

Oracle Access Manager  
Oracle FLEXCUBE Universal Banking  
Release 12.87.7.0.0  
[May] [2021]



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# 1. Introduction

For the purpose of single sign-on FLEXCUBE UBS is qualified with Oracle Identity Management 11.1.2.2.0 (Fusion Middleware 11gR1) – specifically using the Access Manager component of Oracle Identity Management. This feature is available in the releases FC UBS V.UM 7.3.0.0.0.0.0 and onwards of FLEXCUBE UBS.

This document is expected to provide an understanding as to how single sign-on can be enabled for a FLEXCUBE UBS deployment using Oracle Fusion Middleware 11g.

In addition to providing a background to the various components of the deployment, this document also, talks about Configuration in FLEXCUBE and Oracle Access Manager to enable single sign-on using Oracle Internet Directory as a LDAP server.

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## 2. Background and Prerequisites

### 2.1 Pre-Requisites

The following are the pre-requisites for Oracle Access Manager (OAM) and LDAP Directory Server.

#### 2.1.1 Software Requirements

1. Oracle Access Manager – OAM (11.1.2.2.0)
  - Access Server
  - Webtier Utilities 11.1.1.7.0
  - Web Gate 11.1.2.2.0
  - Http Server
2. LDAP Directory Server

Please make sure that the LDAP which is been used for FLEXCUBE Single Signon deployment is certified to work with OAM.

List of few LDAP Directory servers supported as per OAM document (note – this is an indicative list. The conclusive list can be obtained from the Oracle Access Manager documentation):

- Oracle Internet Directory
  - Active Directory
  - ADAM
  - ADSI
  - Data Anywhere (Oracle Virtual Directory)
  - IBM Directory Server
  - NDS
  - Sun Directory Server
3. Web Logic(10.3.5)

For the purpose of achieving single sign on for FCUBS in FMW 11gR1, it is necessary for the weblogic instance to have an explicit Oracle HTTP server (OHS).

### 2.2 Background of SSO related components

#### 2.2.1 Oracle Access Manager (OAM)

Oracle Access Manager consists of the Access System, and the Identity System. The Access System secures applications by providing centralized authentication, authorization and auditing to enable single sign-on and secure access control across enterprise resources. The Identity System manages information about individuals, groups and organizations. It enables delegated administration of users, as well as self-registration interfaces with approval workflows. These systems integrate seamlessly.

The backend repository for the Access Manager is an LDAP-based directory service that can be a combination of a multiple directory servers, which is leveraged for two main purposes:

- As the store for policy, configuration and workflow related data, which is used and managed by the Access and Identity Systems
- As the identity store, containing the user, group and organization data that is managed through the Identity System and is used by the Access System to evaluate access policies.

## **2.2.2 LDAP Directory Server**

To integrate FLEXCUBE with OAM to achieve Single Sign-on feature, FLEXCUBE's password policy management, like password syntax and password7 expiry parameters can no longer be handled by FLEXCUBE. Instead, the password policy management can be delegated to the Directory Server. All password policy enforcements would be on the LDAP user id's password and NOT FLEXCUBE application users' passwords.

## **2.2.3 WebGate/AccessGate**

A WebGate is a Web server plug-in that is shipped out-of-the-box with Oracle Access Manager. The WebGate intercepts HTTP requests from users for Web resources and forwards it to the Access Server for authentication and authorization.

Whether you need a WebGate or an AccessGate depends on your use of the Oracle Access Manager Authentication provider. For instance, the:

Identity Asserter for Single Sign-On: Requires a separate WebGate and configuration profile for each application to define perimeter authentication. Ensure that the Access Management Service is On.

Authenticator or Oracle Web Services Manager: Requires a separate AccessGate and configuration profile for each application. Ensure that the Access Management Service is On.

## **2.2.4 Identity Asserter**

Identity Asserter uses Oracle Access Manager Authentication services and also validates already-authenticated Oracle Access Manager Users through the ObSSOCookie and creates a WebLogic-authenticated session. It also provides single sign-on between WebGates and portals. We can get more details on Identity asserter [HERE](#)



This document contains the configuration of Oracle Internet Directory as LDAP server and its configuration in weblogic. This document will not discuss the configuring and setting up of OAM and LDAP directory server of other LDAP servers. This will be provided by the corresponding Software provider.

## 3. Configuration

### 3.1 Pre-Requisites

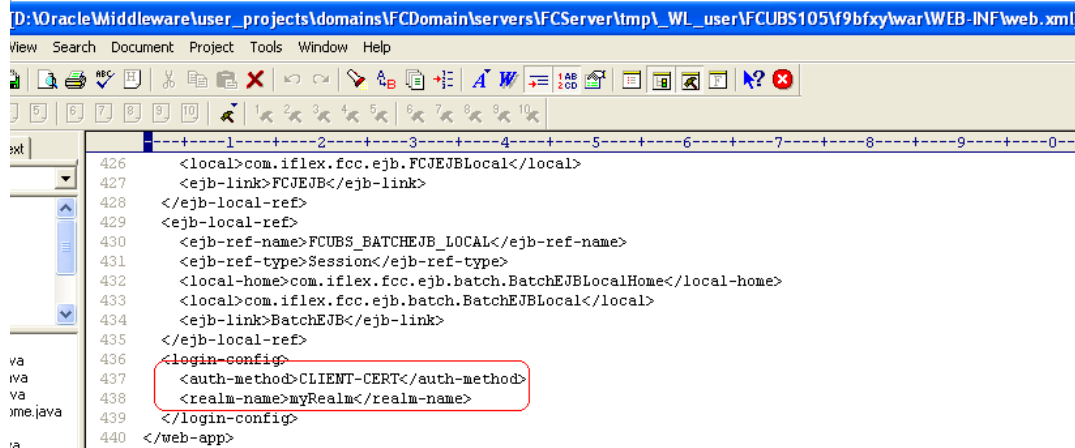
The steps provided below assume that FLEXCUBE has already been deployed and is working (without single sign-on)

The provided below steps assume that Oracle Access Manager and the LDAP server have been installed already and the requisite setup already done with respect to connecting the two along Weblogic's Identity Asserter.

### 3.2 Change the web.xml file

1. Locate the web.xml file in the application (FCUBS) EAR file
2. Add the following lines under login-config.

```
<login-config>
  <auth-method>CLIENT-CERT</auth-method>
  <realm-name>myRealm</realm-name>
</login-config>
```



The screenshot shows a text editor window with the following XML content:

```
426 <local>com.iflex.fcc.ejb.FCJEJBLocal</local>
427 <ejb-link>FCJEJB</ejb-link>
428 </ejb-local-ref>
429 <ejb-local-ref>
430 <ejb-ref-name>FCUBS_BATCHEJB_LOCAL</ejb-ref-name>
431 <ejb-ref-type>Session</ejb-ref-type>
432 <local-home>com.iflex.fcc.ejb.batch.BatchEJBLocalHome</local-home>
433 <local>com.iflex.fcc.ejb.batch.BatchEJBLocal</local>
434 <ejb-link>BatchEJB</ejb-link>
435 </ejb-local-ref>
436 <login-config>
437 <auth-method>CLIENT-CERT</auth-method>
438 <realm-name>myRealm</realm-name>
439 </login-config>
440 </web-app>
```

The lines 436 through 439 are enclosed in a red rectangular box.

3. Save the file and redeploy and restart the application.

### 3.3 Configuring SSO in OAM Console

After installing OAM, Webtier Utilities and Webgate, extend the weblogic domain to create OAM server.

Follow the post installation scripts deployWebGate and EditHttpConf as provided in [http://docs.oracle.com/cd/E17904\\_01/install.1111/e12002/webgate004.htm](http://docs.oracle.com/cd/E17904_01/install.1111/e12002/webgate004.htm)

1. Identity Store Creation

To create new User Identity Store, Login to OAM Console and navigate to System Configuration>>Common configuration>>Data Sources>> User Identity Store.

2. Input below information in the User Identity Store.

Choose Store Type as Oracle Internet Directory.

