

Setting up Single Sign-on between Oracle Business Intelligence Enterprise Edition and Oracle Hyperion Financial Management Data source

An Oracle White Paper January, 2013

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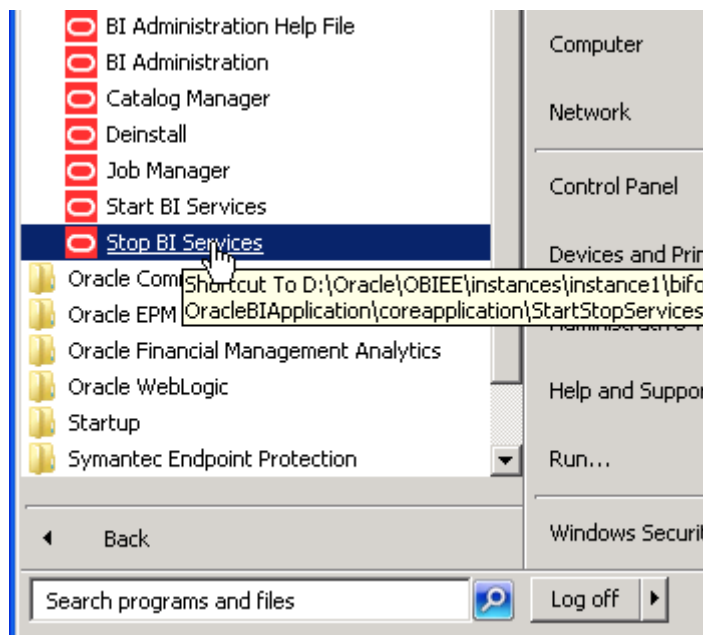
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Introduction

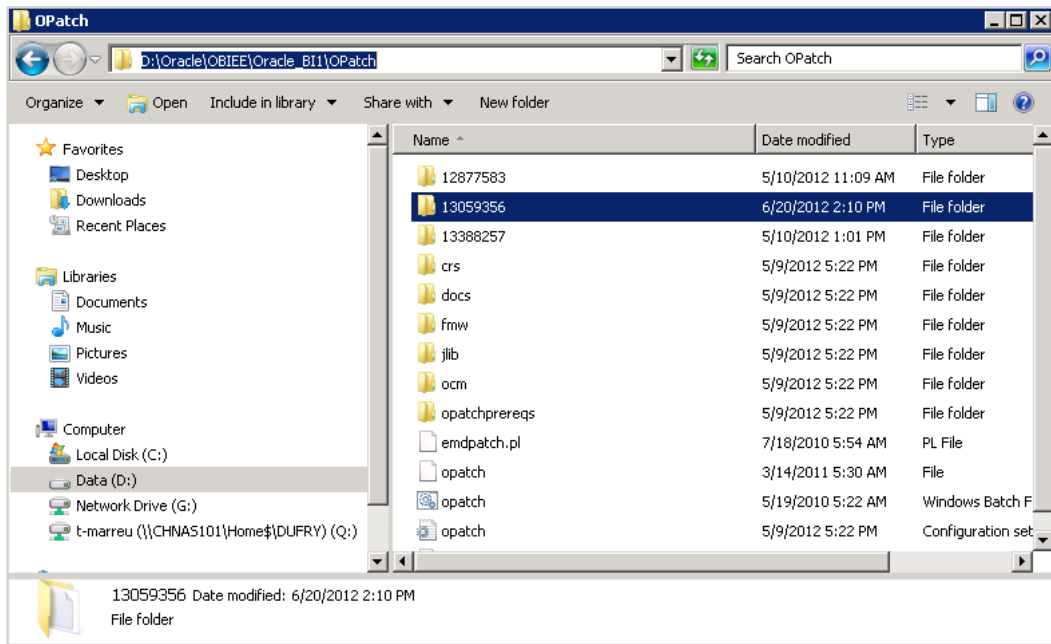
Implementation of Single Sign-on between Hyperion Financial Management and OBIEE provides seamless access to data by leveraging the security access rights defined within the EPM System. The user credentials stored in the external authentication providers (OID/MSAD) are passed to the EPM System from OBIEE in a secured manner using CSS Token without having to login multiple times. This setup completes the real time integration between a Hyperion Financial Management data source and OBIEE.

Pre-requisites

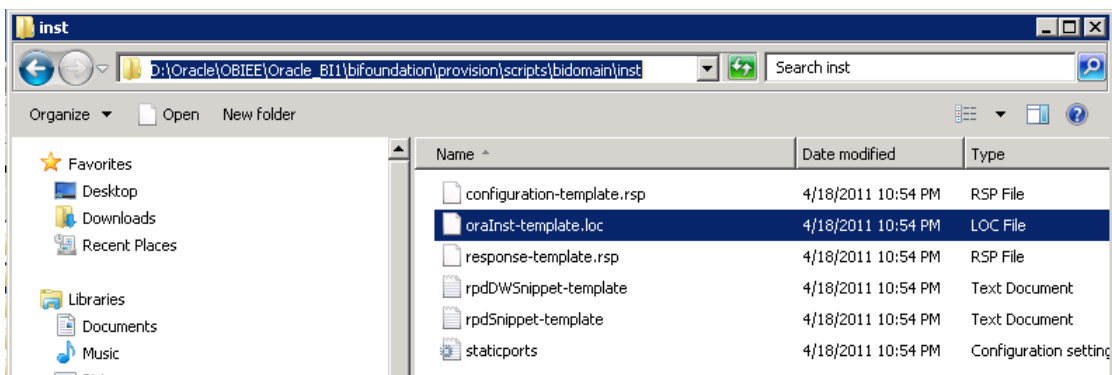
1. Oracle BI EE and Oracle Hyperion Shared Services must be connected to a common OID \MSAD store
2. If OBIEE11.1.1.5.x version is used, then the below Opatch needs to be applied.
 - a. Shutdown BI Domain including Admin Server and Managed Server(s) and any dependent OPMN Processes.

