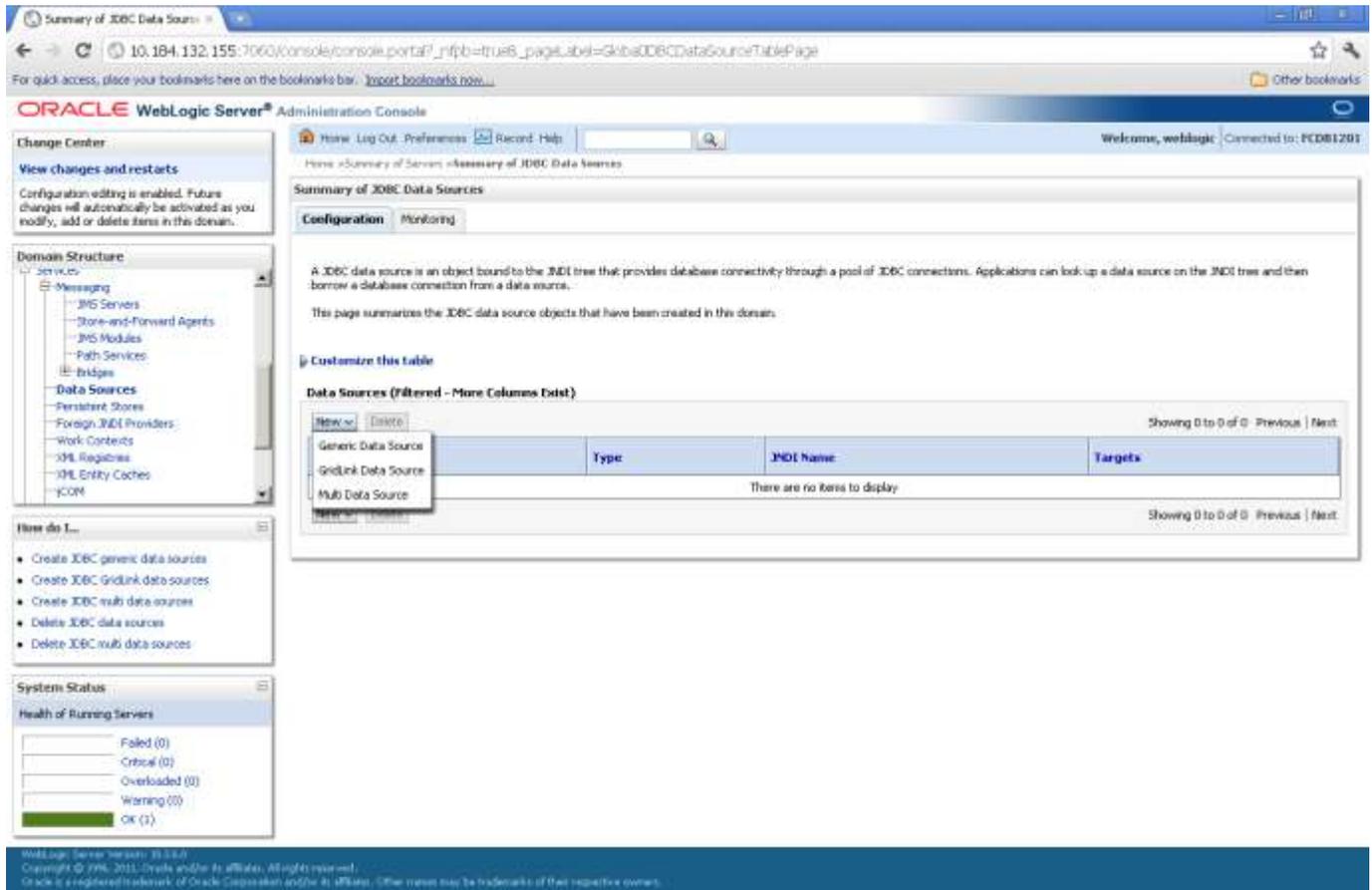
The XA-aware data source implementation allows connections to participate in distributed transactions. If an application needs to participate in a two-phase commit like in case of Bulk which will interact across the MQ and the DB for example, this type of data source must be used.

Following are the steps to configure the XA data source.

1. Go to the “Services→Data Sources”.
2. Click New to create a new JDBC Data Source

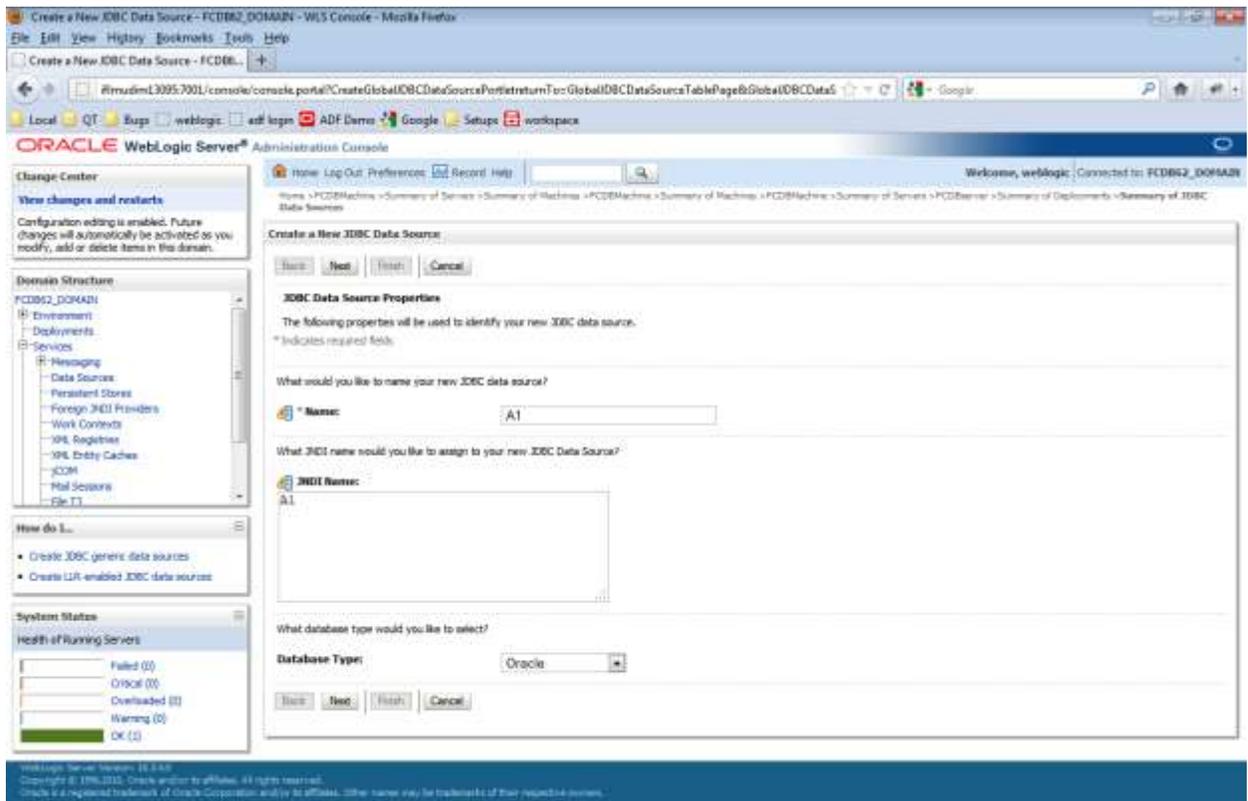


3. Select the option "Generic Data Source".

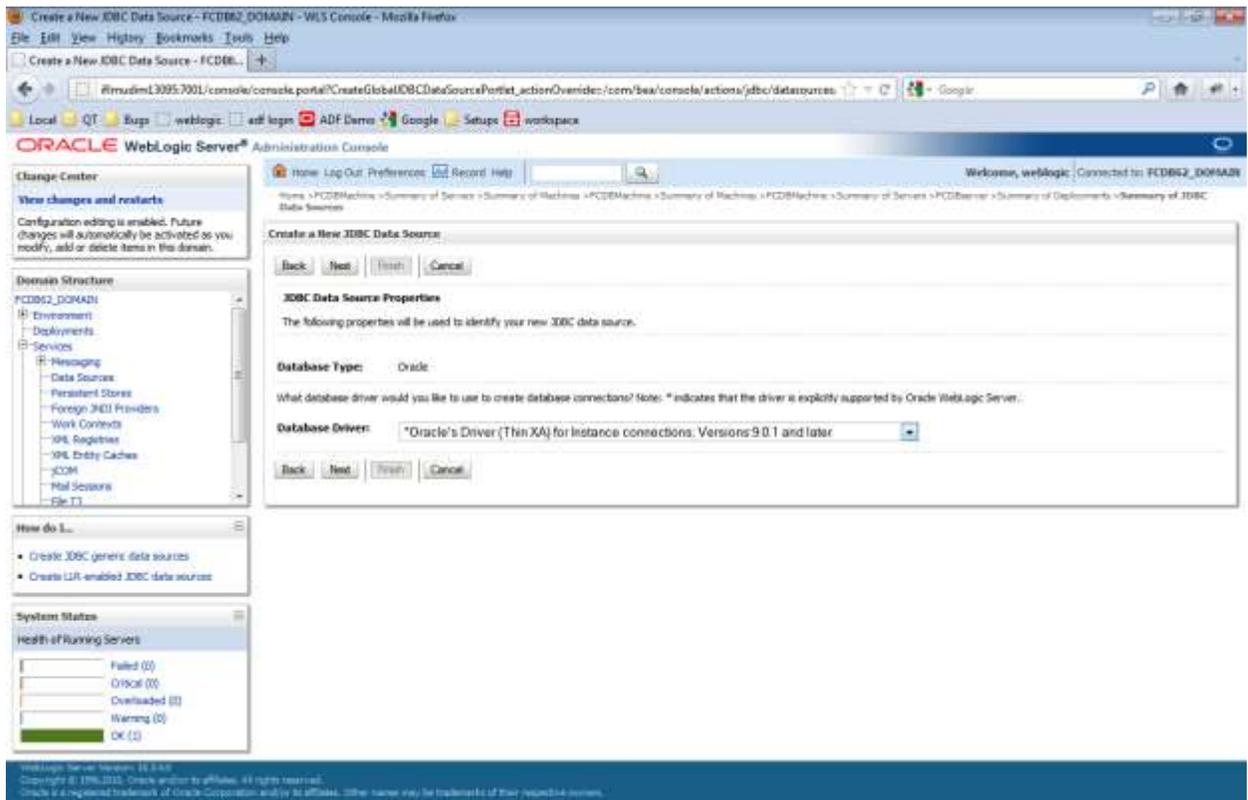


Configure the following properties for Data Source creation and click “Next”.

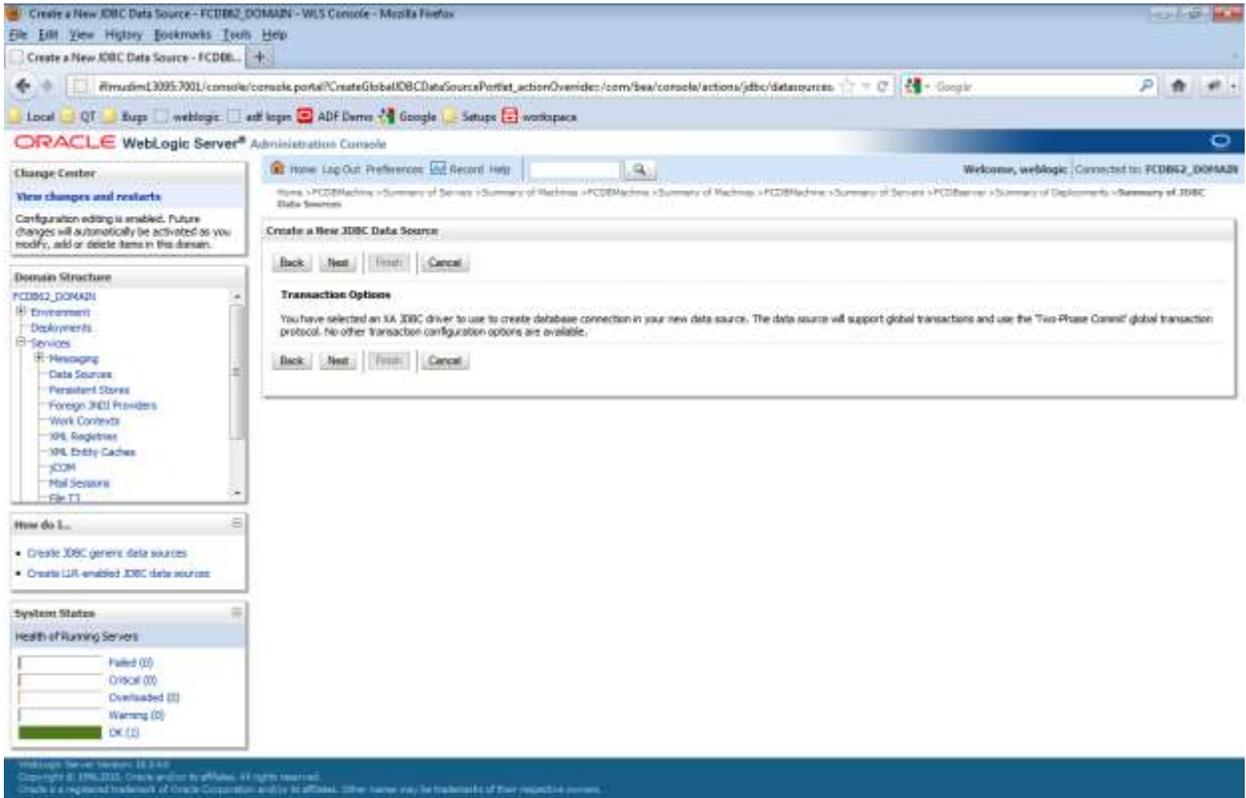
| Property | Value |
|------------------|-------------------------|
| Data Source Name | <FCDB data source name> |
| JNDI Name | A1 |
| Database Type | Oracle |



Select Database Driver as Oracle's Driver (Thin XA) Versions: 9.0.1 and later and click Next.



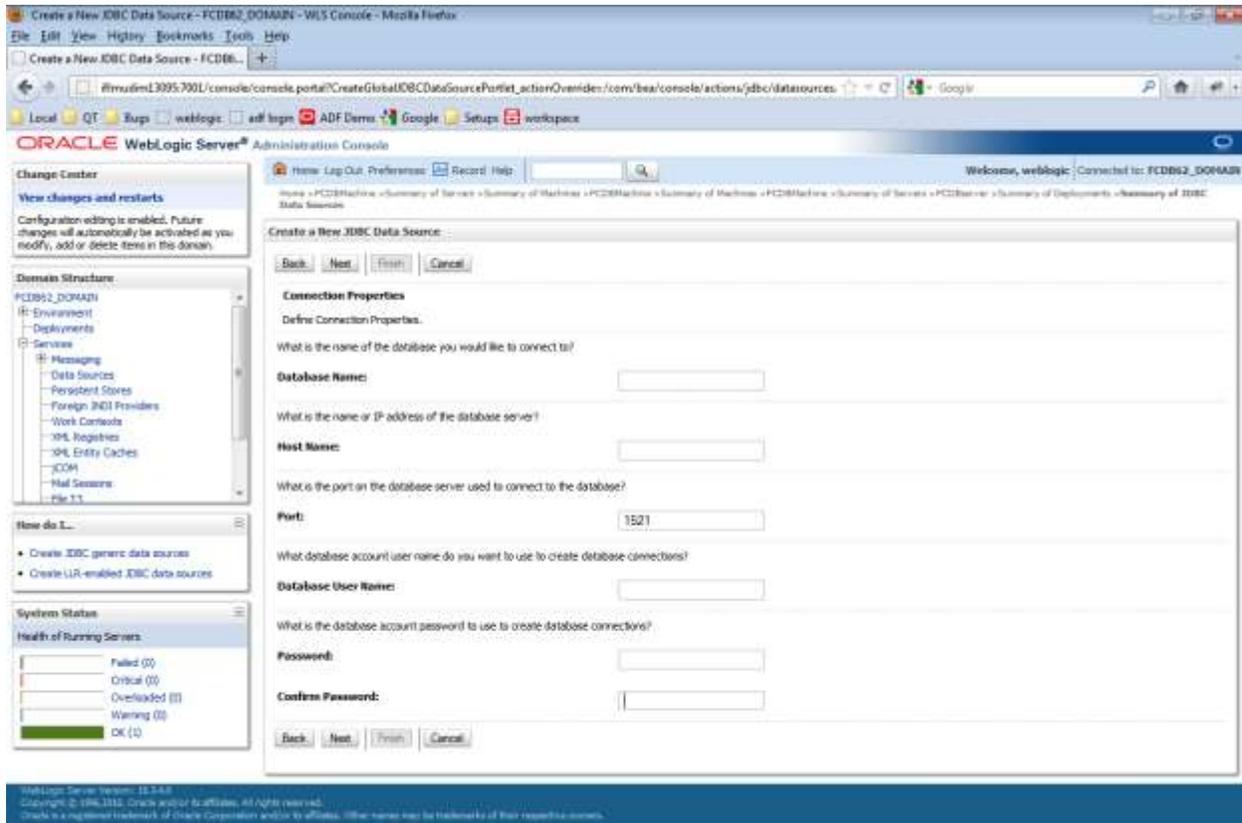
Click Next.



