Oracle HTTP Server 11g R1 Configuration for FLEXCUBE

Oracle FLEXCUBE Universal Banking

Release 12.5.0.0.0

[September] [2017]

Table of Contents

1. Purpose

The objective of this document is to explain the installation and configuration of Oracle HTTP Server 11g R1 (11.1.1.6.0). This includes setting up of server details, configuration of compression rules and enabling SSL.

2. Introduction to Oracle HTTP Server (OHS)

Oracle HTTP Server is the Web server component for Oracle Fusion Middleware. It is based on Apache web server, and includes all base Apache modules and modules developed specifically by Oracle. It provides a HTTP listener for Oracle WebLogic Server and the framework for hosting static pages, dynamic pages, and applications over the Web. Key aspects of Oracle HTTP Server are its technology, its serving of both static and dynamic content and its integration with both Oracle and non-Oracle products.

Oracle HTTP Server consists of several components that run within the same process. These components provide the extensive list of features that Oracle HTTP Server offers when handling client requests.
Following are the major components:

2.1 HTTP Listener

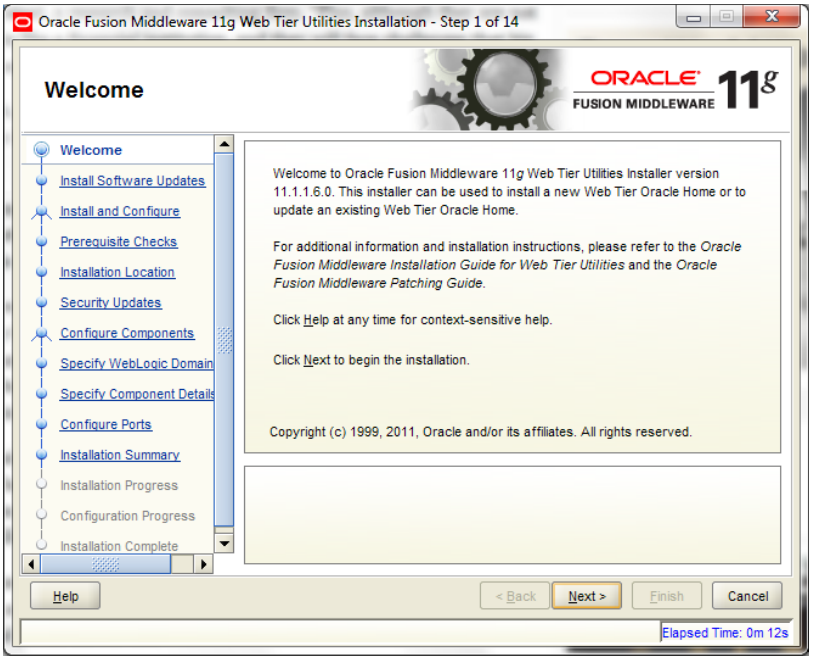
Oracle HTTP Server is based on an Apache HTTP listener to serve client requests. An HTTP server listener handles incoming requests and routes them to the appropriate processing utility.

2.2 Modules (mods)

Modules extend the basic functionality of Oracle HTTP Server, and support integration between Oracle HTTP Server and other Oracle Fusion Middleware components. There are modules developed specifically by Oracle for Oracle HTTP Server. Ex: mod_wl_ohs, mod_plsql
Oracle HTTP Server also includes the base Apache and third-party modules out-of-the-box. These modules are not developed by Oracle. Ex: mod_proxy, mod_perl

3. Installation of OHS 11g

Invoke the setup exe to start the installation



Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 1 of 14

Welcome

Welcome to Oracle Fusion Middleware 11*g* Web Tier Utilities Installer version 11.1.1.6.0. This installer can be used to install a new Web Tier Oracle Home or to update an existing Web Tier Oracle Home.

For additional information and installation instructions, please refer to the *Oracle Fusion Middleware Installation Guide for Web Tier Utilities* and the *Oracle Fusion Middleware Patching Guide*.

Click Help at any time for context-sensitive help.

Click Next to begin the installation.

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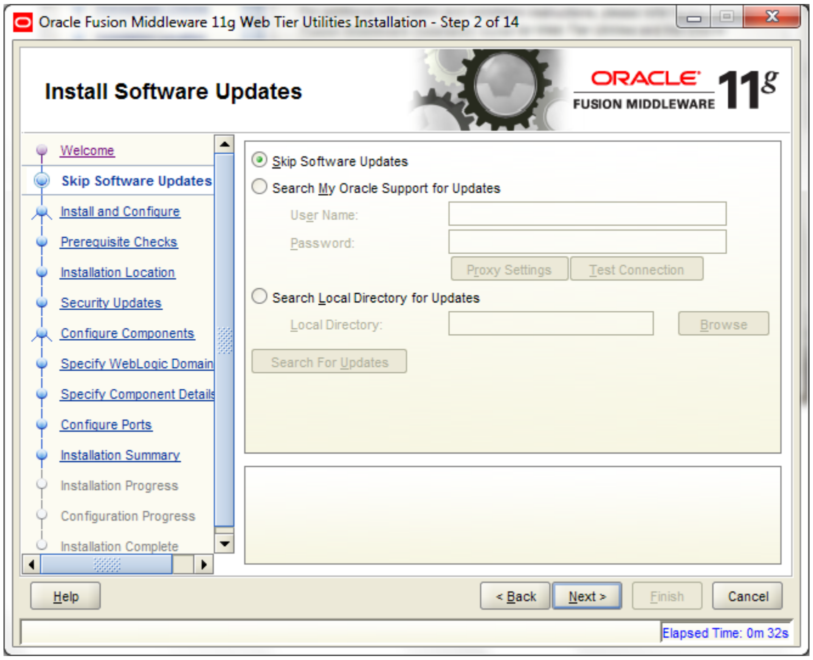
Elapsed Time: 0m 12s

Select Skip Software Updates



Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 2 of 14

Install Software Updates

● Skip Software Updates

○ Search My Oracle Support for Updates

User Name:

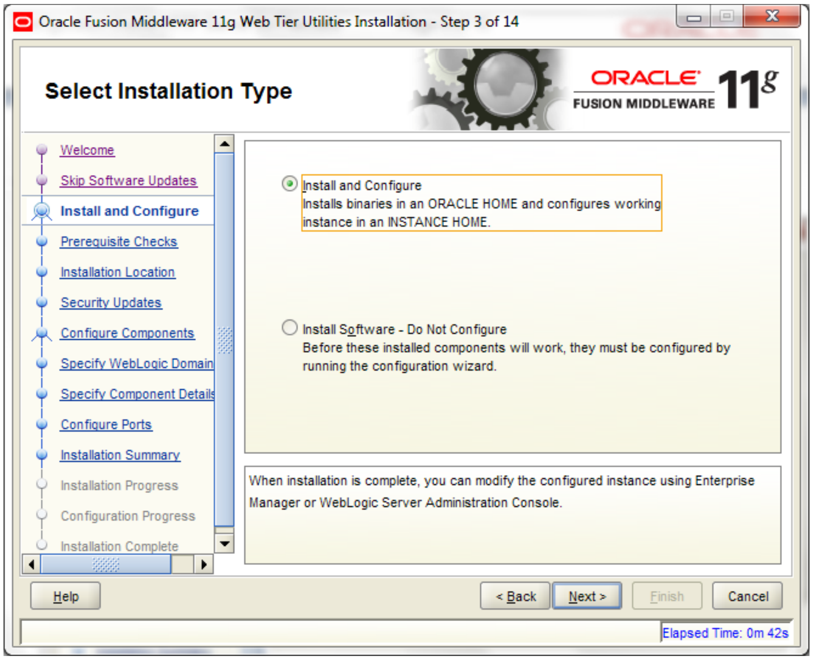
Password:

○ Search Local Directory for Updates

Local Directory:

Elapsed Time: 0m 32s

Select Install and Configure



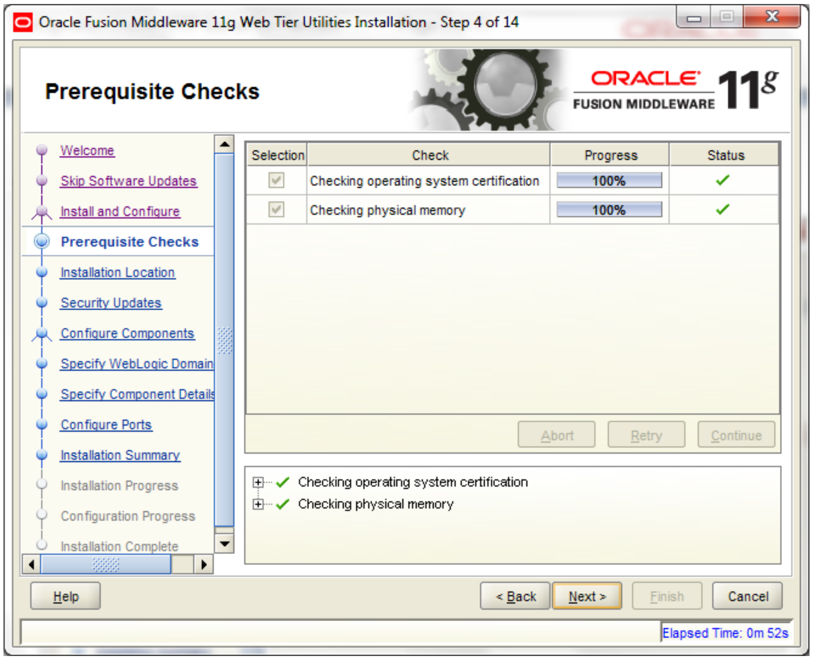
Select Installation Type

● Install and Configure
Installs binaries in an ORACLE HOME and configures working instance in an INSTANCE HOME.

○ Install Software - Do Not Configure
Before these installed components will work, they must be configured by running the configuration wizard.

