Oracle® Fusion Middleware

Installing WebGates for Oracle Access Manager

12*c* (12.2.1.3.0)
E95502-03
October 2020

Oracle Fusion Middleware Installing WebGates for Oracle Access Manager, 12*c* (12.2.1.3.0)

E95502-03

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Preface

This Preface provides supporting information for *Oracle Fusion Middleware Installing WebGates for Oracle Access Manager* and includes the following topics:

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

Audience

The *Oracle Fusion Middleware Installing WebGates for Oracle Access Manager* guide is intended for administrators that are responsible for installing 12*c* WebGates for Oracle Access Manager.This document assumes you have experience installing enterprise components. Basic knowledge about Oracle Access Manager, WebGates, and Oracle Application Server is recommended.

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`.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info` or visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs` if you are hearing impaired.

Related Documents

For more information, see the following documents in the Oracle Identity and Access Management 11g Release 2 (11.1.2) documentation library:

- *Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management*

- *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*
- *Planning an Installation of Oracle Fusion Middleware*
- *Oracle Fusion Middleware Release Notes*

You can also access Oracle documentation online from the Oracle Technology Network (OTN) Web site at the following URL:

`http://docs.oracle.com/`

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

About WebGates for Oracle Access Manager

A WebGate is a web-server plug-in for Oracle Access Manager (OAM) that intercepts HTTP requests and forwards them to the Access Server for authentication and authorization.
For information about the typical workflow in an environment with a WebGate and Oracle Access Manager, see About SSO Log In Processing with OAM Agents in *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager with Oracle Security Token Service*.

This document contains the following chapters:

- Configuring Oracle HTTP Server WebGate for Oracle Access Manager
- Configuring Oracle Traffic Director WebGate for Oracle Access Manager
- Adding Trusted Certificate for `SIMPLE` and `CERT` Mode communication
- Upgrading to OHS/OTD 12c WebGate

2

Configuring Oracle HTTP Server WebGate for Oracle Access Manager

Configuring Oracle HTTP Server WebGate for Oracle Access Manager involves several steps.

The chapter contains the following sections:

- About Oracle HTTP Server Webgate
- General Prerequisites for Configuring Oracle HTTP Server Webgate
- Configuring Oracle HTTP Server WebGate
- Registering the Oracle HTTP Server 12c WebGate with Oracle Access Manager

- About Oracle HTTP Server Webgate
  Oracle HTTP Server WebGate is a Web server plug-in that intercepts HTTP requests and forwards them to an existing Oracle Access Manager instance for authentication and authorization.
- General Prerequisites for Configuring Oracle HTTP Server Webgate
  Before you can configure Oracle HTTP Server WebGate, you must have installed and configured a certified version of Oracle Access Manager.
- Configuring Oracle HTTP Server WebGate
  Configuring Oracle HTTP Server WebGate for Oracle Access Manager requires several steps.
- Registering the Oracle HTTP Server 12c WebGate with Oracle Access Manager
  You can register the WebGate agent with Oracle Access Manager using the Oracle Access Manager Administration console.

About Oracle HTTP Server Webgate

Oracle HTTP Server WebGate is a Web server plug-in that intercepts HTTP requests and forwards them to an existing Oracle Access Manager instance for authentication and authorization.

General Prerequisites for Configuring Oracle HTTP Server Webgate

Before you can configure Oracle HTTP Server WebGate, you must have installed and configured a certified version of Oracle Access Manager.

At the time this document was published, the supported version was Oracle Access Manager 12*c* Release 2 (12.2.1.1). For the most up-to-date information, see the certification document for your release on the *Oracle Fusion Middleware Supported System Configurations* page.

> **Note:**
>
> For production environments, it is highly recommended that you install Oracle Access Manager in its own environment and not on the machines that are hosting the enterprise deployment.

For more information about Oracle Access Manager, see the latest Oracle Identity and Access Management documentation, which you can find in the **Middleware** documentation on the Oracle Help Center.

For Oracle Fusion Middleware 12*c*, the WebGate software is installed as part of the Oracle HTTP Server 12*c* software installation. See Registering and Managing OAM 12c Agents in *Adminstrator's Guide for Oracle Access Management*.

Configuring Oracle HTTP Server WebGate

Configuring Oracle HTTP Server WebGate for Oracle Access Manager requires several steps.

In the following examples:

- Replace *OHS_ORACLE_HOME* with the complete path to the Oracle home where you installed the Oracle HTTP Server software.
- Replace *OHS_CONFIG_DIR* with the path to the following location in the Oracle HTTP Server domain home:

  DOMAIN_HOME/config/fmwconfig/components/OHS/*ohs_instance_name*

1. Navigate to the `deployWebGate` directory in the Oracle HTTP Server Oracle home:

   (UNIX) cd *OHS_ORACLE_HOME*/webgate/ohs/tools/deployWebGate

   (Windows) cd *OHS_ORACLE_HOME*\webgate\ohs\tools\deployWebGate

2. Run the following command to create the WebGate Instance directory and enable WebGate logging on OHS Instance:

   (UNIX) ./deployWebGateInstance.sh -w *OHS_CONFIG_DIR* -oh *OHS_ORACLE_HOME*

   (Windows) deployWebGateInstance.bat -w *OHS_CONFIG_DIR* -oh *OHS_ORACLE_HOME*

3. Verify that a `webgate` directory and subdirectories was created by the `deployWebGateInstance` command:

   For example, on UNIX:

   ```
   ls -lart OHS_CONFIG_DIR/webgate/
   total 6
   drwxr-x---+ 8 orcl oinstall 20 Oct  2 07:14 ..
   drwxr-xr-x+ 4 orcl oinstall  4 Oct  2 07:14 .
   drwxr-xr-x+ 3 orcl oinstall  3 Oct  2 07:14 tools
   drwxr-xr-x+ 3 orcl oinstall  4 Oct  2 07:14 config
   ```

4. Run the following command to set the path environment variable:

   (UNIX) export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:*OHS_ORACLE_HOME*/lib