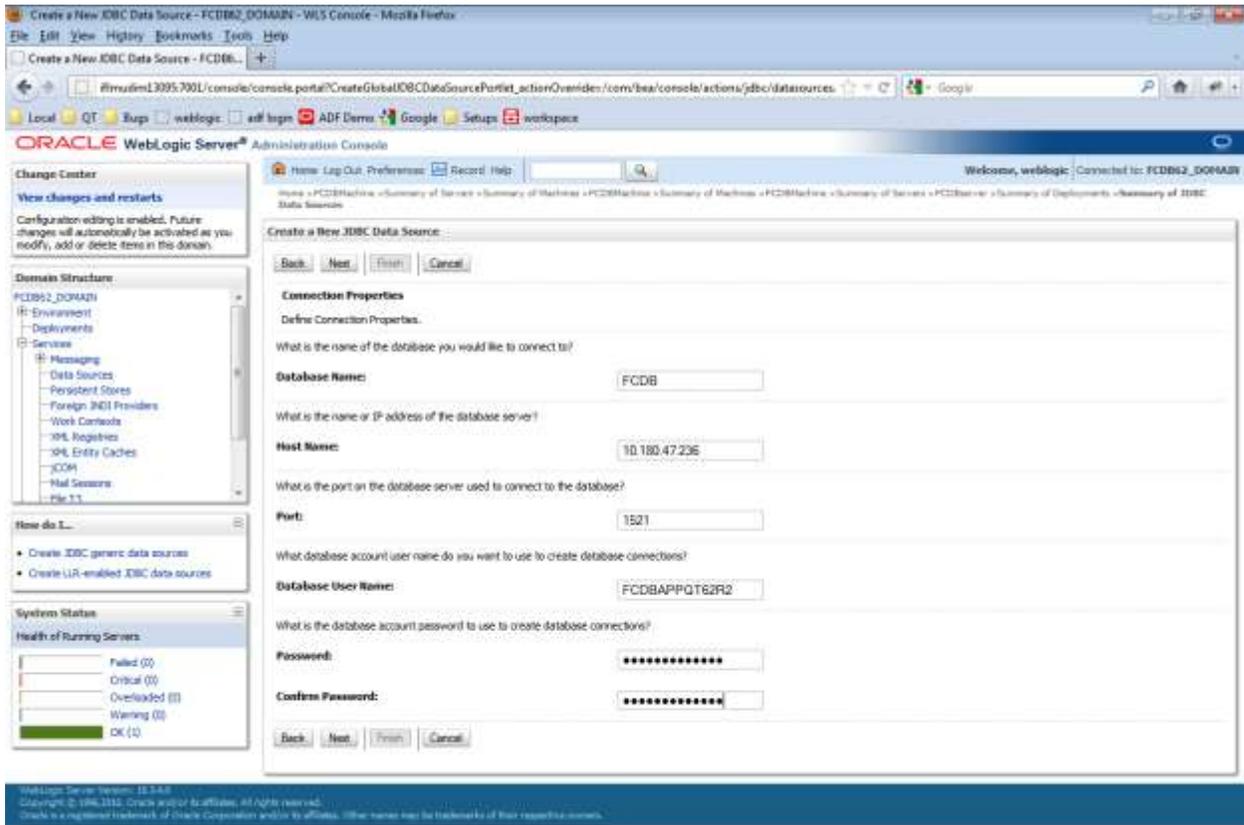
Click “Next” button.

Give the following database details to which you need to connect. For e.g :

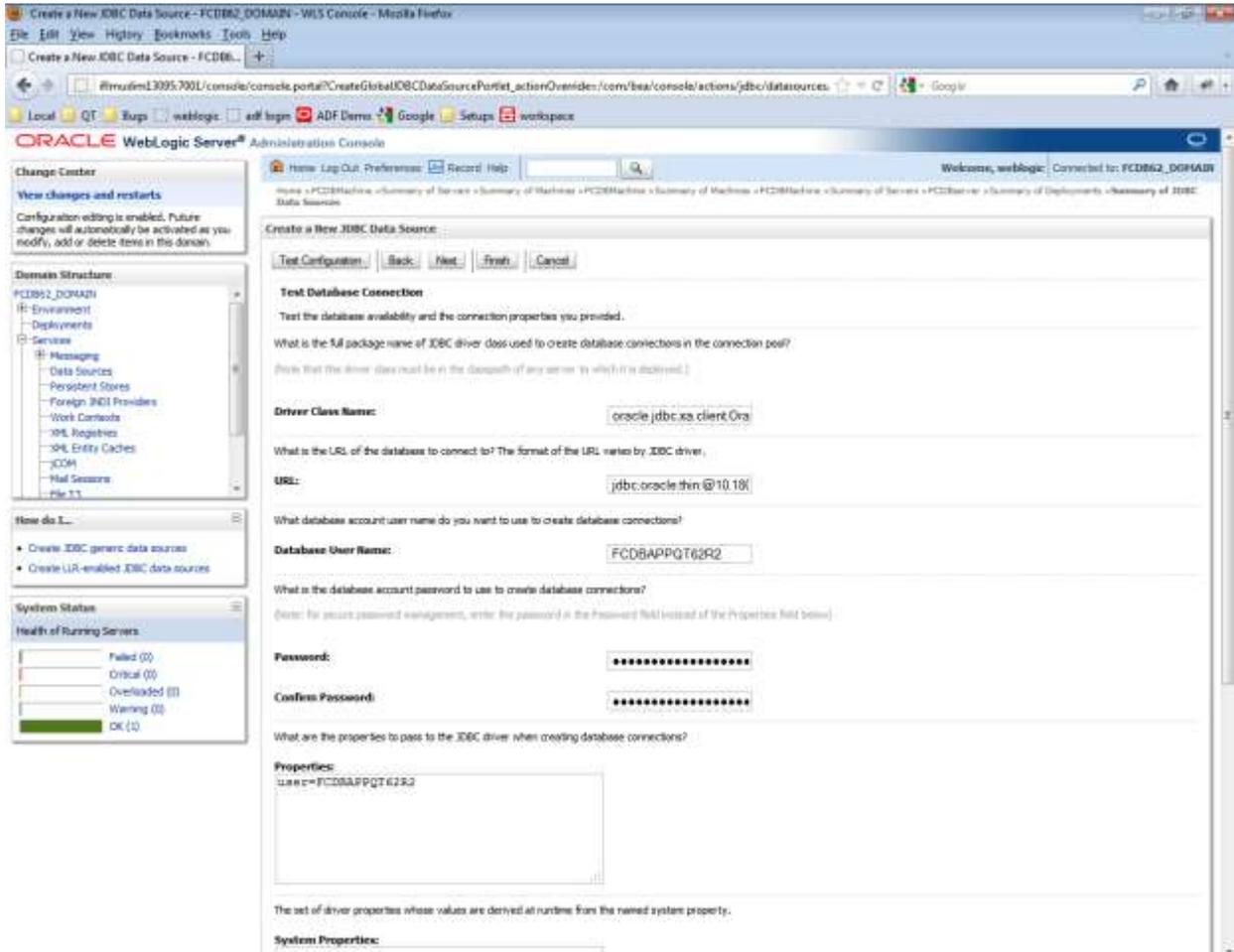
| Property | Description |
|--------------------|--|
| Database Name | Name of the database to be connected to |
| Host Name | ip address or hostname |
| Port | Port number of the database |
| Database User Name | Username used to connect to the database. |
| Password | Password used to connect to the database. |
| Confirm Password | Same password used to connect to the database. |



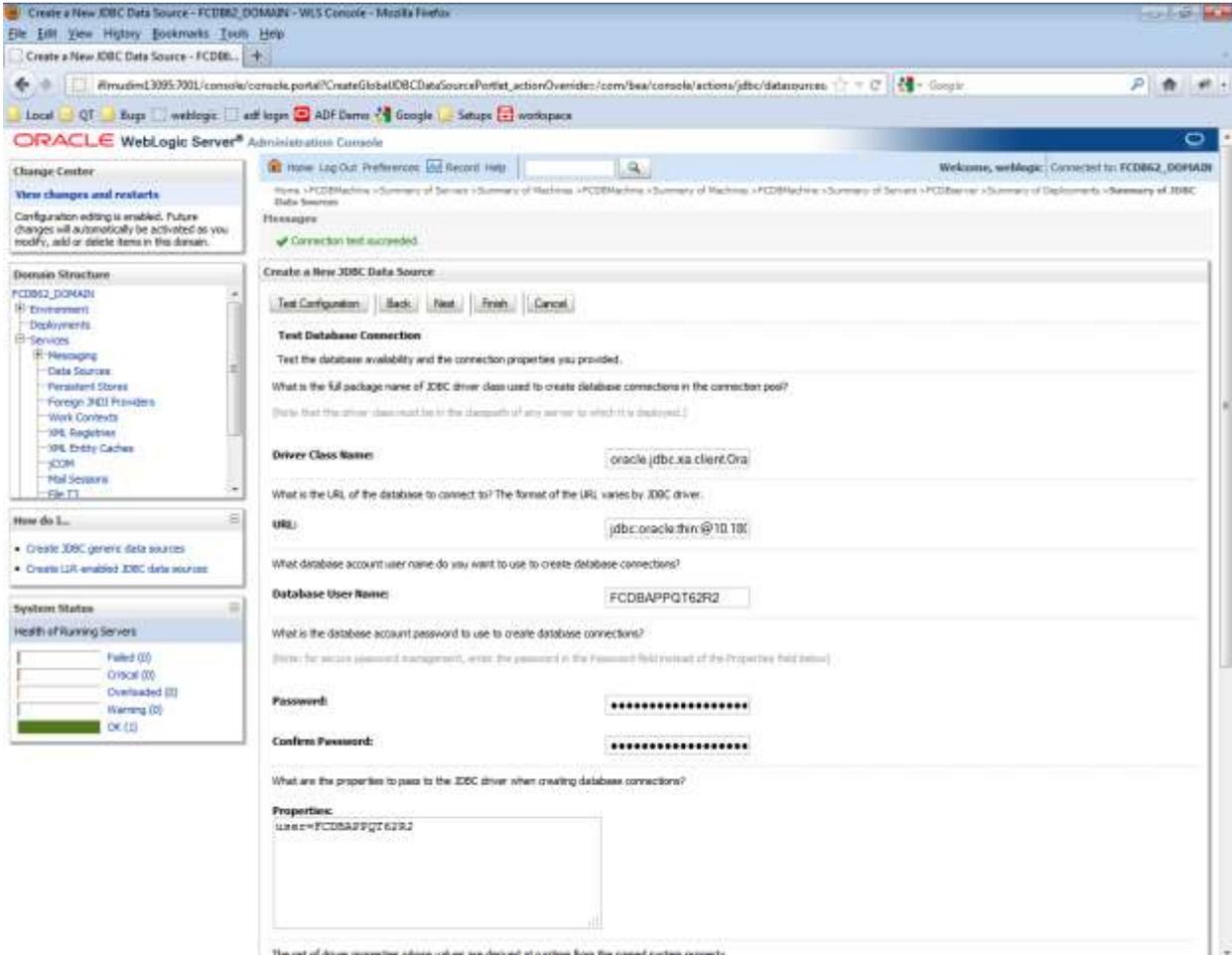
Click "Next" button.



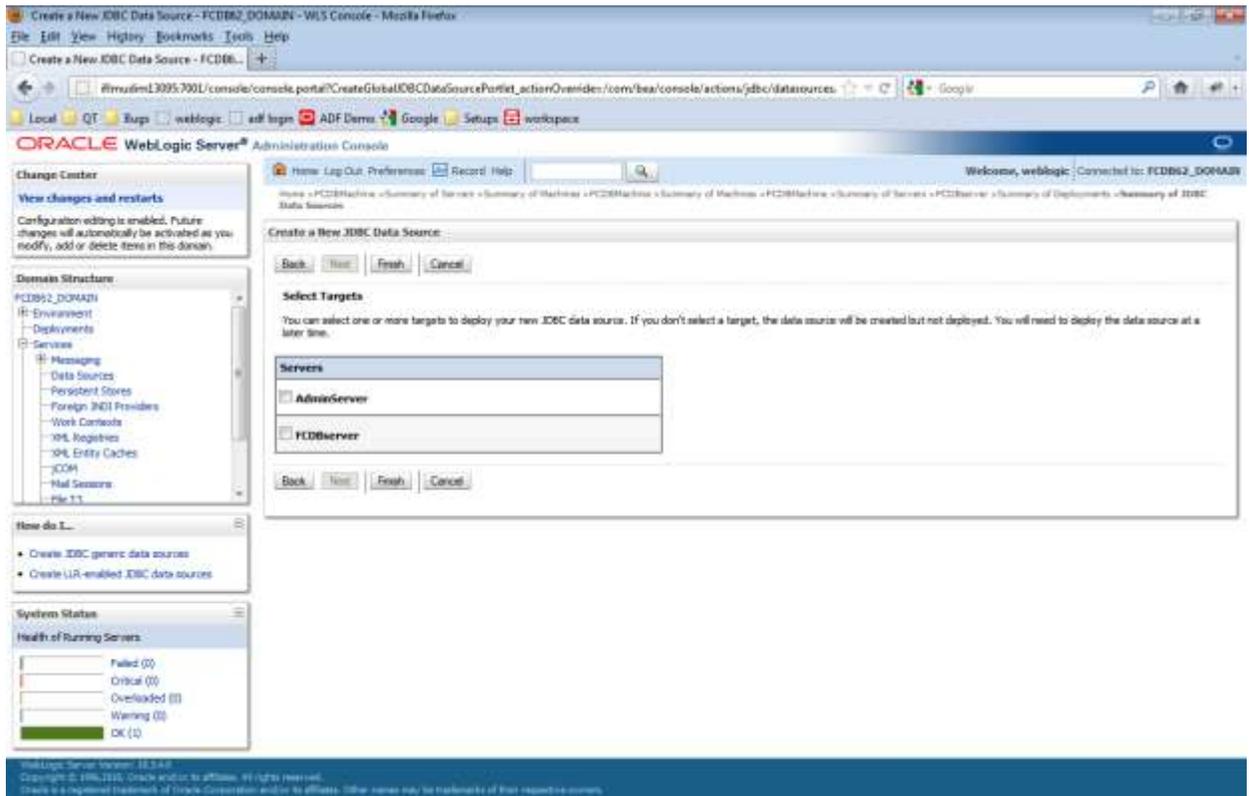
Click "Test Configuration" below.



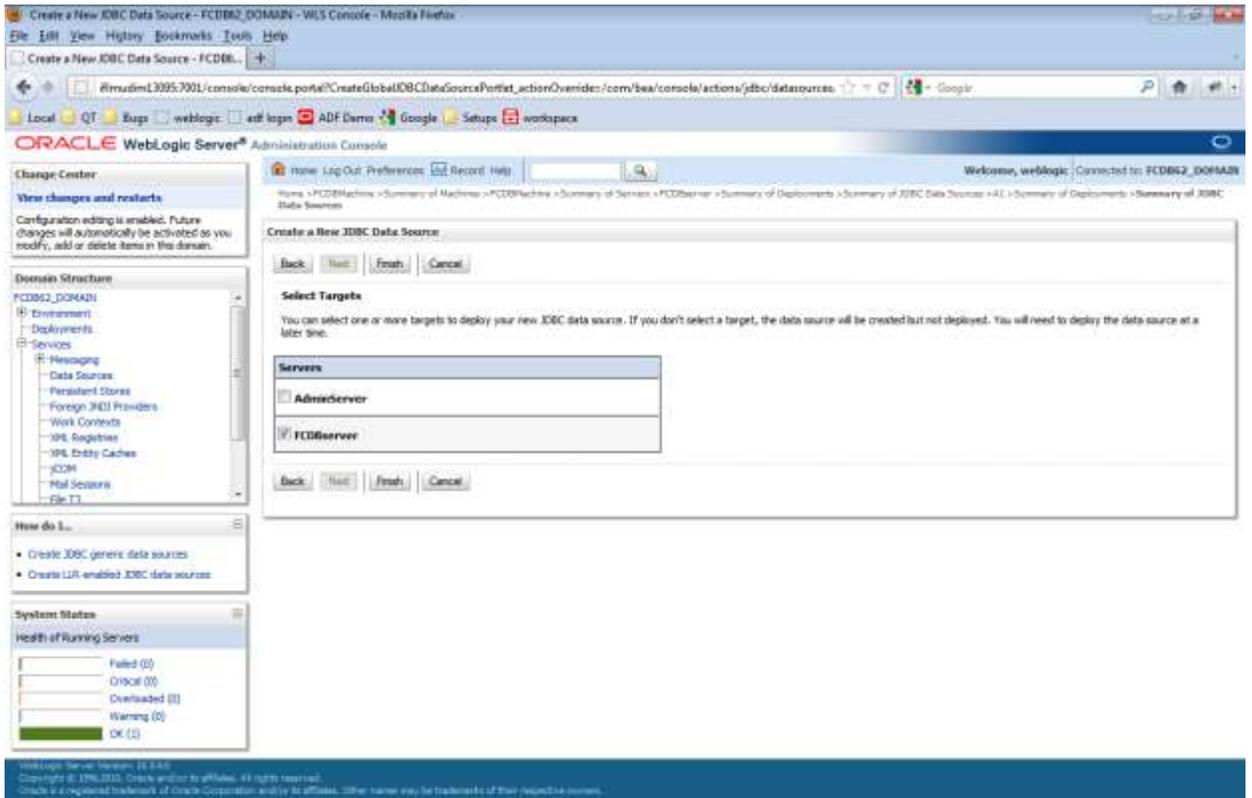
A success message must appear with “Connection test succeeded”.