When installation is complete, you can modify the configured instance using Enterprise Manager or WebLogic Server Administration Console.

Elapsed Time: 0m 42s

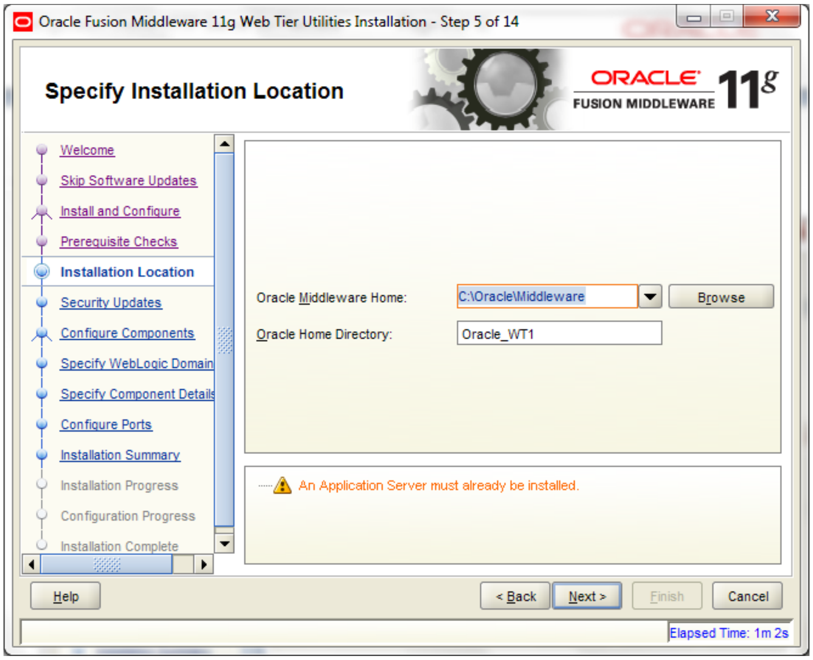


Prerequisite Checks

Selection	Check	Progress	Status
☑	Checking operating system certification	100%	✓
☑	Checking physical memory	100%	✓

⊞ ✓ Checking operating system certification
⊞ ✓ Checking physical memory

Elapsed Time: 0m 52s



Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 5 of 14

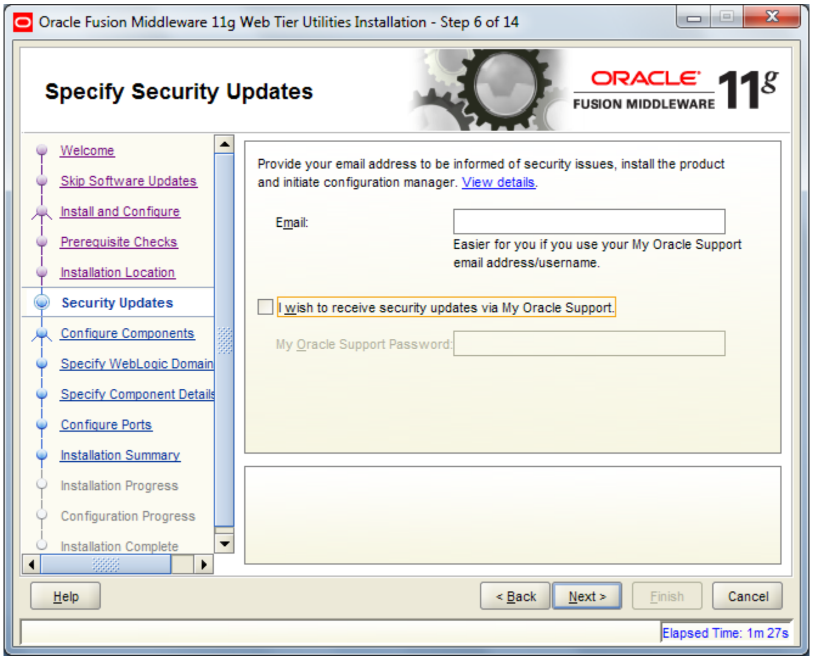
Specify Installation Location

Oracle Middleware Home: C:\Oracle\Middleware

Oracle Home Directory: Oracle_WT1

⚠ An Application Server must already be installed.

Elapsed Time: 1m 2s



Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 6 of 14

Specify Security Updates

Provide your email address to be informed of security issues, install the product and initiate configuration manager. View details.

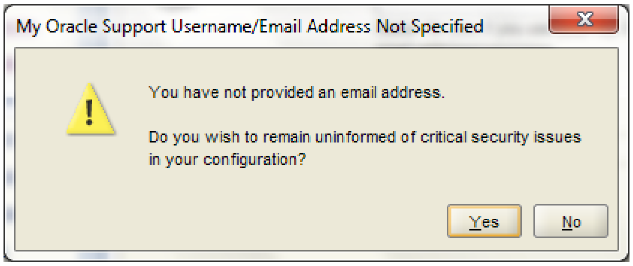
Email:

Easier for you if you use your My Oracle Support email address/username.

□ I wish to receive security updates via My Oracle Support.

My Oracle Support Password:

Elapsed Time: 1m 27s

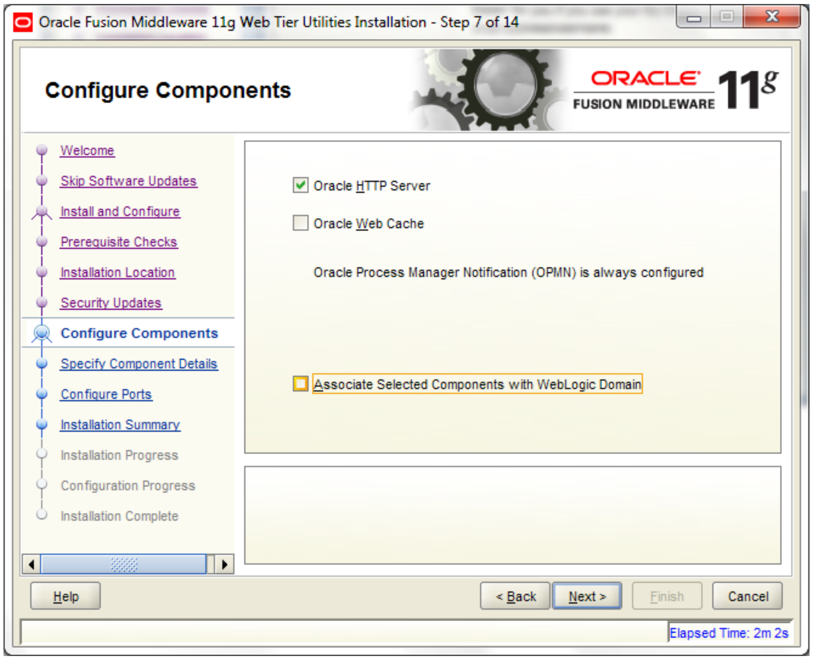


My Oracle Support Username/Email Address Not Specified

You have not provided an email address.

Do you wish to remain uninformed of critical security issues in your configuration?

Select only Oracle HTTP Server



Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 7 of 14

Configure Components

☑ Oracle HTTP Server

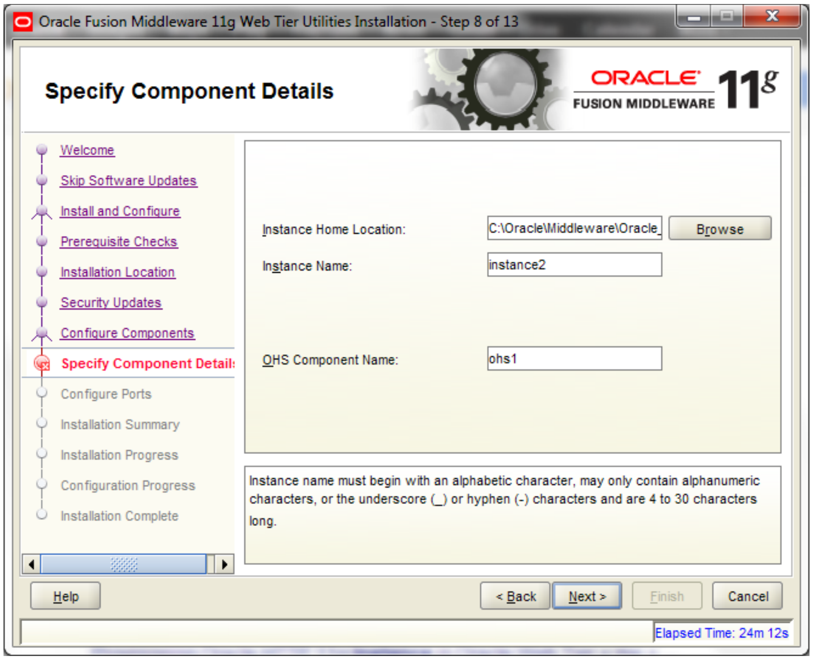
□ Oracle Web Cache

Oracle Process Manager Notification (OPMN) is always configured

□ Associate Selected Components with WebLogic Domain

Elapsed Time: 2m 2s

Enter the required OHS instance and component names



Specify Component Details

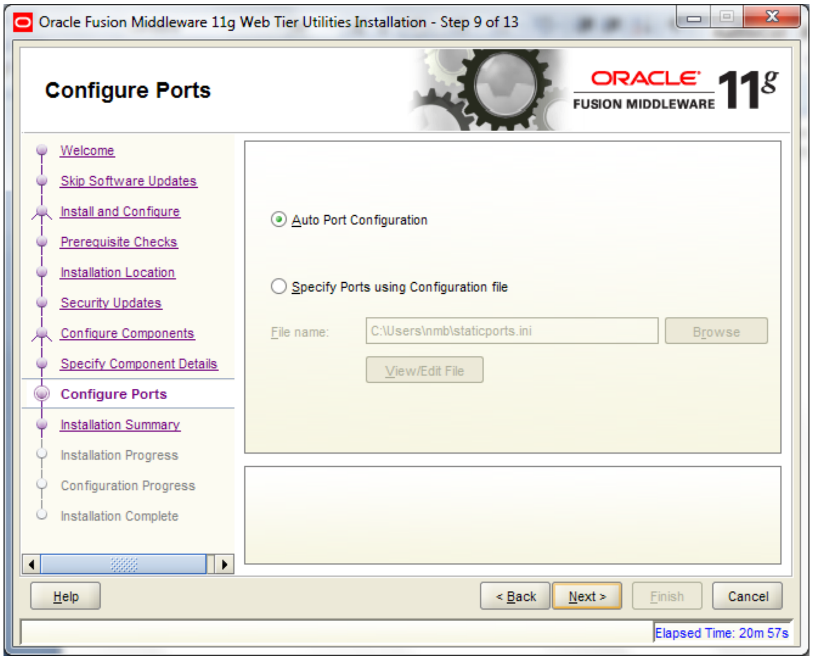
Instance Home Location: C:\Oracle\Middleware\Oracle_

Instance Name: instance2

OHS Component Name: ohs1

Instance name must begin with an alphabetic character, may only contain alphanumeric characters, or the underscore (_) or hyphen (-) characters and are 4 to 30 characters long.