(Windows) set PATH=%PATH%;*OHS_ORACLE_HOME*\bin

5. Navigate to the EditHttpConf directory:

   (UNIX) cd *OHS_ORACLE_HOME*/webgate/ohs/tools/setup/InstallTools

   (Windows) cd *OHS_ORACLE_HOME*\webgate\ohs\tools\EditHttpConf

6. Run the following command:

   (UNIX) ./EditHttpConf -w *OHS_CONFIG_DIR* [-oh *OHS_ORACLE_HOME*] [-o *output_file_name*] [-dcc *custom_dcc_scripts/pages_location*]

   (Windows) EditHttpConf -w *OHS_CONFIG_DIR* [-oh *OHS_ORACLE_HOME*] [-o *output_file_name*] [-dcc *custom_dcc_scripts\pages_location*]

   This command does the following:

   - Copies the apache_webgate.template file from the Oracle HTTP Server Oracle home to a new webgate.conf file in the Oracle HTTP Server configuration directory.
   - Updates the httpd.conf file to add one line, so it includes the webgate.conf.
   - Generates a WebGate configuration file. The default name of the file is webgate.conf, but you can use a custom name by using the *output_file* argument to the command.

If you want to customize Detached Credential Collector (DCC) scripts or pages, such as the oamsso/logout.html, oamsso-bin/login.pl, or logout.pl scripts), then you can copy these scripts from the following location to the custom location identified by the -dcc parameter to EditHttpConf utility:

ORACLE_HOME/webgate/ohs/

Registering the Oracle HTTP Server 12c WebGate with Oracle Access Manager

You can register the WebGate agent with Oracle Access Manager using the Oracle Access Manager Administration console.

See Registering an OAM Agent Using the Console in *Administrator's Guide for Oracle Access Management*.

- Locating and Preparing the RREG Tool
- Updating the Standard Properties in the OAM11gRequest.xml File
- Running the RREG Tool
- Files and Artifacts Generated by RREG
- Copying Generated Artifacts to the Oracle HTTP Server WebGate Instance Location
- Deleting the previous version files
  After installing the newer version of Oracle HTTP Server Webgate, you must manually delete the older files in the configuration folder.
- Restarting the Oracle HTTP Server Instance

Locating and Preparing the RREG Tool

To set up the RREG tool, complete the following steps:

1. Log in to one of the Oracle Access Manager hosts in the Application tier.
2. Change directory to the following directory in the Oracle Access Manager Oracle home:

   > **Note:**
   >
   > The location is required only for the out-of-band mode.

   OAM_ORACLE_HOME`/oam/server/rreg/client`

   In this example, *OAM_ORACLE_HOME* refers to the Oracle home on the system where the Oracle Access Manager software was installed.

   > **Note:**
   >
   > If the Oracle Enterprise Deployment Guide for IDM was used, *OAM_ORACLE_HOME* may be `/u01/oracle/products/access/iam`.

   > **Note:**
   >
   > If you do not have privileges or access to the Oracle Access Manager server, then you can use out-of-band mode to generate the required files and register the WebGate with Oracle Access Manager. See About RREG In-Band and Out-of-Band Mode.

3. Unzip the `RREG.tar.gz` file to the required directory.
4. From the unzipped directory, open the `oamreg.sh` file and set the following environment variables in the file, as follows:
   - Set `OAM_REG_HOME` to the absolute path to the directory in which you extracted the contents of RREG archive.

     Set `JAVA_HOME` to the absolute path of the directory in which a supported JDK is installed on your machine.

Updating the Standard Properties in the OAM11gRequest.xml File

Before you can register the Webgate agent with Oracle Access Manager, you must update some required properties in the `OAM11gRequest.xml` file.

> **Note:**
>
> If you plan to use the default values for most of the parameters in the provided XML file, then you can use the shorter version (`OAM11gRequest_short.xml`, in which all non-listed fields will take a default value.

> **Note:**
>
> In the primary server list, the default names are mentioned as OAM_SERVER1 and OAM_SERVER2 for OAM servers. Rename these names in the list if the server names are changed in your environment.

To perform this task:

1. If you are using in-band mode, then change directory to the following location on one of the OAM Servers:

   OAM_ORACLE_HOME`/oam/server/rreg/input`

   If you are using out-of-band mode, then change directory to the location where you unpacked the RREG archive on the WEBHOST1 server.

2. Make a copy of the `OAM11GRequest.xml` file template with an environment-specific name.

   ```
   cp OAM11GRequest.xml OAM11GRequest_edg.xml
   ```

3. Review the properties listed in the file, and then update your copy of the `OAM11GRequest.xml` file to make sure the properties reference the host names and other values specific to your environment.

OAM11gRequest.xml Property	Set to...
`serverAddress`	The host and the port of the Administration Server for the Oracle Access Manager domain.
`agentName`	Any custom name for the agent. Typically, you use a name that identifies the Fusion Middleware product you are configuring for single sign-on.
`applicationDomain`	A value that identifies the Web tier host and the FMW component you are configuring for single sign-on.

OAM11gRequest.xml Property	Set to...
`security`	Must be set to the security mode configured on the Oracle Access Management server. This will be one of three modes: open, simple, or certificate. **Note:** For an enterprise deployment, Oracle recommends simple mode, unless additional requirements exist to implement custom security certificates for the encryption of authentication and authorization traffic. In most cases, avoid using open mode, because in open mode, traffic to and from the Oracle Access Manager server is not encrypted. For more information using certificate mode or about Oracle Access Manager supported security modes in general, see Securing Communication Between OAM Servers and WebGates in the *Administrator's Guide for Oracle Access Management*.
`cachePragmaHeader`	private
`cacheControlHeader`	private
`ipValidation`	0 `<ipValidation>0</ipValidation>`

`ipValidationExceptions`	The IP address of the front-end load balancer. For example:
	
	`<ipValidationExceptions>`
	`  <ipAddress>130.35.165.42</ipAddress>`
	`</ipValidationExceptions>`

OAM11gRequest.xml Property	Set to...

`agentBaseUrl`	Fully-qualified URL with the host and the port of the front-end Load Balancer VIP in front of the WEBHOST*n* machines on which Oracle HTTP 12*c* WebGates are installed.
	For example:
	`<agentBaseUrl>`
	`https://soa.example.com:443`
	`</agentBaseUrl>`

`virtualHost`	Set to **true** when protecting more than the `agentBaseUrl`, such as SSO protection for the administrative VIP.