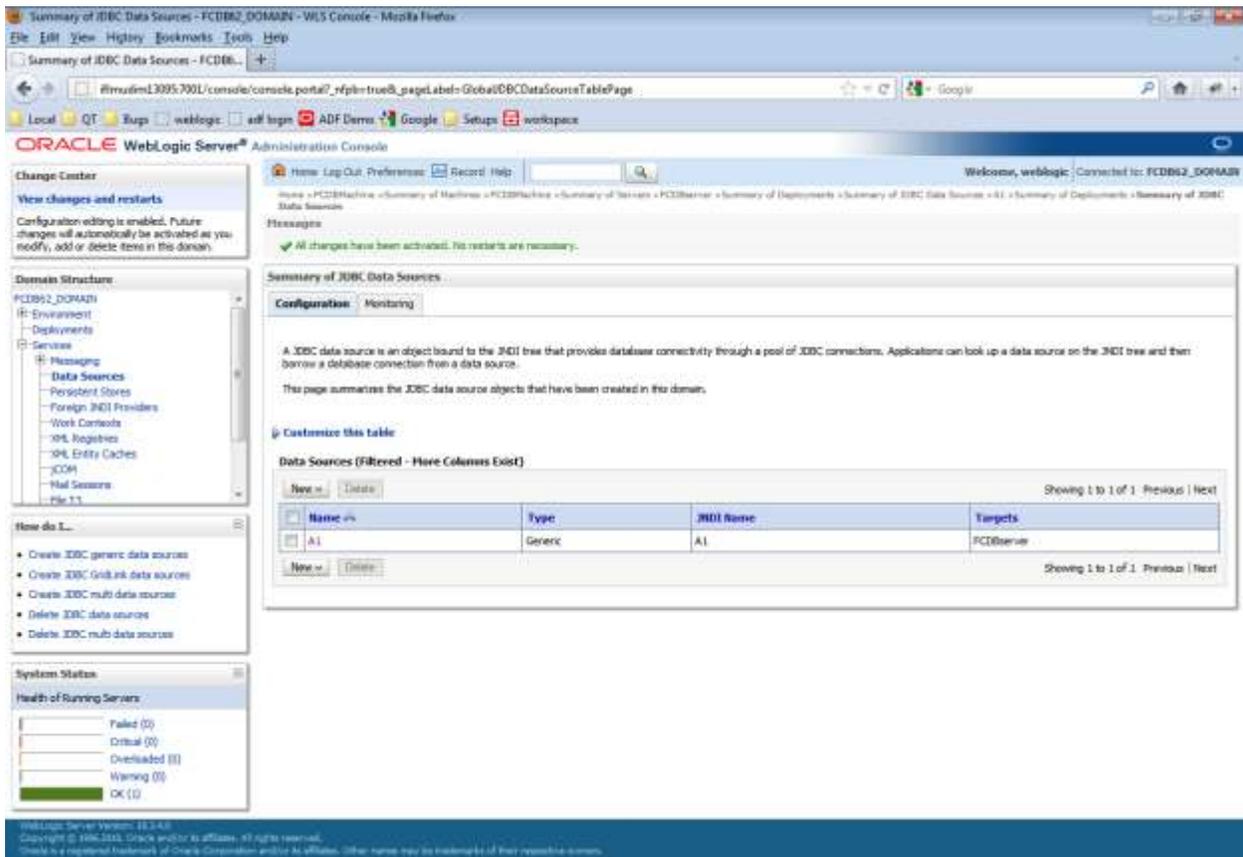
Click on the “Next” button.



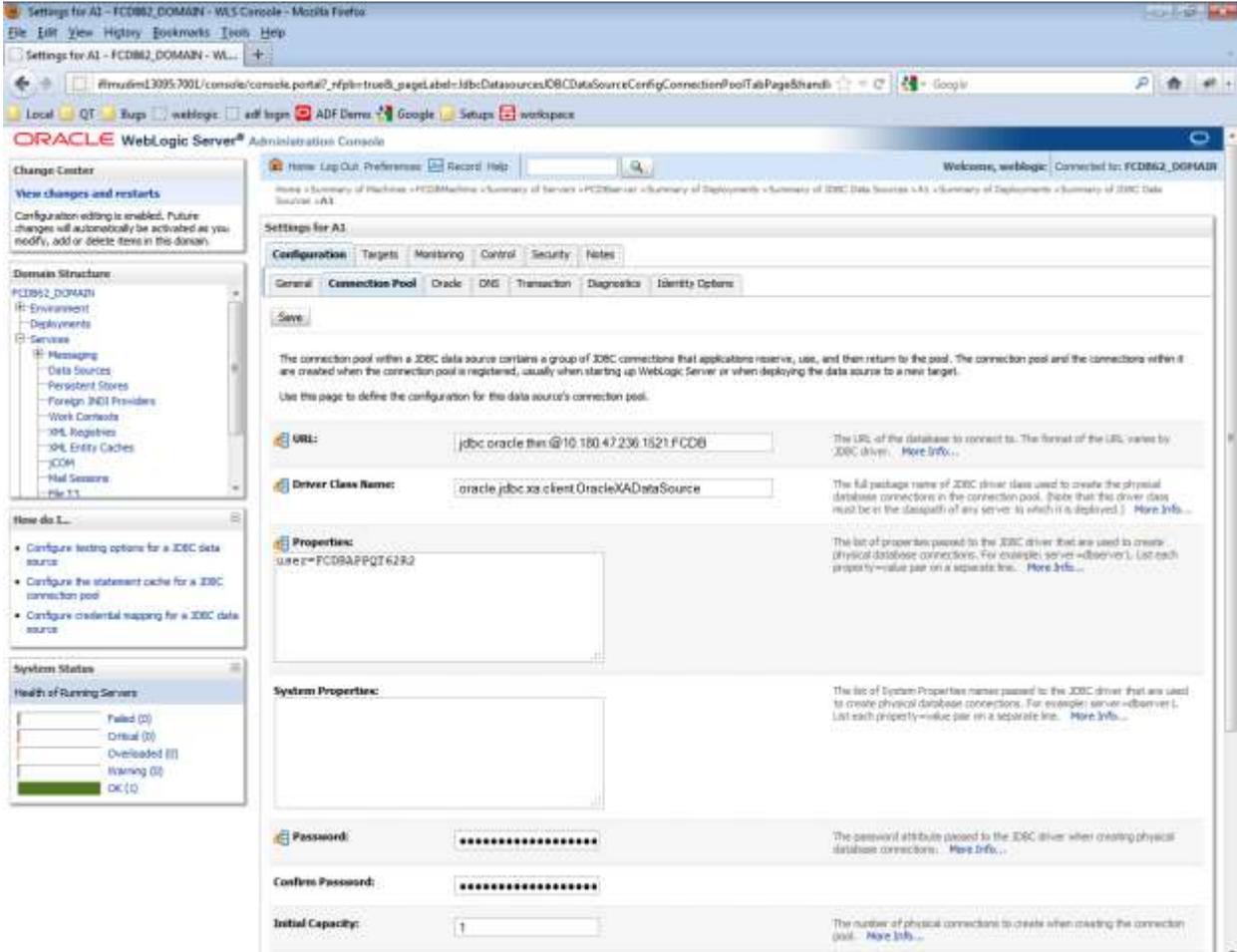
Select the server as 'FCDBServer' and click on Finish.



The data source is created successfully. Click on the newly created data source under Data Sources menu option.



Click "Connection Pool" under "Configuration" tab on the top.

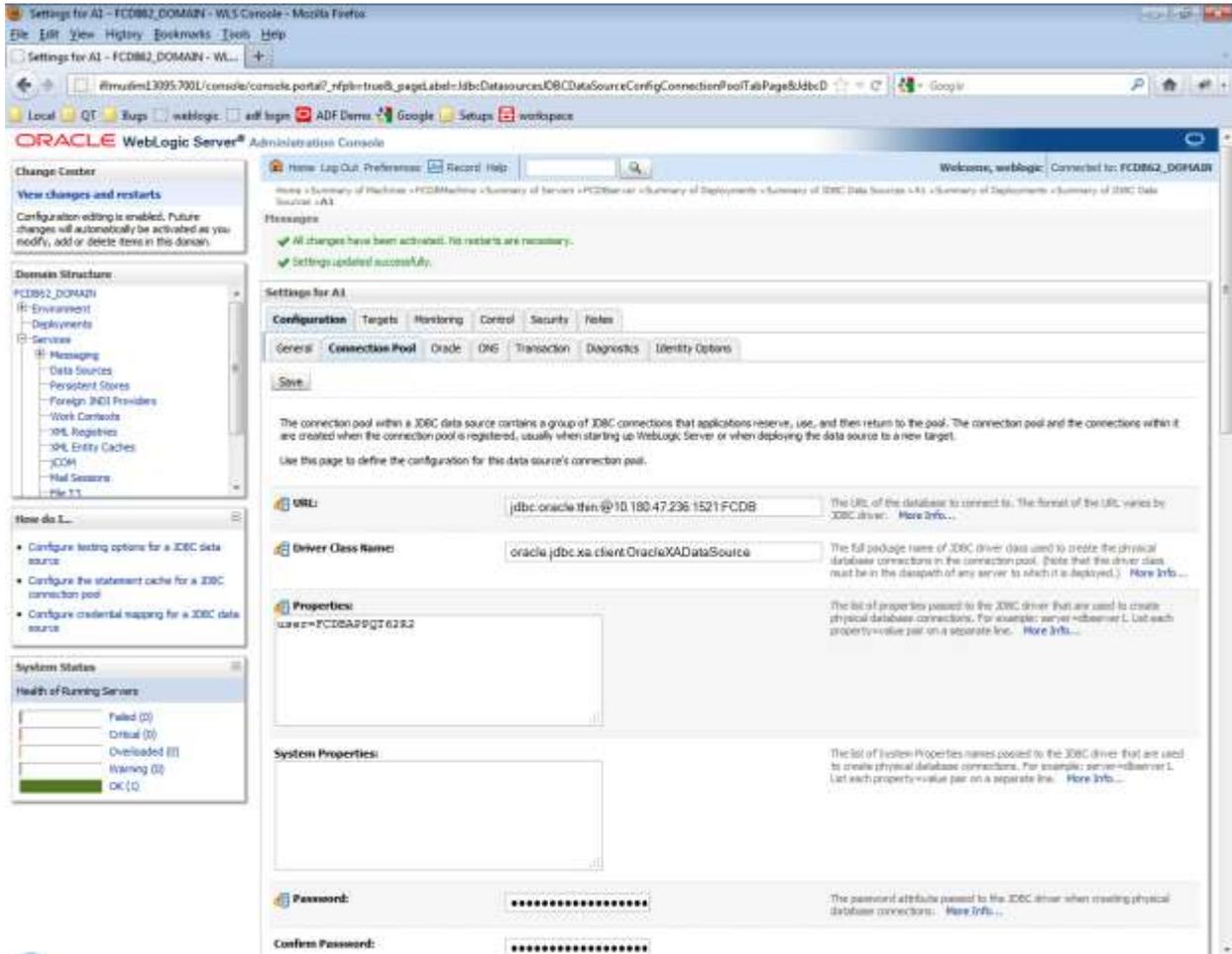


Click on the “Advanced” link below.

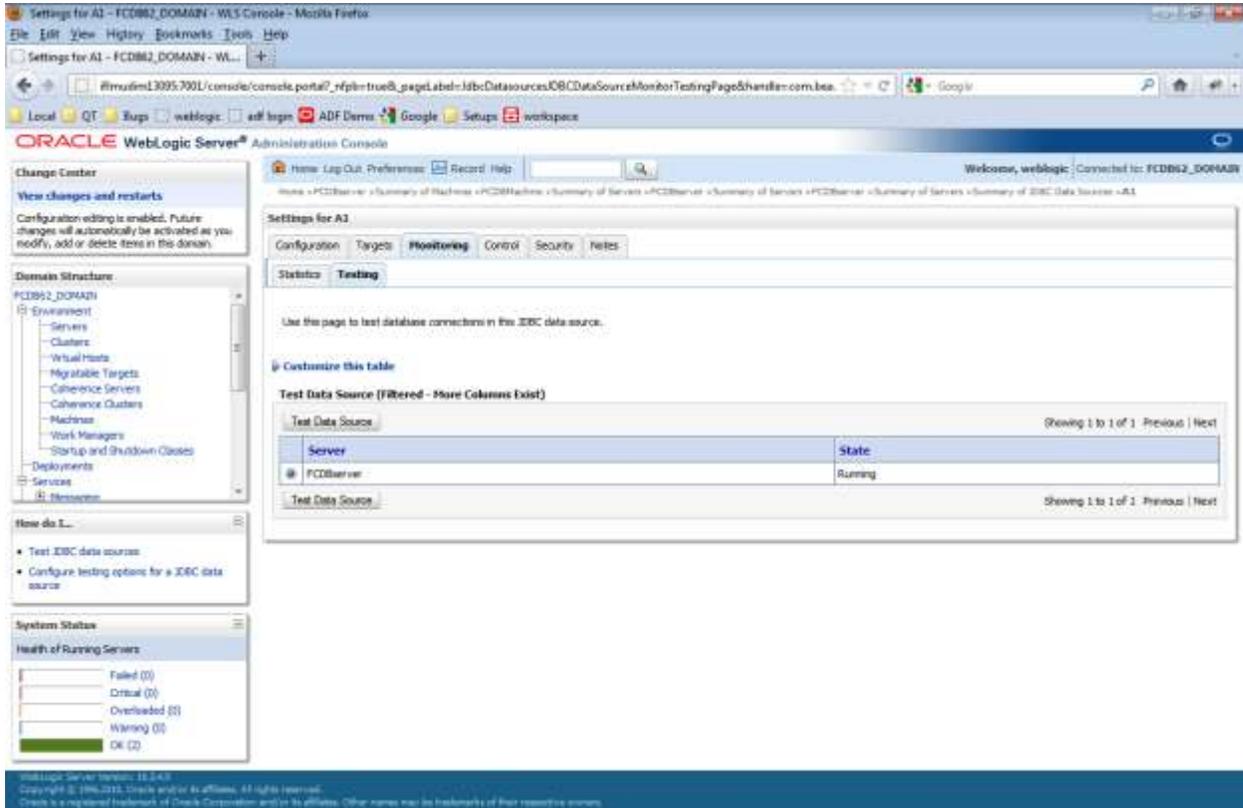
The screenshot shows the 'Advanced' configuration page for a database connection in Oracle WebLogic. The page is titled 'Settings for A1 - FCDBM2_DOMAIN - WLS Console - Mozilla Firefox'. The browser address bar shows the URL: `#/msidm13095700L/console/console.portal?_afplm=true&_pageLabel=dbcDataSourcesJDBCDataSourceConfigConnectionPoolTabPage&idbcD`. The page content is organized into a table-like structure with settings on the left and descriptions on the right.

| Setting | Value | Description |
|--|------------------------|---|
| <input checked="" type="checkbox"/> Test Connections On Reserve | | Enables WebLogic Server to test a connection before going to a client. (Requires that you specify a Test Table Name.) More Info... |
| Test Frequency: | 120 | The number of seconds between when WebLogic Server tests unused connections. (Requires that you specify a Test Table Name.) Connections that fail the test are closed and reopened to re-establish a valid physical connection. If the test fails again, the connection is closed. More Info... |
| Test Table Name: | SQL SELECT 1 FROM DUAL | The name of the database table to use when testing physical database connections. This name is required when you specify a Test Frequency and enable Test Reserved Connections. More Info... |
| Seconds to Trust an Idle Pool Connection: | 10 | The number of seconds with a connection user that WebLogic Server trusts that the connection is still viable and will skip the connection test, either before delivering it to an application or during the periodic connection testing process. More Info... |
| Shrink Frequency: | 900 | The number of seconds to wait before shrinking a connection pool that has incrementally increased to meet demand. More Info... |
| Init SQL: | | SQL statement to execute that will initialize newly created physical database connections. Start the statement with SQL, followed by a space. More Info... |
| Connection Creation Retry Frequency: | 0 | The number of seconds between attempts to establish connections to the database. More Info... |
| Login Delay: | 0 | The number of seconds to delay before creating each physical database connection. This delay supports database servers that cannot handle multiple connection requests in rapid succession. More Info... |
| Inactive Connection Timeout: | 0 | The number of inactive seconds on a reserved connection before WebLogic Server releases the connection and releases it back into the connection pool. More Info... |
| Maximum Waiting for Connection: | 2147483647 | The maximum number of connection requests that can concurrently block threads while waiting to reserve a connection from the data source's connection pool. More Info... |
| Connection Reserve Timeout: | 30 | The number of seconds after which a call to reserve a connection from the connection pool will timeout. More Info... |

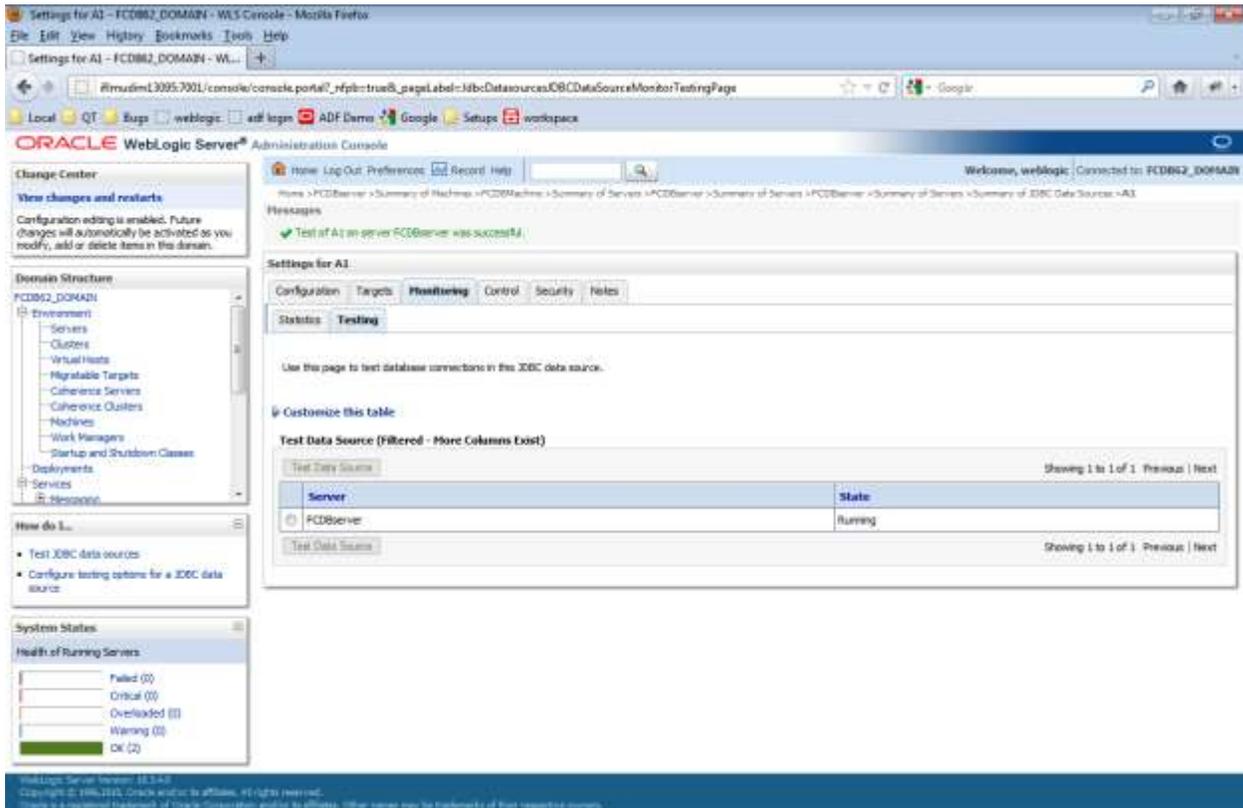
You can specify the required parameters for connection pooling. In the second section check the option against “Test Connections On Reserve” and click Save.