Elapsed Time: 24m 12s



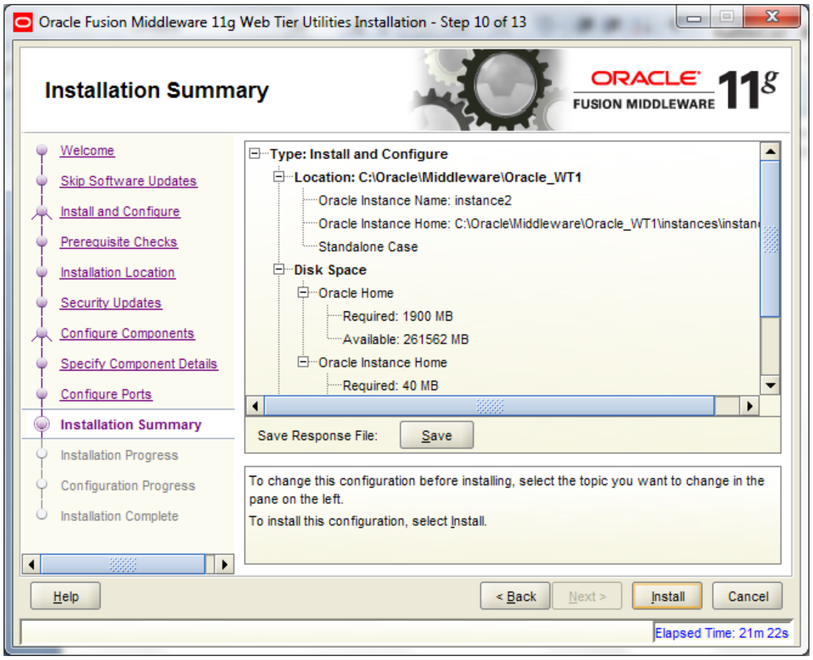
Configure Ports

● Auto Port Configuration

○ Specify Ports using Configuration file

File name: C:\Users\nmb\staticports.ini

Elapsed Time: 20m 57s



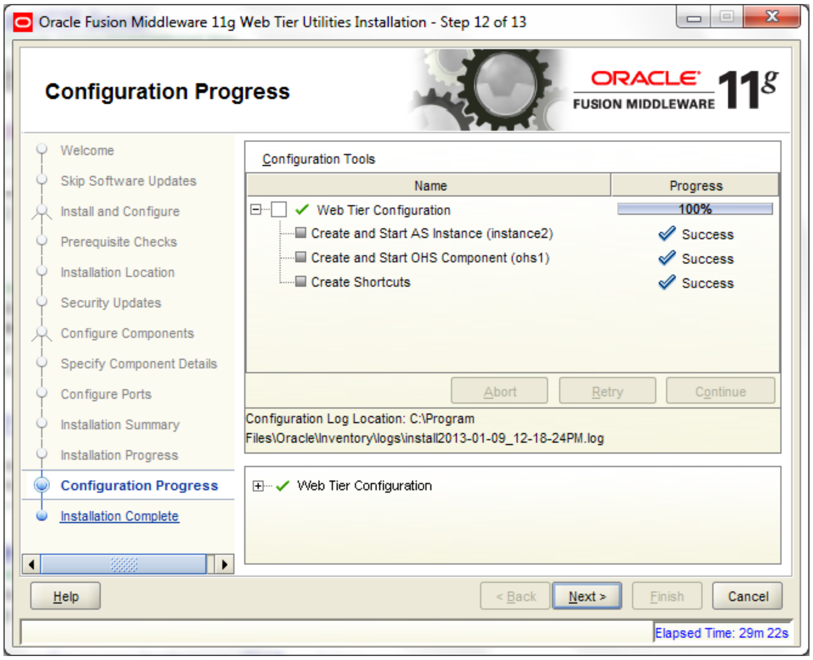
Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 10 of 13

Installation Summary

```
Type: Install and Configure
  Location: C:\Oracle\Middleware\Oracle_WT1
    Oracle Instance Name: instance2
    Oracle Instance Home: C:\Oracle\Middleware\Oracle_WT1\instances\instan
    Standalone Case
  Disk Space
    Oracle Home
      Required: 1900 MB
      Available: 261562 MB
    Oracle Instance Home
      Required: 40 MB
```

To change this configuration before installing, select the topic you want to change in the pane on the left.

To install this configuration, select Install.



Oracle Fusion Middleware 11g Web Tier Utilities Installation - Step 12 of 13

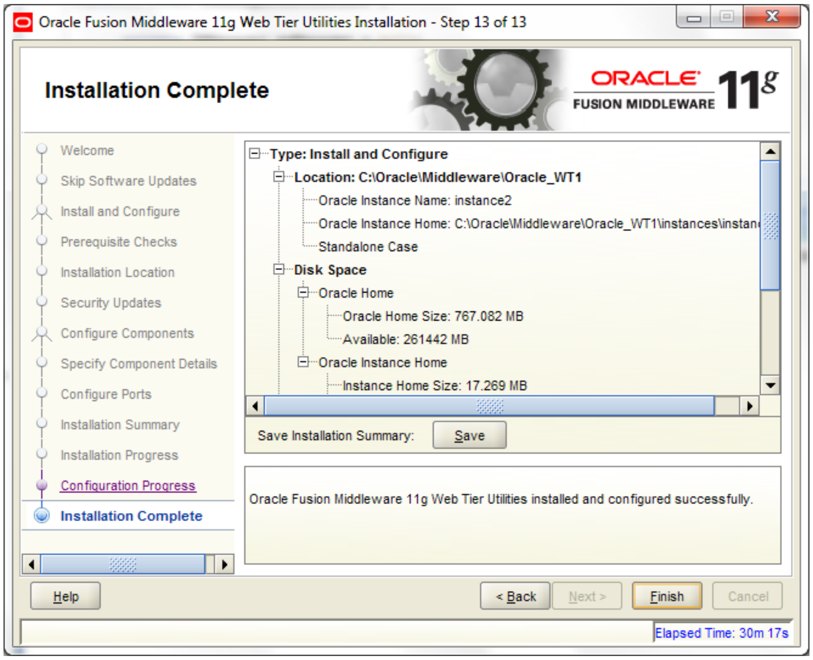
Configuration Progress

Configuration Tools

Name	Progress
✓ Web Tier Configuration	100%
Create and Start AS Instance (instance2)	✓ Success
Create and Start OHS Component (ohs1)	✓ Success
Create Shortcuts	✓ Success

Configuration Log Location: C:\Program Files\Oracle\Inventory\logs\install2013-01-09_12-18-24PM.log

✓ Web Tier Configuration



Installation Complete

- Type: Install and Configure
  - Location: C:\Oracle\Middleware\Oracle_WT1
    - Oracle Instance Name: instance2
    - Oracle Instance Home: C:\Oracle\Middleware\Oracle_WT1\instances\instan
    - Standalone Case
  - Disk Space
    - Oracle Home
      - Oracle Home Size: 767.082 MB
      - Available: 261442 MB
    - Oracle Instance Home
      - Instance Home Size: 17.269 MB

Save Installation Summary:

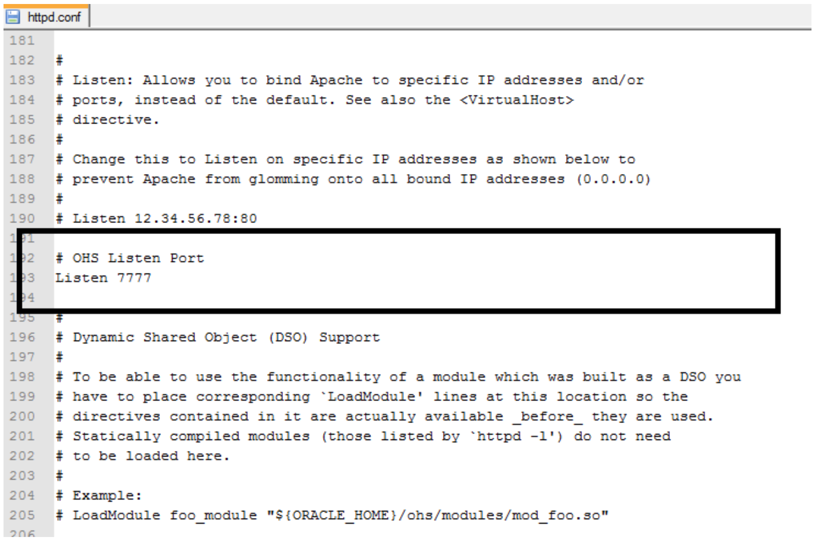
Oracle Fusion Middleware 11g Web Tier Utilities installed and configured successfully.