Location:

LDAP server Host name and Port Number in <HOSTNAME>:PORT format

Bind DN:

User name to connect the LDAP Server

Password:

Password to connect the LDAP Server

User Name Attribute:

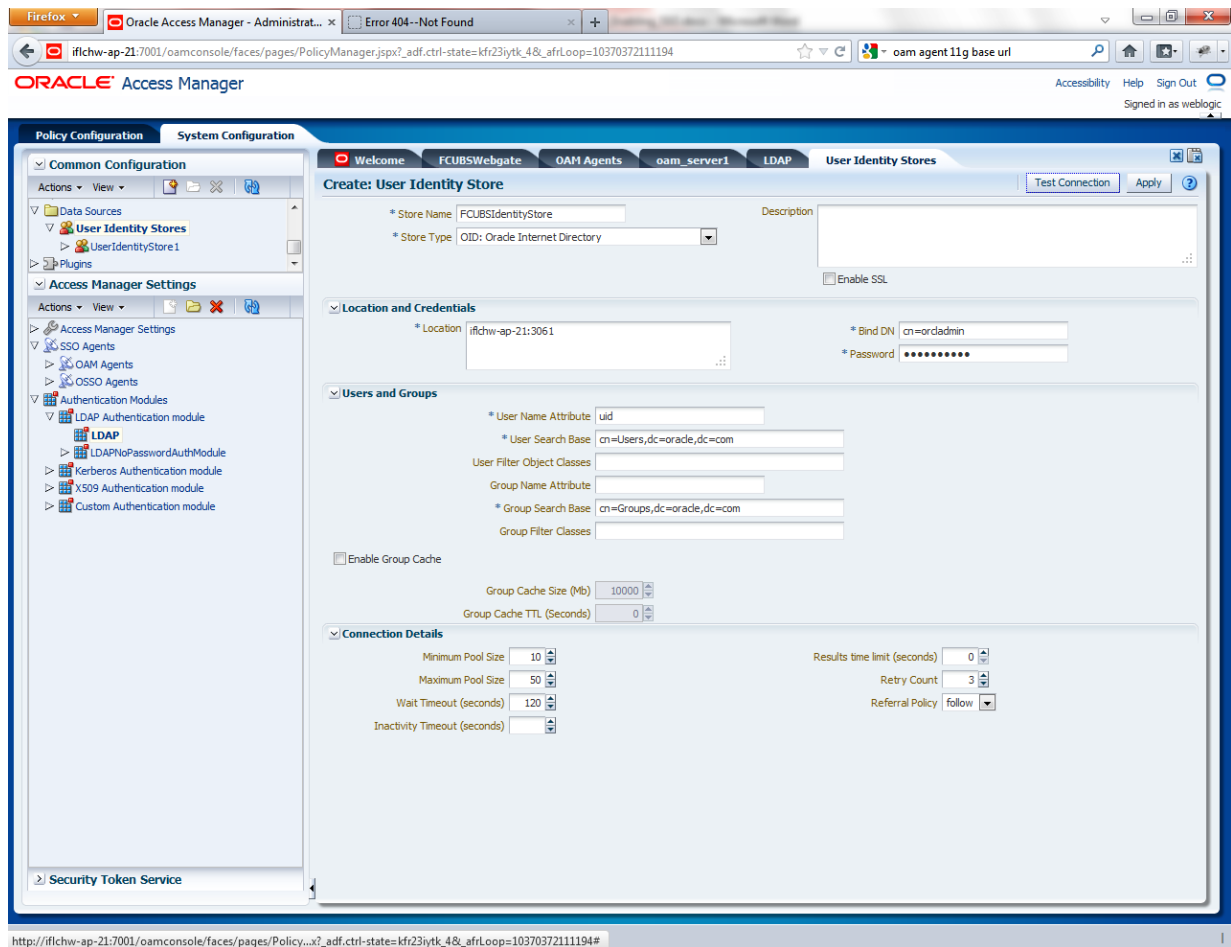
The attribute created in LDAP, which will be the User Name for the other application (here it will be treated as the FCUBS Username)

User Search Base:

The container of the User Name in the LDAP server.

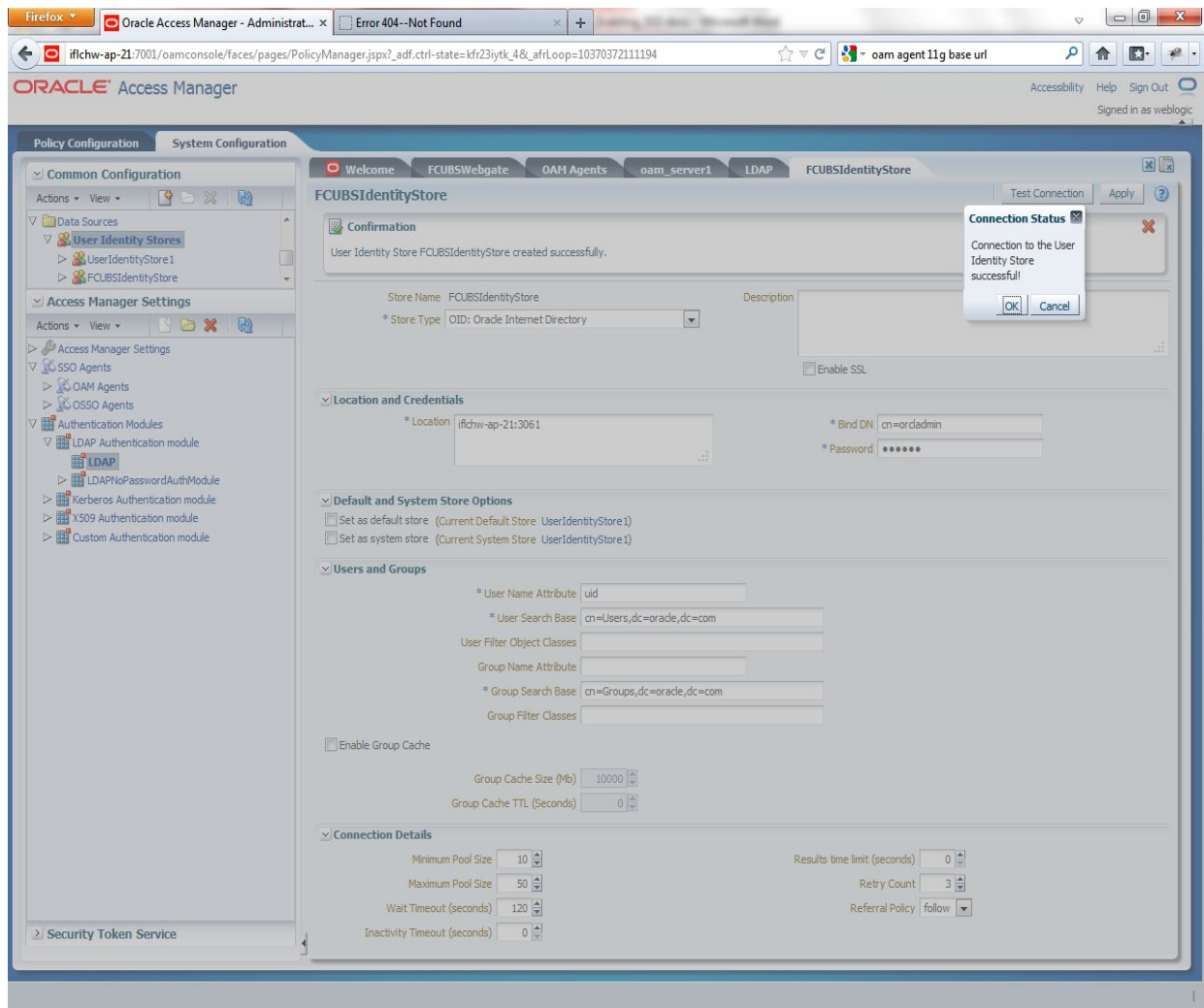
Group Search Base:

The container of the Group Name in the LDAP server.



3. After input of the above information click on 'Apply' button. On successful creation, click test connection button to verify whether the LDAP connection is working fine.

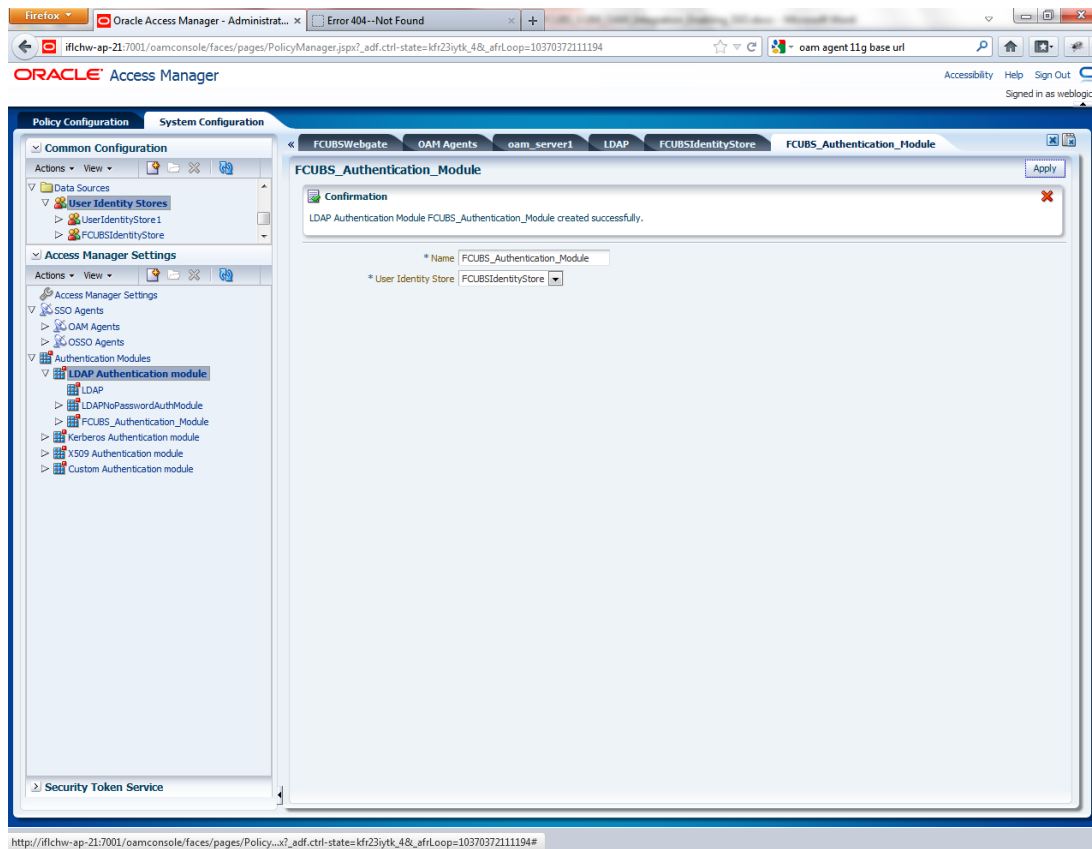




#### 4. Creating Authentication Module

Navigate to System Configuration >> Access Manager Settings >> Authentication Modules >> LDAP Authentication Module.