The server should be running to perform the remaining steps.
 On the same screen next to the Configuration tab, select the “Monitoring” tab on the top.
 Select Testing tab under Monitoring tab and then Select the radio button against the server and click
 “Test Data Source”.



A success message with the connection tested successfully must appear.



The property files mentioned in the [Appendix](#) will need to be updated with the data source and connection pool details as per the "Oracle_FLEXCUBE_Direct_Banking_Parameter_Sheet" under the Module Name "Core" and for Property location "fcat.properties" and "fcat-config.xml" where the Parameter Name includes application id "A1 and AP".

Different data sources can be created w.r.t Application Id, Application type etc.

6.JMS queue creation on Weblogic server

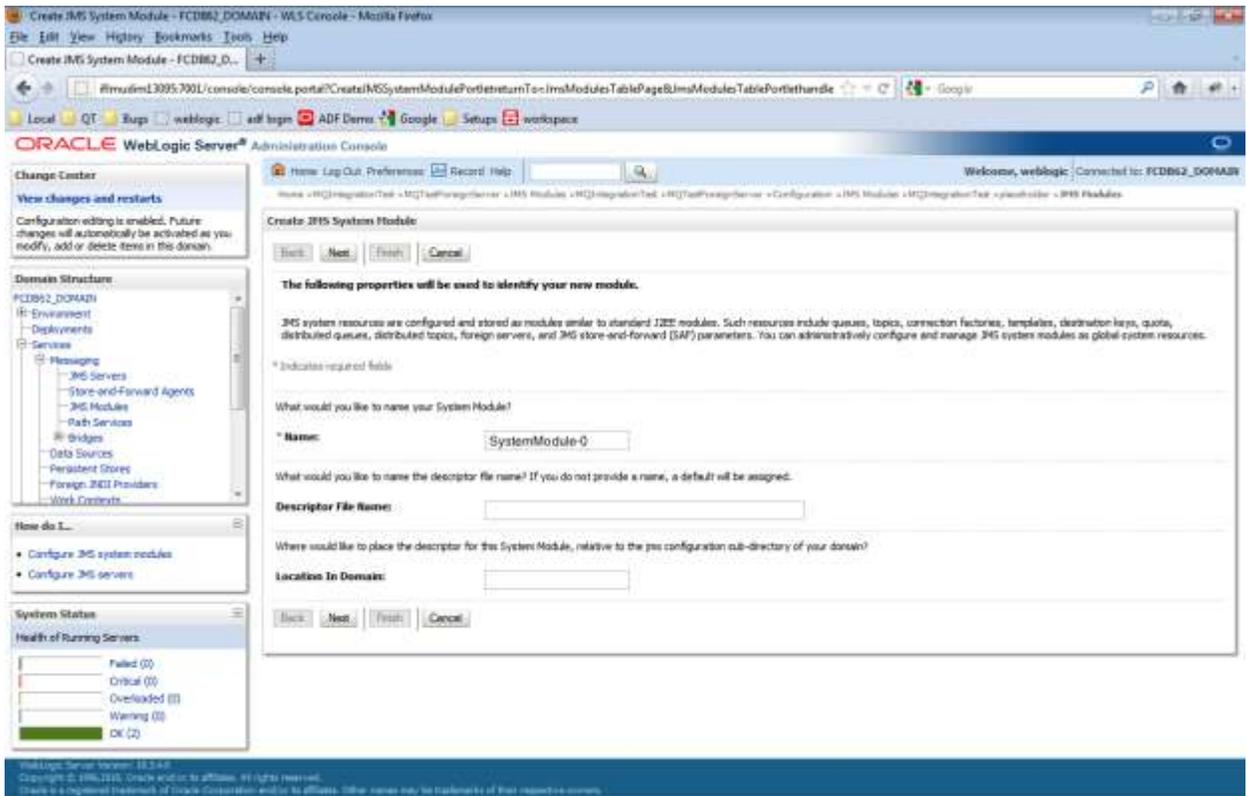
This section assumes that Weblogic JMS is to be used as the queuing system. For a detailed explanation on creation of queues on Weblogic JMS, please refer to the document

Oracle_FLEXCUBE_Direct_Banking_JMS_Queue_Creation_On_Weblogic.doc.

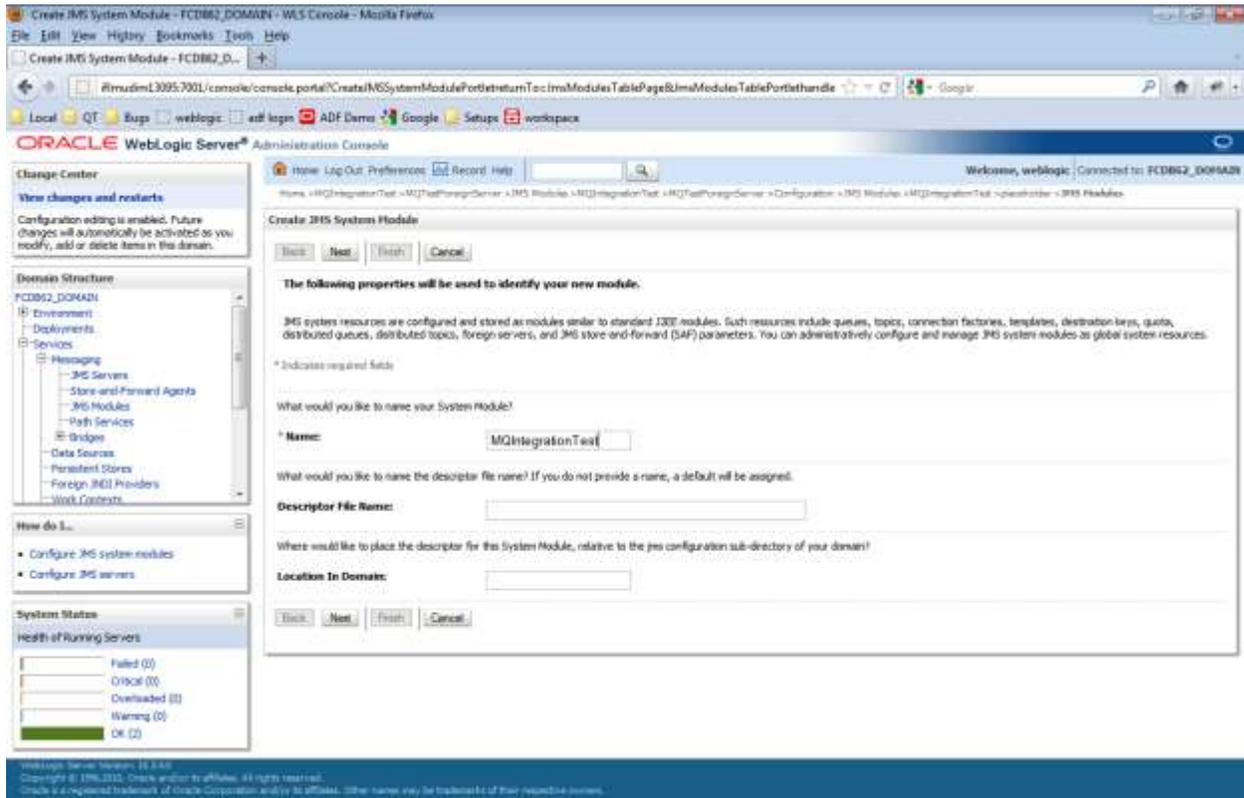
After completing the steps mentioned in above document, follow steps below

6.1. Create JMS Module

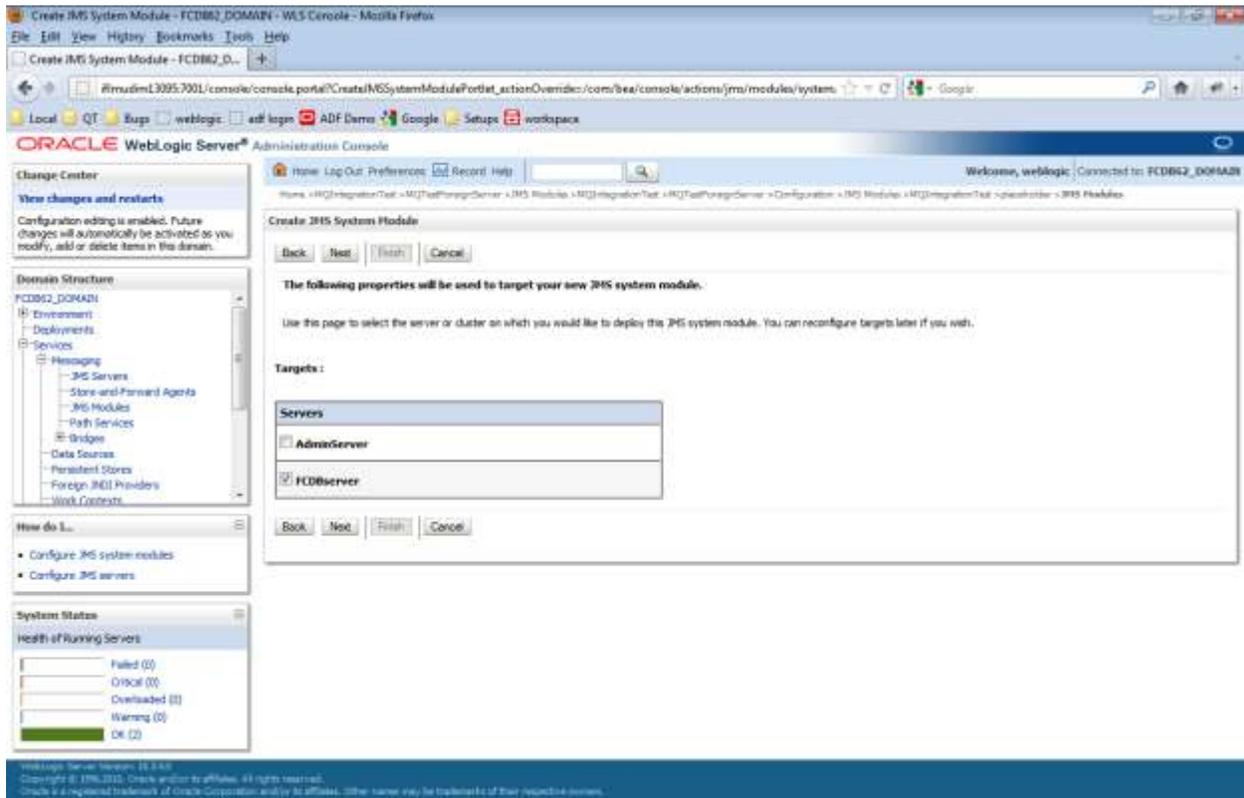
Click on “Services→Messaging→JMS Modules” on the left menu. Click on “New” button on RHS screen.



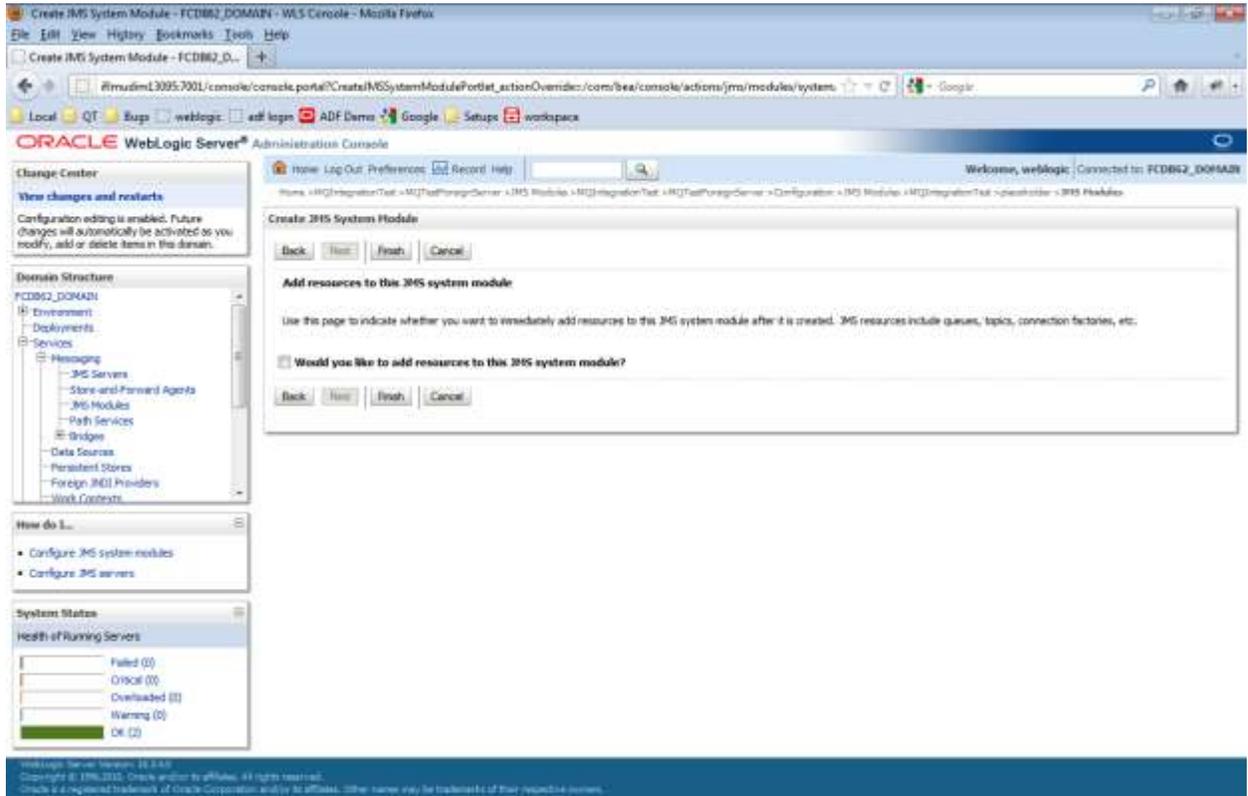
1. Type in a name “MQIntegrationTest” in the Name text box and click “Next”.



2. Select the target server as “*FCDB server*” and click “Next”



3. Click on the “Finish” without selecting the add resource to this JMS System Module.



4. Following screen will appear.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled "Summary of JMS Servers". It includes a "Messages" section with two green checkmarks indicating successful activation and server creation. Below this is a table of JMS servers. The table has columns for Name, Persistent Store, Target, Current Server, and Health. One server, "FCDSESERVER", is listed with a health status of "OK".

| Name | Persistent Store | Target | Current Server | Health |
|-------------|------------------|-------------|----------------|--------|
| FCDSESERVER | | FCDSESERVER | FCDSESERVER | OK |

6.2. Create JMS Foreign Server

5. Select “Services→Messaging→JMS Modules” and click the link of the newly created module “MQIntegrationTest”.

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main content area is titled "JMS Modules" and contains the following text:

JMS system resources are configured and stored as modules similar to standard J2EE modules. Such resources include queues, topics, connection factories, templates, destination keys, quotas, distributed queues, distributed topics, foreign servers, and JMS store-and-forward (SAF) parameters. You can administratively configure and manage JMS system modules as global system resources. This page summarizes the JMS system modules that have been created for this domain.

Below the text is a section titled "Customize this Table" containing a table of JMS Modules:

| Name | Type |
|-------------------|--------|
| MQIntegrationTest | System |

At the bottom of the table, there is a "Sort table by Name" button. The console also features a left-hand navigation pane with a tree view showing "Services" > "Messaging" > "JMS Modules".