Elapsed Time: 30m 17s

This completes the installation of Oracle HTTP Server with <Instance> and <component>. Example: Instance is instance1 and component is ohs1.

If you would like to change the port after the installation(OHS Listen Port) edit $ORACLE_INSTANCE/config/OHS/<component_name>/httpd.conf and change the listen port.

NOTE: This port is for http protocol and not for https.



```

#
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses (0.0.0.0)
#
# Listen 12.34.56.78:80

# OHS Listen Port
Listen 7777

#
# Dynamic Shared Object (DSO) Support
#
# To be able to use the functionality of a module which was built as a DSO you
# have to place corresponding `LoadModule' lines at this location so the
# directives contained in it are actually available _before_ they are used.
# Statically compiled modules (those listed by `httpd -l') do not need
# to be loaded here.
#
# Example:
# LoadModule foo_module "${ORACLE_HOME}/ohs/modules/mod_foo.so"
```

4. Configure Oracle HTTP Server infront of Weblogic Server

In Oracle HTTP Server requests from Oracle HTTP Server to Weblogic server are proxied using mod_wl_ohs module. This configuration file needs to be modified to include the Weblogic server and port details.

mod_wl_ohs.conf file is located at

${ORACLE_INSTANCE}/config/OHS/{COMPONENT_NAME}/mod_wl_ohs.conf

Add the below directives to mod_wl_ohs.conf file.

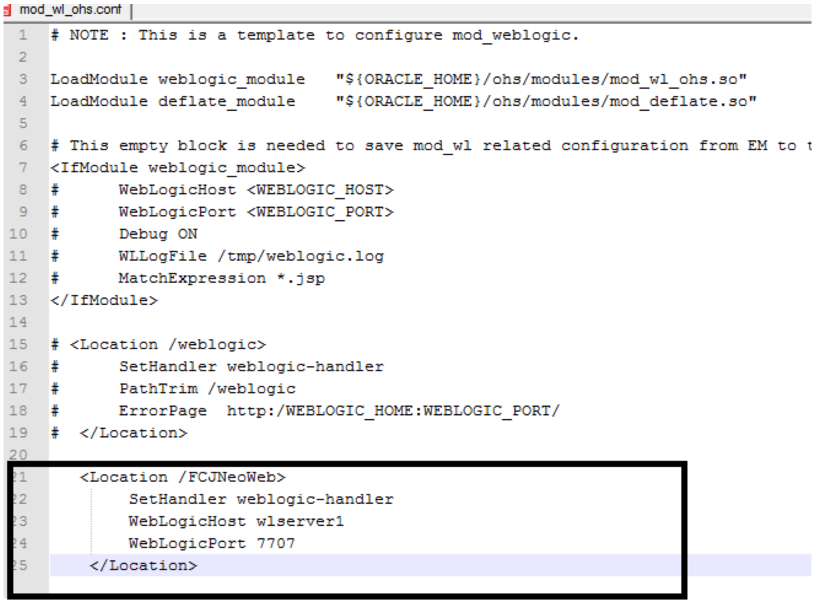
4.1 For WebLogic in single instance

```
<Location /<<context/url>> >
    SetHandler weblogic-handler
    WebLogicHost <<server name>>
    WeblogicPort  <<port>>
</Location>
```

Example:

```
<Location /FCJNeoWeb>
    SetHandler weblogic-handler
    WebLogicHost wlserver1
    WeblogicPort 7707
</Location>
```

This will forward /FCJNeoWeb from HTTP server to /FCJNeoWeb on WebLogic Server wlserver1: 7707



```
# NOTE : This is a template to configure mod_weblogic.

LoadModule weblogic_module   "${ORACLE_HOME}/ohs/modules/mod_wl_ohs.so"
LoadModule deflate_module    "${ORACLE_HOME}/ohs/modules/mod_deflate.so"

# This empty block is needed to save mod_wl related configuration from EM to t
<IfModule weblogic_module>
#       WebLogicHost <WEBLOGIC_HOST>
#       WebLogicPort <WEBLOGIC_PORT>
#       Debug ON
#       WLLogFile /tmp/weblogic.log
#       MatchExpression *.jsp
</IfModule>

# <Location /weblogic>
#       SetHandler weblogic-handler
#       PathTrim /weblogic
#       ErrorPage  http:/WEBLOGIC_HOME:WEBLOGIC_PORT/
#  </Location>

   <Location /FCJNeoWeb>
        SetHandler weblogic-handler
        WebLogicHost wlserver1
        WebLogicPort 7707
    </Location>
```

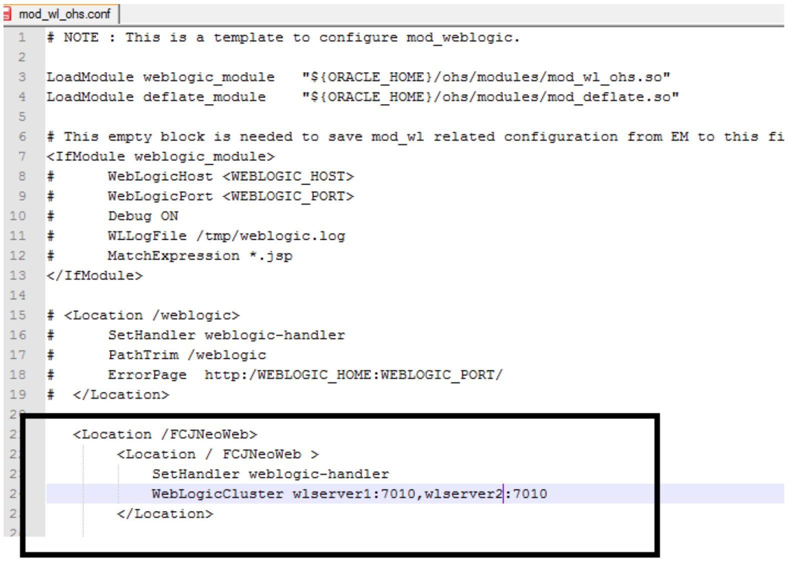
4.2 For Weblogic instances in cluster

```
<Location /<<context/url>> >
   SetHandler weblogic-handler
   WebLogicCluster <server1>:<port1>,<server2>:<port2>
</Location>
```

Example

```
<Location / FCJNeoWeb >
  SetHandler weblogic-handler
  WebLogicCluster wlserver1:7010, wlserver2:7010
</Location>
```

This will forward /FCJNeoWeb from HTTP server to /FCJNeoWeb on WebLogic Cluster wlserver1:7010 and wlserver2:7010



```
# NOTE : This is a template to configure mod_weblogic.

LoadModule weblogic_module   "${ORACLE_HOME}/ohs/modules/mod_wl_ohs.so"
LoadModule deflate_module    "${ORACLE_HOME}/ohs/modules/mod_deflate.so"

# This empty block is needed to save mod_wl related configuration from EM to this fi
<IfModule weblogic_module>
#       WebLogicHost <WEBLOGIC_HOST>
#       WebLogicPort <WEBLOGIC_PORT>
#       Debug ON
#       WLLogFile /tmp/weblogic.log
#       MatchExpression *.jsp
</IfModule>

# <Location /weblogic>
#       SetHandler weblogic-handler
#       PathTrim /weblogic
#       ErrorPage  http:/WEBLOGIC_HOME:WEBLOGIC_PORT/
#  </Location>

   <Location /FCJNeoWeb>
        <Location / FCJNeoWeb >
            SetHandler weblogic-handler
            WebLogicCluster wlserver1:7010,wlserver2:7010
        </Location>

```

5. Enable “WebLogic Plug-In Enabled” flag in weblogic

This flag needs to be enabled in weblogic if it is accessed through proxy plugins. When the WebLogic plugin is enabled, a call to getRemoteAddr will return the address of the browser client from the proprietary WL-Proxy-Client-IP header instead of the web server.

a. Plugin flag at managed server level

   i. Click on ‘Environment’- > 'Servers' -> '<ManagedServer>' -> 'General' -> 'Advanced'

   ii. Check the 'WebLogic Plug-In Enabled' box.

   iii. Click 'Save'

   iv. Restart the Server.

b. Plugin flag at domain level

   v. Click on <Domain> -> 'Web Applications'

   vi. Check the 'WebLogic Plug-In Enabled' box.

   vii. Click 'Save'

   viii. Restart the server.

6. Compression rule setting

Content compression in Oracle HTTP Server is done using mod_deflate. This can compress HTML, text or XML files to approx. 20 - 30% of their original sizes, thus saving on server traffic. However, compressing files causes a slightly higher load on the server, but clients' connection times to server is reduced.

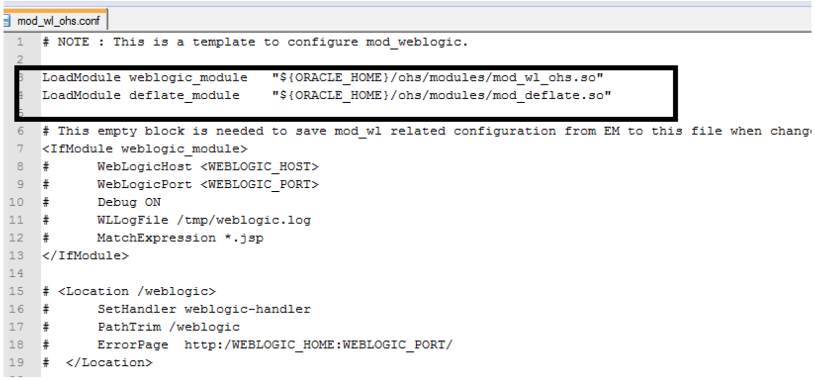
6.1 Loading mod_deflate

mod_deflate is used for compression in OHS and this is installed in Oracle HTTP Server under location "${ORACLE_HOME}/OHS/modules/mod_deflate.so"

But it might not be loaded.