Click 'New' Button to create new Authentication Module. Input the Name of the authentication module and choose the User Identity Store we created in step 1.

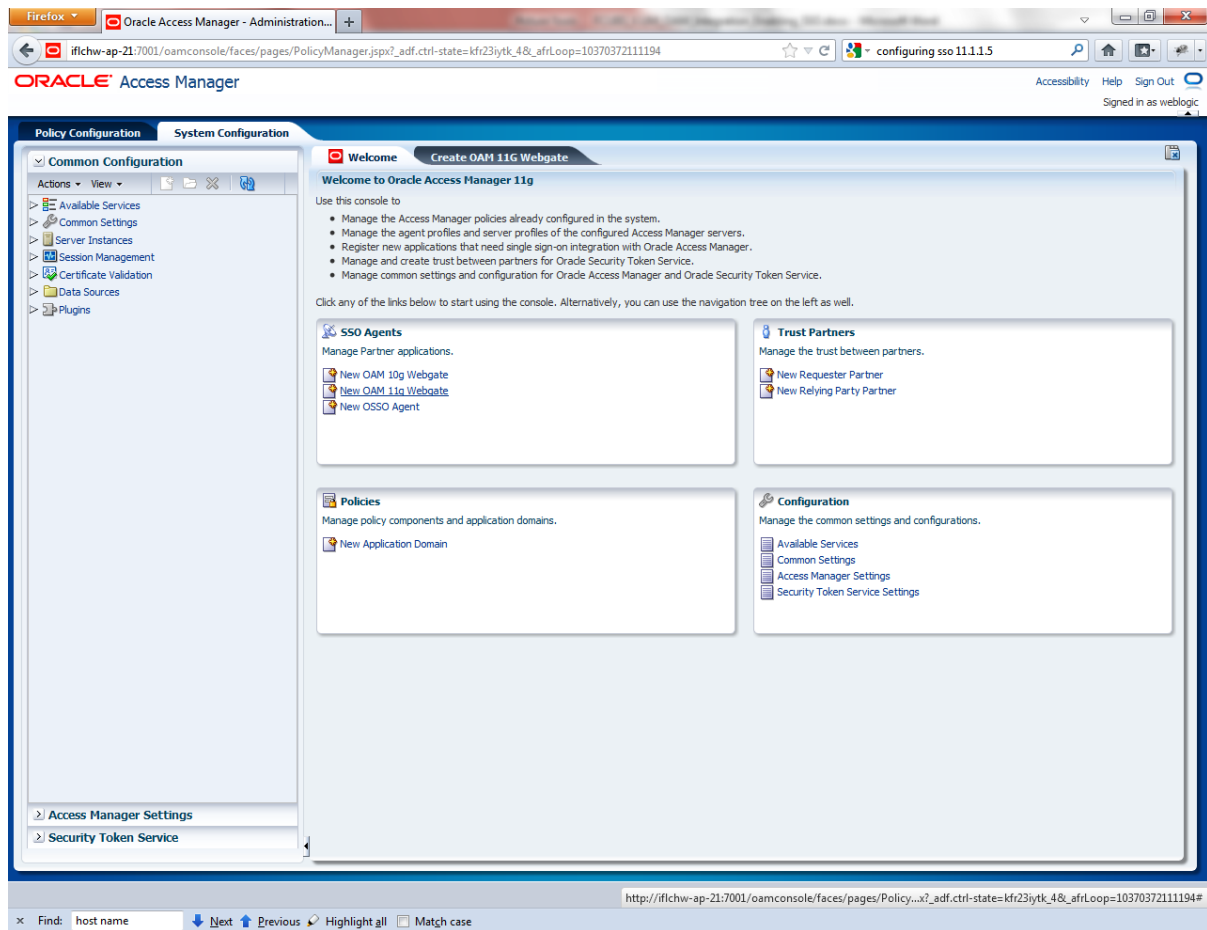


## 5. Creating OAM 11g Webgate

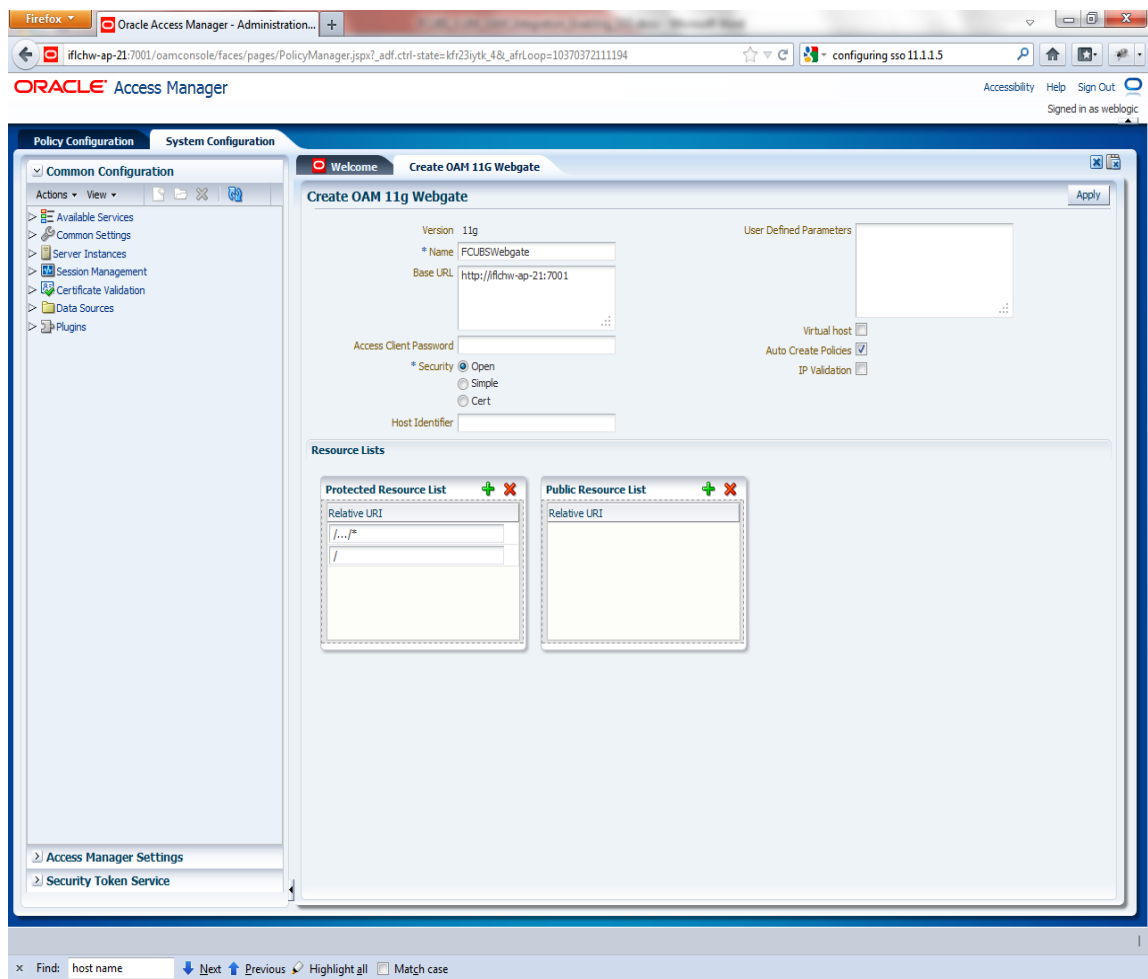
Navigate to System Configuration>>Access Manager Settings>>SSo Agents>>OAM Agents.

Click on 'Create 11g webgate' button

or Click on New OAM 11g Webgate link available in welcome page.