6. Click the “New” button.

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main content area displays the configuration page for the 'MQIntegrationTest' JMS system module. The page includes a navigation sidebar on the left with sections like 'Change Center', 'Domain Structure', 'How do I...', and 'System Status'. The main content area has tabs for 'Configuration', 'Subdeployments', 'Targets', 'Security', and 'Notes'. The 'Configuration' tab is active, showing the following details:

- Name:** MQIntegrationTest
- Descriptor File Name:** mqintegrationtest.jms.xml

Below the configuration details is a 'Summary of Resources' section with a table. The table has columns for Name, Type, JMS Name, Subdeployment, and Targets. The table is currently empty, displaying 'There are no items to display'.

| Name | Type | JMS Name | Subdeployment | Targets |
|-------------------------------|------|----------|---------------|---------|
| There are no items to display | | | | |

7. Select "Foreign Server" radio button and click Next

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main content area is titled "Create a New JMS System Module Resource". It features a navigation pane on the left with "Domain Structure" and "System Status" sections. The "Domain Structure" shows a tree view with "Services" expanded to "Foreign JMS Providers". The "System Status" section shows "Health of Running Servers" with a green bar indicating "OK (2)".

The main content area contains the following text and options:

Create a New JMS System Module Resource

Back Next Finish Cancel

Choose the type of resource you want to create.

Use these pages to create resources in a JMS system module, such as queues, topics, templates, and connection factories.

Depending on the type of resource you select, you are prompted to enter basic information for creating the resource. For targetable resources, like stand-alone queues and topics, connection factories, distributed queues and topics, foreign servers, and JMS SAF destinations, you can also proceed to targeting pages for selecting appropriate server targets. You can also associate targetable resources with subdeployments, which is an advanced mechanism for grouping JMS module resources and the members to server resources.

Connection Factory

Queue

Topic

Distributed Queue

Distributed Topic

Foreign Server

Quota

Destination Sort Key

JMS Template

SAF Imported Destinations

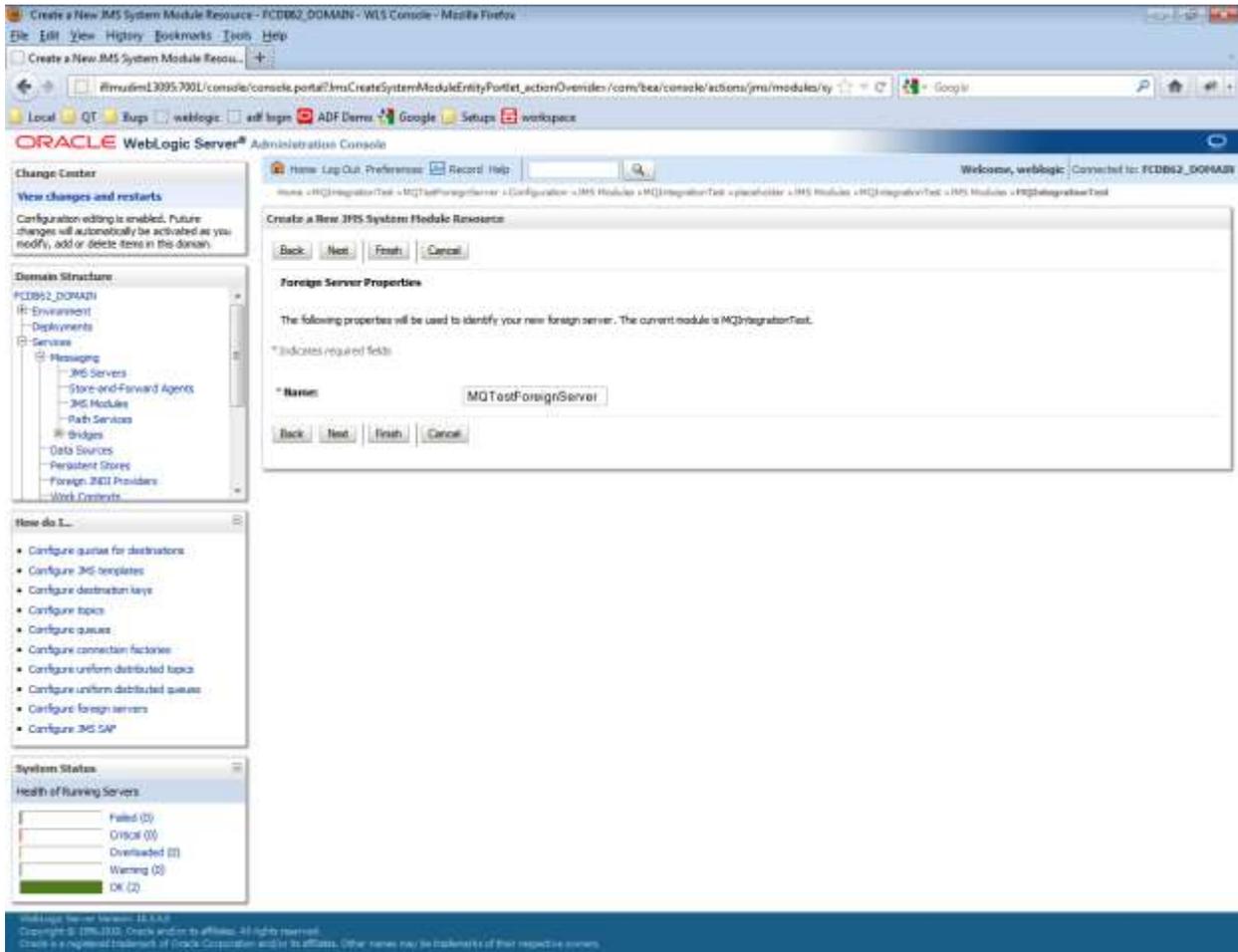
Remote SAF Context

SAF Error Handling

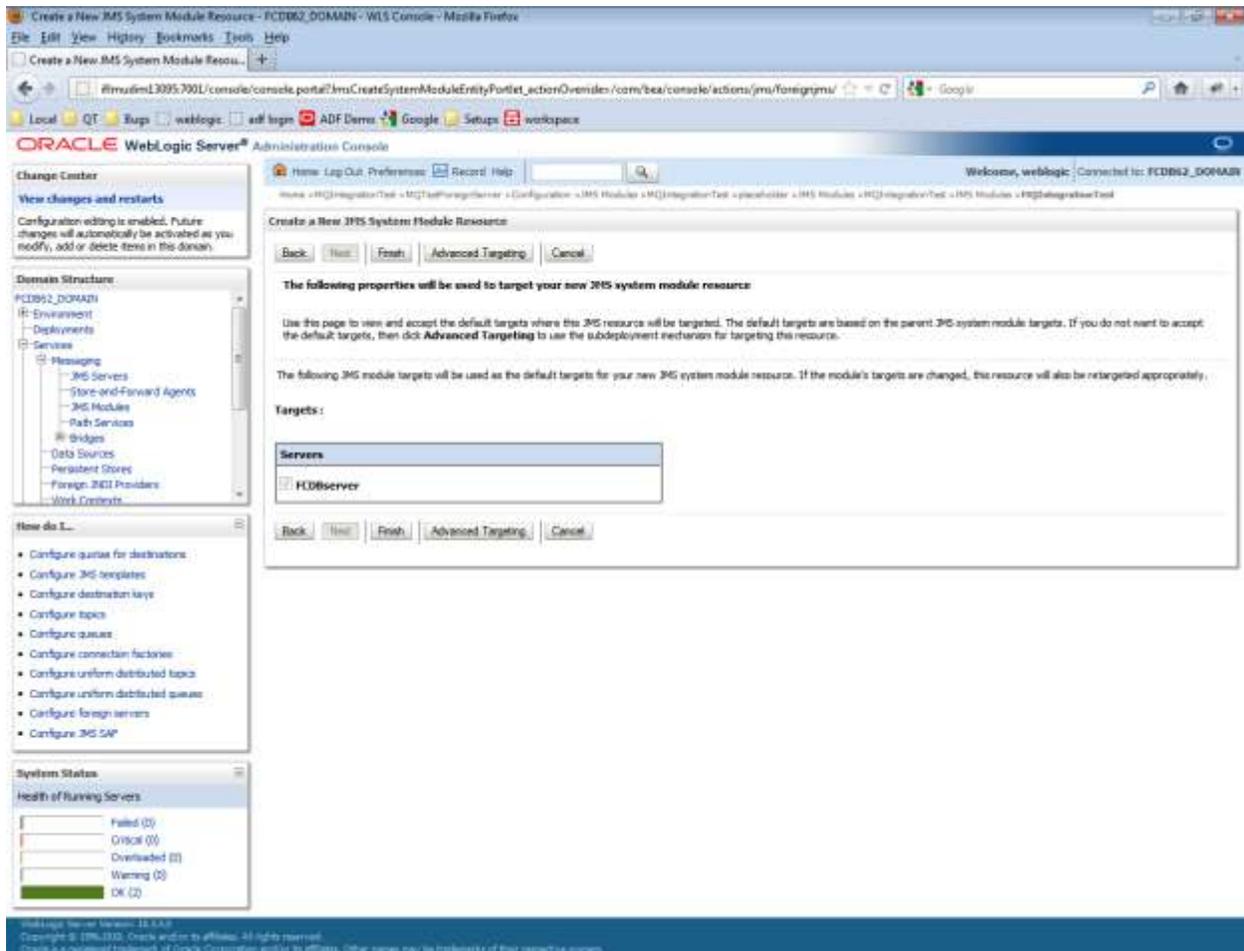
Back Next Finish Cancel

Oracle WebLogic Server version: 12.1.3.0.0
Copyright © 2006, 2012, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

8. Enter “MQTestForeignServer” in the Name text box, click “Next” button.

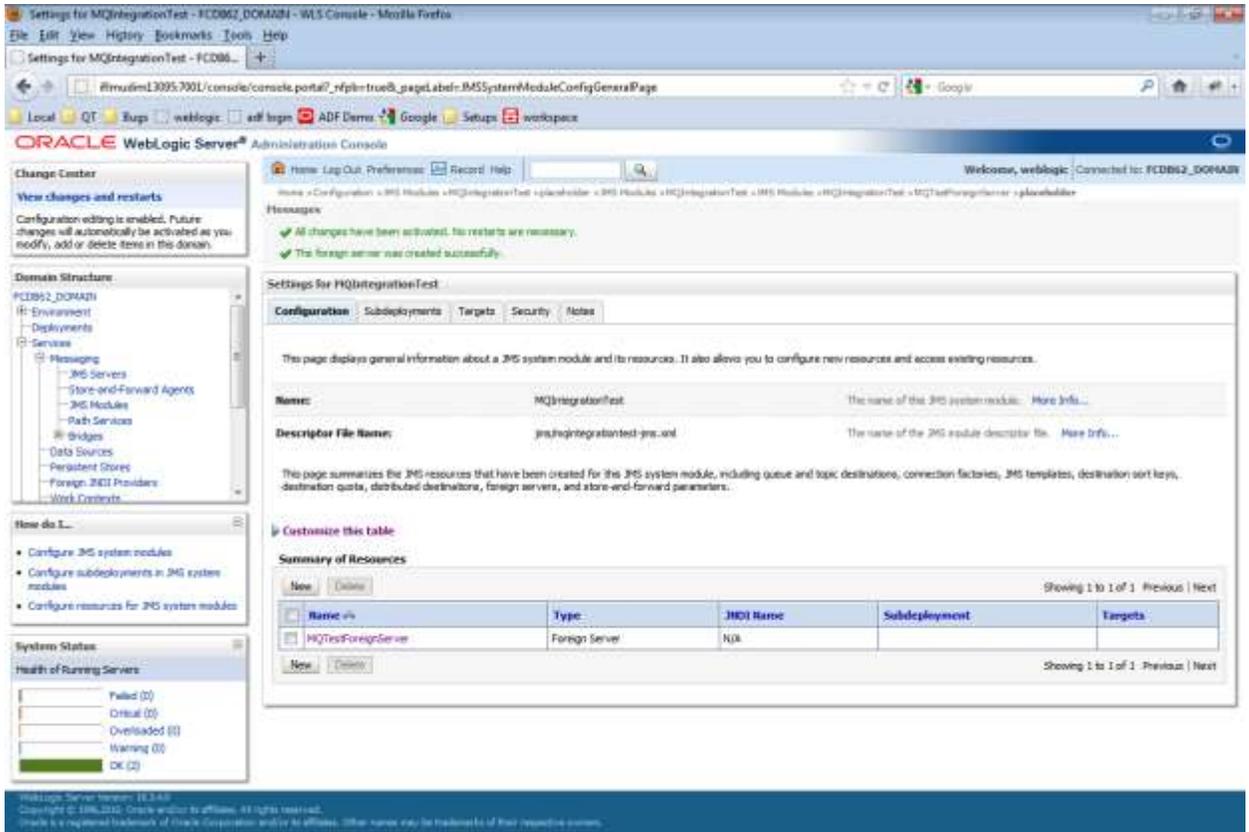


9. The ensuing page shows that the target server is already selected. Click “Finish”



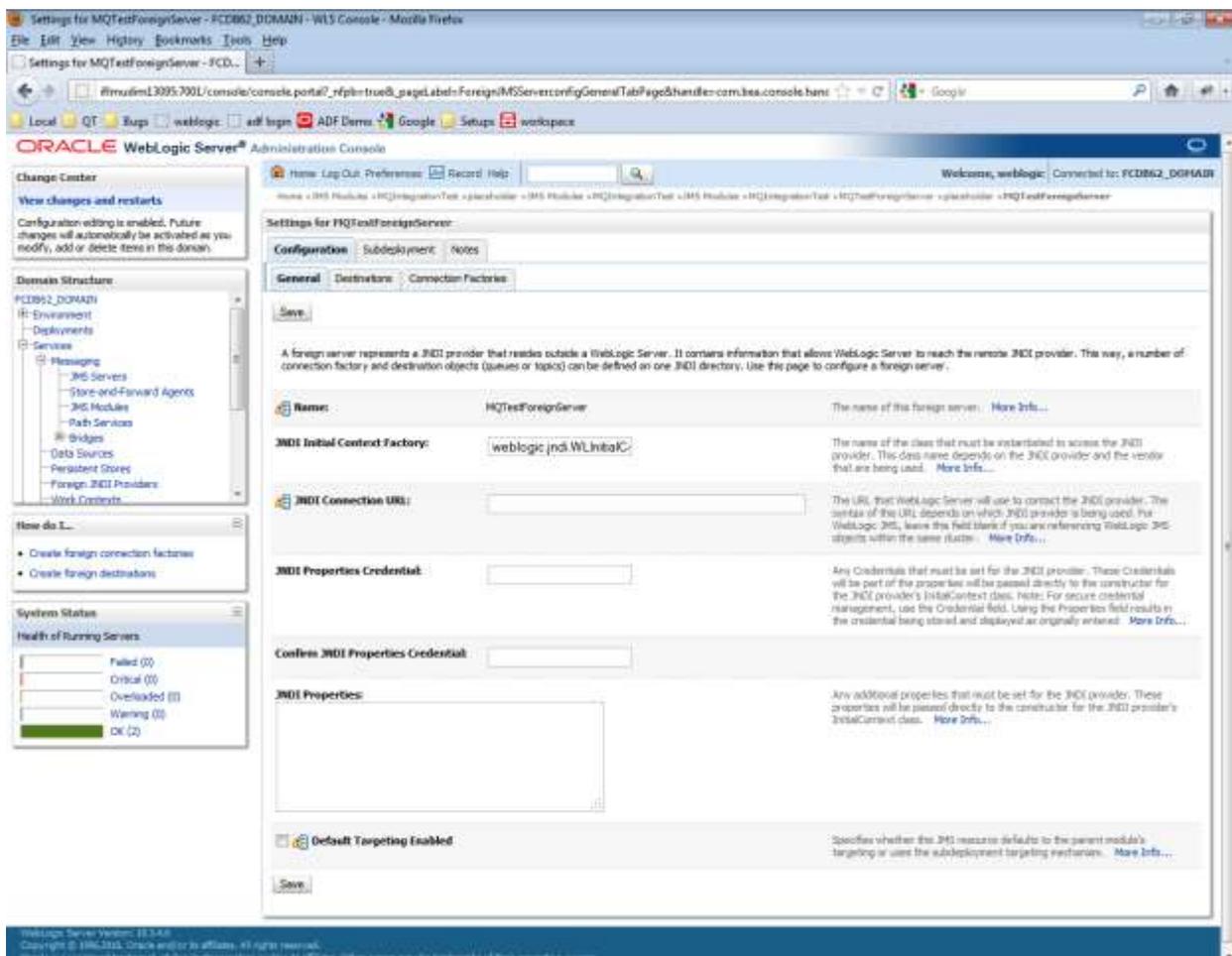
10. 'The foreign server was created successfully' message will appear.