`hostPortVariationsList`	Add `hostPortVariation` host and port elements for each of the load-balancer URLs that will be protected by the WebGates.
	For example:
	`<hostPortVariationsList>`
	`<hostPortVariations>`
	`<host>soainternal.example.com</host>`
	`<port>80</port>`
	`</hostPortVariations>`
	`<hostPortVariations>`
	`<host>admin.example.com</host>`
	`<port>80</port>`
	`</hostPortVariations>`
	`<hostPortVariations>`
	`<host>osb.example.com</host>`
	`<port>443</port>`
	`</hostPortVariations>`
	`</hostPortVariationsList>`

Running the RREG Tool

The following topics provide information about running the RREG tool to register your Oracle HTTP Server Webgate with Oracle Access Manager.

- About RREG In-Band and Out-of-Band Mode
- Running the RREG Tool in In-Band Mode
- Running the RREG Tool in Out-Of-Band Mode

About RREG In-Band and Out-of-Band Mode

You can run the RREG Tool in one of two modes: in-band and out-of-band.

Use **in-band** mode when you have the privileges to access the Oracle Access Manager server and run the RREG tool yourself from the Oracle Access Manager Oracle home. You can then copy the generated artifacts and files to the Web server configuration directory after you run the RREG Tool.

Use **out-of-band** mode if you do *not* have privileges or access to the Oracle Access Manager server. For example, in some organizations, only the Oracle Access Manager server administrators have privileges access the server directories and perform administration tasks on the server. In out-of-band mode, the process can work as follows:

1. The Oracle Access Manager server administrator provides you with a copy of the RREG archive file (RREG.tar.gz).

   The server administrator can find it in the location described in Updating the Standard Properties in the OAM11gRequest.xml File.

2. Untar the `RREG.tar.gz` file that was provided to you by the server administrator.

   For example:

   ```
   gunzip RREG.tar.gz
   ```

   ```
   tar -xvf RREG.tar
   ```

   After you unpack the RREG archive, you can find the tool for registering the agent in the following location:

   `RREG_HOME``/bin/oamreg.sh`

   In this example, *`RREG_Home`* is the directory in which you extracted the contents of RREG archive.

3. Use the instructions in Updating the Standard Properties in the OAM11gRequest.xml File to update the `OAM11GRequest.xml` file, and send the completed `OAM11GRequest.xml` file to the Oracle Access Manager server administrator.

4. The Oracle Access Manager server administrator then uses the instructions in Running the RREG Tool in Out-Of-Band Mode to run the RREG Tool and generate the *`AgentID`*`_response.xml` file.

5. The Oracle Access Manager server administrator sends the *`AgentID`*`_response.xml` file to you.

6. Use the instructions in Running the RREG Tool in Out-Of-Band Mode to run the RREG Tool with the *`AgentID`*`_response.xml` file and generate the required artifacts and files on the client system.

Running the RREG Tool in In-Band Mode

To run the RREG Tool in in-band mode:

1. Navigate to the RREG home directory.

   If you are using in-band mode, the RREG directory is inside the Oracle Access Manager Oracle home:

   `OAM_ORACLE_HOME``/oam/server/rreg`

   If you are using out-of-band mode, then the RREG home directory is the location where you unpacked the RREG archive.

2. In the RREG home directory, navigate to the bin directory:

   ```
   cd RREG_HOME/bin/
   ```

3. Set the permissions of the `oamreg.sh` command so you can execute the file:

   ```
   chmod +x oamreg.sh
   ```

4. Run the following command:

   ```
   ./oamreg.sh inband RREG_HOME/input/OAM11GRequest_edg.xml
   ```

In this example:

- It is assumed the edited `OAM11GRequest.xml` file is located in the *RREG_HOME*`/input` directory.
- The output from this command will be saved to the following directory:

  RREG_HOME`/output/`

The following example shows a sample RREG session:

```
Welcome to OAM Remote Registration Tool!
Parameters passed to the registration tool are:
Mode: inband
Filename: /u01/oracle/products/fmw/iam_home/oam/server/rreg/client/rreg/
input/OAM11GRequest_edg.xml
Enter admin username:weblogic_idm
Username: weblogic_idm
Enter admin password:
Do you want to enter a Webgate password?(y/n):
n
Do you want to import an URIs file?(y/n):
n

----------------------------------------
Request summary:
OAM11G Agent Name:SOA12213_EDG_AGENT
Base URL: https://soa.example.com:443
URL String:null
Registering in Mode:inband
Your registration request is being sent to the Admin server at: http://
host1.example.com:7001
----------------------------------------

Jul 08, 2015 7:18:13 PM oracle.security.jps.util.JpsUtil disableAudit
INFO: JpsUtil: isAuditDisabled set to true
Jul 08, 2015 7:18:14 PM oracle.security.jps.util.JpsUtil disableAudit
INFO: JpsUtil: isAuditDisabled set to true
Inband registration process completed successfully! Output artifacts
are created in the output folder.
```

Running the RREG Tool in Out-Of-Band Mode

To run the RREG Tool in out-of-band mode on the WEBHOST server, the administrator uses the following command:

```
RREG_HOME/bin/oamreg.sh outofband input/OAM11GRequest.xml
```

In this example:

- Replace *RREG_HOME* with the location where the RREG archive file was unpacked on the server.
- The edited `OAM11GRequest.xml` file is located in the *RREG_HOME*`/input` directory.
- The RREG Tool saves the output from this command (the *AgentID*`_response.xml` file) to the following directory:

  RREG_HOME`/output/`

  The Oracle Access Manager server administrator can then send the *AgentID*`_response.xml` to the user who provided the `OAM11GRequest.xml` file.

To run the RREG Tool in out-of-band mode on the Web server client machine, use the following command:

```
RREG_HOME/bin/oamreg.sh outofband input/AgentID_response.xml
```

In this example:

- Replace *RREG_HOME* with the location where you unpacked the RREG archive file on the client system.
- The *AgentID*`_response.xml` file, which was provided by the Oracle Access Manager server administrator, is located in the *RREG_HOME*/input directory.
- The RREG Tool saves the output from this command (the artifacts and files required to register the Webgate software) to the following directory on the client machine:

  RREG_HOME`/output/`

Files and Artifacts Generated by RREG

The files that get generated by the RREG Tool vary, depending on the security level you are using for communications between the WebGate and the Oracle Access Manager server. See Securing Communication Between OAM Servers and WebGates in *Administrator's Guide for Oracle Access Management*.