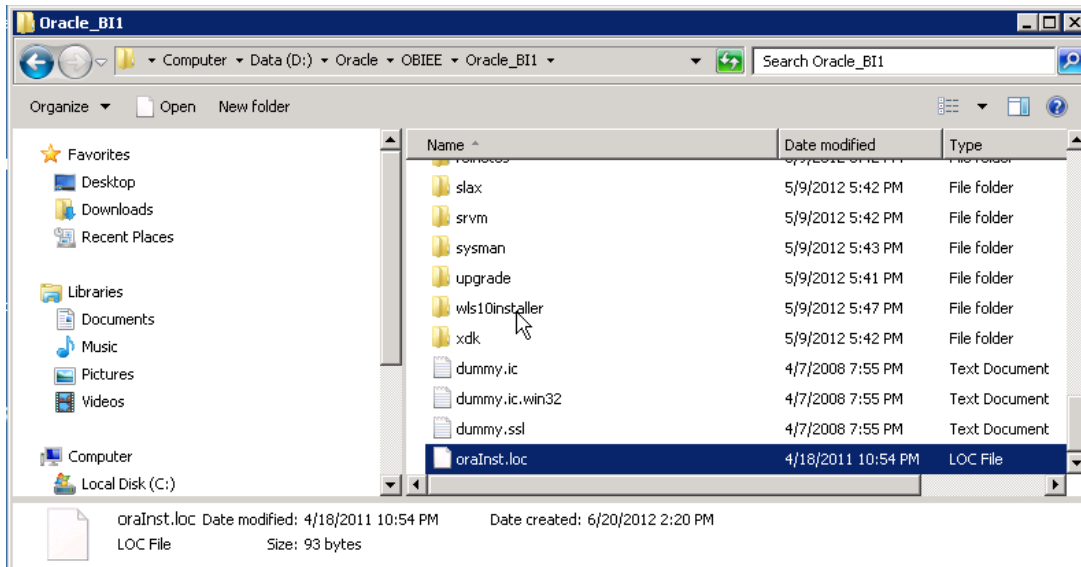


- b. Download **13059356.zip** from bug 13059356 and extract it under %BI_ORACLE_HOME%/OPatch/

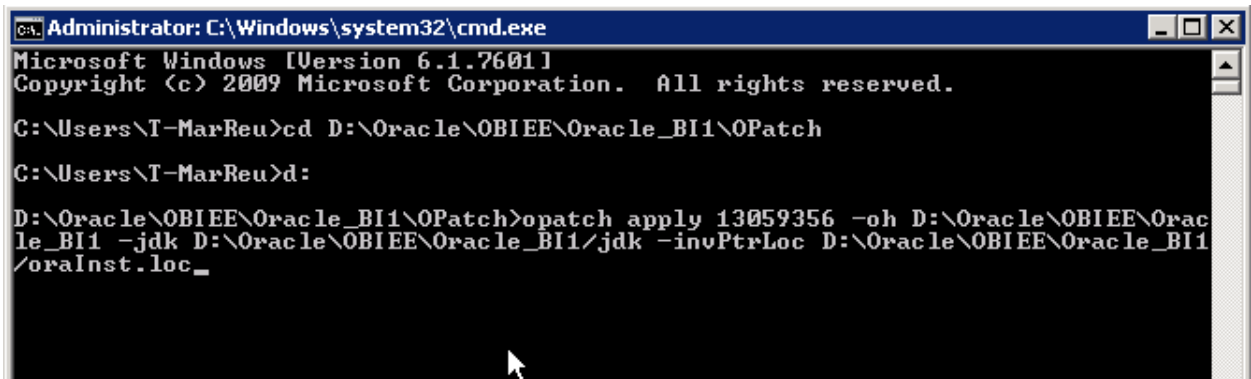


- Ensure '%BI_ORACLE_HOME%' has oraInst.Loc file. If it does not,
- Browse to %BI_ORACLE_HOME%\bifoundation\provision\scripts\bidomain\inst folder.
- Copy the oraInst-template.Loc to the '%BI_ORACLE_HOME%' location.
- Rename it to oraInst.Loc





- Invoke command prompt and change directory to %BI_ORACLE_HOME%/OPatch folder. Apply OPatch using following OPatch command:
opatch apply 13059356 -oh %BI_ORACLE_HOME% -jdk %BI_ORACLE_HOME%/jdk -invPtrLoc %BI_ORACLE_HOME%/oraInst.loc



- A message is displayed saying that the patch is applied successfully.

```

Administrator: C:\Windows\system32\cmd.exe

Running prerequisite checks...

OPatch detected non-cluster Oracle Home from the inventory and will patch the local system only.

Backing up files and inventory (not for auto-rollback) for the Oracle Home
Backing up files affected by the patch '13059356' for restore. This might take a while...
Backing up files affected by the patch '13059356' for rollback. This might take a while...

Patching component oracle.bi.bifndnepm, 11.1.1.5.0...
Copying file to 'D:\Oracle\OBIEE\Oracle_BI1\common\CSS\11.1.2.0\lib\css.jar'
ApplySession adding interim patch '13059356' to inventory

Verifying the update...
Inventory check OK: Patch ID 13059356 is registered in Oracle Home inventory with proper meta-data.
Files check OK: Files from Patch ID 13059356 are present in Oracle Home.

OPatch succeeded.

D:\Oracle\OBIEE\Oracle_BI1\OPatch>_

```

Note: In case the above command does not work and errors out with the following:

The response file for OCM configuration does not exist (or) is not readable. Please provide a valid response file.

Please run the following command.

- %ORACLE_HOME%\ccr\bin\emocmrsp.bat -no_banner -output c:\out.rsp

- Rerun the opatch command as below:

```

opatch apply 13059356 -oh "c:\obiee\oracle_bi1" -ocmrf
c:\out.rsp -jdk "c:\obiee\oracle_bi1\jdk" -invPtrLoc
"c:\obiee\oracle_bi1\oraInst.loc"

```

- The opatch should get applied successfully.