11. Click on the newly created foreign server ("MQTestForeignServer".)



12. Under the tab “Configuration→General” type in following details

| Property | Value |
|------------------------------|--|
| JNDI Initial Context Factory | weblogic.jndi.WLInitialContextFactory |
| JNDI Connection URL | t3://localhost:7003 (The server IP of the weblogic server where queues are created should be mentioned here. If the queues are on the same server as FCDB, then localhost can be mentioned. The port should be queuing server’s bootstrap port). If https is to be used then t3s should be used. |



13. Click “Save”.

6.3.Creating Destinations

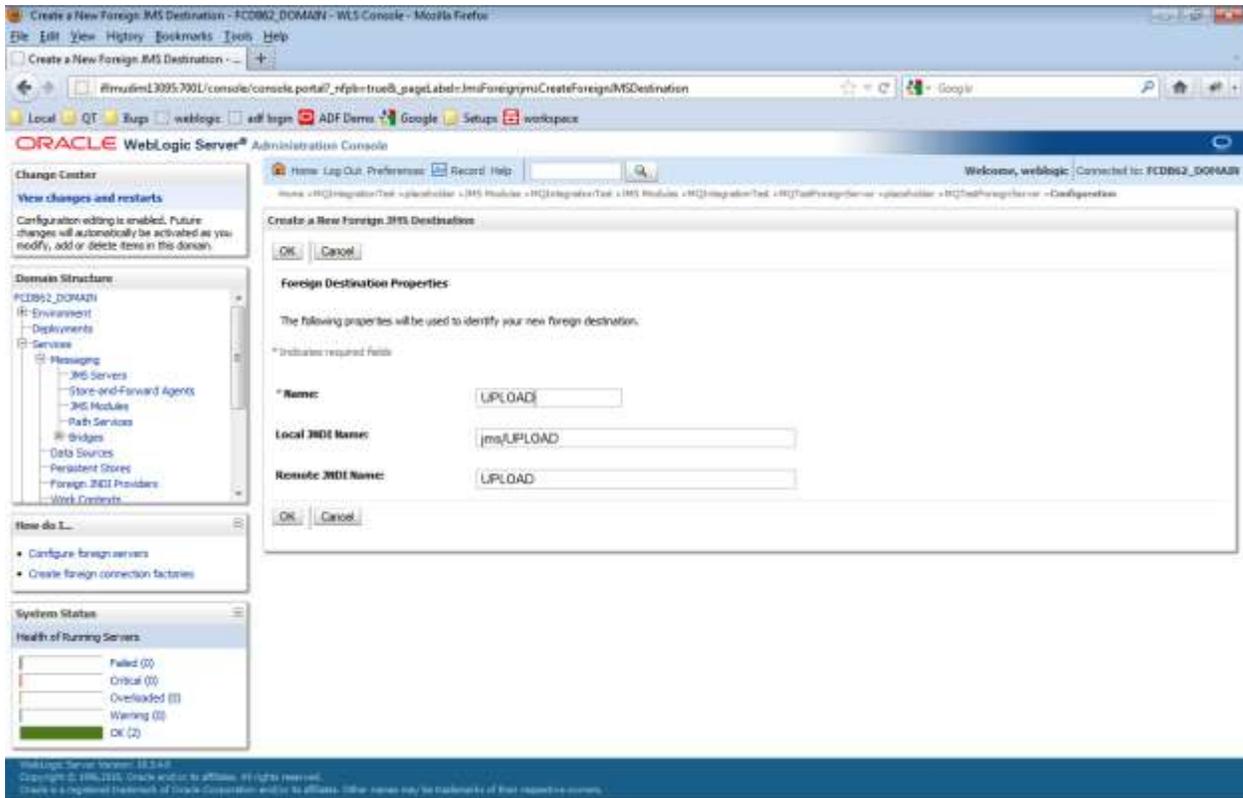
14. Click button “New” under “Configuration→Destinations” the tab at the top

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main content area is titled "Settings for MQTestForeignServer" and has tabs for "Configuration", "Subdeployment", and "Notes". The "Destinations" tab is selected. Below the tabs, there is a text block explaining that a foreign destination (topic or queue) can be found on a remote server and that a look-up will be performed automatically on the remote JNDI directory. Below this, there is a section titled "Foreign Destinations" which contains a table with the following structure:

| Name | Local JNDI Name | Remote JNDI Name |
|-------------------------------|-----------------|------------------|
| There are no items to display | | |

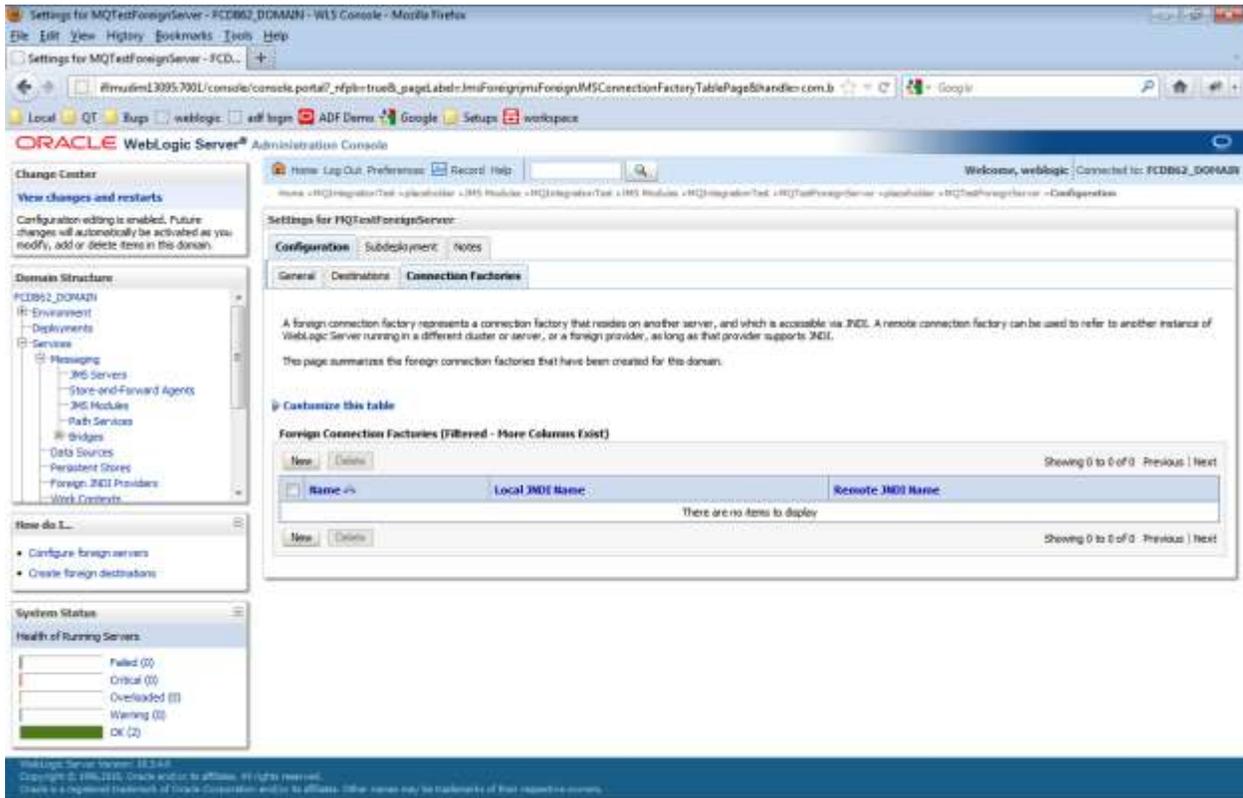
Buttons for "New" and "Delete" are located above and below the table. The console also shows a "Domain Structure" tree on the left and a "System Status" section at the bottom left.

15. Click “New” and enter following details.



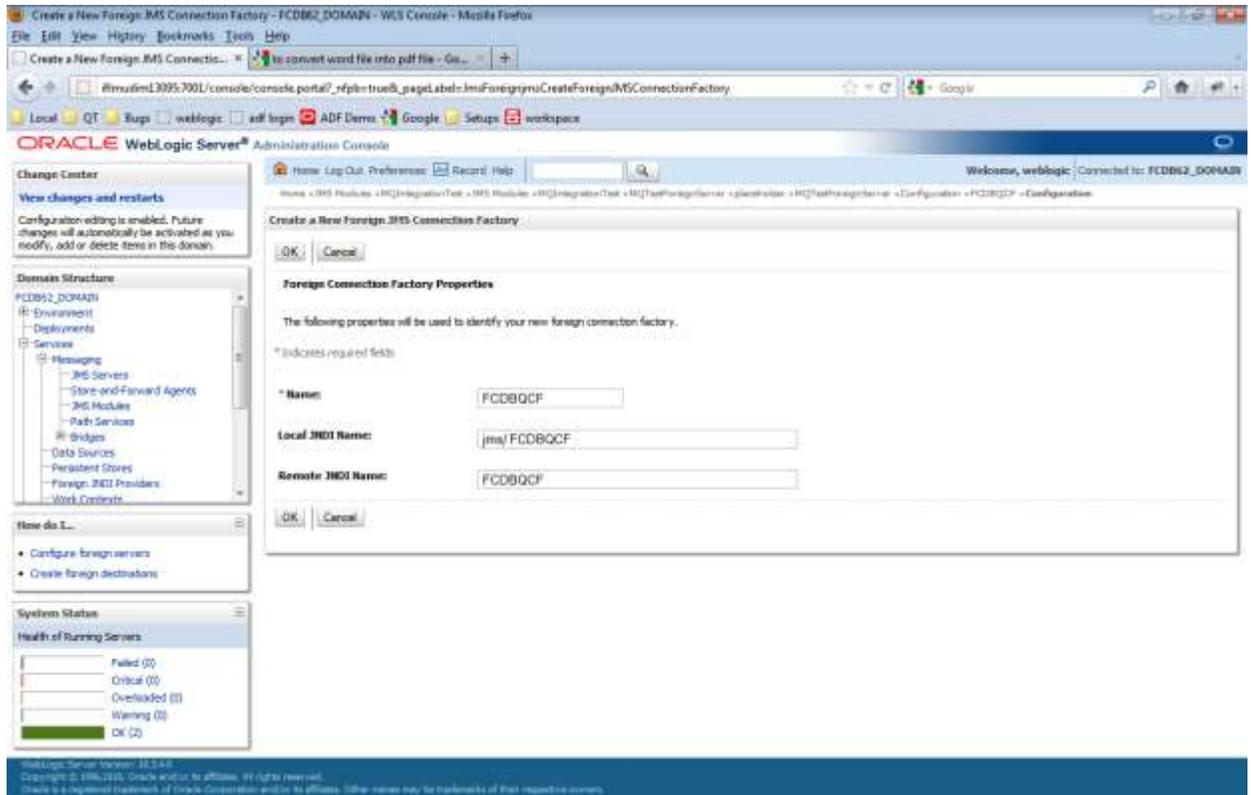
16. Click “OK”.

17. Click on Connection Factories under Configuration tab on top and click “New”.



18. Enter following details in “Create a New Foreign JMS Connection Factory”.

| Property | Value |
|------------------|---|
| Name | FCDBQCF |
| Local JNDI Name | jms/ FCDBQCF (Name of the Queue Connection Factory) |
| Remote JNDI Name | FCDBQCF (Name of the Queue Connection Factory) |



Click “OK”. With that you are done with creating and configuring Foreign JMS Server.

7.Module Installation

7.1. Bulk Module Setup

To deploy the bulk module on Weblogic JMS follow the steps explained in the doc “Oracle_FLEXCUBE_Direct_Banking_JMS_Queue_Creation_On_Weblogic” along with the deployment of MDBs as explained in section “[Deploying Applications](#)”. The MDBs will be deployed as a normal war/ear deployment. Alongwith the MDBs Refer to the [Appendix](#) for the ears required to be deployed for Bulk.

A queue connection factory with the JNDI name “jms/FCDBQCF” is required to be created.

List of queues required for Bulk module are:-

1. jms/UPLOAD
2. jms/DECRYPT
3. jms/PREPROCESS
4. jms/PROCESS
5. jms/AUTH
6. jms/AUTHREJECT
7. jms/RESPONSE
8. jms/COMPLETE

The list of MDBs required for deployment on the queues is as follows:

1. UPLOAD_MDB
2. DECRYPT_MDB
3. PREPROCESS_MDB
4. PROCESS_MDB

5. AUTH_MDB
6. AUTHREJECT_MDB
7. RESPONSE_MDB
8. COMPLETE_MDB

Configure the properties in as per the sheet attached
 “Oracle_FLEXCUBE_Direct_Banking_Parameter_Sheet” for the Property Location “fcat.properties
 and fcat.config file” under the Module Name for the “BULK” section.

Creating Data source for Bulk Connection:

To create Data source for Bulk connection follow the steps of creation of ‘XA Enabled Data Source.
 (As mentioned in the section ‘Setup JDBC data source and Connection Pooling’ of this document)
 using following parameters.

| Property | Value |
|------------------|---|
| Data Source Name | BT |
| JNDI Name | BT |
| Database Type | Oracle |
| Database Driver | Oracle’s Driver (Thin XA) Versions:9.0.1 or later |

7.2. Alerts Notification and Chase Cycle Setup

To deploy the Alerts and Chase module on the Weblogic JMS follow the steps explained in the doc
 “Oracle_FLEXCUBE_Direct_Banking_JMS_Queue_Creation_On_Weblogic” along with the deployment
 of MDBs as explained in section “[Deploying Applications](#)”. The MDBs will be deployed as a normal
 war/ear deployment.

1. Create one queue manager and two Queues. One Queue manager will manage both the
 queues.
2. Deploy the following MDBs for Alerts and Chase:
 - a. AlertMDBQueue
 - b. ChaseQueue
3. Configure the properties in as per the sheet attached
 “Oracle_FLEXCUBE_Direct_Banking_Parameter_Sheet” for the Property Location
 “fcat.properties and fcat.config file” under the Module Name for “Timer Bean, Alerts (Email),
 Alerts (SMS),EMAIL SMTP,Chase”

7.3.J2ME based Oracle FLEXCUBE Direct Banking Application

The following archives should be downloaded on user mobile to enable J2ME Based Oracle FLEXCUBE Direct Banking Application:

| Deployable | Path Location |
|----------------|-------------------------------|
| FCDBMidlet.jar | <FCDB BASE DIR>\deploy\mobile |
| FCDBMidlet.jad | <FCDB BASE DIR>\deploy\mobile |

7.4.SMS based Oracle FLEXCUBE Direct Banking Application

The following web archive needs to be deployed on the Application server to enable SMS Based Oracle FLEXCUBE Direct Banking Application:

| Deployable | Context | Path Location |
|------------|---------|------------------------|
| SMS.war | SMS | <FCDB BASE DIR>\deploy |

8.DB Creation

For completing the DB setup kindly refer to the doc
“Oracle_FLEXCUBE_Direct_Banking_Database_Setup“

Once the database scripts are successfully executed the SUPERADMIN user created must be unlocked by executing the files in the [Tools](#) Section.

9.Encryption and Decryption of property files

The property files <Identity>.xml , fcat-config.xml and fcat.properties mentioned in the [Appendix](#) will be stored in the encrypted format and decrypted later for reading them.

The system property “fcat.propfile.isencr” is set as “true”; if the property files are encrypted. It is set as “false”; if property files are in plain text format. If this property is not set at all as system property then all the property files are assumed to be in plain text format.

The usage of the tools are mentioned in the [Tools](#) section.

10.Service Tier Security

10.1.Webservice Mode

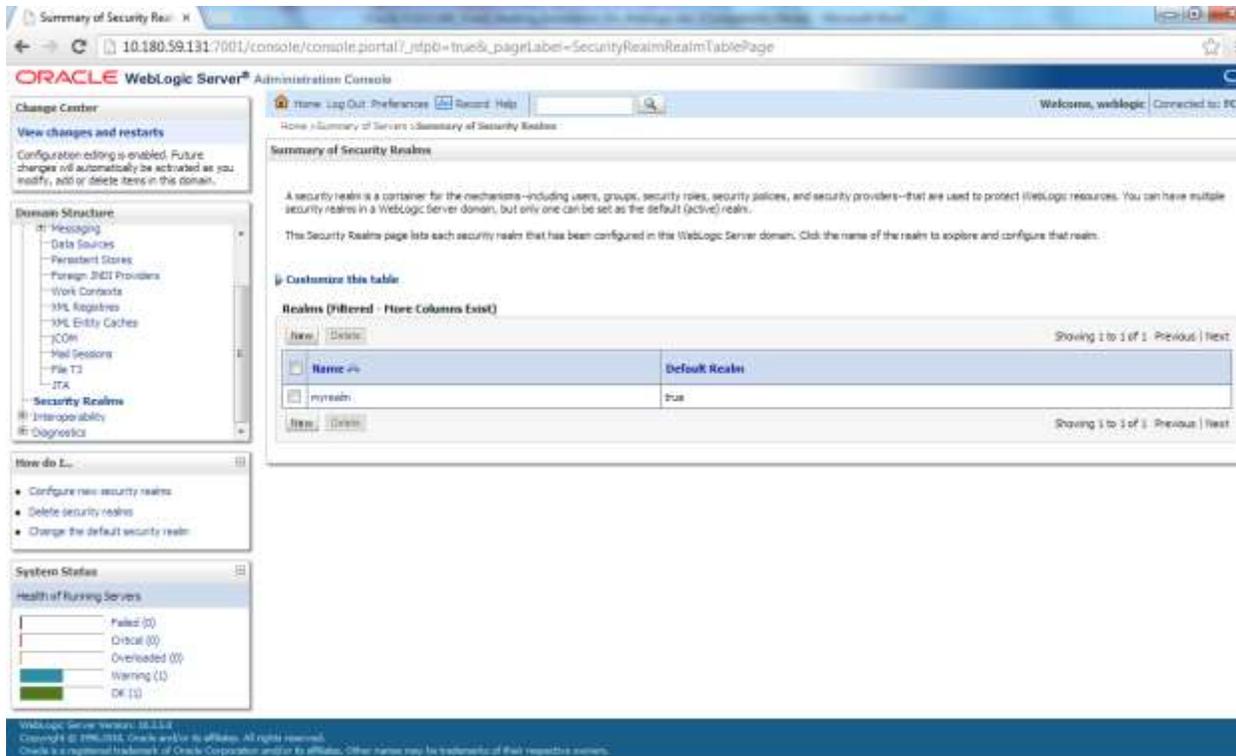
For enabling webservice mode, the invocation mode in fcat-config.xml should be set as 'W'.