Note that in this topic any references to *RREG_HOME* should be replaced with the path to the directory where you ran the RREG tool. This is typically the following directory on the Oracle Access Manager server, or (if you are using out-of-band mode) the directory where you unpacked the RREG archive:

OAM_ORACLE_HOME`/oam/server/rreg/client`

The following table lists the artifacts that are always generated by the RREG Tool, regardless of the Oracle Access Manager security level.

File	Location
`cwallet.sso`	• *RREG_HOME*`/output/Agent_ID/` - For WebGate 12*c* . • *RREG_HOME*`/output/Agent_ID/wallet` - For WebGate 12*c* and OHS 12*c*.
`ObAccessClient.xml`	*RREG_HOME*`/output/Agent_ID/`

The following table lists the additional files that are created if you are using the SIMPLE or CERT security level for Oracle Access Manager:

File	Location
`aaa_key.pem`	*`RREG_HOME`*`/output/Agent_ID/`
`aaa_cert.pem`	*`RREG_HOME`*`/output/Agent_ID/`
`password.xml`	*`RREG_HOME`*`/output/Agent_ID/`

Note that the `password.xml` file contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be different than the passphrase used on the server.

You can use the files generated by RREG to generate a certificate request and get it signed by a third-party Certification Authority. To install an existing certificate, you must use the existing `aaa_cert.pem` and `aaa_chain.pem` files along with `password.xml` and `aaa_key.pem`.

Copying Generated Artifacts to the Oracle HTTP Server WebGate Instance Location

After the RREG Tool generates the required artifacts, manually copy the artifacts from the *`RREG_Home`*`/output/`*`agent_ID`* directory to the Oracle HTTP Server configuration directory on the Web tier host.

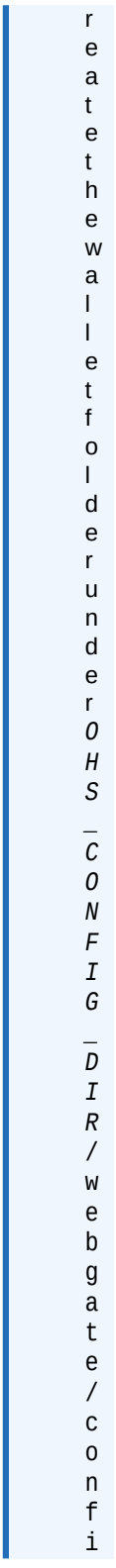
The location of the files in the Oracle HTTP Server configuration directory depends upon the Oracle Access Manager security mode setting (OPEN, SIMPLE, or CERT).

The following table lists the required location of each generated artifact in the Oracle HTTP Server configuration directory, based on the security mode setting for Oracle Access Manager. In some cases, you might have to create the directories if they do not exist already. For example, the wallet directory might not exist in the configuration directory.

> **Note:**
>
> For an enterprise deployment, Oracle recommends simple mode, unless additional requirements exist to implement custom security certificates for the encryption of authentication and authorization traffic. The information about using open or certification mode is provided here as a convenience.
>
> Avoid using open mode, because in open mode, traffic to and from the Oracle Access Manager server is not encrypted.
>
> For more information using certificate mode or about Oracle Access Manager supported security modes in general, see Securing Communication Between OAM Servers and WebGates in *Administrator's Guide for Oracle Access Management*.

File	Location When Using OPEN Mode	Location When Using SIMPLE Mode	Location When Using CERT Mode
wallet/cwallet.sso	*OHS_CONFIG_DIR*/webgate/config/wallet	*OHS_CONFIG_DIR*/webgate/config/wallet/	*OHS_CONFIG_DIR*/webgate/config/wallet/

Note: By default the wallet folder is not available. C

File	Location When Using OPEN Mode	Location When Using SIMPLE Mode	Location When Using CERT Mode
			

File	Location When Using OPEN Mode	Location When Using SIMPLE Mode	Location When Using CERT Mode
		g / .	
ObAccessClient.xml	*OHS_CONFIG_DIR*/webgate/config	*OHS_CONFIG_DIR*/webgate/config/	*OHS_CONFIG_DIR*/webgate/config/
password.xml	N/A	*OHS_CONFIG_DIR*/webgate/config/	*OHS_CONFIG_DIR*/webgate/config/
aaa_key.pem	N/A	*OHS_CONFIG_DIR*/webgate/config/simple/	*OHS_CONFIG_DIR*/webgate/config/
aaa_cert.pem	N/A	*OHS_CONFIG_DIR*/webgate/config/simple/	*OHS_CONFIG_DIR*/webgate/config/
aaa_chain.pem	N/A	N/A	*OHS_CONFIG_DIR*/webgate/config/

Note:

If you need to redeploy the ObAccessClient.xml to WEBHOST1 and WEBHOST2, delete the cached copy of ObAccessClient.xml and its lock file, ObAccessClient.xml.lck from the servers. The cache location on WEBHOST1 is:

OHS_DOMAIN_HOME/servers/ohs1/cache/

And you must perform the similar step for the second Oracle HTTP Server instance on WEBHOST2:

OHS_DOMAIN_HOME/servers/ohs2/cache/

Note:

aaa_chain.pem is generated when certificates are created for CERT mode.

Deleting the previous version files

After installing the newer version of Oracle HTTP Server Webgate, you must manually delete the older files in the configuration folder.

Complete the following steps:

1. Go to the *{Oracle_OAMWebGate1}*/webgate/ohs/config directory.
2. Delete the np*{previous_rel}*_wg.txt file.

Where, *{previous_rel}* is the version number of the previous release from which you have upgraded from.

Restarting the Oracle HTTP Server Instance

For information about restarting the Oracle HTTP Server instance, see Restarting Oracle HTTP Server Instances by Using WLST in *Administrator's Guide for Oracle HTTP Server*.

If you have configured Oracle HTTP Server in a WebLogic Server domain, you can also use Oracle Fusion Middleware Control to restart the Oracle HTTP Server instances. See Restarting Oracle HTTP Server Instances by Using Fusion Middleware Control in *Administrator's Guide for Oracle HTTP Server*.