To load the file add the below directive in mod_wl_ohs.conf file

LoadModule deflate_module   "${ORACLE_HOME}/OHS/modules/mod_deflate.so"



mod_wl_ohs.conf

```
# NOTE : This is a template to configure mod_weblogic.

LoadModule weblogic_module   "${ORACLE_HOME}/ohs/modules/mod_wl_ohs.so"
LoadModule deflate_module    "${ORACLE_HOME}/ohs/modules/mod_deflate.so"

# This empty block is needed to save mod_wl related configuration from EM to this file when chang
<IfModule weblogic_module>
#       WebLogicHost <WEBLOGIC_HOST>
#       WebLogicPort <WEBLOGIC_PORT>
#       Debug ON
#       WLLogFile /tmp/weblogic.log
#       MatchExpression *.jsp
</IfModule>

# <Location /weblogic>
#       SetHandler weblogic-handler
#       PathTrim /weblogic
#       ErrorPage  http:/WEBLOGIC_HOME:WEBLOGIC_PORT/
#  </Location>
```

6.2 Configuring file types

mod_deflate also requires to specify which type files are going to be compressed.

In the LOCATION section of mod_wl_ohs.conf file add the below entries.

AddOutputFilterByType DEFLATE text/plain

AddOutputFilterByType DEFLATE text/xml

AddOutputFilterByType DEFLATE application/xhtml+xml

AddOutputFilterByType DEFLATE text/css

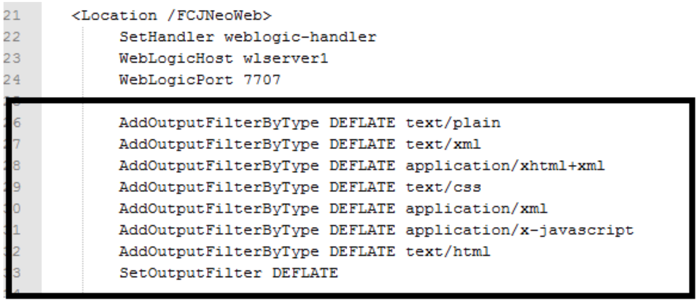
AddOutputFilterByType DEFLATE application/xml

AddOutputFilterByType DEFLATE application/x-javascript

AddOutputFilterByType DEFLATE text/html

SetOutputFilter DEFLATE

Images are supposed to be in a compressed format, and therefore are bypassed by mod_deflate.



```
<Location /FCJNeoWeb>
    SetHandler weblogic-handler
    WebLogicHost wlserver1
    WebLogicPort 7707

    AddOutputFilterByType DEFLATE text/plain
    AddOutputFilterByType DEFLATE text/xml
    AddOutputFilterByType DEFLATE application/xhtml+xml
    AddOutputFilterByType DEFLATE text/css
    AddOutputFilterByType DEFLATE application/xml
    AddOutputFilterByType DEFLATE application/x-javascript
    AddOutputFilterByType DEFLATE text/html
    SetOutputFilter DEFLATE
```

6.3 httpd.conf file changes

This is a server configuration file which typically contains directives that affect how the server runs, such as user and group IDs it should use, and location of other files. Cross check the existence of mod_wl_ohs.conf include in httpd.conf file.

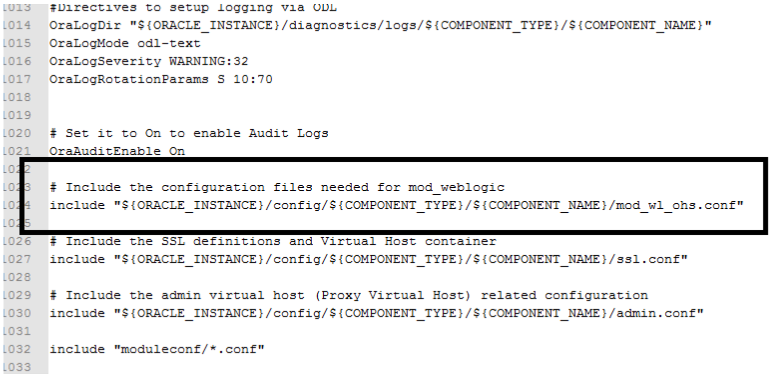
httpd.conf file is present under location

“${ORACLE_INSTANCE}/config/OHS/{COMPONENT_NAME}/httpd.conf”

In this file cross check for the below entry

include "${ORACLE_INSTANCE}/config/OHS/${COMPONENT_NAME}/mod_wl_ohs.conf"

If above include entry is not present, then add the above include section.



```
#Directives to setup logging via ODL
OraLogDir "${ORACLE_INSTANCE}/diagnostics/logs/${COMPONENT_TYPE}/${COMPONENT_NAME}"
OraLogMode odl-text
OraLogSeverity WARNING:32
OraLogRotationParams S 10:70


# Set it to On to enable Audit Logs
OraAuditEnable On

# Include the configuration files needed for mod_weblogic
include "${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_NAME}/mod_wl_ohs.conf"

# Include the SSL definitions and Virtual Host container
include "${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_NAME}/ssl.conf"

# Include the admin virtual host (Proxy Virtual Host) related configuration
include "${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_NAME}/admin.conf"

include "moduleconf/*.conf"
```

7. Configuring SSL for Oracle HTTP Server

Secure Sockets Layer (SSL) is required to run any Web site securely. Secure Sockets Layer (SSL) is an encrypted communication protocol that is designed to securely send messages across the Internet.

Reading of “**SSL_Configuration on Weblogic**” document provided as part of FCUBS installation is recommended before proceeding with further setup.

In Oracle HTTP server, SSL configuration can be done between

1. Browser to Oracle HTTP Server(Mandatory)
2. Oracle HTTP Server to Oracle Weblogic Server(If required)

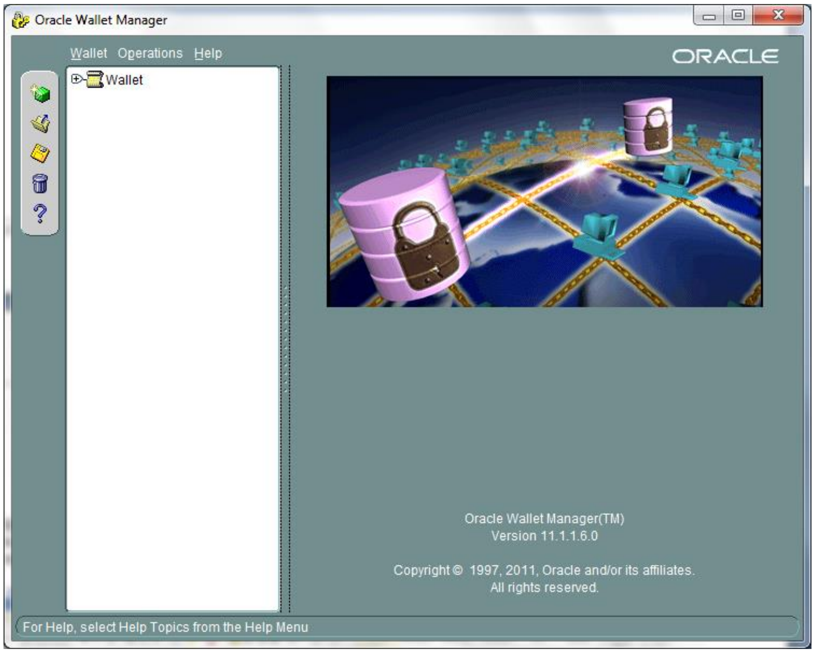
7.1 SSL configuration for Inbound Request to Oracle HTTP Server

Perform these tasks to enable and configure SSL between browser and Oracle HTTP Server.

1. Obtain a certificate from CA or create a self signed certificate.
2. Create an Oracle Wallet which contains the above SSL Certificate. The default wallet that is automatically installed with Oracle HTTP Server is for testing purposes only. The default wallet is located in "${ORACLE_INSTANCE}/config/OHS/${COMPONENT_NAME}/keystores/default"
3. Configuring Wallet in ssl.conf file

7.1.1 Create a new Wallet and import Certificate

1. Go to the \Oracle_WT1\bin\launch.exe, this will launch your wallet manager



Oracle Wallet Manager(TM)
Version 11.1.1.6.0

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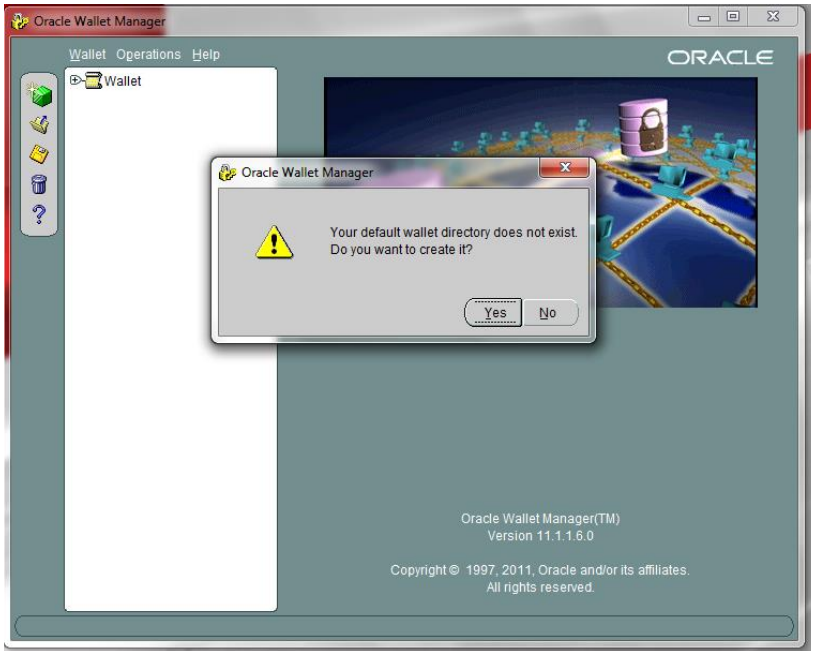
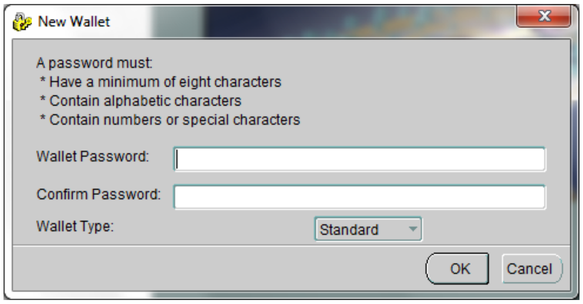
For Help, select Help Topics from the Help Menu

2. Click on Create new and then click no option.



Your default wallet directory does not exist.
Do you want to create it?