Deployment of application through *Webservice* mode requires following ear:

| Application Name | Deployable | Context | Path Location |
|------------------|-------------|---------|---------------------------------|
| service | service.ear | service | <FCDB BASE DIR>\deploy\weblogic |

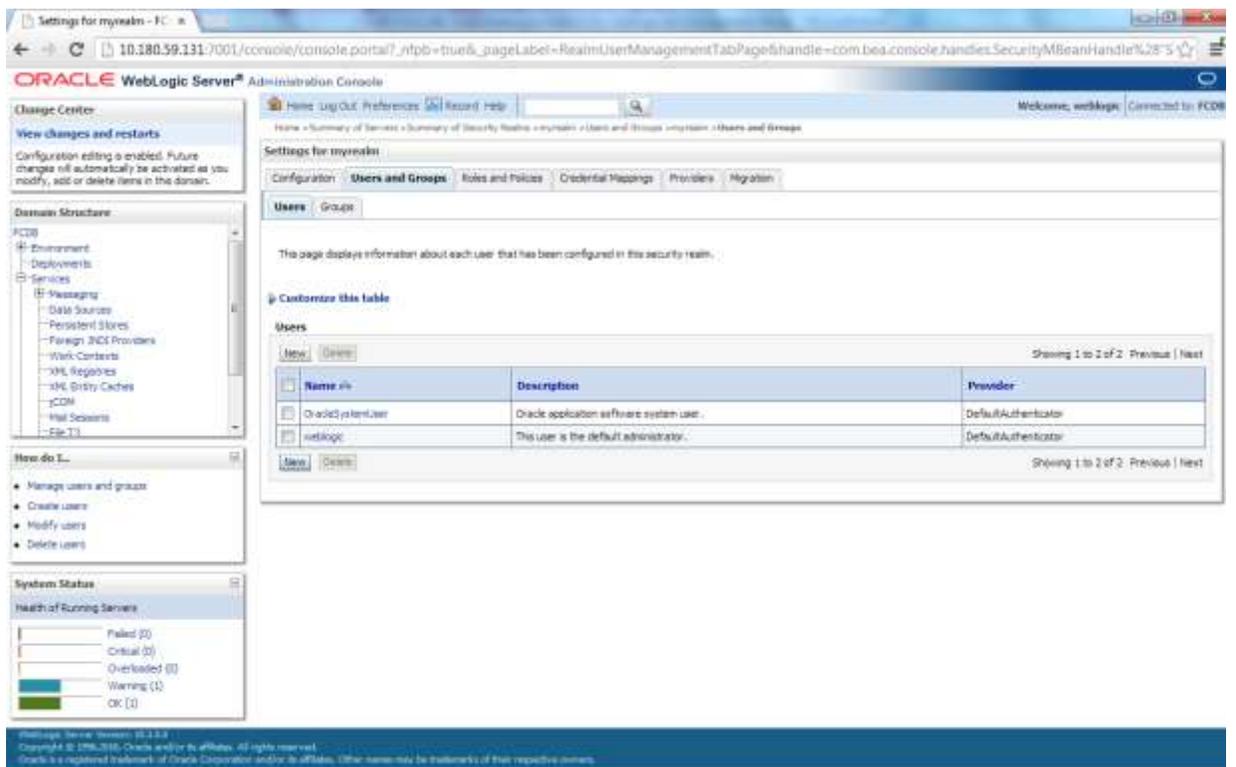
After deploying services.ear, please follow the below steps to authenticate webservice –

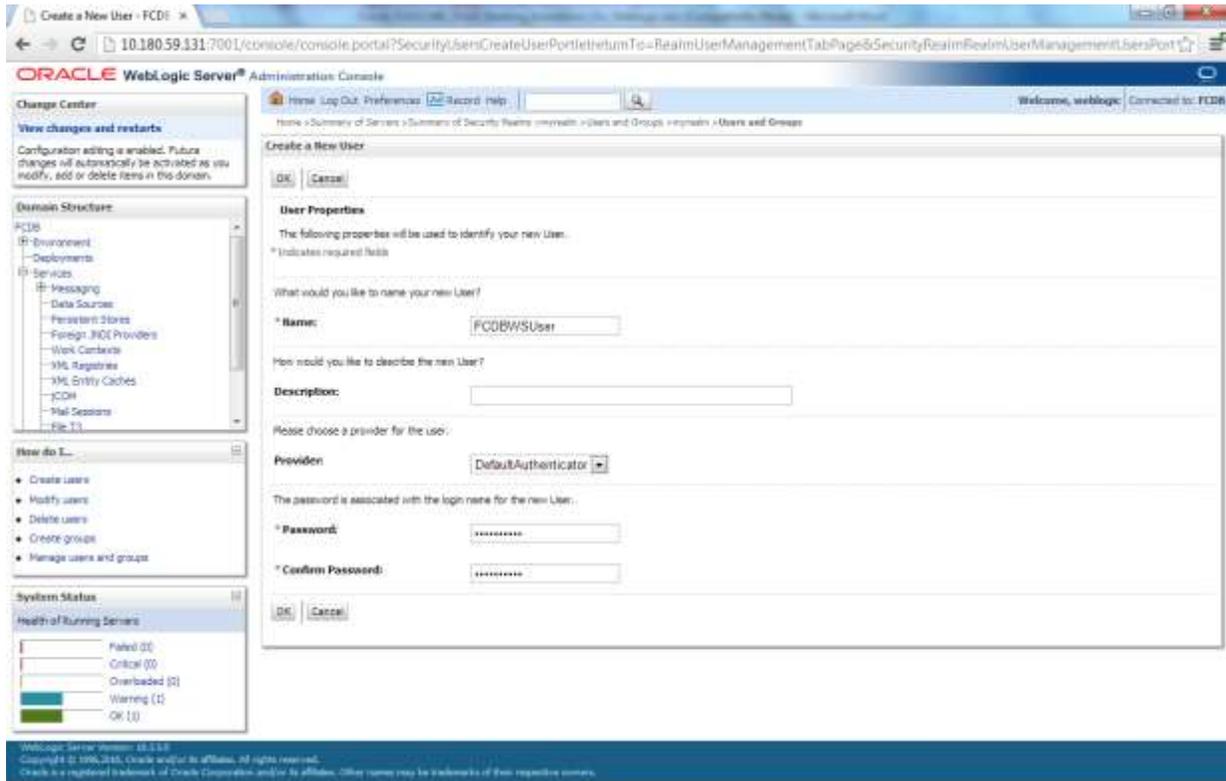
1. Create a user under the current security realm.



Click on the name of security realm.

Under 'User & Groups' tab, click on "New"

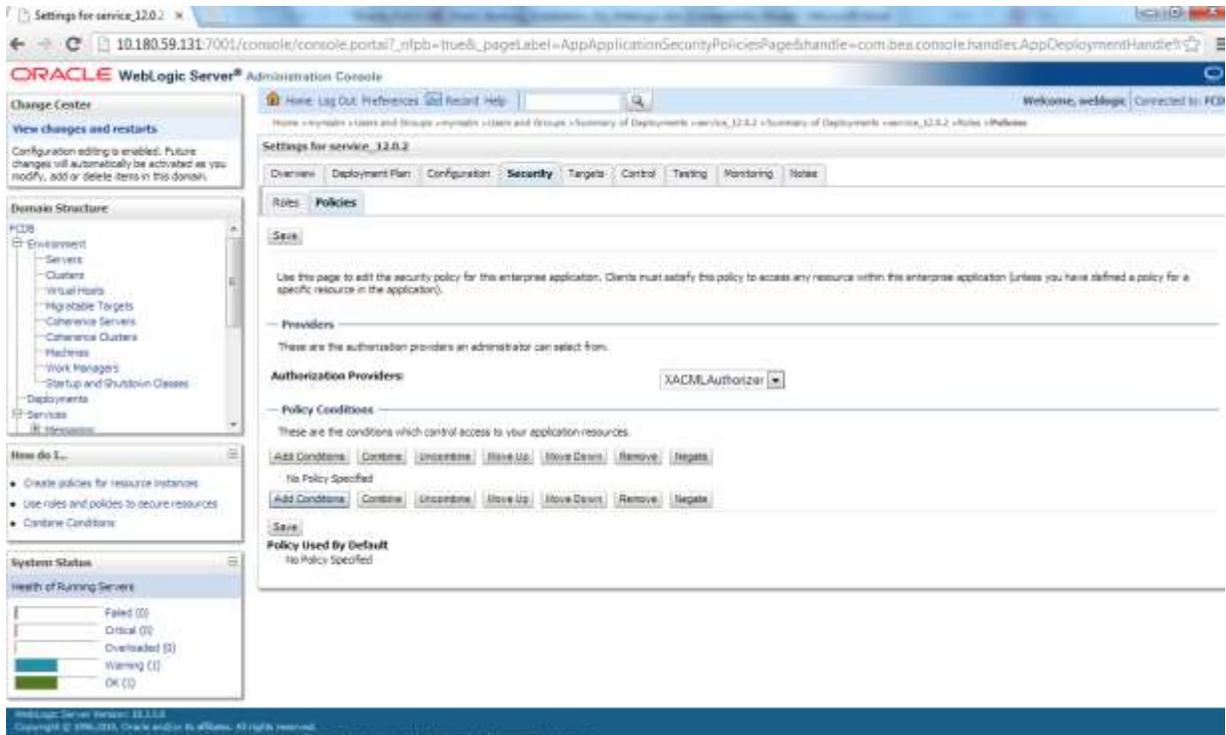




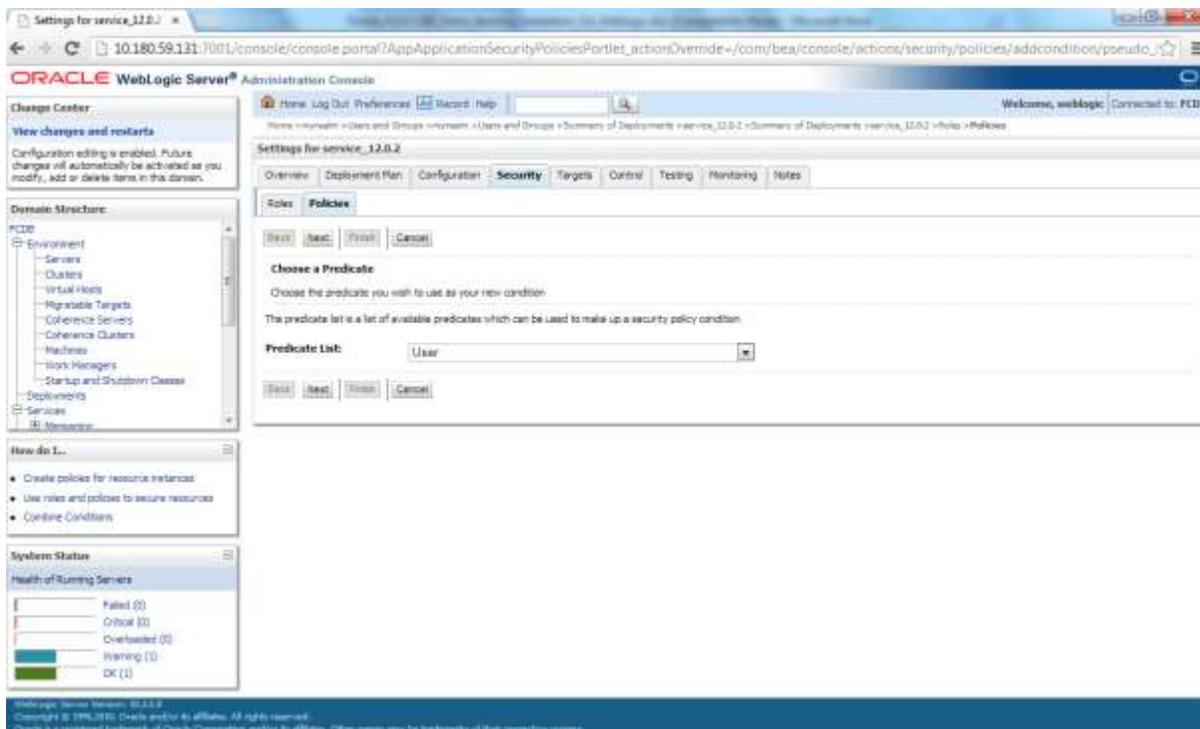
Enter the following values and click “OK”

| Field | Value |
|------------------|------------------------|
| Name | <Enter username> |
| Password | <Enter password> |
| Confirm Password | <Repeat same password> |

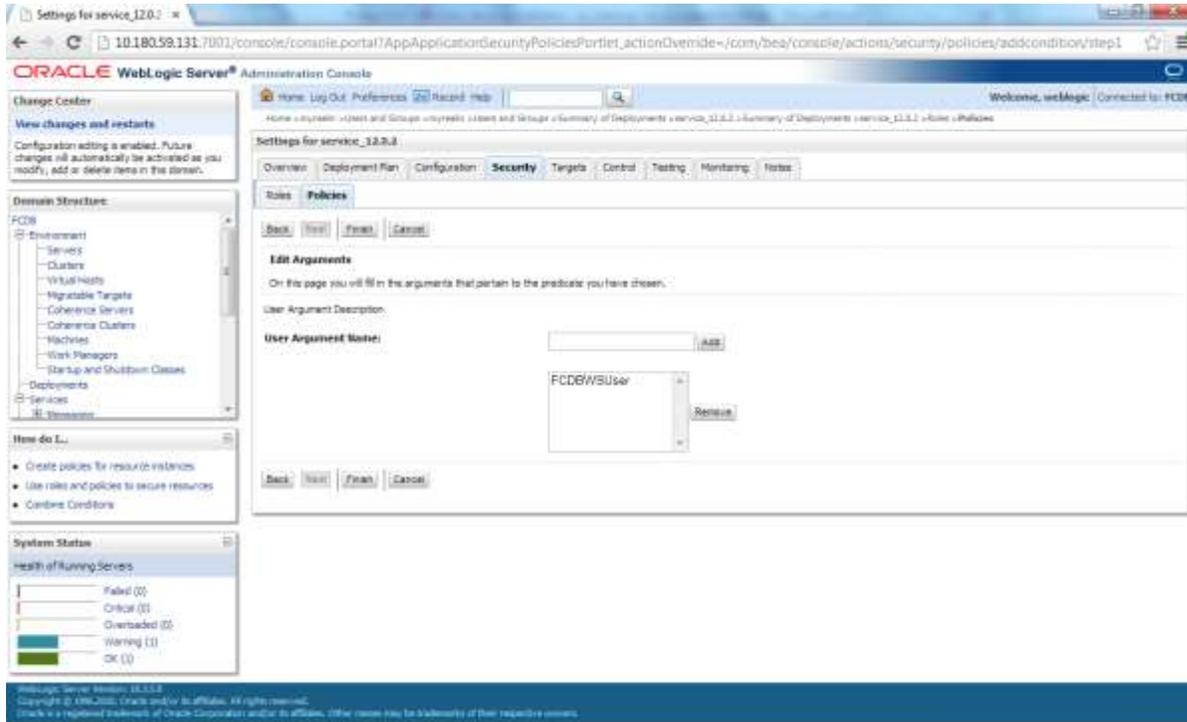
- Go to Deployment and click on “service”
Go to Security → Policies → Add condition



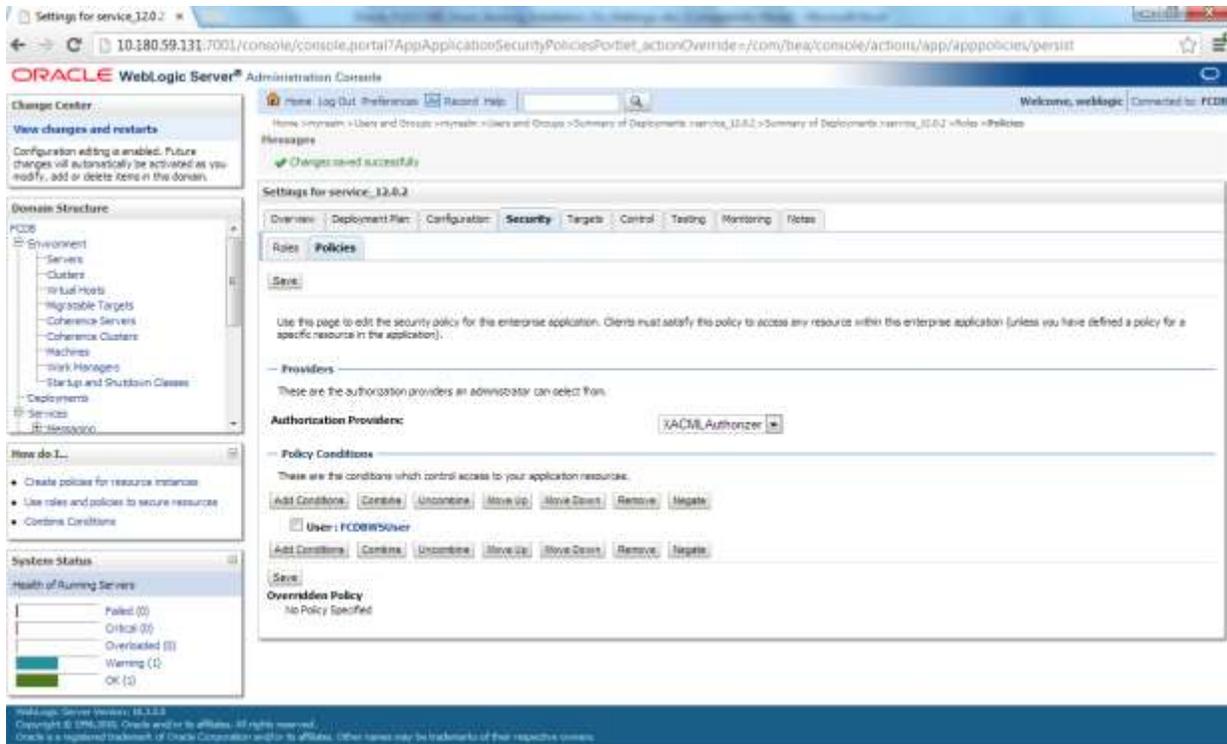
From predicate list, select the “User” option and click on “Next”



Specify the name of the user in "User Argument Name" field and "Add", Click on "Finish"



Click on "Save"