3. Confirm that BI Domain, mainly Admin Server is up and running.

4. Run wlst.sh/wlst.cmd available at \$MW_HOME/oracle_common/common/bin

For Example: C:\OBIEE\oracle_common\common\bin>wlst

5. Execute WLST connect command as shown below:

```

connect("<WLS_ADMIN_USERNAME>","<WLS_ADMIN_PASSWORD>","t3://<
HOSTNAME>:<ADMIN_PORT>")

```

For Example: wls:/offline> connect("biadmin","biadmin1_2","t3://localhost:7001")

6. Execute WLST runtime command as shown below:

```
runtime()
```

7. Execute WLST grantPermission command as shown below:

```
grantPermission(codeBaseURL="file:${hyperion.home}/common/CSS/11.1.2.0/lib/css.jar",permClass="oracle.security.jps.JpsPermission",permTarget="IdentityAssertion")
```

For Example:

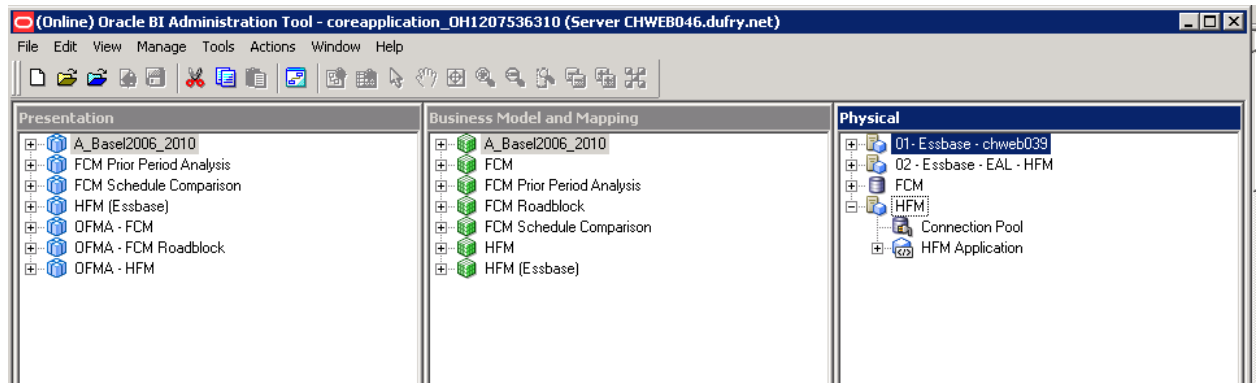
```
wls:/bifoundation_domain/runtime>grantPermission(codeBaseURL="file:${hyperion.home}/common/CSS/11.1.2.0/lib/css.jar",permClass="oracle.security.jps.JpsPermission",permTarget="IdentityAssertion")
```

8. Output after successful execution of grantPermission() should be something similar to:
“Location changed to domainRuntime tree. This is a read-only tree with DomainMBean as the root. For more help, use help (domainRuntime)”

Note: If the Identity Assertion Permission has already been granted to css.jar, after executing the above commands, a message will come up to that effect.

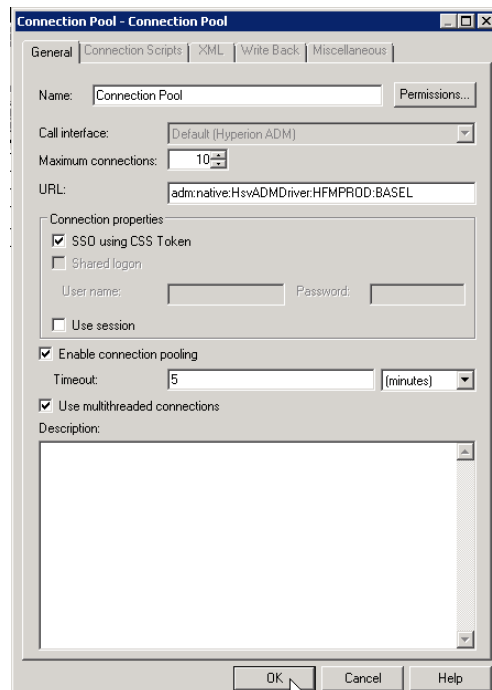
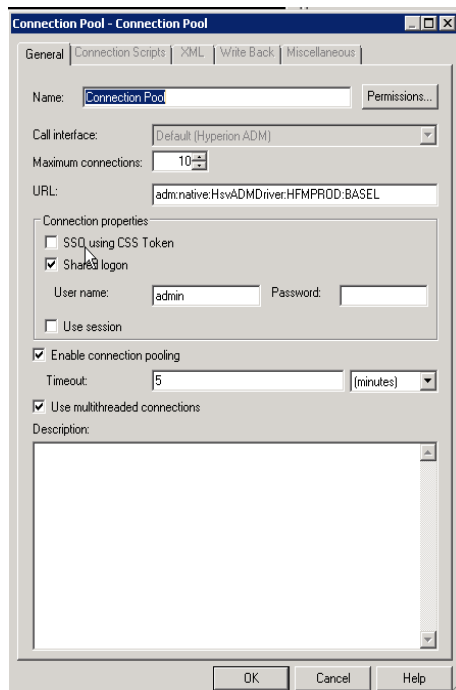
Steps to Enable SSO in OBIEE