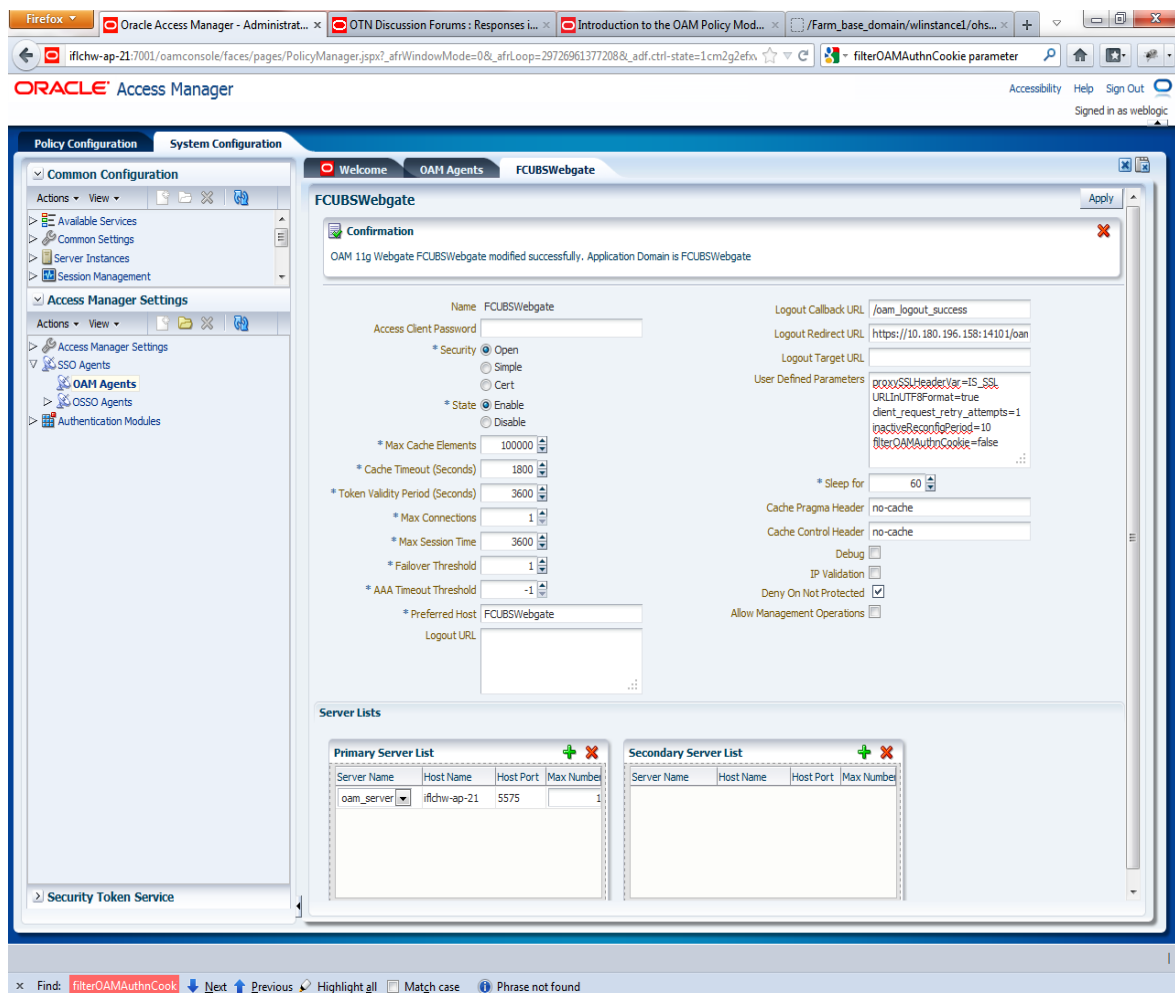


Enter any name for Webgate and Base URL (The host and port of the computer on which the Web server for the Webgate is installed) and click on apply.



Once the OAM 11g Webgate created, add filterOAMAuthnCookie=false parameter along with default parameters in User Defined Parameters.

Click 'Apply' button to save the changes.



## 6. Post OAM Webgate 11g Creation Steps

Perform the following steps to copy the artifacts to the Webgate installation directory:

- On the Oracle Access Manager Console host, locate the updated OAM Agent ObAccessClient.xml configuration file (and any certificate artifacts). For example:

`$DOMAIN_HOME/output/$Agent_Name/ObAccessClient.xml`

- On the OAM Agent host, copy artifacts (to the following Webgate directory path). For example:

`11gWebgate_instance_dir/webgate/config/ObAccessClient.xml`  
(for instance `WebTier_Middleware_Home/Oracle_WT1/instances/instance1/config/OHS/ohs1/webgate/config/ObAccessClient.xml`)

## 7. Creating Authentication Scheme

To create Authentication Scheme navigate to Policy Configuration >> Authentication Schemes

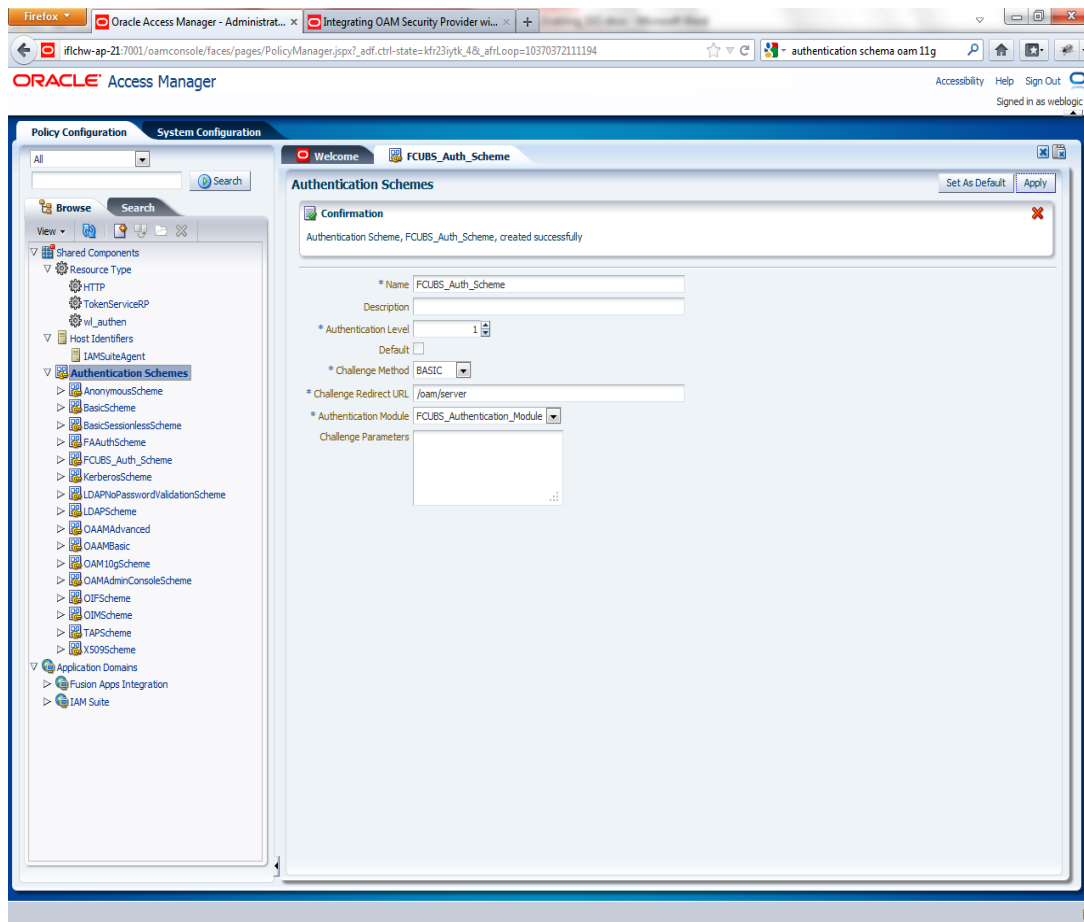
Click on 'Create' button to create new Authentication Scheme.

Name : Any name to identify Authentication Scheme

Challenge Method : BASIC

Challenge Redirect URL : /oam/server

Authentication Module : Choose the authentication module created in step 2.



If it is a basic authentication scheme, we need to add the 'enforce-valid-basic-auth-credentials' tag to the config.xml file located under /user\_projects/domains/<MyDomain>/config/. The tag must be inserted within the <security-configuration> tag as follows: [Just before the end of security configuration tag]

```
<enforce-valid-basic-auth-credentials>false</enforce-valid-basic-auth-credentials>
```

```
</security-configuration>
```

## 8. Creating Authentication Scheme

To create authentication policy, navigate to Policy Configuration >> Application Domains >> [Webgate agent name] >> Authentication Policies.