3

Configuring Oracle Traffic Director WebGate for Oracle Access Manager

WebGate is installed by default along with Oracle Traffic Director. However, you still need to configure it.
A WebGate intercepts HTTP requests and forwards them to the Oracle Access Manager for authentication and authorization. WebGate gets installed by default when you install Oracle Traffic Director.

This appendix contains the following sections:

- Prerequisites for Configuring Webgate
- Configuring Oracle Traffic Director 12*c* WebGate
- Verifying the Configuration of Oracle Traffic Director 12*c* WebGate
- Getting Started with a New Oracle Traffic Director 12*c* WebGate
- Prerequisites for Configuring Webgate
  You need to install Oracle Access Manager (OAM) before configuring Oracle Traffic Director. Also, there are version and environment related limitations for installing OAM.
- Configuring Oracle Traffic Director 12c WebGate
- Verifying the Configuration of Oracle Traffic Director 12c WebGate
- Getting Started with a New Oracle Traffic Director 12c WebGate

Prerequisites for Configuring Webgate

You need to install Oracle Access Manager (OAM) before configuring Oracle Traffic Director. Also, there are version and environment related limitations for installing OAM.

Before you can configure Oracle Traffic Director 12c WebGate, you must install one of the following versions of Oracle Access Manager.

> **Note:**
>
> It is highly recommended that Oracle Access Manager is installed in its own environment and not on the same machine as WebLogic Server. Oracle Access Manager and WebLogic Server can be installed on the same machine if they are both 11g versions.

- *Oracle Fusion Middleware 12c Release 1(12.2.1.2)*
- *Oracle Fusion Middleware 12c Release 2(12.1.3)*

Configuring Oracle Traffic Director 12*c* WebGate

Complete the following steps after installing Oracle Traffic Director to configure Oracle Traffic Director 12*c* WebGate for Oracle Access Manager:

- **On UNIX**

1. Go to the *$(Oracle_Home)/webgate/otd/tools/deployWebGate* directory (Please note that `$(Oracle_Home)` is the location set as the OracleHome when installing Oracle Traffic Director) by running the following command:

   `cd` *`$(Oracle_Home)`*`/webgate/otd/tools/deployWebGate`

2. Run the following command to create the OTD WebGate Instance Directory from *$(Oracle_Home)*/webgate/otd/tools/deployWebGate:

   `./deployWebGateInstance -w` *`webgate_instanceDirectory`* `-oh` *`$(Oracle_Home)`* `-ws otd`

   In this command:

   – `$(Oracle_Home)` is the path to where Oracle Traffic Director has been installed.

     Example:

     `/home/oracle`

   – `webgate_instanceDirectory` is the location of the directory where you will copy the WebGate profile.

     Example:

     `$(Domain_Home)``/config/fmwconfig/components/OTD/instances/`*`Instance_Name`*

     (Please note that `$(Domain_Home)`is the path to the directory which contains the OTD domain.)

3. Set the environment variable `LD_LIBRARY_PATH` to *`WebGate_$(Oracle_Home)`*`/lib`

   For example:

   For Linux 64

   ```
   export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$(Oracle_Home)/lib
   ```

   For Windows

   ```
   set PATH=%(Oracle_Home)%\bin;%path%
   ```

4. Go to the following directory:

   For Unix-based platforms

   `$(Oracle_Home)/webgate/otd/tools/setup/InstallTools`

   For Windows

   `%(Oracle_Home)%\webgate\otd\tools\EditObjConf`

5. On the command line, run the following command for updating OTD conf files, such as `magnus.conf` and `obj.conf`.

For a standalone Oracle Traffic Director installation:

```
./EditObjConf -f Domain_Home/config/fmwconfig/components/OTD/
instances/Instance_Name/config/Instance_Name-obj.conf -w
webgate_instanceDirectory [-oh Oracle_Home] -ws otd
```

For a collocated Oracle Traffic Director installation:

```
./EditObjConf -f Domain_Home/config/fmwconfig/
components/OTD/Instance_Name/config/Instance_Name-obj.conf -w
webgate_instanceDirectory [-oh Oracle_Home] -ws otd
```

In this command:

- Oracle_Home is the path to the parent directory of a valid WebLogic Server installation, or to where Oracle Traffic Director is installed.

  Example:

  ```
  /home/oracle
  ```

- `webgate_instanceDirectory` is the location of the directory where you will copy the WebGate profile.

  Example:

  ```
  Domain_Home/config/fmwconfig/components/OTD/instances/
  Instance_Name
  ```

- **On Windows**

  1. Go to the *%Oracle_Home%\webgate\otd\tools\deployWebGate* directory by running the following command:

     ```
     cd %Oracle_Home%\webgate\otd\tools\deployWebGate
     ```

  2. Run the following command to copy the required bits of agent from the *%Oracle_Home%* directory to the *webgate_instanceDirectory* location:

     ```
     deployWebGateInstance.bat -w webgate_instanceDirectory [-oh
     Oracle_Home] -ws otd
     ```

     In this command:

     - `Oracle_Home` is the directory in which you have installed Oracle Traffic Director WebGate.

       Example:

       ```
       \home\oracle
       ```

     - `webgate_instanceDirectory` is the location of the directory where you will copy the WebGate profile.

       Example:

       ```
       Domain_Home/config/fmwconfig/components/OTD/instances/
       Instance_Name
       ```

  3. Run the following command to set the `PATH` environment variable:

     ```
     set %PATH%=%PATH%;%Oracle_Home%\webgate\otd\lib;%Oracle_Home%\bin
     ```

  4. Go to the following directory:

     ```
     %Oracle_Home%\webgate\otd\tools\EditObjConf
     ```

5. On the command line, run the following command for updating OTD conf files, such as `magnus.conf` and `obj.conf`.

   For a standalone Oracle Traffic Director installation:

   ```
   EditObjConf -f Domain_Home/config/fmwconfig/components/OTD/
   instances/Instance_Name/config/Instance_Name-obj.conf -w
   webgate_instanceDirectory [-oh $(Oracle_Home)] -ws otd
   ```

   For a collocated Oracle Traffic Director installation:

   ```
   ./EditObjConf -f Domain_Home/config/fmwconfig/
   components/OTD/Instance_Name/config/Instance_Name-obj.conf -w
   webgate_instanceDirectory [-oh $(Oracle_Home)] -ws otd
   ```

   In this command:

   – `Oracle_Home` is the directory in which you have installed Oracle Traffic Director WebGate for Oracle Access Manager.