1. Open the rpd file in online mode, using the Oracle BI Administration tool with appropriate password.

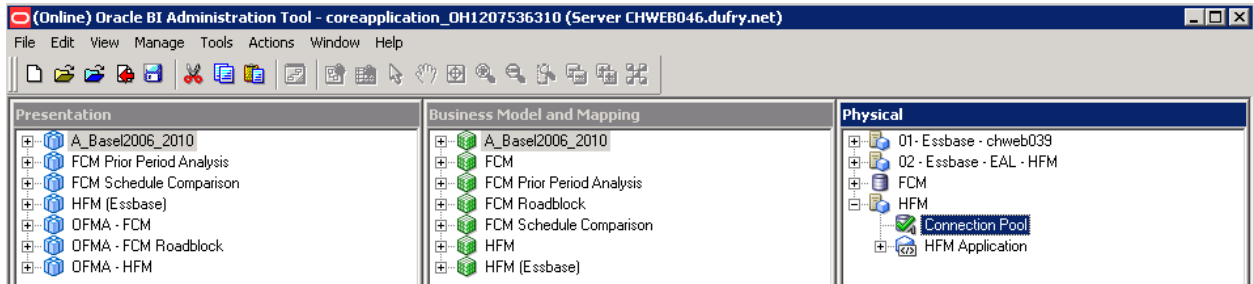


2. Expand the **HFM** node, and then double click on the **Connection Pool** icon to view the properties. Under the **Connection properties** box, select the **SSO using CSS token** as shown below.

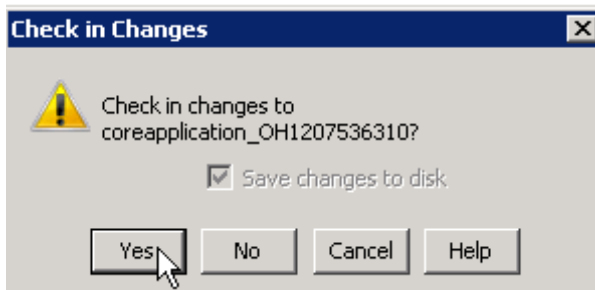
Screenshot Before/After change:



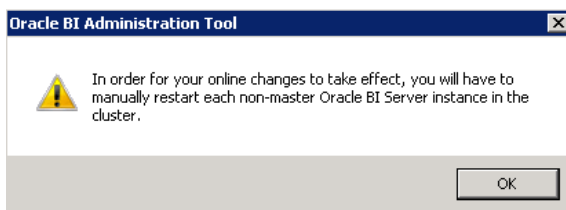
RPD screenshot after the selection of SSO option is done.



3. Save the RPD and if it prompts for check-in the changes (as below), click **Yes**.

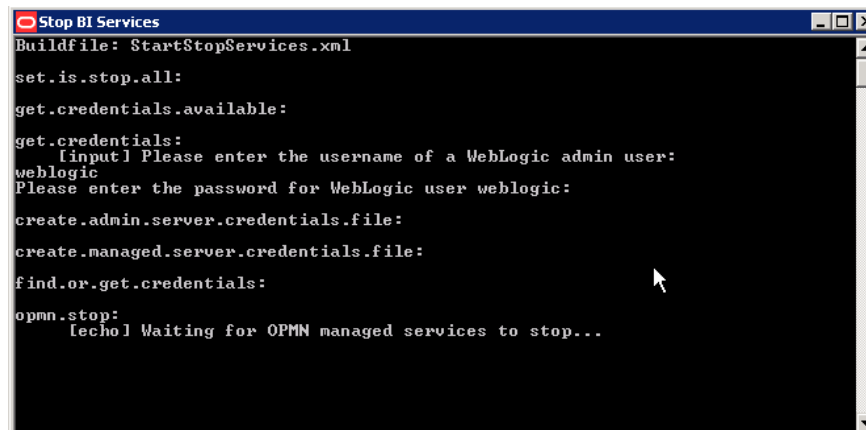
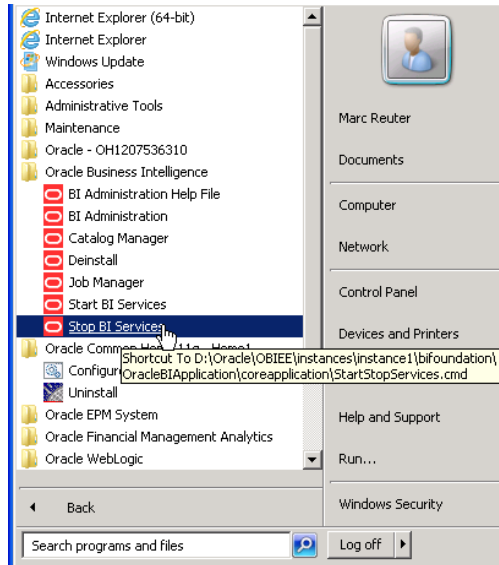


4. A message is displayed indicating that the BI server needs to be restarted for the changes to take effect. Click **OK**.



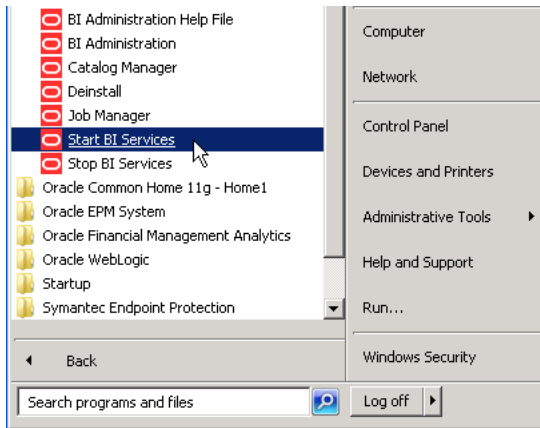
5. Restart BI services:

- From the Start menu, select Stop BI Services. See below screenshots for the steps.

A screenshot of a Windows command prompt window titled 'Stop BI Services'. The window shows the execution of a script named 'StartStopServices.xml'. The output of the script is as follows:

```
Buildfile: StartStopServices.xml
set.is.stop.all:
get.credentials.available:
get.credentials:
  [input] Please enter the username of a WebLogic admin user:
weblogic
Please enter the password for WebLogic user weblogic:
create.admin.server.credentials.file:
create.managed.server.credentials.file:
find.or.get.credentials:
opmn.stop:
  [echo] Waiting for OPMN managed services to stop...
```

- From the Start menu, select Start BI Services.