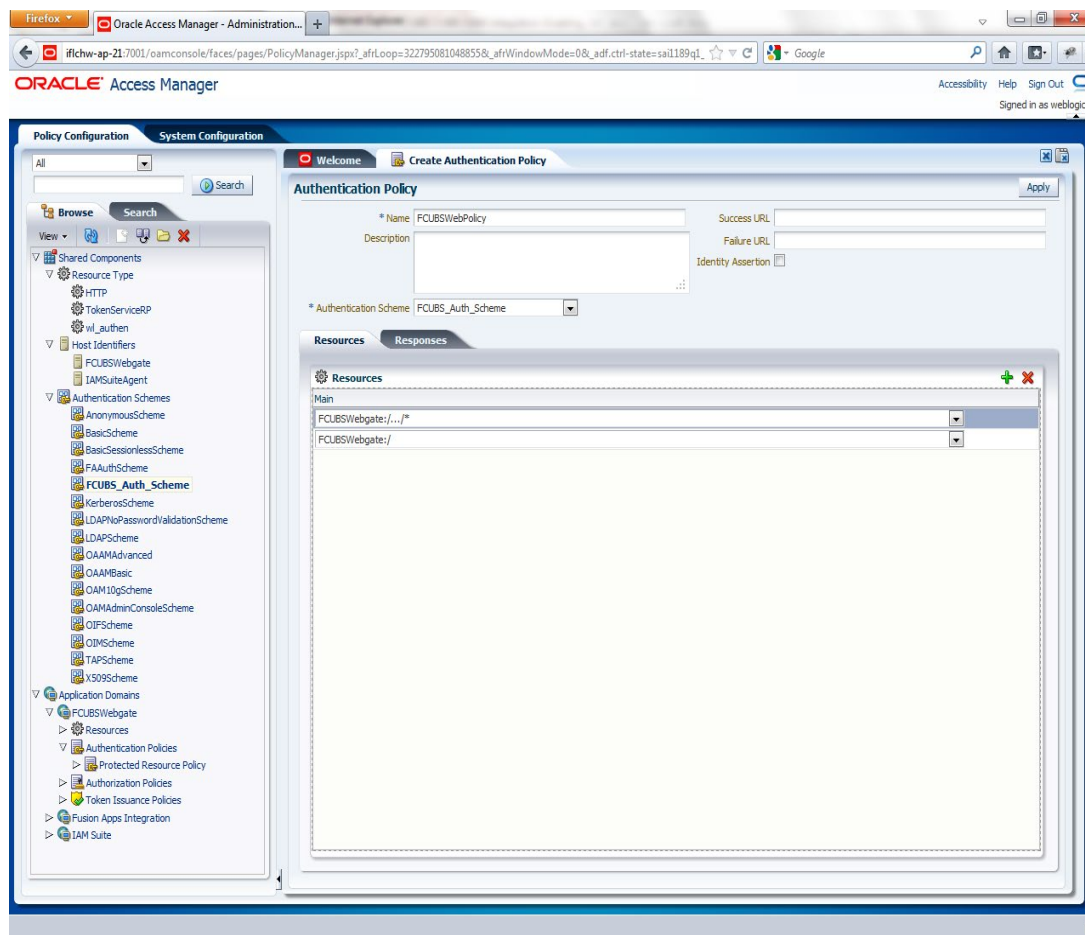
Click new button and input the below information

Name: Enter any name to identify the Authentication Policy (eg. FCUBSWebPolicy)

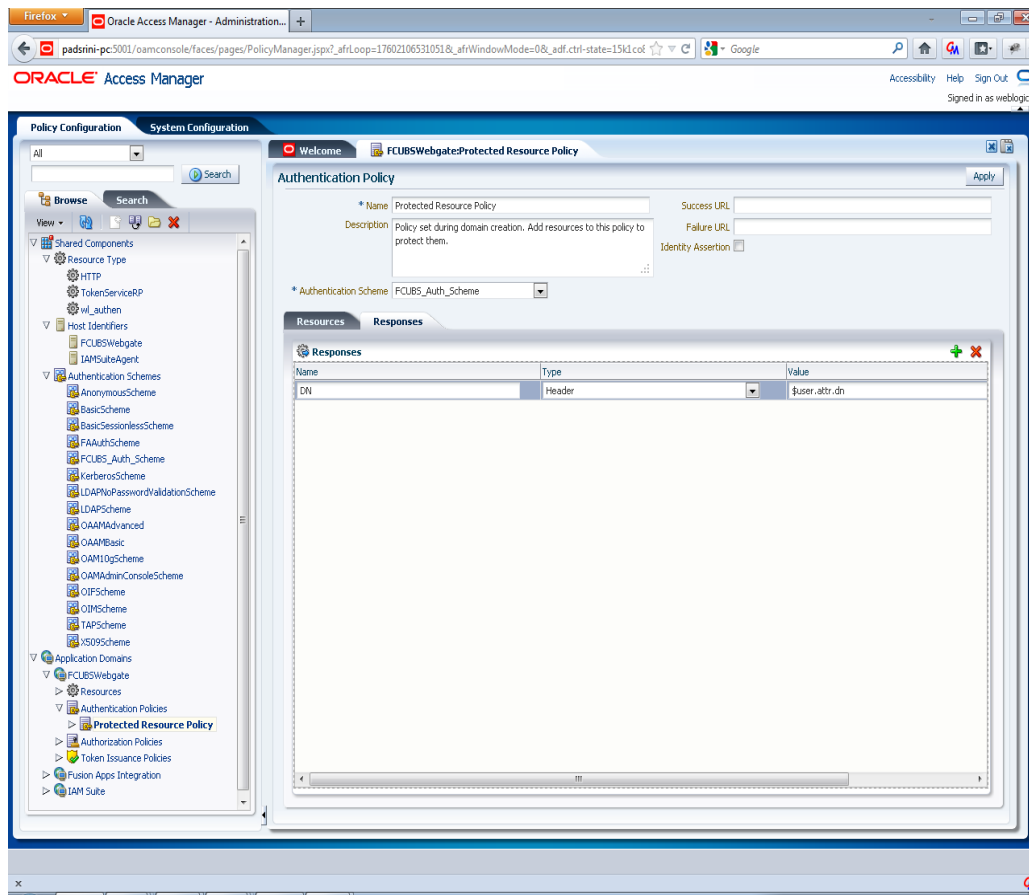
Authentication Scheme: Choose the authentication scheme created in step 5.

Resources:

Add the resources which are all need to be protected. If <WebgateName>:/.../ and <WebgateName>:/ are added in the resources then all the sources are protected.



Add DN in the Responses section. Enter the value as ***\$user.attr.dn***. The responses maintained in the tab will be added in the response header during the authentication.

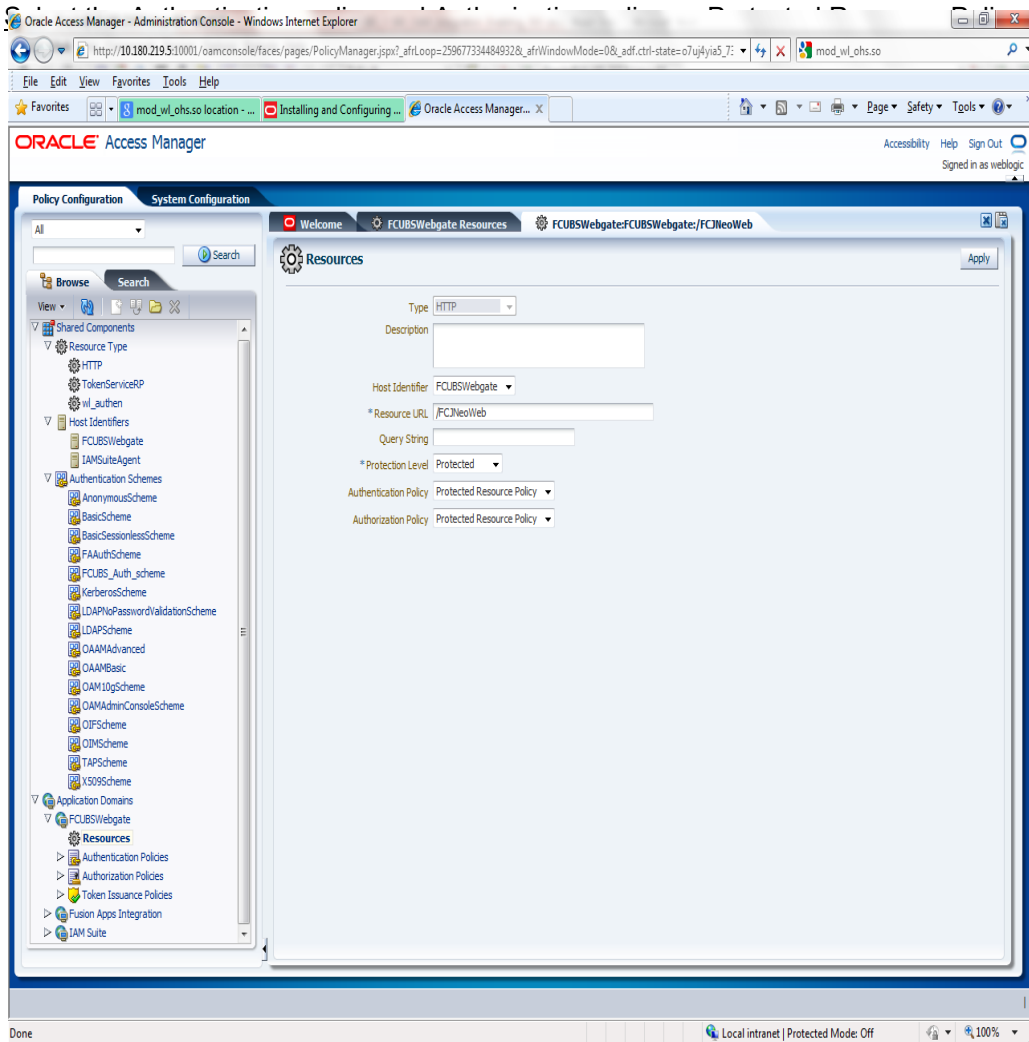


## 9. Adding Resources

Navigate to Policy Configuration >>Application Domains >>FCUBSWebgate >>Resources .