3. In fcat-config.xml set the following properties with username and password of the user created in above steps.

| Field | Value |
|---------------------------|------------------|
| FCAT.CONNECT.SVC.USERNAME | <Enter username> |
| FCAT.CONNECT.SVC.PASSWORD | <Enter password> |

10.2.EJB Mode

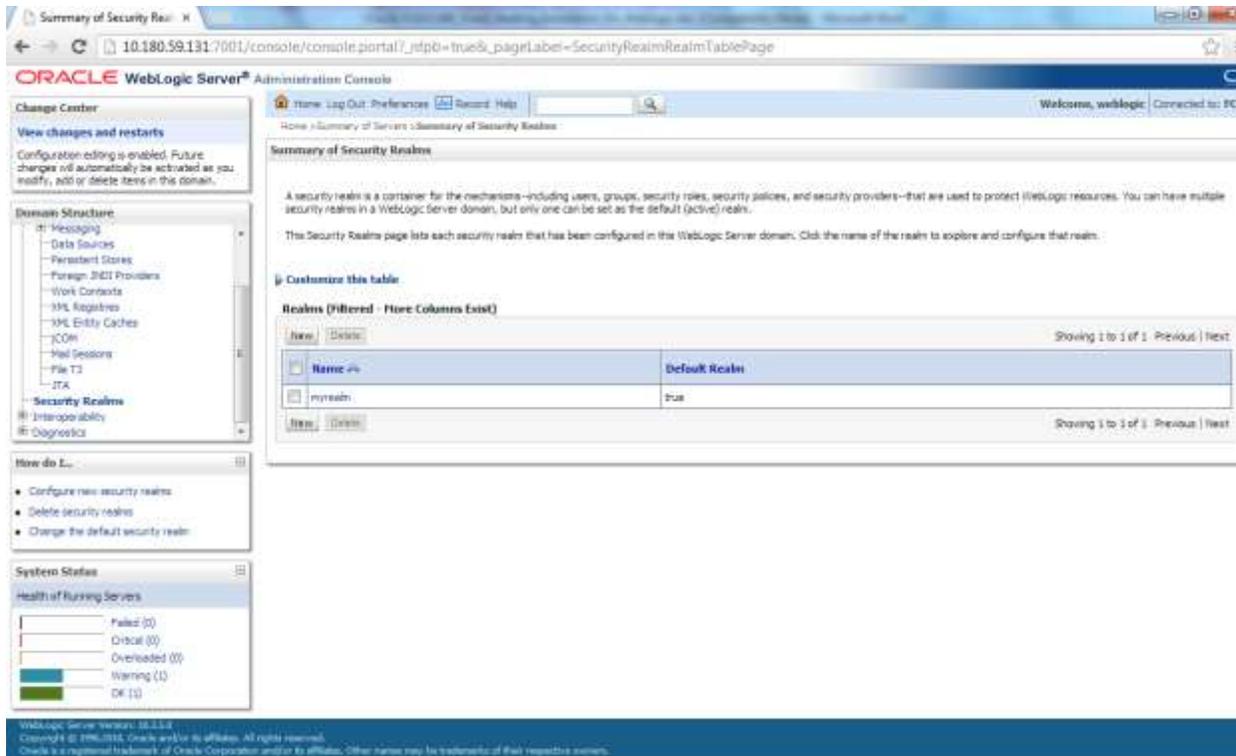
For enabling EJB mode, the invocation mode in fcat-config.xml should be set as 'E'.

Deployment of application through *EJB* mode requires following jar:

| Application Name | Deployable | Context | Path Location |
|-------------------|-----------------------|--------------------|------------------------|
| ServiceEndPointRI | ServiceEndPointRI.jar | ServiceEndPointEJB | <FCDB BASE DIR>\deploy |

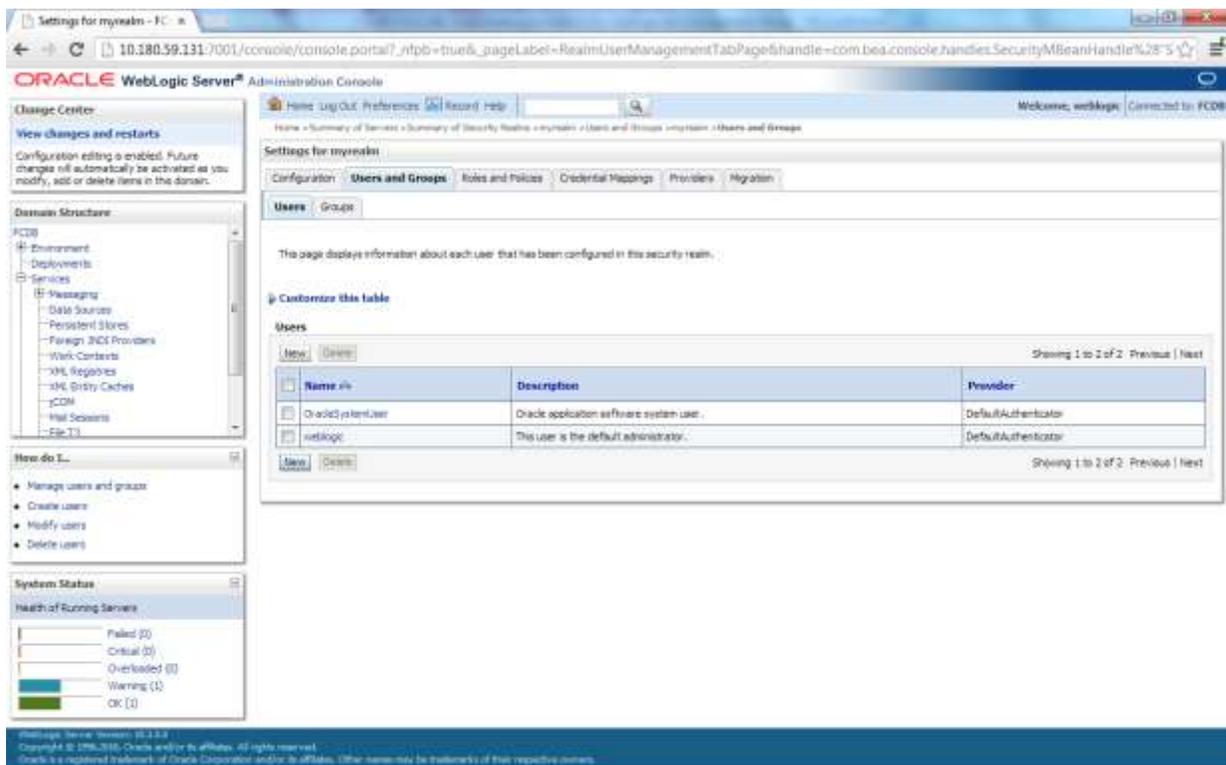
After deploying ServiceEndPointRI.jar, please follow the below steps to authenticate EJB mode –

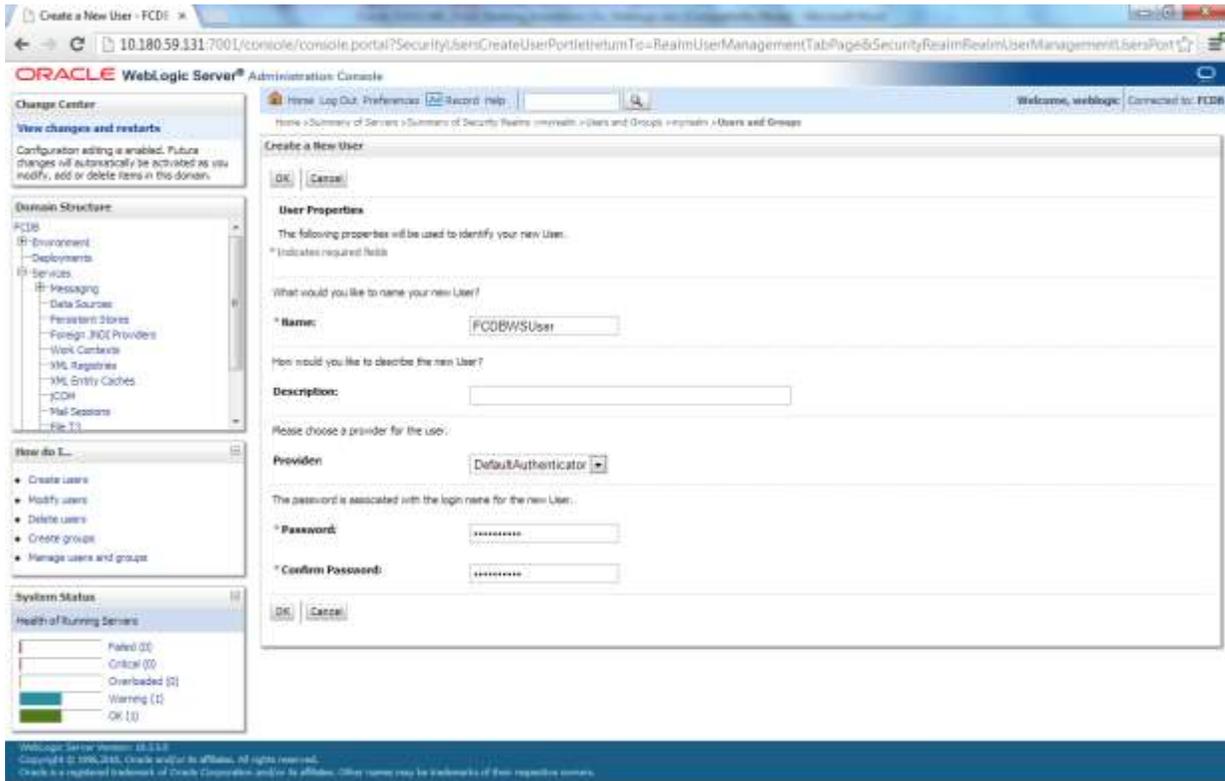
1. Create a user under the current security realm.



Click on the name of security realm.

Under 'User & Groups' tab, click on "New"





Enter the following values and click “OK”

| Field | Value |
|------------------|------------------------|
| Name | <Enter username> |
| Password | <Enter password> |
| Confirm Password | <Repeat same password> |

2. In fcac-config.xml set the following properties with username and password of the user created in above steps.

| Field | Value |
|---------------------------|------------------|
| FCAT.CONNECT.SVC.USERNAME | <Enter username> |
| FCAT.CONNECT.SVC.PASSWORD | <Enter password> |

3. A role named *FCDBEJBRole* is defined as follows, in *ejb-jar.xml* inside *ServiceEndPointRI.jar*. The user which was created in the above steps is to be assigned this role which is done in step 4.s

```
<assembly-descriptor>
  <security-role>
    <role-name>FCDBEJBRole</role-name>
  </security-role>
  <method-permission>
    <role-name>FCDBEJBRole</role-name>
    <method>
      <ejb-name>ServiceEndPointEJB</ejb-name>
      <method-name>processRequestWithXML</method-name>
    </method>
  </method-permission>
</assembly-descriptor>
```

4. Update the above created username in *weblogic-*ejb-jar.xml** inside *ServiceEndPointRI.jar* in *<principal-name/>* tag.

```
<security-role-assignment>
  <role-name>FCDBEJBRole</role-name>
  <principal-name>%%username%%</principal-name>
</security-role-assignment>
```

**By default, the username set in *<principal-name/>* is *weblogic*.

12. Fonts

If the FCDB application is being used at sites with language other than English, then we recommend that you put in the required language-specific font files in the following location of Weblogic installation

<Oracle Base Folder>\jrockit-jdk1.6.0_22-R28.1.1-4.0.1\jre\lib\fonts

To support the language font for certain functionalities like PDF download.

13.Appendix

After the successful installation of FCDB with the help of FCDB Installer, following folder structure will be created:

| Folder Name | Comments |
|--|--|
| <FCDB BASE DIR>\documents | Folder containing all FCDB documents |
| <FCDB BASE DIR>\dbsetup | Folder containing scripts for FCDB Database setup |
| <FCDB BASE DIR>\system | Folder containing FCDB application & properties files |
| <FCDB BASE DIR>\system\build\kernel | Folder containing the application codebase in form of a jar called FCDB_kernel.jar. |
| <FCDB BASE DIR>\system\build\extclasses\jars | Folder containing all requisite third-party jars. Seperate folders will be created for all the third party jars. e.g. <FCDB BASE DIR>\system\build\extclasses\jars\fcr |
| <FCDB BASE DIR>\system\home | Folder containing all the configuration/properties files of the application. |

| | |
|------------------------------------|--|
| <FCDB BASE DIR>\system\build\tools | Folder containing all the tools required to generate the GUI xls, to encrypt/decrypt the property files and generation of password for db user. |
| <FCAT.LOGFILE.PATH>\logs | Property FCAT.LOGFILE.PATH is configured to locate the folder for storing the log files of the server. e.g. D:\FCDBLogs. If this property is not set then logs are created at default location at <FCDB BASE DIR>\logs. |

Deployment of application through *EJB mode* requires following jars:

| Application Name | Deployable | JNDI | Path Location |
|----------------------|--------------------------|----------------------|------------------------|
| EJBChannleController | EJBChannleController.jar | EJBChannelController | <FCDB BASE DIR>\deploy |
| ServiceEndPointRI | ServiceEndPointRI.jar | ServiceEndPointEJB | <FCDB BASE DIR>\deploy |
| TransactionBean | TransactionBean.jar | TransactionBean | <FCDB BASE DIR>\deploy |
| TimerBean | TimerBean.jar | TimerBean | <FCDB BASE DIR>\deploy |

Deployment of the war file is mandatory for both modes (EJB\Webservice).

| Deployable | Context | Path Location |
|-----------------------|---------|-------------------------|
| F001.war | F001 | <FCDB BASE DIR>\deploy |
| B001.war | B001 | <FCDB BASE DIR>\deploy |
| SMS.war [SMS Banking] | SMS | <FCDB BASE DIR>\deploy |
| T001.war | T001 | < FCDB BASE DIR>\deploy |
| V001.war | V001 | < FCDB BASE DIR>\deploy |
| SMS.war | SMS | < FCDB BASE DIR>\deploy |

Additional deployments when interaction with host is Message driven requires the following MDBs:

| Deployable | Context | Comment | Path Location |
|------------|---------|---------|---------------|
|------------|---------|---------|---------------|

| | | | |
|-------------------------------|---------------------------|-----------|------------------------|
| CloneQueueReceiverMDB.jar | CloneQueueReceiverMDB | Mandatory | <FCDB BASE DIR>\deploy |
| ClonedQueuResourceAdapter.rar | ClonedQueuResourceAdapter | Mandatory | <FCDB BASE DIR>\deploy |

The following ears will be required for Bulk module setup.

| Deployable | Context | Path Location |
|-------------------------|---------------------|--------------------------------------|
| BULKEVENTHANDLEREJB.ear | BULKEVENTHANDLEREJB | <FCDB BASE DIR>\deploy\weblogic\bulk |

The following archives should be downloaded on user mobile to enable J2ME Based Oracle FLEXCUBE Direct Banking Application.

| Deployable | Context | Path Location |
|----------------|---------|-------------------------------|
| FCDBMidlet.jar | | <FCDB BASE DIR>\deploy\mobile |
| FCDBMidlet.jad | | <FCDB BASE DIR>\deploy\mobile |

Configuration/Property Files

The layers presentation, channel & service in the system use the following property files:

| Property File | Purpose |
|-----------------|--|
| <Identity>.xml | Each web application deployed has its own property file named as <daemonName>.xml. The daemon name can be configured by property 'FCAT.INTERNETSERVLET.DAEMON.NAME' in web.xml. If no daemon name is specified, default name 'INTERNETSERVLET' is used. (internetservlet.xml). The daemon name can be B001 hence B001.xml. |
| fcac-config.xml | Configuration property used at the channel layer containing the db properties, invocation mode. This will be updated mainly when the invocation mode is Webservice (W). |
| fcac.properties | Configuration property used at the service layer containing the db properties, connection pool settings, path for logs and properties configured specific to any module installed. |

Kindly refer to the sheet "Oracle_FLEXCUBE_Direct_Banking_Parameter_Sheet" under Module Name "Core" and Property Location for all the above files.

14.Tools

Before using the tools ensure that the Java home path is set.

Encryption and Decryption of property files in home folder.

Change the working folder to <FCDB BASE DIR>\system\build\tools. Pick up the following files for the respective platform and execute them at the command prompt:

| File Name | OS |
|---------------------------|---------|
| securepropertiesfiles.bat | Windows |
| securepropertiesfiles.sh | Linux |

The tool operates in the interactive mode. The arguments will be provided on execution of the files.

To encrypt or decrypt a file the arguments prompted are :

<Encryption or Decryption mode(E/D)> <Path of the input property file> <Path of the output property file>

e.g. E D:\FCDB\system\home\fcac-config.xml D:\config

Once the file is encrypted set the system property "fcac.propfile.isencr" to "true".

Build the XSL templates to required language.

The templatized xsls will be picked up from the location

<FCDB BASE DIR>\system\datafiles\gui\<usertype>\<channel id>\template To generate the GUI xsls from the templatized xsls the following tools must be executed at the command prompt.

| File Name | OS |
|--------------|---------|
| xslbuild.bat | Windows |
| xslbuild.sh | Linux |

The tool will execute in the interactive mode and prompt for the user type, channel id, language id and format. After execution the generated files will be stored in the location

<FCDB BASE DIR>\system\datafiles\gui\<usertype>\<channel id>\<language id>

Unlock & set password for user "SUPERADMIN"

To unlock the user created and set a user defined password for it, the following files must be executed at the command prompt for the respective platform.

| File Name | OS |
|----------------|---------|
| resetadmin.bat | Windows |
| resetadmin.sh | Linux |

These tools cannot be successfully used more than once

The tool would require weblogic.jar which is located in the following path on the application server

< ORACLE Base Folder>\<WLS home directory>\server\lib