EPM System related configurations in OBIEE

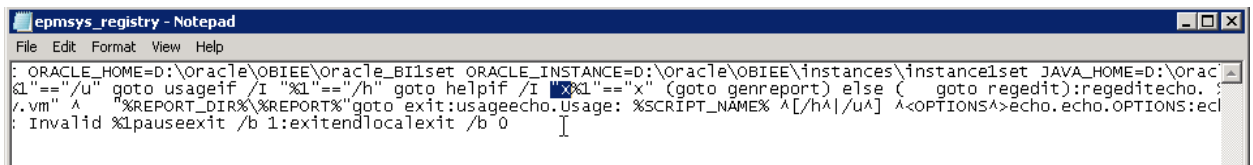
Changes if using EPM 11.1.1.x series

1. Note: This step of compatibility setting is NOT required when using [EPM 11.1.2.x](#)
2. From the command prompt, run the following command from OBIEE installation path to set the CSS backward compatibility tag to true in OBIEE
For Example:

```
C:\OBIEE\instances\instance1\config\foundation\11.1.2.0>
```

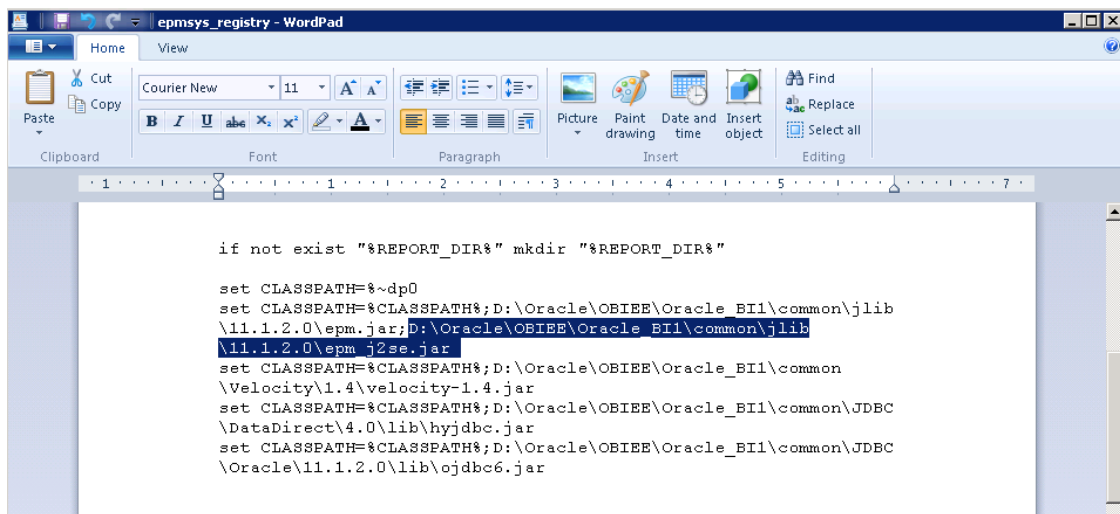
```
epmsys_registry.bat updateproperty  
SHARED_SERVICES_PRODUCT/@COMPATIBILITY 11120-
```

3. Make these changes to the epmsys_registry.bat located at:
<C:\OBIEE>\instances\instance1\config\foundation\11.1.2.0
 - Alter the script from X"%1"== to "X"%1"== as shown in the screenshot below.



```
epmsys_registry - Notepad
File Edit Format View Help
: ORACLE_HOME=D:\Oracle\OBIEE\Oracle_BI1 set ORACLE_INSTANCE=D:\Oracle\OBIEE\instances\instance1 set JAVA_HOME=D:\Orac
&l"==/u" goto usageif /I "%l"=="h" goto helpif /I "%l"=="x" (goto genreport) else ( goto regedit):regedit:echo.
/vm" ^ "%REPORT_DIR%\%REPORT%" goto exit:usage:echo.Usage: %SCRIPT_NAME% ^[/h^]/u^ ^<OPTIONS^>echo.echo.OPTIONS:ec
: Invalid %lpauseexit /b 1:exitendlocalexit /b 0
```

- Include the highlighted Jar file in the CLASSPATH:



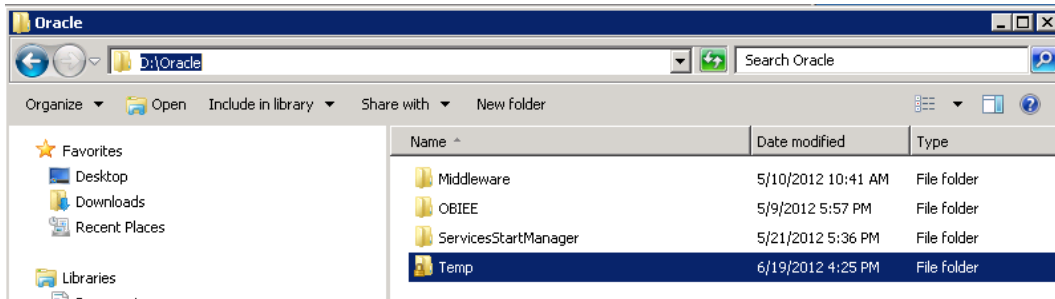
```
epmsys_registry - WordPad
Home View
Clipboard Font Paragraph Insert Editing
if not exist "%REPORT_DIR%" mkdir "%REPORT_DIR%"

set CLASSPATH=%~dp0
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common\jlib
\11.1.2.0\epm.jar;D:\Oracle\OBIEE\Oracle_BI1\common\jlib
\11.1.2.0\epm_j2se.jar
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common
\Velocity\1.4\velocity-1.4.jar
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common\JDBC
\DataDirect\4.0\lib\hyjdbc.jar
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common\JDBC
\Oracle\11.1.2.0\lib\ojdbc6.jar
```