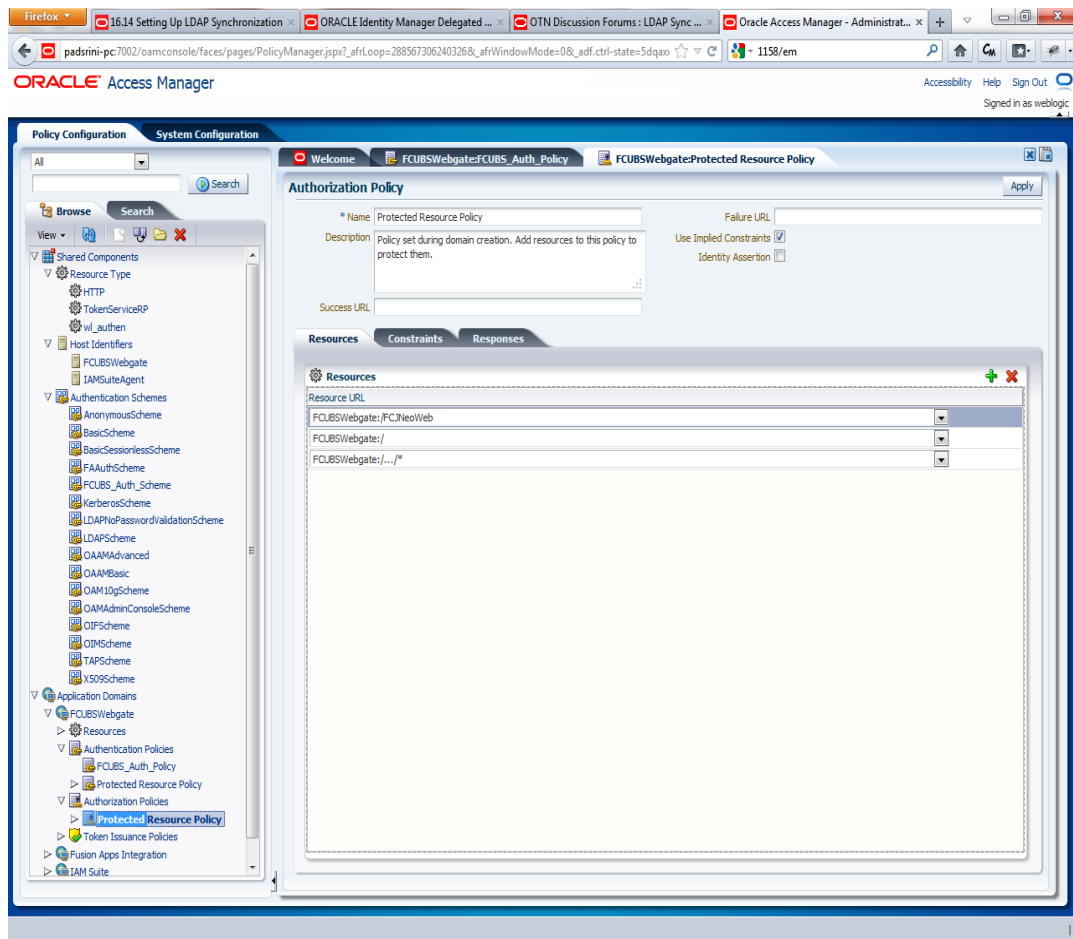
- Click on Create New Resource button .
- Select the type as HTTP.
- Select the Host Identifier as FCUBSWebgate
- Enter the resource URL as /FCJNeoWeb
- Select the protection level as Protected
- Click on apply button to update the resource added.



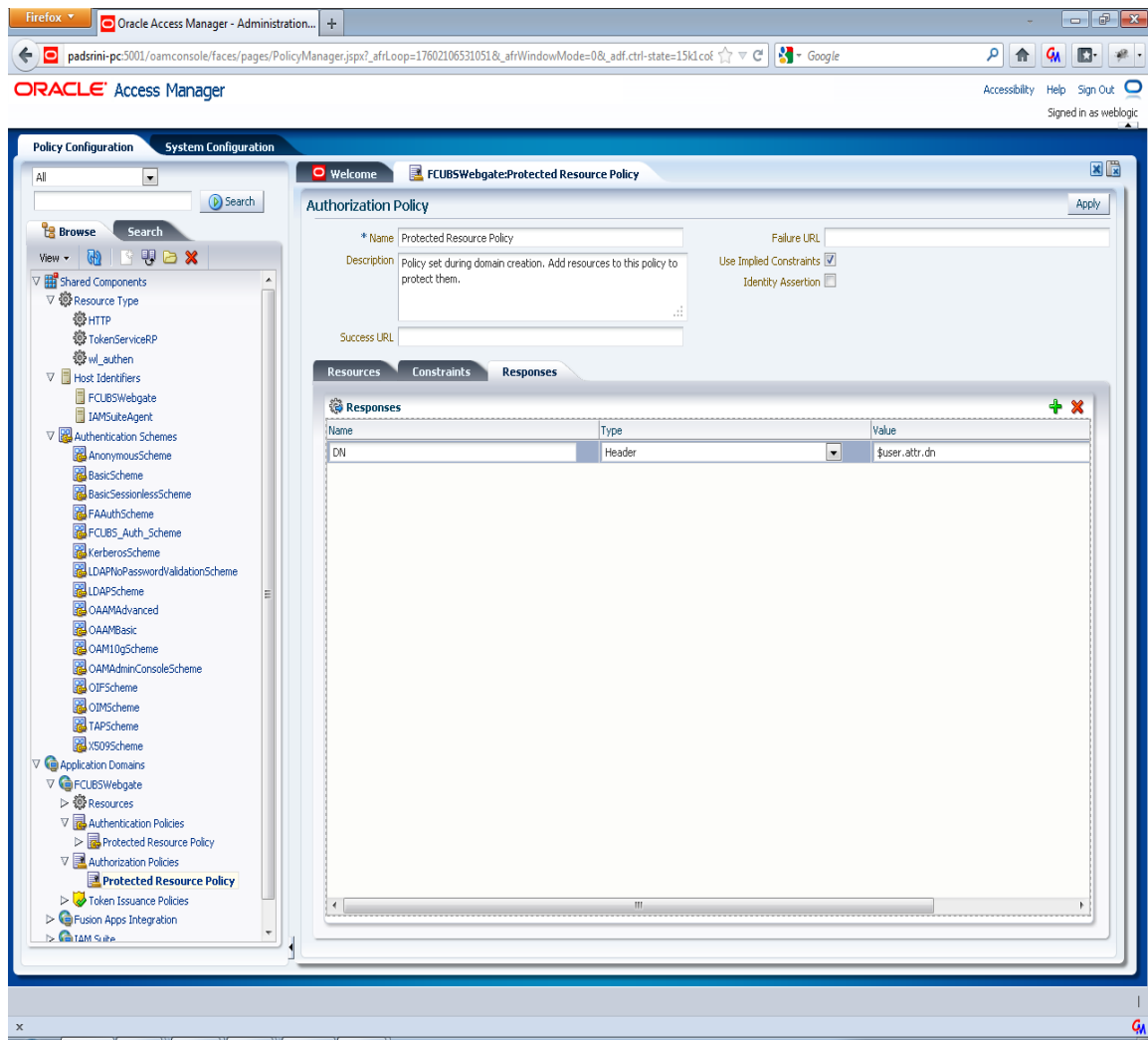


## 10. Adding Authorization Policy

Check whether the resources available in the authentication policies are available in Authorization Policy. During web gate creation these values are defaulted.



Add DN in the Responses section. Enter the value as ***\$user.attr.dn***. The responses maintained in the tab will be added in the response header during the authorization.



## 11. Configuring mod\_wl\_ohs for Oracle Weblogic server Clusters

To enable the Oracle HTTP Server instances to route to applications deployed on the Oracle Weblogic Server Clusters, add the directive shown below to the mod\_wl\_ohs.sh file available in <Weblogic Home>/Oracle\_WT1/instances/instance1/config/OHS/ohs1.

```
<Location /console>
```

```
    SetHandler weblogic-handler
```

```
    WebLogicHost idmhost1.mycompany.com
```

```
    WeblogicPort 7001
```

```
</Location>
```

## 12. Checking the Webgate 11g Agent Creation

After configuration of webgate 11g agent launch the URL

<http://<hostname>:<ohs Port>/ohs/modules/webgate.cgi?progid=1> to verify whether the webgate configuration is fine. If the URL launches a screen as below then the webgate configuration is working fine.