3. Enter the wallet password and click on OK, this will create a new wallet.



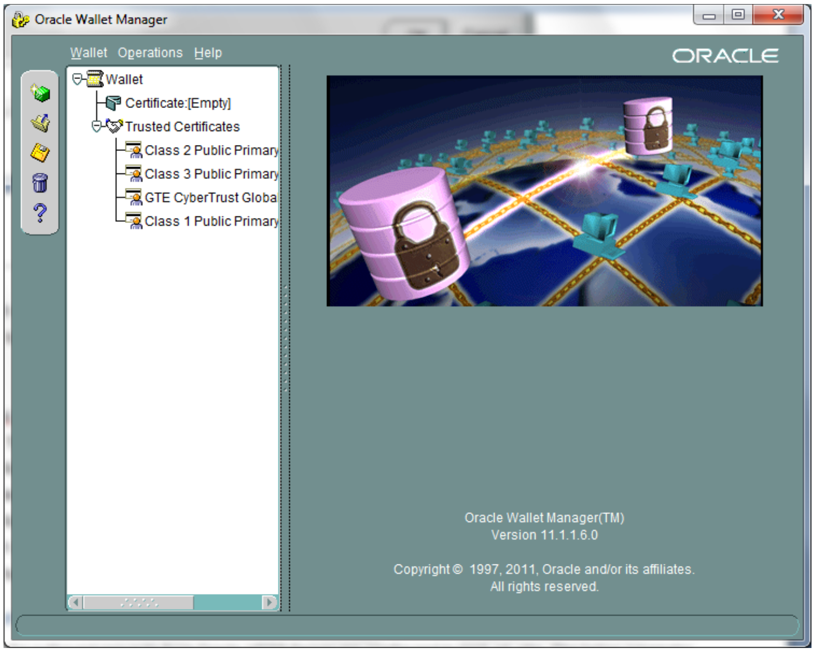
A password must:
* Have a minimum of eight characters
* Contain alphabetic characters
* Contain numbers or special characters

Wallet Password:

Confirm Password:

Wallet Type: Standard

4. Not it will ask for certificate request creation, Click on NO to proceed



Oracle Wallet Manager(TM)
Version 11.1.1.6.0

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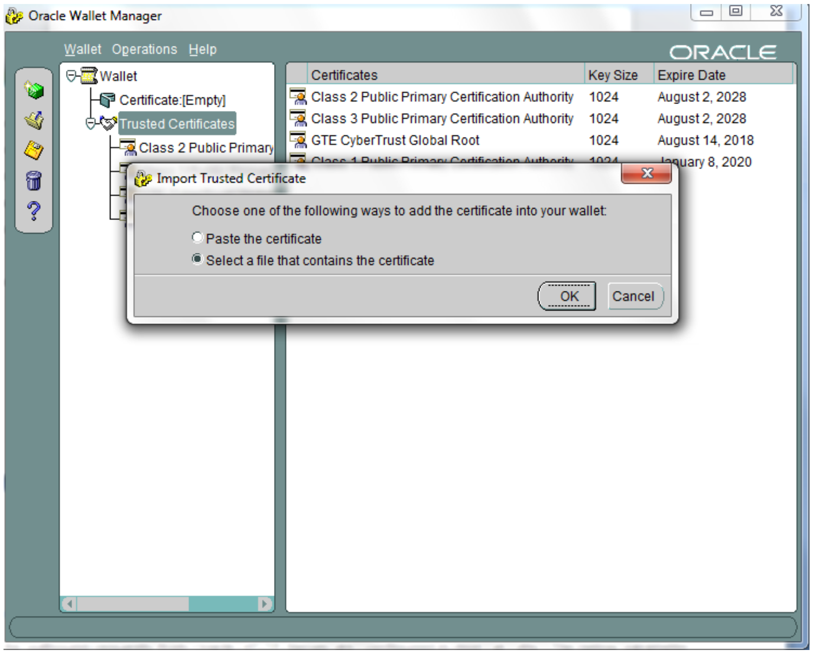
5. Right click on trusted certificates and then import trusted certificate.



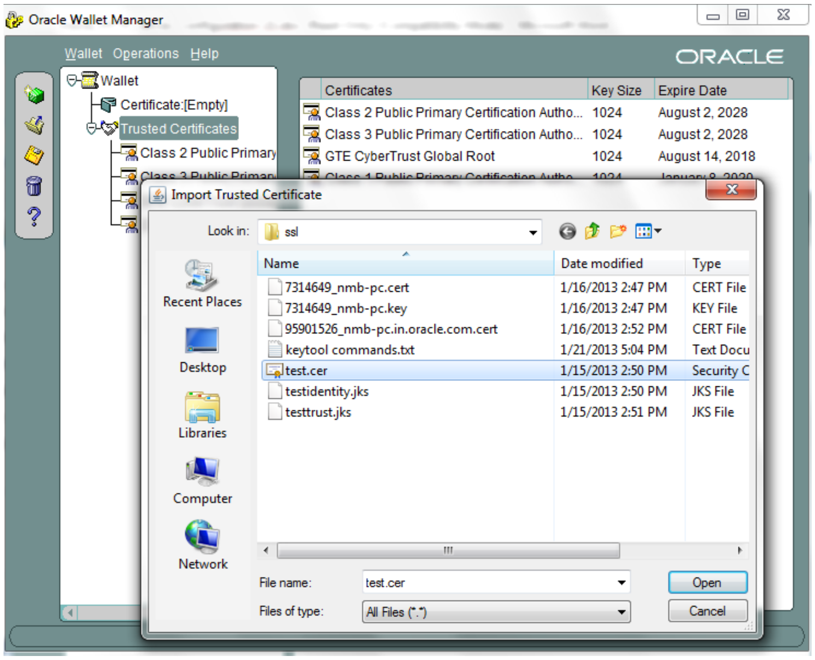
Certificates	Key Size	Expire Date
Class 2 Public Primary Certification Authority	1024	August 2, 2028
Class 3 Public Primary Certification Authority	1024	August 2, 2028
GTE CyberTrust Global Root	1024	August 14, 2018
Class 1 Public Primary Certification Authority	1024	January 8, 2020

Choose one of the following ways to add the certificate into your wallet:

○ Paste the certificate

● Select a file that contains the certificate

6. Browse to the folder where certificate is stored and click on Open



Certificates	Key Size	Expire Date
Class 2 Public Primary Certification Autho...	1024	August 2, 2028
Class 3 Public Primary Certification Autho...	1024	August 2, 2028
GTE CyberTrust Global Root	1024	August 14, 2018
Class 1 Public Primary Certification Autho...	1024	January 8, 2020

Look in: ssl

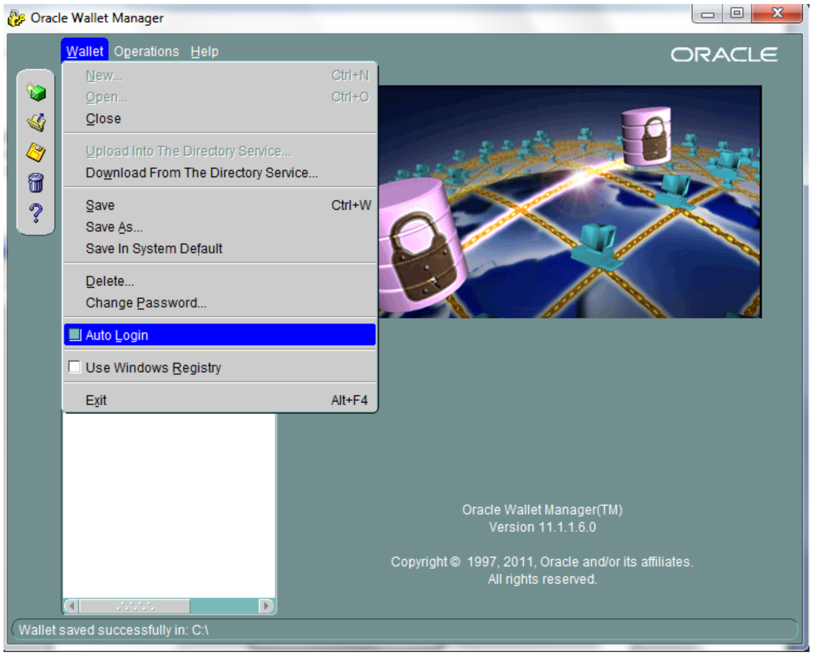
Name	Date modified	Type
7314649_nmb-pc.cert	1/16/2013 2:47 PM	CERT File
7314649_nmb-pc.key	1/16/2013 2:47 PM	KEY File
95901526_nmb-pc.in.oracle.com.cert	1/16/2013 2:52 PM	CERT File
keytool commands.txt	1/21/2013 5:04 PM	Text Docu
test.cer	1/15/2013 2:50 PM	Security C
testidentity.jks	1/15/2013 2:50 PM	JKS File
testtrust.jks	1/15/2013 2:51 PM	JKS File

File name: test.cer

Files of type: All Files (*.*)

7. Click on Save Wallet button on the left side navigation and save the wallet either to default location("${ORACLE_INSTANCE}/config/OHS/${COMPONENT_NAME}/keystores/default") or folder of your choice.