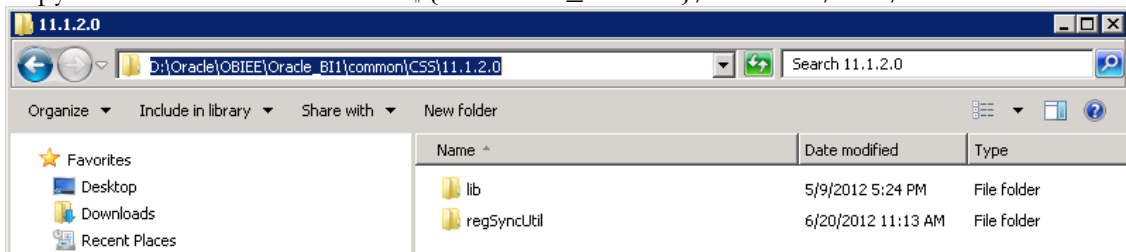
Changes if using EPM 11.1.2.x series

Note: This syncing of keys in the registry is only required when using **EPM 11.1.2.x**

1. Get the regSyncUtil_OBIEE-TO-EPM.zip from details in bug 11725145.
2. Unzip the file to local machine.



3. Copy contents of the folder into $\${ORACLE_HOME}/common/CSS/11.1.2.0$



4. Copy the 'reg.properties' file in EPM environment located at `C:\Oracle\Middleware\user_projects\epmsystem1\config\foundation\11.1.2.0\reg.properties` to the OBIEE server box at $\${ORACLE_HOME}/common/CSS/11.1.2.0/regSyncUtil/src$
5. Edit $\${ORACLE_HOME}/common/CSS/11.1.2.0/regSyncUtil/runRegSyncUtil.bat$ to update the environment variables related to the OBIEE environment.
 - ORACLE_HOME
 - ORACLE_INSTANCE
 For example : open the
`"C:\TESTOBIEE\Oracle_BI1\common\CSS\11.1.2.0\regSyncUtil"`
`set ORACLE_HOME=".....\Oracle_BI1"`
`set ORACLE_INSTANCE=".....\instance1"`

```

runRegSyncUtil - Notepad
File Edit Format View Help
@echo off

setlocal

REM set following Environment variables
REM For Example:-
REM set ORACLE_HOME=C:\oracle\middleware\EPMSys11R1
REM set ORACLE_INSTANCE=C:\oracle\middleware\instance1

set ORACLE_HOME=D:\oracle\OBIEE\oracle_BI1
set ORACLE_INSTANCE=D:\oracle\OBIEE\instances\instance1

IF "" == "%1" GOTO ENV_VARIABLE_CHECK
set %1
IF "" == "%2" GOTO ENV_VARIABLE_CHECK
set %2

:ENV_VARIABLE_CHECK
IF %ORACLE_HOME% == "" GOTO NO_ORACLE_HOME
IF %ORACLE_INSTANCE% == "" GOTO NO_ORACLE_INSTANCE

:CONTINUE
set JAVA_HOME=%ORACLE_HOME%\jdk

```

- Start Command prompt and run the Regsyncutility.bat using the command below.
`{ORACLE_HOME}/common/CSS/11.1.2.0/regSyncUtil/runRegSyncUtil.bat`

```

Administrator: C:\Windows\system32\cmd.exe

D:\>cd D:\Oracle\OBIEE\Oracle_BI1\common\CSS\11.1.2.0\regSyncUtil

D:\Oracle\OBIEE\Oracle_BI1\common\CSS\11.1.2.0\regSyncUtil>runRegSyncUtil.bat
Location of Source reg.properties:-D:\Oracle\OBIEE\Oracle_BI1\common\CSS\11.1.2.0\regSyncUtil\src
Location of Destination reg.properties:-D:\Oracle\OBIEE\instances\instance1\config\foundation\11.1.2.0
Not doing any maintenance
OPERATION STATUS:-Required Key was successfully read from the Source EPM Registry
OPERATION STATUS:-Required Key was successfully imported into the Destination EPM Registry

D:\Oracle\OBIEE\Oracle_BI1\common\CSS\11.1.2.0\regSyncUtil>_

```

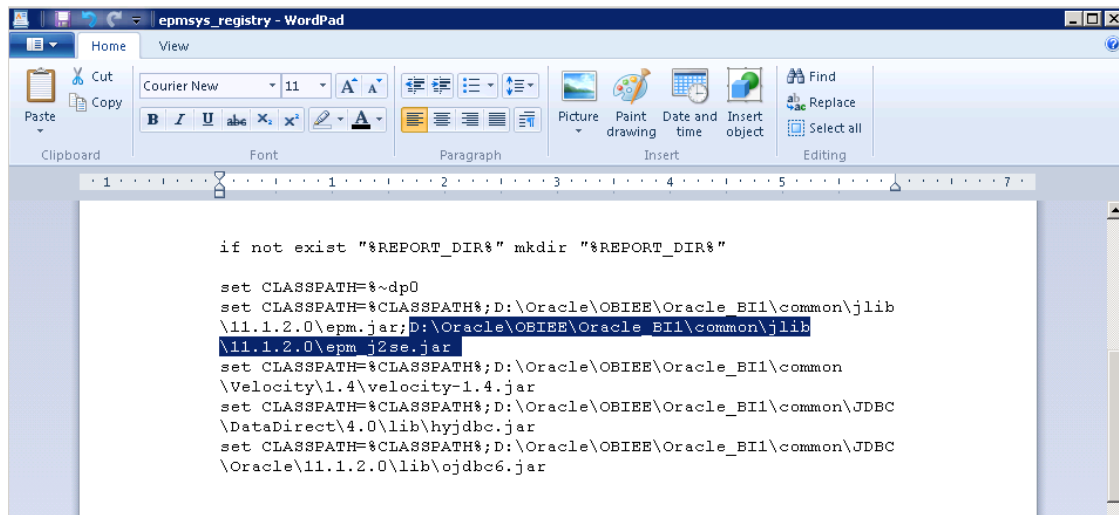
- Make these changes to the epmsys_registry.bat located at:
`<C:\OBIEE>\instances\instance1\config\foundation\11.1.2.0`
 - Alter the script from `..... X"%1"==` to `....."X%1"==.....` as shown in the screenshot below.

```

epmsys_registry - Notepad
File Edit Format View Help
: ORACLE_HOME=D:\oracle\OBIEE\oracle_BI1set ORACLE_INSTANCE=D:\oracle\OBIEE\instances\instance1set JAVA_HOME=D:\orac
%1"=="/u" goto usageif /I "%1"==" /h" goto helpif /I %1=="x" (goto genreport) else ( goto regedit):regedit:echo. :
/.vm" A "%REPORT_DIR%\%REPORT%"goto exit:usageecho.Usage: %SCRIPT_NAME% ^[/h^/u^] ^<OPTIONS^>echo.echo.OPTIONS:ecl
: Invalid %1pauseexit /b 1:exitendlocalexit /b 0