The screenshot shows a Firefox browser window with the address bar displaying 'padsrini-pc:7780/ohs/modules/webga'. The page content includes two tables:

| Access Server       | Connection State | Created                          | Installation Directory | Num Of Threads | Directory Information |
|---------------------|------------------|----------------------------------|------------------------|----------------|-----------------------|
| padsrini-pc:5575, 1 | Up               | Monday, August 27, 2012 11:08:01 |                        |                |                       |

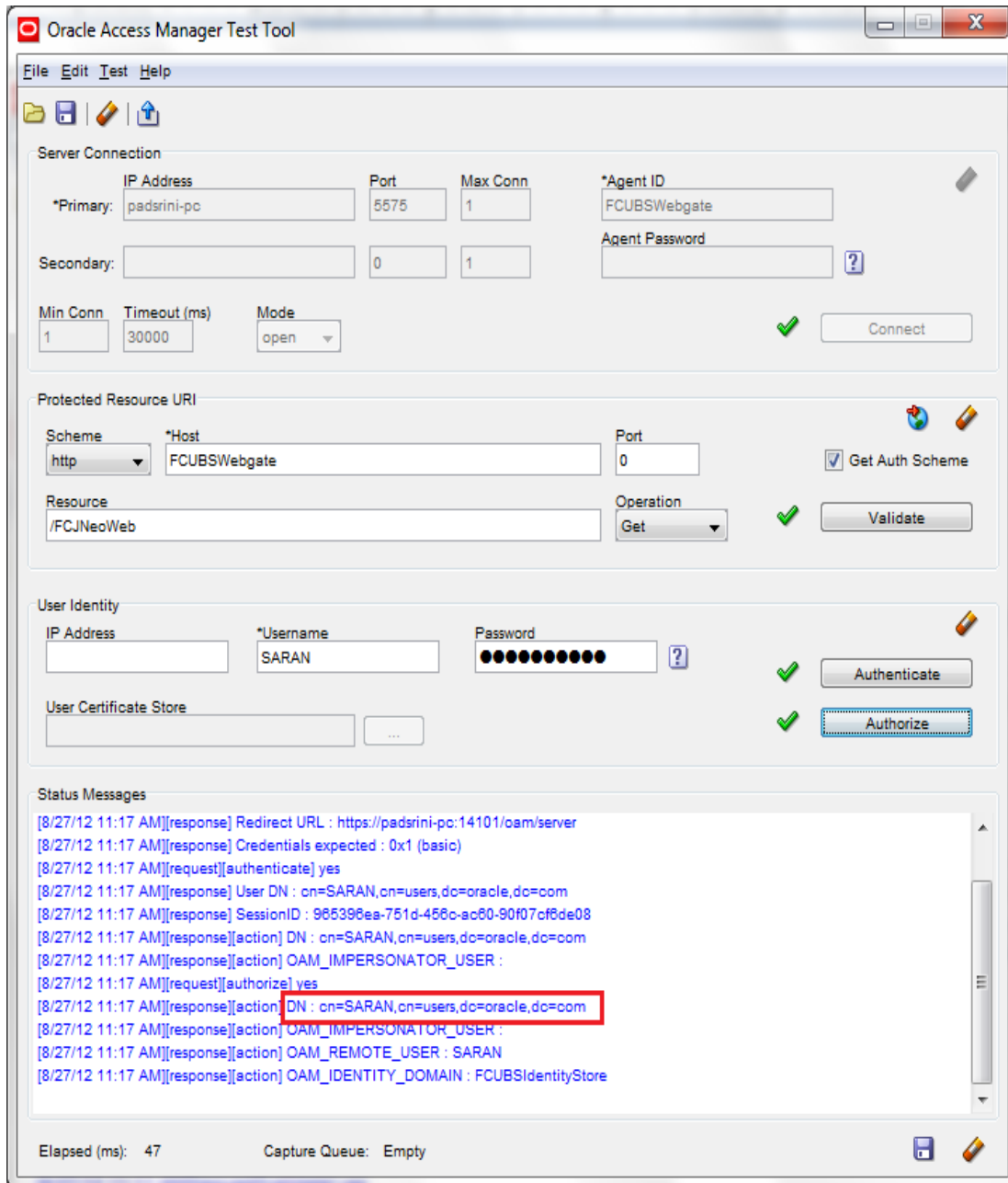
| Cache Name                        | State  | Max Elems | Curr Elems | Timeout (seconds) | Cache Stats (Hits:Misses:Expired:Flushed) | Memory Footprint (bytes) |
|-----------------------------------|--------|-----------|------------|-------------------|---|--------------------------|
| Resource to Authentication Scheme | active | 100000    | 60         | 1800              | 13979:416:139:1                           | 33688                    |
| Authentication Scheme             | active | 25        | 1          | 1800              | 45629:140:138:1                           | 710                      |
| Resource to Authorization Policy  | active | 100000    | 59         | 1800              | 183:59:0:1                                | 25488                    |
| Authorization Result              | active | 1000      | 3          | 15                | 178:5:4:1                                 | 6507                     |

### 13. Using OAM Test Tool (This step is not mandatory)

There is a test tool provided in OAM software which helps us to check the response parameter values. The test tool is available in <OAM Install Dir>\ oam\server\tester.

For eg. D:\weblogic\Middleware\Oracle\_IDM1\oam\server\tester

Use **java -jar oamtest.jar** to launch the OAM test tool.



### 3.4 First launch of FLEXCUBE after Installation

After installing FLEXCUBE and while launching it for first time, the normal FCUBS login screen with userid and password will appear, this is because when installing the 'sso installed' parameter will be set to 'N'.

#### 3.4.1 Bank Parameter Maintenance

To enable SSO in FLEXCUBE, login into the application and enable "SSO Enabled" Check box in "Bank Maintenance" screen.

Bank Parameters Maintenance

Bank Code \* 000 Customer Name BANK FUTURA

Head Office Branch Code \* 000 Description BANK FUTURA

Financial Preferences General Preferences

Format Masks Year End Profit and Loss

CIF Mask bbbnnnnn General Ledger \* 241000801

General Ledger Mask \* nnnnnnnn Transaction Code \* 000

Spread General Ledger Purge Days

Spread Application Both Leg

Spool File Purge Days 90

Inter Pay Lead days 3

Cheque Numbering Details Checksum Algorithm

Scheme

Cheque Numbers Unique for Branch

Auto Batch

User Restriction For Batch Number

SSO Enabled

Lodgment Numbers Unique For Branch

TRS Details Suspense Account

Account Mask Preferences Fields

Input By LC32702 Authorized By LC32702A03 Modification Number 152  Authorized

Date Time 2012-02-29 13:26:22 Date Time 2012-02-29 15:20:45  Open

Ok Exit

#### 3.4.2 SSO Parameters

After enabling SSO, the parameters required for SSO should be maintained. Go to "Security Maintenance -> Sys. Administration -> SSO Maintenance". Provide all the details like Directory Server host name, Port number, LDAP admin Userid , admin Password, LDAP base and Login time out duration (in Sec).

The screenshot shows a window titled "Single Sign On Maintenance" with the following fields:

- LDAP Host \* pdsrini-pc
- LDAP Port \* 3060
- LDAP Admin Id \* cn=orcladmin
- LDAP Password \* [masked]
- LDAP Base \* cn=Users,dc=oracle,dc=com
- Time Out Duration(Seconds) \* 600

At the bottom, there is a "Fields" section with the following information:

|                               |                               |                       |  |
|-------------------------------|-------------------------------|-----------------------|--|
| Input By SARAN                | Authorized By SARAN           | Modification Number 1 | <input checked="" type="checkbox"/> Authorized |
| Date Time 2012-01-06 12:33:04 | Date Time 2012-01-06 12:33:04 |                       | <input checked="" type="checkbox"/> Open       |

An "Exit" button is located in the bottom right corner.

### 3.4.3 Maintaining Branch Level DN Template (Branch Maintenance)

Go to the "Branch Maintenance" of FLEXCUBE UBS.

For each branch LDAP DN template should be maintained, which is used in the FLEXCUBE user maintenance Form to populate corresponding LDAP userid automatically from this template. Go to branch level parameter screen and Click on Preferences Icon.

E.g.: LDAP DN Template: *cn=<FCJUSR>,cn=Users,dc=i-flex,dc=com*

Here in this above template **cn=<FCJUSR>** part preferably must be there and it should not be altered, but the rest of the DN name can change based on the configuration.

**Branch Parameters Preferences**

|   |                   |   |   |
|---|-------------------|---|---|
| Netting Suspense General Ledger                                   | 233200804         | <b>Profit and Loss Adjustment</b>                 | <input type="checkbox"/> Track Previous Year Profit And Loss Adjustment |
| Walk In Customer  | 000003171         | <b>Revaluation Split Details</b>                  | <input type="checkbox"/> Revaluation Split Required                     |
| Internal Swap Customer  | 000003171         | <b>Suspense Product Maintenance</b>               |   |
| Clearing Account  |                   | Debit Product                                     |   |
| Offset Clearing Account   |                   | Description                                       |   |
| Weekly Holiday 1  | Saturday          | Credit Product                                    |   |
| Weekly Holiday 2  | Sunday            | Description                                       |   |
| Clearing Bank Code  |                   | <b>International Banking Account Number Masks</b> |   |
| MIS Group For Currency  |                   | Bank Code   | aaaann  |
| <input type="checkbox"/> Interdict Validation Required            |                   | Account Number                                    | aann  |
| Interdict Timeout Interval  |                   | <b>FGL Integration</b>                            | <input type="checkbox"/> FGL Handoff Required                           |
| Status Processing Basis   | Contract Level    | <b>ELCM Integration</b>                           | <input checked="" type="checkbox"/> ELCM Replication                    |
| Provisioning Frequency  | Daily             |   |   |
| Uncollected Funds Basis   | Uncollected Funds |   |   |
| <input checked="" type="checkbox"/> Deferred Statement Generation |                   |   |   |
| <input type="checkbox"/> Enterprise General Ledger                |                   |   |   |
| Minor Age Limit (Yrs)   | 18                |   |   |
| Notification Days   |                   |   |   |
| Cheque Stale Days   |                   |   |   |
| Limit Expiry Advice Notification Days                             |                   |   |   |
| <b>Back Value Details</b>   |                   | <b>LDAP DN Template</b>                           |   |
| <input type="checkbox"/> Back Valued Check Required               |                   | LDAP DN Template                                  | cn=<FCCUSR>,cn=User s,dc=oracle,dc=com                                  |
| Back Value Days   |                   |   |   |

**LCY Message Preferences**

Ok Exit

### 3.4.4 Maintaining LDAP DN for FCUBS Users

For each user id in FCUBS a user has to be created in the LDAP.