     Example:

     ```
     \home\oracle
     ```

   – `webgate_instanceDirectory` is the location of the directory where you will copy the WebGate profile.

     Example:

     ```
     Domain_Home/config/fmwconfig/components/OTD/instances/
     Instance_Name
     ```

Verifying the Configuration of Oracle Traffic Director 12*c* WebGate

After installing Oracle Traffic Director 12 *c* WebGate for Oracle Access Manager and completing the configuration steps, you can examine the *installDATE-TIME_STAMP.out* log file to verify the installation. The default location of the log are as follows:

- **On UNIX**

  $(Oracle_Home)/oraInst.loc

- **On Windows**

  C:\Program Files\Oracle\Inventory\logs

Getting Started with a New Oracle Traffic Director 12*c* WebGate

Before you can use the new Oracle Traffic Director 12*c* WebGate agent for Oracle Access Manager, you must complete the following tasks:

1. Registering the New Oracle Traffic Director 12*c* WebGate
2. Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance Location

3. Restarting the Oracle Traffic Director Instance

- Registering the New Oracle Traffic Director 12c WebGate
- Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance Location
- Restarting the Oracle Traffic Director Instance

Registering the New Oracle Traffic Director 12*c* WebGate

You can register the new WebGate agent with Oracle Access Manager by using the Oracle Access Manager Administration console. For more information, see Registering an OAM Agent Using the Console in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*.

Alternatively, you can use the RREG command-line tool to register a new WebGate agent. You can use the tool to run in two modes: **In-Band** and **Out-Of-Band**.

This section contains the following topics:

- Setting Up the RREG Tool
- Updating the OAM11gRequest.xml File
- Using the In-Band Mode
- Using the Out-Of-Band Mode
- Files and Artifacts Generated by RREG
- Setting Up the RREG Tool
- Updating the OAM11gRequest.xml File
- Using the In-Band Mode
- Using the Out-Of-Band Mode
- Files and Artifacts Generated by RREG

Setting Up the RREG Tool

To set up the RREG tool, complete the following steps:

- **On UNIX**

  1. After installing and configuring Oracle Access Manager, go to the following directory:

     Oracle_IDM2/oam/server/rreg/client

  2. Untar the `RREG.tar.gz` file.

     Example:

     ```
     gunzip RREG.tar.gz
     ```

     ```
     tar -xvf RREG.tar
     ```

  The tool for registering the agent is located at:

  RREG_Home/bin/oamreg.sh

> **Note:**
>
> *RREG_Home* is the directory in which you extracted the contents of RREG.tar.gz/rreg.

- **On Windows**

  1. After installing and configuring Oracle Access Manager, go to the following location:

     Oracle_IDM2\oam\server\rreg\client

  2. Extract the contents of the RREG.tar.zip file to a destination of your choice.

The tool for registering the agent is located at:

RREG_Home\bin\oamreg.bat

> **Note:**
>
> *RREG_Home* is the directory in which you extracted the contents of RREG.tar.gz/rreg.

Set the following environment variables in the oamreg.sh script, on UNIX, and oamreg.bat script, on Windows:

- OAM_REG_HOME

  Set this variable to the absolute path to the directory in which you extracted the contents of RREG.tar/rreg.

- JDK_HOME

  Set this variable to the absolute path to the directory in which Java or JDK is installed on your machine.

Updating the OAM11gRequest.xml File

You must update the agent parameters, such as agentName, in the OAM11GRequest.xml file in the *RREG_Home*\input directory on Windows. On UNIX, the file is in the *RREG_Home*/input directory.

> **Note:**
>
> The OAM11GRequest.xml file or the short version OAM11GRequest_short.xml is used as a template. You can copy this template file and use it.

Modify the following required parameters in the OAM11GRequest.xml file or in the OAM11GRequest_short.xml file:

- serverAddress

Specify the host and the port of the OAM Administration Server.

- `agentName`

  Specify any custom name for the agent.

- `agentBaseUrl`

  Specify the host and the port of the machine on which Oracle Traffic Director 12c WebGate is installed.

- `preferredHost`

  Specify the host and the port of the machine on which Oracle Traffic Director 12*c* WebGate is installed.

- `security`

  Specify the security mode, such as `open`, based on the WebGate installed.

- `primaryServerList`

  Specify the host and the port of Managed Server for the Oracle Access Manager proxy, under a *`Server`* container element.

After modifying the file, save and close it.

Using the In-Band Mode

If you run the RREG tool once after updating the WebGate parameters in the `OAM11GRequest.xml` file, the files and artifacts required by WebGate are generated in the following directory:

On UNIX:

`RREG_Home``/output/`*`agent_name`*

On Windows:

`RREG_Home``\output\`*`agent_name`*

> **Note:**
>
> You can run RREG either on a client machine or on the server. If you are running it on the server, you must manually copy the artifacts back to the client.

Complete the following steps:

1. Open the `OAM11GRequest.xml` file, which is in *`RREG_Home`*`/input/` on UNIX and *`RREG_Home`*`\input` on Windows. *`RREG_Home`* is the directory on which you extracted the contents of `RREG.tar.gz/rreg`.

   Edit the XML file and specify parameters for the new Oracle Traffic Director WebGate for Oracle Access Manager.

2. Run the following command:

   On UNIX:

   `./`*`RREG_Home`*`/bin/oamreg.sh inband input/OAM11GRequest.xml`

On Windows:

```
RREG_Home\bin\oamreg.bat inband input\OAM11GRequest.xml
```

Using the Out-Of-Band Mode

If you are an end user with no access to the server, you can e-mail your updated `OAM11GRequest.xml` file to the system administrator, who can run RREG in the out-of-band mode. You can collect the generated *AgentID*`_Response.xml` file from the system administrator and run RREG on this file to obtain the WebGate files and artifacts you require.