```

- Include the highlighted Jar file in the CLASSPATH:



```

if not exist "%REPORT_DIR%" mkdir "%REPORT_DIR%"

set CLASSPATH=%~dp0
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common\jlib
\11.1.2.0\epm.jar;D:\Oracle\OBIEE\Oracle_BI1\common\jlib
\11.1.2.0\epm_j2se.jar
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common
\Velocity\1.4\velocity-1.4.jar
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common\JDBC
\DataDirect\4.0\lib\hyjdbc.jar
set CLASSPATH=%CLASSPATH%;D:\Oracle\OBIEE\Oracle_BI1\common\JDBC
\Oracle\11.1.2.0\lib\ojdbc6.jar

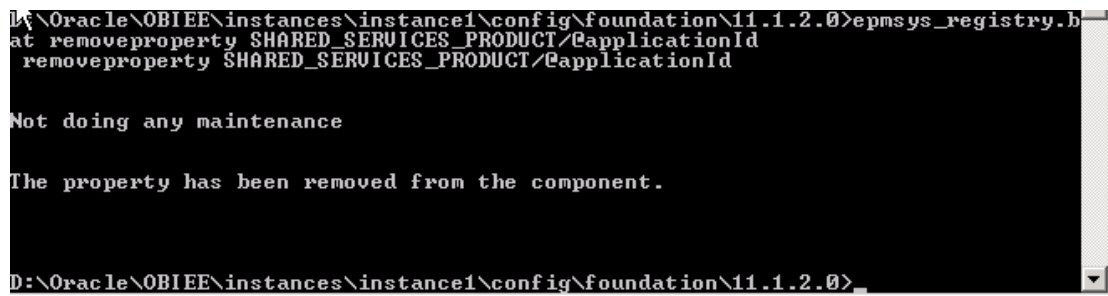
```

Note: This step is only applicable for OBIEE 11.1.1.5.x installation on Windows Operating System.

8. In BI Shiphome environment, start command prompt and run following epmsys_registry.bat command:
`{ORACLE_INSTANCE}/config/foundation/11.1.2.0/epmsys_registry.bat removeproperty SHARED_SERVICES_PRODUCT/@applicationId`

On Linux run the following command

- `{ORACLE_INSTANCE}/config/foundation/11.1.2.0> sh epmsys_registry.sh removeproperty SHARED_SERVICES_PRODUCT/@applicationId`



```

D:\Oracle\OBIEE\instances\instance1\config\foundation\11.1.2.0>epmsys_registry.bat
at removeproperty SHARED_SERVICES_PRODUCT/@applicationId
removeproperty SHARED_SERVICES_PRODUCT/@applicationId

Not doing any maintenance

The property has been removed from the component.

D:\Oracle\OBIEE\instances\instance1\config\foundation\11.1.2.0>_

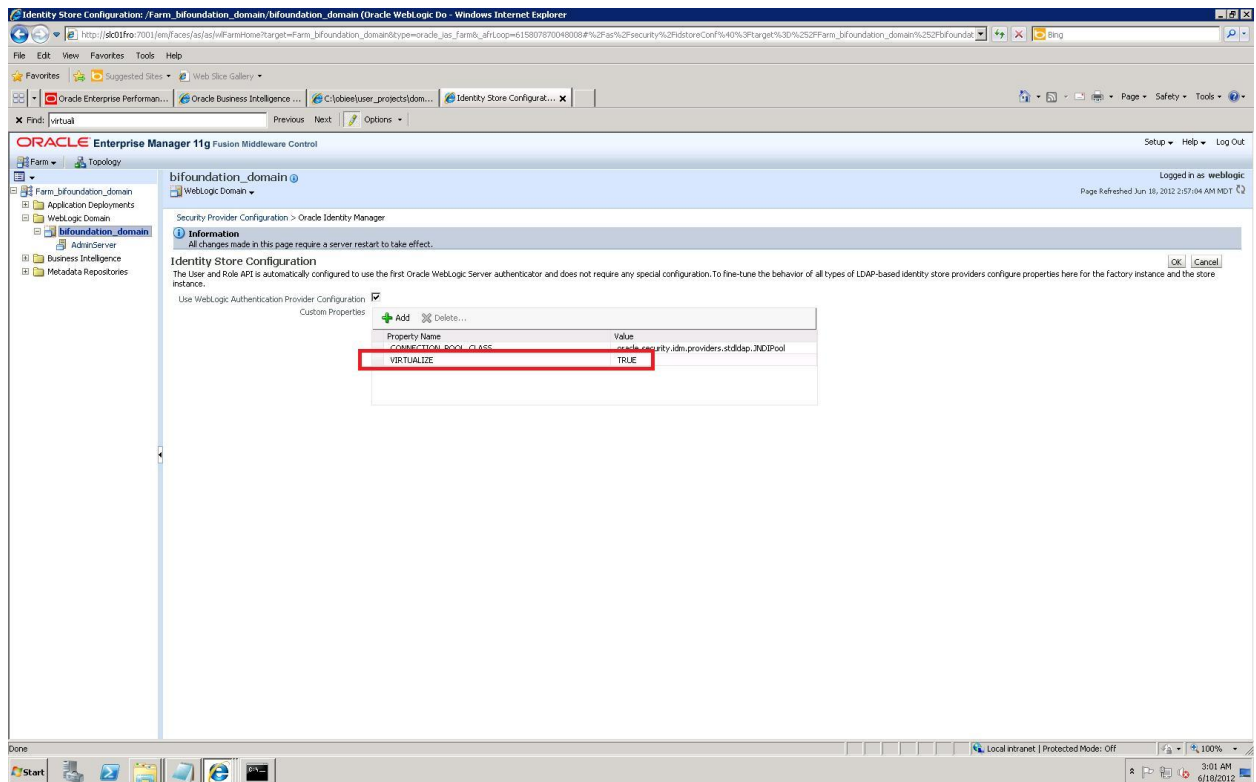
```