8. Click on Wallet tab and enable Auto Login



Oracle Wallet Manager(TM)
Version 11.1.1.6.0

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Wallet saved successfully in: C:\

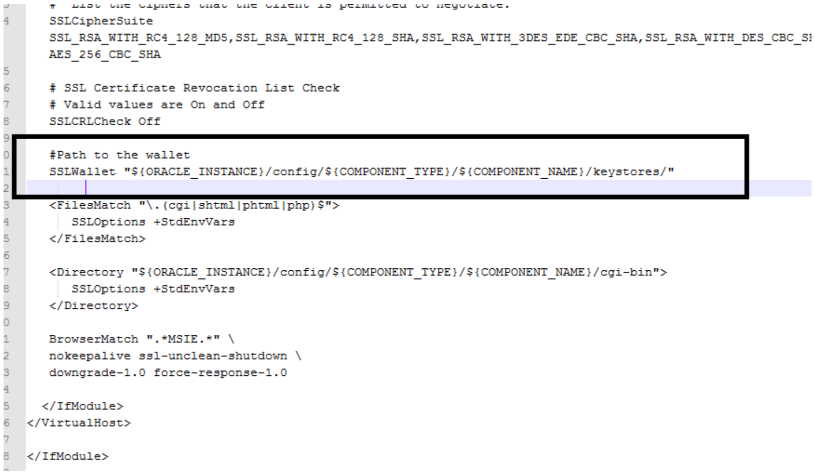
7.1.2 Configuring Wallet in ssl.conf file

In ssl.conf file the newly created wallet need to updated. This file is located under folder

"${ORACLE_INSTANCE}/config/OHS/${COMPONENT_NAME}/

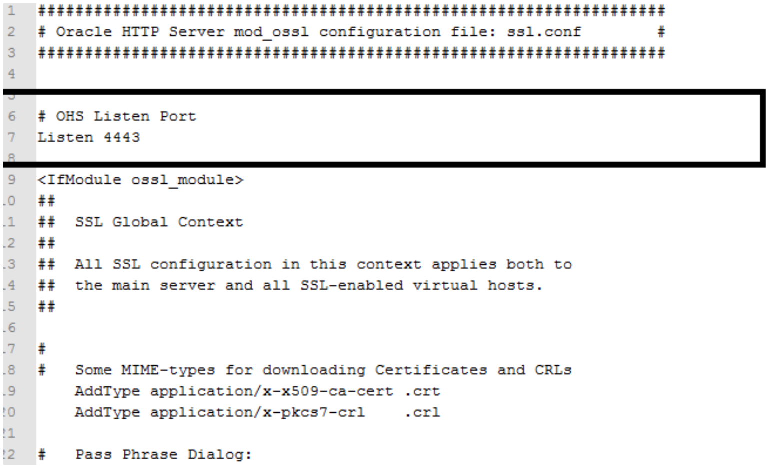
1. Change the SSLWallet directive to point to the location of new wallet created.

SSLWallet "${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_NAME}/keystores/"



```
    #  List the ciphers that the client is permitted to negotiate.
    SSLCipherSuite
    SSL_RSA_WITH_RC4_128_MD5,SSL_RSA_WITH_RC4_128_SHA,SSL_RSA_WITH_3DES_EDE_CBC_SHA,SSL_RSA_WITH_DES_CBC_SH
    AES_256_CBC_SHA

    # SSL Certificate Revocation List Check
    # Valid values are On and Off
    SSLCRLCheck Off

    #Path to the wallet
    SSLWallet "${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_NAME}/keystores/"

    <FilesMatch "\.(cgi|shtml|phtml|php)$">
       SSLOptions +StdEnvVars
    </FilesMatch>

    <Directory "${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_NAME}/cgi-bin">
       SSLOptions +StdEnvVars
    </Directory>

    BrowserMatch ".*MSIE.*" \
    nokeepalive ssl-unclean-shutdown \
    downgrade-1.0 force-response-1.0

  </IfModule>
</VirtualHost>

</IfModule>
```

2. Change the Listen port number in ssl.conf file to the SSL enabled port, by default the value is 4443



```
###################################################################
# Oracle HTTP Server mod_ossl configuration file: ssl.conf        #
###################################################################


# OHS Listen Port
Listen 4443

<IfModule ossl_module>
##
##  SSL Global Context
##
##  All SSL configuration in this context applies both to
##  the main server and all SSL-enabled virtual hosts.
##

#
#   Some MIME-types for downloading Certificates and CRLs
    AddType application/x-x509-ca-cert .crt
    AddType application/x-pkcs7-crl    .crl

#   Pass Phrase Dialog:
```

7.2 Configuring SSL between Oracle HTTP Server and Oracle Weblogic Server

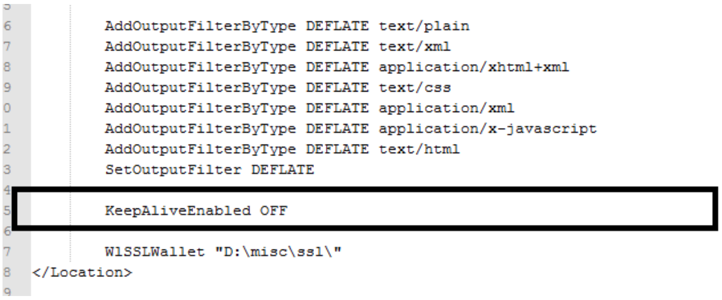
SSL for outbound requests from Oracle HTTP Server are configured in mod_wl_ohs.

Refer to “**SSL_Configuration on Weblogic”** document for weblogic server setting mentioned in below section.

7.2.1 Turn off KeepAliveEnabled

The below parameter in mod_wl_ohs should be turned off, by default it is on. Add the below directive under LOCATION section of mod_wl_ohs file

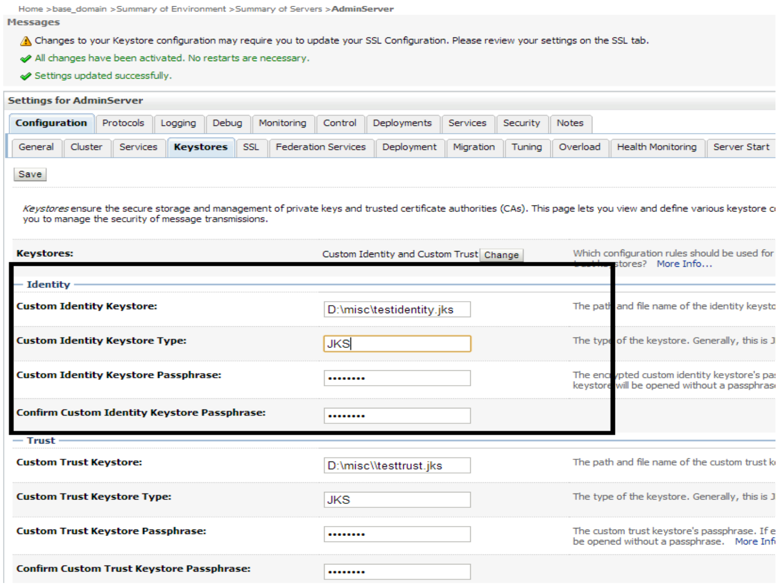
KeepAliveEnabled OFF



```
        AddOutputFilterByType DEFLATE text/plain
        AddOutputFilterByType DEFLATE text/xml
        AddOutputFilterByType DEFLATE application/xhtml+xml
        AddOutputFilterByType DEFLATE text/css
        AddOutputFilterByType DEFLATE application/xml
        AddOutputFilterByType DEFLATE application/x-javascript
        AddOutputFilterByType DEFLATE text/html
        SetOutputFilter DEFLATE

        KeepAliveEnabled OFF

        WlSSLWallet "D:\misc\ssl\"
</Location>
```

7.2.2 To enable one-way SSL

1. Generate a custom keystore identity.jks for Weblogic Server containing a certificate.
2. At Identity section in Keystores tab in weblogic Admin Console for server set
    a. The custom trust store with the identity.jks file location
    b. The keystore type as JKS
    c. The passphrase used to created the keystore



Messages

⚠ Changes to your Keystore configuration may require you to update your SSL Configuration. Please review your settings on the SSL tab.

✓ All changes have been activated. No restarts are necessary.

✓ Settings updated successfully.

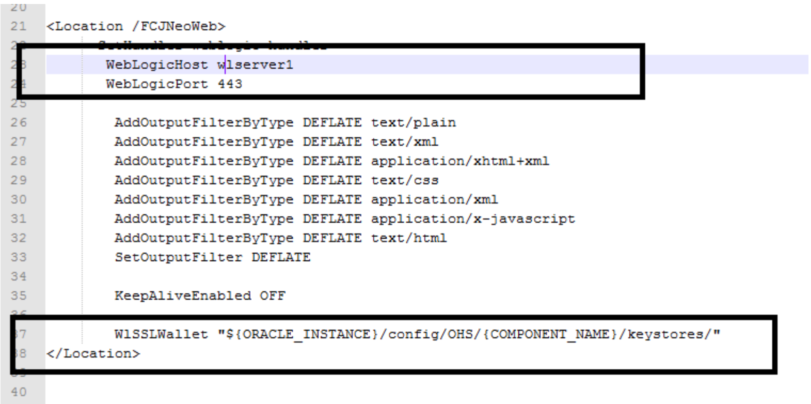
Settings for AdminServer

Keystores ensure the secure storage and management of private keys and trusted certificate authorities (CAs). This page lets you view and define various keystore c you to manage the security of message transmissions.