After you receive the generated *AgentID*`_Response.xml` file from the administrator, you must manually copy the file to the `input` directory on your machine.

- **On UNIX**

  Complete the following steps:

  1. If you are an end user with no access to the server, open the `OAM11GRequest.xml` file, which is in *RREG_Home*`/input/`.

     RREG_Home is the directory on which you extracted the contents of `RREG.tar.gz/rreg`. Edit this XML file and specify parameters for the new Oracle Traffic Director WebGate for Oracle Access Manager. Send the updated file to your system administrator.

  2. If you are an administrator, copy the updated `OAM11GRequest.xml` file, which is in *RREG_Home*`/input/` directory.

     This is the file that you received from the end user. Go to your (administrator's) *RREG_Home* directory and run the following command:

     ```
     ./RREG_Home/bin/oamreg.sh outofband input/OAM11GRequest.xml
     ```

     An *Agent_ID*`_Response.xml` file is generated in the `output` directory on the administrator's machine, in the *RREG_Home*`/output/` directory. Send this file to the end user who sent you the updated `OAM11GRequest.xml` file.

  3. If you are an end user, copy the generated *Agent_ID*`_Response.xml` file, which is in *RREG_Home*`/input/`.

     This is the file that you received from the administrator. Go to your (client's) RREG home directory and run the following command on the command line:

     ```
     ./RREG_Home/bin/oamreg.sh outofband input/Agent_ID_Response.xml
     ```

> **Note:**
>
> If you register the WebGate agent by using the Oracle Access Manager Administration Console, as described in "Registering an OAM Agent Using the Consolein the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*, you must manually copy the files and artifacts generated after the registration from the server (the machine on which the Oracle Access Manager Administration Console is running) to the client machine. The files and artifacts are generated in the *$(Oracle_Home)*`/user_projects/domains/`*name_of_the_WebLogic_domain_for_OAM*`/output/`*Agent_ID* directory.

- **On Windows**

  Complete the following steps:

  1. If you are an end user with no access to the server, open the `OAM11GRequest.xml` file, which is in *`RREG_Home`*`\input\` directory.

     `RREG_Home` is the directory in which you extracted the contents of `RREG.tar.gz/rreg`. Edit this XML file, specify parameters for the new Oracle Traffic Director WebGate for Oracle Access Manager, and send the updated file to your system administrator.

  2. If you are an administrator, copy the updated `OAM11GRequest.xml` file, which is in *`RREG_Home`*`\input\`. This is the file you received from the end user. Go to your (administrator's) *`RREG_Home`* directory and run the following command:

     `RREG_Home``\bin\oamreg.bat outofband input\OAM11GRequest.xml`

     An *`Agent_ID`*`_Response.xml` file is generated on the administrator's machine in the *`RREG_Home`*`\output\` directory. Send this file to the end user who sent you the updated `OAM11GRequest.xml` file.

  3. If you are an end user, copy the generated *`Agent_ID`*`_Response.xml` file, which is in *`RREG_Home`*`\input\`. This is the file you received from the administrator. Go to your (client's) RREG home directory and run the following command:

     `RREG_Home``\bin\oamreg.bat outofband input\`*`Agent_ID`*`_Response.xml`

> **Note:**
>
> If you register the WebGate agent by using the Oracle Access Manager Administration Console, as described in "Registering an OAM Agent Using the Console in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*, you must manually copy the files and artifacts generated after the registration from the server (the machine on which the Oracle Access Manager Administration Console is running) to the client machine. The files and artifacts are generated in the *`$(Oracle_Home)`*`/user_projects/domains/`*`name_of_the_WebLogic_domain_for_OAM`*`/output/`*`Agent_ID`* directory.

Files and Artifacts Generated by RREG

Regardless of the method or mode you use to register the new WebGate agent, the following files and artifacts are generated in the *`RREG_Home`*`/output/`*`Agent_ID`* directory:

- `wallet/cwallet.sso`
- `cwallet.sso`
- `ObAccessClient.xml`
- In the **SIMPLE** mode, RREG generates:
  - `password.xml`, which contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be the same as the passphrase used on the server.
  - `aaa_key.pem`

  - `aaa_cert.pem`

- In the **CERT** mode, RREG generates `password.xml`, which contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be different than the passphrase used on the server.

> **Note:**
>
> You can use these files generated by RREG to generate a certificate request and get it signed by a third-party Certification Authority. To install an existing certificate, you must use the existing `aaa_cert.pem` and `aaa_chain.pem` files along with `password.xml` and `aaa_key.pem`.

Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance Location

After RREG generates these files and artifacts, you must manually copy them, based on the security mode you are using, from the *`RREG_Home`*`/output/`*`Agent_ID`* directory to the `webgate_instanceDirectory` directory.

Do the following according to the security mode you are using:

- In **OPEN** mode, copy the following files from the *`RREG_Home`*`/output/`*`Agent_ID`* directory to the *`webgate_instanceDirectory`*`/webgate/config` directory:
  - `wallet/cwallet.sso`
  - `ObAccessClient.xml`
  - `cwallet.sso`
- In **SIMPLE** mode, copy the following files from the *`RREG_Home`*`/output/`*`Agent_ID`* directory to the *`webgate_instanceDirectory`*`/webgate/config` directory:
  - `ObAccessClient.xml`
  - `cwallet.sso`
  - `password.xml`

  In addition, copy the following files from the *`RREG_Home`*`/output/`*`Agent_ID`* directory to the *`webgate_instanceDirectory`*`/webgate/config/simple` directory:
  - `aaa_key.pem`
  - `aaa_cert.pem`
- In **CERT** mode, copy the following files from the *`RREG_Home`*`/output/`*`Agent_ID`* directory to the *`webgate_instanceDirectory`*`/webgate/config` directory:
  - `ObAccessClient.xml`
  - `cwallet.sso`
  - `password.xml`
- Generating a New Certificate
- Migrating an Existing Certificate

Generating a New Certificate

You can generate a new certificate as follows:

1. Go to the *$(Oracle_Home)/webgate/otd/tools/openssl* directory.
2. Create a certificate request as follows:

   ```
   ./openssl req -utf8 -new -nodes -config openssl_silent_otd11g.cnf -
   keyout aaa_key.pem -out aaa_req.pem -rand $(Oracle_Home)/webgate/otd/
   config/random-seed/
   ```

3. Self-sign the certificate as follows:

   ```
   ./openssl ca -config openssl_silent_otd11g.cnf -policy policy_anything
   -batch -out aaa_cert.pem -infiles aaa_req.pem
   ```

4. Copy the following generated certificates to the *webgate_instanceDirectory*/webgate/config directory:
   - aaa_key.pem
   - aaa_cert.pem
   - cacert.pem located in the simpleCA directory

> **Note:**
>
> After copying the cacert.pem file, you must rename the file to aaa_chain.pem.