When creating the user in LDAP ensure that the DN used is same as the LDAP DN value that will be updated in user maintenance form. Once the user is created in LDAP go to the user maintenance form in FCUBS. If the FCUBS user already exists then unlock the user and update the LDAP DN value which was set when creating the user in LDAP. Click on Validate button to check whether any other user is having the same LDAP DN value.



**User Maintenance**

**User Details**

User Identification \* FCUBSUSER  
 Name \* FCUBS User  
 User Reference \_\_\_\_\_  
 Language \* ENG  
 Home Branch \* 004  
 Customer No \_\_\_\_\_  
 Department Code \_\_\_\_\_  
 Department Description \_\_\_\_\_  
 Tax Identifier \_\_\_\_\_  
 LDAP DN FCUBSUSER  
 Time Level \* 9  
 Amount Format [v]  
 Date Format [v]  
 Auto Authorization

User Status  Enabled  
 Hold  
 Disabled  
 Locked  
 Classification  Staff  
 Branch  
 Status Changed On \_\_\_\_\_  
 Last Signed On \_\_\_\_\_  
 Staff Customer Restriction Required  
 ELCM User ID \_\_\_\_\_  
 Multi Branch Access

**User Password**

Password .....  
 Password Changed On 2012-01-06 11:01:33  
 Email \_\_\_\_\_  
 Start Date \* 2012-01-06  
 End Date \_\_\_\_\_

**Invalid Logins**

Cumulative \_\_\_\_\_  
 Successive \_\_\_\_\_

|                      |               |        |                   |                  |                 |                 |        |          |          |
|----------------------|---------------|--------|-------------------|------------------|-----------------|-----------------|--------|----------|----------|
| Restricted Password  | Roles         | Rights | Functions         | Tills            | Account Classes | General Ledgers | Limits | Branches | Products |
| Disallowed Functions | Users Holiday | Fields | Group Restriction | Centralized Role |                 |                 |        |          |          |

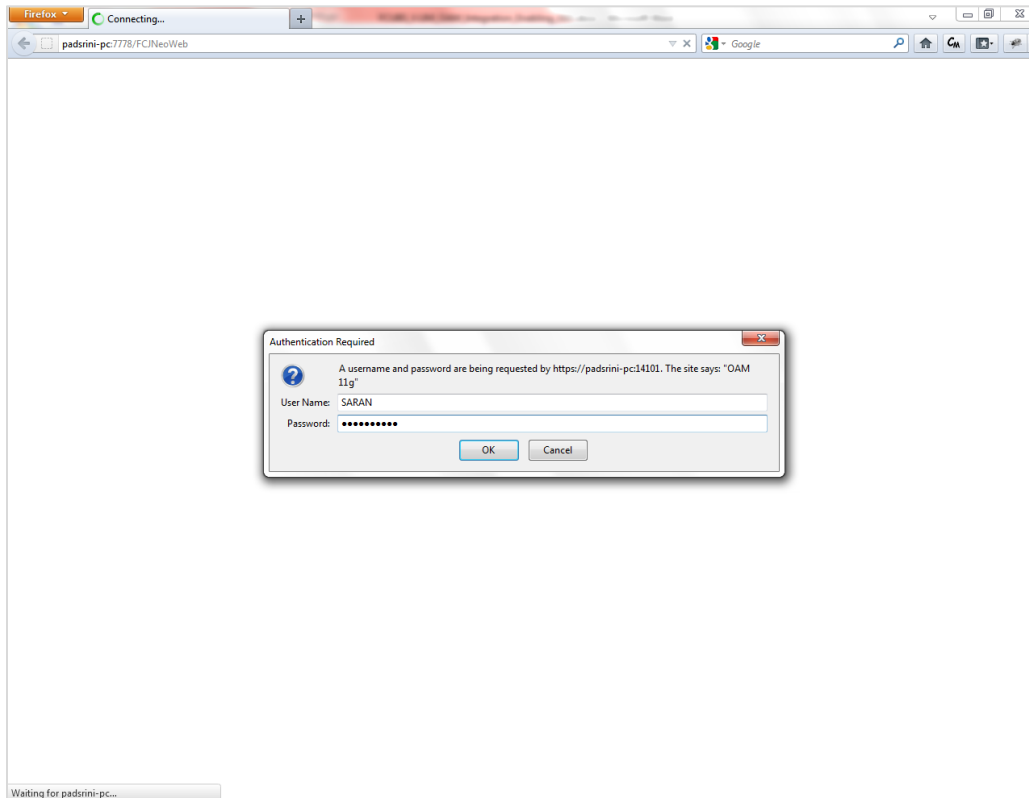
Maker KANNAN1 Date Time: 2012-01-06 13:29:56 Mod No 3  
 Checker SARAN Date Time: 2012-01-06 13:34:26 Record Status Closed  
 Authorization Status Authorized

### 3.4.5 Launching FLEXCUBE

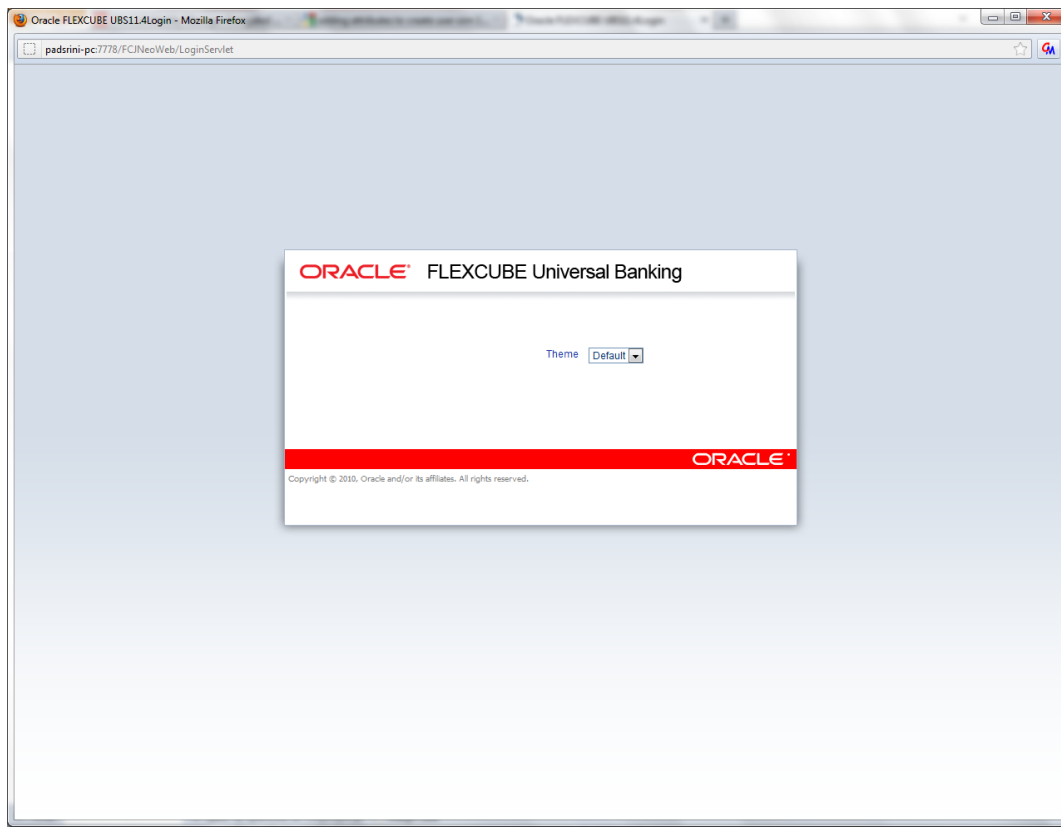
After setting up FLEXCUBE to work on Single Sign on mode, navigate to the interim servlet URL from your browser.

For e.g.: http://<hostname>:[port]/FCJNeoWeb

Since the resource is protected, the WebGate challenges the user for credentials as shown below.



Once the user is authenticated and authorized to access the resource, the servlet gets redirected to normal FLEXCUBE application server URL and now the new signon form will appear as below. The application will automatically redirect FLEXCUBE home page.



### 3.4.6 Signoff in a SSO Situation

FLEXCUBE does not provide for single signoff currently, i.e., when a user signs off in FLEXCUBE, the session established with Oracle Access Manager by the user will not be modified in any manner.

In a SSO situation the 'Exit' and 'Logoff' actions in FLEXCUBE will function as 'Exit', i.e., on clicking these, the user will 'exit' FLEXCUBE and will need to re-launch FLEXCUBE using the FLEXCUBE launch URL.



Oracle Access Manager

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Version 12.87.7.0.0

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Fax: +91 22 6718 3001  
<https://www.oracle.com/industries/financial-services/index.html>

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