Keystores:	Custom Identity and Custom Trust	Which configuration rules should be used for trust keystores? More Info...
Identity		
Custom Identity Keystore:	D:\misc\testidentity.jks	The path and file name of the identity keysto
Custom Identity Keystore Type:	JKS	The type of the keystore. Generally, this is J
Custom Identity Keystore Passphrase:	••••••••	The encrypted custom identity keystore's pa keystore will be opened without a passphras
Confirm Custom Identity Keystore Passphrase:	••••••••	
Trust		
Custom Trust Keystore:	D:\misc\\testtrust.jks	The path and file name of the custom trust k
Custom Trust Keystore Type:	JKS	The type of the keystore. Generally, this is J
Custom Trust Keystore Passphrase:	••••••••	The custom trust keystore's passphrase. If e be opened without a passphrase. More Inf
Confirm Custom Trust Keystore Passphrase:	••••••••	

3. Copy the certificate to Oracle HTTP Server and import the new certificate into OHS wallet as a trusted certificate.
4. Add following new directive in mod_wl_ohs.conf to point to the wallet location

   WlSSLWallet "${ORACLE_INSTANCE}/config/OHS/{COMPONENT_NAME}/keystores/default"
5. Change the port in mod_wl_ohs file to point to SSL port of Weblogic server.

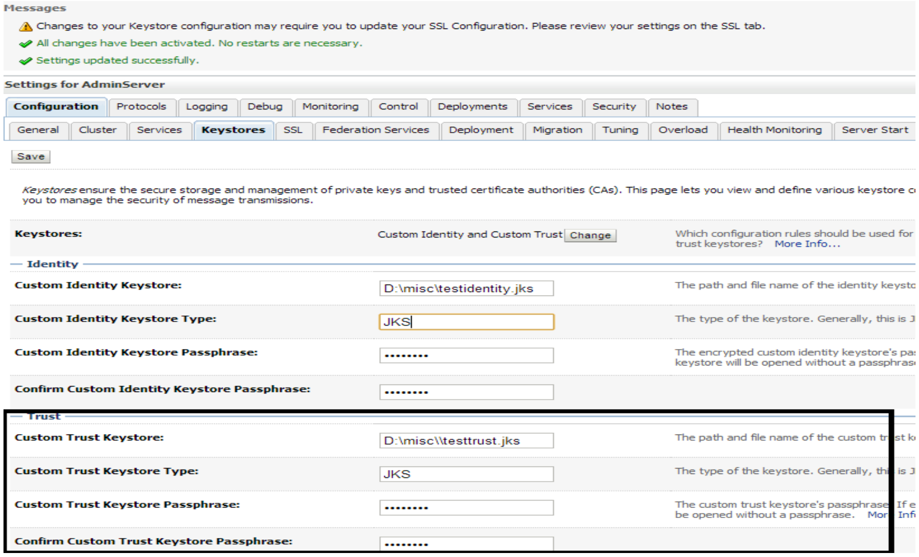


```
<Location /FCJNeoWeb>
        SetHandler weblogic-handler
        WebLogicHost wlserver1
        WebLogicPort 443

         AddOutputFilterByType DEFLATE text/plain
         AddOutputFilterByType DEFLATE text/xml
         AddOutputFilterByType DEFLATE application/xhtml+xml
         AddOutputFilterByType DEFLATE text/css
         AddOutputFilterByType DEFLATE application/xml
         AddOutputFilterByType DEFLATE application/x-javascript
         AddOutputFilterByType DEFLATE text/html
         SetOutputFilter DEFLATE

         KeepAliveEnabled OFF

         WlSSLWallet "${ORACLE_INSTANCE}/config/OHS/{COMPONENT_NAME}/keystores/"
</Location>
```

6. Restart both Weblogic Server and Oracle HTTP Server

7.2.3 To enable two-way SSL

1. Perform one-way SSL configuration steps
2. Generate a new trust store, trust.jks for Weblogic server
3. Keystore created for one-way SSL could be used, but it is recommended to create a separate truststore
4. Export the user certificate from Oracle HTTP Server wallet, and import it into truststore created above
5. At Trust section in Keystores tab in Weblogic Admin Console for the server set
   a. The custom trust store with the trust.jks file location
   b. The keystore type as JKS
   c. The passphrase used to created the keystore



Changes to your Keystore configuration may require you to update your SSL Configuration. Please review your settings on the SSL tab.

All changes have been activated. No restarts are necessary.

Settings updated successfully.

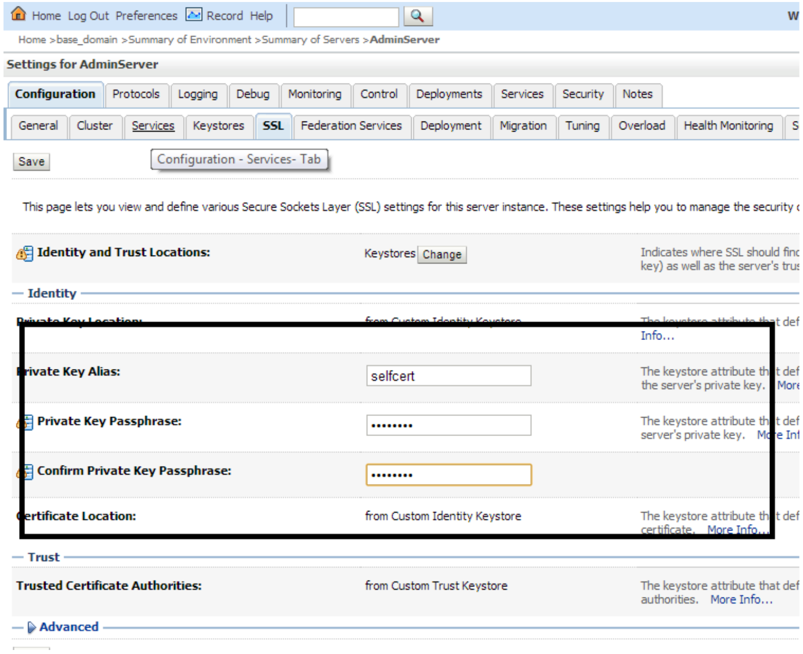
Settings for AdminServer

Keystores ensure the secure storage and management of private keys and trusted certificate authorities (CAs). This page lets you view and define various keystore c
you to manage the security of message transmissions.

Keystores:	Custom Identity and Custom Trust Change	Which configuration rules should be used for trust keystores? More Info...
Identity		
Custom Identity Keystore:	D:\misc\testidentity.jks	The path and file name of the identity keysto
Custom Identity Keystore Type:	JKS	The type of the keystore. Generally, this is J
Custom Identity Keystore Passphrase:	••••••••	The encrypted custom identity keystore's pa keystore will be opened without a passphras
Confirm Custom Identity Keystore Passphrase:	••••••••	
Trust		
Custom Trust Keystore:	D:\misc\\testtrust.jks	The path and file name of the custom tr st k
Custom Trust Keystore Type:	JKS	The type of the keystore. Generally, th is J
Custom Trust Keystore Passphrase:	••••••••	The custom trust keystore's passphrase If e be opened without a passphrase. Mor Inf
Confirm Custom Trust Keystore Passphrase:	••••••••	

6. Under the SSL tab

   Ensure trusted CA is set as from Custom Trust Keystore.



Settings for AdminServer

This page lets you view and define various Secure Sockets Layer (SSL) settings for this server instance. These settings help you to manage the security

Identity and Trust Locations: Keystores — Indicates where SSL should find key) as well as the server's trus

Identity

Private Key Location: from Custom Identity Keystore — The keystore attribute that def Info...

Private Key Alias: selfcert — The keystore attribute that def the server's private key. More

Private Key Passphrase: •••••••• — The keystore attribute that def server's private key. More Inf

Confirm Private Key Passphrase: ••••••••

Certificate Location: from Custom Identity Keystore — The keystore attribute that def certificate. More Info...

Trust

Trusted Certificate Authorities: from Custom Trust Keystore — The keystore attribute that def authorities. More Info...

7. Restart Weblogic Server

8. Sample Configuration Files

httpd.conf mod_wl_ohs.conf ssl.conf

9. Starting, Stopping, and Restarting Oracle HTTP Server

Navigate to the below location in command prompt ${ORACLE_INSTANCE}/bin/ and run below commands

9.1 Start

opmnctl startproc ias-component={COMPONENT_NAME}

Example: opmnctl startproc ias-component=ohs1

9.2 Stop

opmnctl stopproc ias-component={COMPONENT_NAME}

Example: opmnctl stopproc ias-component=ohs1

9.3 Restart

opmnctl restartproc ias-component={COMPONENT_NAME}

Example: opmnctl restartproc ias-component=ohs1

10. Test the application

Test the application deployed on Weblogic using Oracle HTTP Server after restarting both the oracle http server and weblogic server

https://ohs_servername:ohs_https_port/<<context/url>>

http://ohs_servername:ohs_http_port/<<context/url>>

ohs_servername: server on which OHS is deployed

ohs_https_port: port number mentioned against LISTEN directive in SSL.conf file

ohs_http_port: port number mentioned against LISTEN directive in httpd.conf file

Example:

https://localhost:4443/FCJNeoWeb/welcome.jsp

Or

http://localhost:7777/FCJNeoWeb/welcome.jsp

11. Server Logs Location

Oracle HTTP Server Logs are generated under folder

${ORACLE_INSTANCE}/diagnostics/logs/OHS/{COMPONENT_NAME}/

12. References

SSL_Configuration.doc for Weblogic provided as part of FCUBS installation.

http://docs.oracle.com/cd/E16764_01/web.1111/e10144/under_mods.htm

http://docs.oracle.com/cd/E25054_01/core.1111/e10105/sslconfig.htm

Oracle_HTTP_Server_Configuration
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