Migrating an Existing Certificate

If you want to migrate an existing certificate (aaa_key.pem, aaa_cert.pem, and aaa_chain.pem), ensure that you use the same passphrase that you used to encrypt aaa_key.pem. You must enter the same passphrase during the RREG registration process. If you do not use the same passphrase, the password.xml file generated by RREG does not match the passphrase used to encrypt the key.

If you enter the same passphrase, you can copy these certificates as follows:

1. Go to the *webgate_instanceDirectory*/webgate/config directory.
2. Copy the following certificates to the *webgate_instanceDirectory*/webgate/config directory:
   - aaa_key.pem
   - aaa_cert.pem
   - aaa_chain.pem

Restarting the Oracle Traffic Director Instance

For information about restarting the Oracle Traffic Director instance, see "Starting, Stopping, and Restarting Oracle Traffic Director Instances by Using WLST" in *Administering Oracle Traffic Director*.

If you have configured Oracle Traffic Director in a WebLogic Server domain, you can also use Oracle Fusion Middleware Control to restart the Oracle Traffic Director Instances. For more information, see "Starting, Stopping, and Restarting Oracle Traffic Director Instances Using Fusion Middleware Control" in *Administering Oracle Traffic Director*.

For a standalone instance, you can restart from *`Domain_Home`*`/config/fmwconfig/components/OTD/instances/`*`Instance_Name`*`/bin` using the `./restart` command.

4

Adding Trusted Certificate for SIMPLE and CERT Mode communication

To add a trusted certificate for SIMPLE and CERT mode communication, you must perform following steps for a new WebGate profile created:

> **Note:**
>
> The orapki utility is used for adding trusted certificate in wallet.

1. Go to webgate_instanceDirectory/webgate/config/wallet directory.
2. Set JAVA_HOME variable to the absolute path of the directory in which Java or JDK is installed.
3. Run the following command to display the wallet content before adding the certificate

   <MW_HOME>/oracle_common/bin/orapki wallet display -wallet ./
4. Perform the following steps to add the trusted certificate in wallet:
   - Run the following command to add the trusted certificate in SIMPLE mode:

     ```
     <MW_HOME>/oracle_common/bin/orapki wallet -wallet ./ -trusted_cert
     -cert webgate_installDirectory/tools/openssl/simpleCA/cacert.pem -
     auto_login_only
     ```
   - Run the following command to add the trusted certificate in CERT mode:

     ```
     <MW_HOME>/oracle_common/bin/orapki wallet -wallet ./ -trusted_cert
     -cert webgate_instanceDirectory/webgate/config/aaa_chain.pem -
     auto_login_only
     ```
5. Run the following command to verify the certificate added:

   ```
   <MW_HOME>/oracle_common/bin/orapki wallet display -wallet ./
   ```

5

Upgrading to OHS/OTD 12c WebGate

After upgrading from OHS 11g WebGate to OHS 12c WebGate or OTD 11g WebGate to OTD 12c WebGate, you must perform either of the following steps:

- Create a new WebGate profile and copy the new WebGate artificats to WebGate. See Regenerating, Copying, and Configuring the WebGate Artifacts.

  OR

- Manually add `SHA256` certificate to the existing WebGate `cwallet.sso` after deleting `md5 cert`.

> **Note:**
>
> OHS WebGate is included as part of the Oracle HTTP Server 12c installation and is upgraded as part of the Oracle HTTP Server upgrade process through Upgrade Assistant. For more information, see Upgrading Oracle HTTP Server from 11g to 12c and Upgrading Oracle HTTP Server from a Previous 12c Release.
>
> OTD WebGate is included as part of Oracle Traffic Director 12c installation and is upgraded as part of the Oracle Traffic Director upgrade process through Upgrade Assistant. For more information, see Upgrading Oracle Traffic Director from 11g Release and Upgrading Oracle Traffic Director from an Earlier or a Previous 12c Release.

This section contains following topic:

- Regenerating, Copying, and Configuring the WebGate Artifacts

Regenerating, Copying, and Configuring the WebGate Artifacts

This section provides information about regenerating, copying, and configuring the WebGate artifacts:

Regenerating the WebGate Artifacts

You can regenerate the WebGate artifacts by making the minor change to the WebGate that you want to regenerate.

Following are the steps to regenerate the WebGate artifacts:

1. Log in to the OAM Console.
2. Click **Agents**.

3. Search for the **Agent** you are interested in, and then click on it to bring up the **configuration** page. For example: Webgate_IDM_11g.
4. Change one of the existing values and click **Apply** (you can always change it back and apply again). This will regenerate the Agent forcefully.
5. Click **Download**. The Agent Config will be downloaded to your machine.

Copying Artifacts to the WEBHOSTs

Copy the file that was downloaded on your host for each of the WebGate machines.

Configuring the WebGate

Log in to each of your WEBHOSTs and use the uploaded file to configure the WebGates.

Following are the steps to configure the WebGates:

1. Change Directory to the WebGate configuration directory.

   For example:

   ```
   cd /u02/private/oracle/config/domains/ohsDomain/config/fmwconfig/
   components/OHS/ohs1/webgate
   ```

2. Unzip the file you uploaded. You should place the files in the correct location inside the config.

> **Note:**
>
> If you need to redeploy the `ObAccessClient.xml` to WEBHOST1 and WEBHOST2, delete the cached copy of `ObAccessClient.xml` and its lock file, and `ObAccessClient.xml.lck` from the servers.
>
> The cache location on WEBHOST1 is: `WEB_DOMAIN_HOME/servers/ohs1/cache/`.

3. Restart the Oracle HTTP Server.