9. Stop all BI services and start all BI services.

OBIEE Related Changes

OBIEE domain configurations

1. Login to <http://localhost:7001/em>.
2. Right click on `bifoundation_domain` and select Security > Security Provider Configuration.
3. Click on the Configure button below the Identity Store Provider.
4. Click **Add**, set Property as `virtualize`, value as `true`. Click **OK**.



5. Set the Java system property:
-`Didstore.identityAttribute=<Identity_Attribute_Name>` should be set in `setDomainEnv.sh` as below -

Edit the `setDomainEnv.cmd` (path - `<BI_DOMAIN_HOME>/bin/`) and add this:


```
Set EXTRA_JAVA_PROPERTIES=-
Dcommon.components.home=%COMMON_COMPONENTS_HOME% -
Didstore.identityAttribute=objectguid %EXTRA_JAVA_PROPERTIES%
export EXTRA_JAVA_PROPERTIES
```

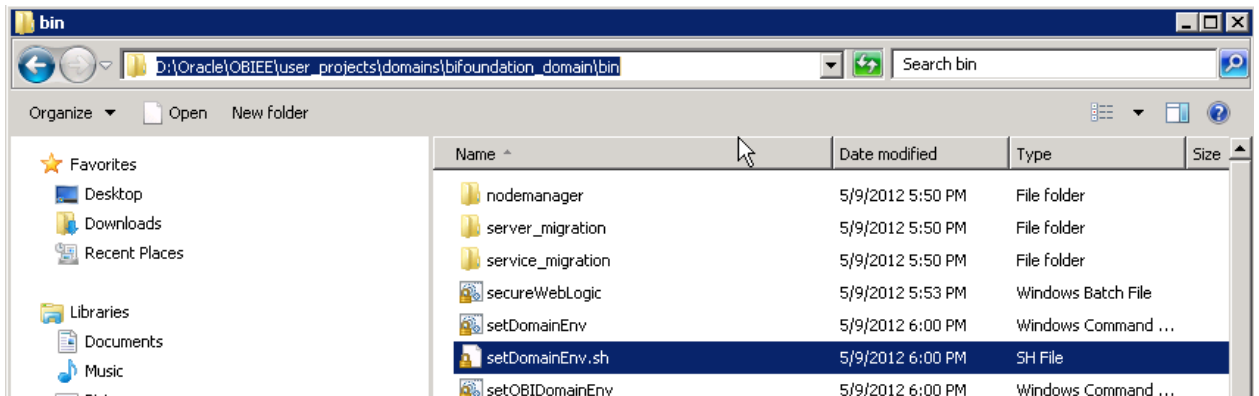
On Linux :

```
EXTRA_JAVA_PROPERTIES="-
Dcommon.components.home=${COMMON_COMPONENTS_HOME} -
Didstore.identityAttribute=orclguid ${EXTRA_JAVA_PROPERTIES}"
export EXTRA_JAVA_PROPERTIES
```

Note:

For 11.1.1.5.x OBIEE release and 11.1.2.1 (Prior to Talleyrand PS1) EPM release, when virtualize is set to “true” in BI Domain. Supports SSO between OBIEE and EPM for one of more LDAP User directories of same type.

For 11.1.1.6.x OBIEE release and 11.1.2.2(Talleyrand PS2) EPM Release, when virtualize is set to “true”. Supports SSO between OBIEE and EPM for one or more LDAP User directories of same or different types. For SSO between OBIEE and EPM to work following Java System property should be set in setDomainEnv.sh of the BI Domain: -Doracle.epm.css.identity.type=fusion



```
set EXTRA_JAVA_PROPERTIES=%EXTRA_JAVA_PROPERTIES% -Dem.oracle.home=D:\Oracle\OBIEE\oracle_common -Djava.awt.headless
set EXTRA_JAVA_PROPERTIES=-Dcommon.components.home=%COMMON_COMPONENTS_HOME% -Djrf.version=11.1.1 -Dorg.apache.commor
Set EXTRA_JAVA_PROPERTIES=-Dcommon.components.home=%COMMON_COMPONENTS_HOME% -Didstore.identityAttribute=objectguid %
Export EXTRA_JAVA_PROPERTIES

set JAVA_PROPERTIES=%JAVA_PROPERTIES% %EXTRA_JAVA_PROPERTIES%
```

- Note: Based on the type of External user directory (OID/MSAD) configured, the value of Didstore.identityAttribute needs to be set differently as below:
 - Microsoft Active Directory = **objectguid**
 - Oracle Internet Directory | Oracle Virtual Directory = **orclguid**
- 6. Restart BI Domain including Admin Server and Managed Server(s)
- 7. Restart OPMN Processes dependent on Admin/Managed Server(s).
- 8. Login using the external directory user credential to OFMA and the user should be able to view the dashboards(MSAD must be configured on OBIEE and HSS and users must be available)



Single Sign-on using CSS Token for external
user directories

January, 2013

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Hardware and Software, Engineered to Work Together