

Web Server Configuration Guide

Appeon® PowerServer® 2017
FOR WINDOWS & UNIX & LINUX

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1 About This Book

1.1 Audience

This book is for programmers who want to configure IIS or Apache to work with the PowerServer.

1.2 How to use this book

There are three chapters in this book.

Chapter 1: About This Book

A general description of this book.

Chapter 2: Configuring IIS

Describes how to configure IIS for different platforms and application servers.

Chapter 3: Configuring Apache

Describes how to configure Apache for different platforms and application servers.

1.3 Related documents

Appeon provides the following user documents to assist you in understanding Appeon PowerServer and its capabilities:

- **Introduction to Appeon:**
Gives general introduction to Appeon PowerServer and its editions.
- **Getting Started (for PowerServer Mobile):**
Guides you through installing PowerBuilder and Appeon PowerServer, and developing and deploying a mobile application.
- **New Features Guide:**
Introduces new features and changes in Appeon PowerServer.
- **PowerServer Mobile Tutorials:**
Gives instructions on deploying, running, and debugging the mobile application, distributing native mobile apps, and configuring the PowerServer cluster.
- **PowerServer Mobile (Offline) Tutorials:**
Gives instructions on setting up the PowerServer Mobile (Offline) environment, and configuring, deploying, running, updating, and debugging the offline application.
- **Appeon Installation Guide:**
Provides instructions on how to install Appeon PowerServer successfully.
- **Mobile UI Design & Development Guide:**
Introduces general guidelines on designing and developing the mobile app and UI.

- **Migration Guidelines for PowerServer Web:**

A process-oriented guide that illustrates the complete diagram of the Apeon Web migration procedure and various topics related to steps in the procedure, and includes a tutorial that walks you through the entire process of deploying a small PowerBuilder application to the Web.
- **Supported PB Features:**

Provides a detailed list of supported PowerBuilder features which can be converted to the Web/Mobile with Apeon as well as which features are unsupported.
- **PowerServer Toolkit User Guide:**

Provides instructions on how to use the PowerServer Toolkit in Apeon PowerServer.
- **Workarounds & API Guide:**

Provides resolutions for unsupported features and various APIs to facilitate you to implement the features (including Web and mobile) that are not easy or impossible to implement in the PowerBuilder IDE.
- **Apeon Workspace User Guide:**

Gives a general introduction on Apeon Workspace and provides detailed instructions on how to use it.
- **PowerServer Configuration Guide:**

Provides instructions on how to configure PowerServer Monitor, establish connections between PowerServer and database servers, and configure AEM for maintaining PowerServer and the deployed applications.
- **Web Server Configuration Guide:**

Describes configuration instructions for different types of Web servers to work with the PowerServer.
- **Troubleshooting Guide:**

Provides information on troubleshooting issues; covering topics, such as product installation, application deployment, AEM, and Apeon application runtime issues.
- **Apeon Performance Tuning Guide:**

Provides instructions on how to modify a PowerBuilder application to achieve better performance from its corresponding Web/mobile application.
- **Testing Apeon Web Applications with UFT:**

Provides instructions on how to test Apeon Web applications with UFT.

1.4 If you need help

If you have any questions about this product or need assistance during the installation process, access the Technical Support Web site at <http://www.appeon.com/support>.

2 Configuring IIS

This section provides instructions of

- [Configuring for PowerServer cluster](#)

Detailed instructions are provided in Chapter 6, *Tutorial 5: Configure PowerServer Cluster* in *PowerServer Mobile Tutorials*.

- [Configuring for single PowerServer](#)

Each sub-section will try to cover the following aspects:

- Redirector plug-in configuration, which enables Web server to redirect requests to a PowerServer.
- Load balancing configuration. Load balancing can be implemented using the Web server redirector plug-in or the Apeon plug-in. This section will only describe how to implement load balancing with multiple PowerServer (not PowerServer cluster) using the Web server redirector plug-in. Description of implementing load balancing (and failover) with PowerServer cluster using the Apeon plug-in will be described in the [Configuring for PowerServer cluster](#) section.
- DataWindow data cache configuration. The Web server must be configured properly to support the DataWindow data cache feature.

2.1 Configuring for PowerServer cluster

PowerServer cluster is a feature provided by Apeon for implementing load balancing and failover with the Apeon plug-in. It will not interfere with the existing application server cluster, such as WebLogic, WebSphere, JBoss, or JEUS cluster.

For detailed instructions on configuring IIS with the PowerServer cluster, please refer to Chapter 6, *Tutorial 5: Configure PowerServer Cluster* in *PowerServer Mobile Tutorials*. The instructions are exactly the same for both PowerServer Web and PowerServer Mobile.

2.2 Configuring for single PowerServer

This section provides configuration for IIS with single PowerServer. Each sub-section will try to cover the following aspects:

- Redirector plug-in configuration, which enables Web server to redirect requests to a PowerServer.
- Load balancing configuration. Load balancing can be implemented using the Web server redirector plug-in or the Apeon plug-in. This section will only describe how to implement load balancing with multiple PowerServer (not PowerServer cluster) using the Web server redirector plug-in. Description of implementing load balancing (and failover) with PowerServer cluster using the Apeon plug-in will be described in the [Configuring for PowerServer cluster](#) section.
- DataWindow data cache configuration. For some reason, the Web server must be configured to support the DataWindow data cache feature.

2.2.1 Configuring IIS with .NET

Note: the configuration files and the DLL files used here are actually the same as those used in the PowerServer cluster, therefore even though their file names contain text like "cluster", it does not necessarily mean they are for the PowerServer cluster only, they are also applicable to a single PowerServer or multiple PowerServer (not PowerServer cluster).

Choose an existing Web site, or create a new site. The **Default Web Site** will be used as examples in the following guide.

1. Installing PowerServer Web component to the Web root of the IIS server.

Make sure you have installed PowerServer Web Component to the Web root of the IIS server. To verify it, go to the IIS Web root (by default C:\inetpub\wwwroot) and check if there is an **apeon** folder which at least contains the **IISSupport** and **weblibrary_ax** sub-folders. If any folder is missing, go to the default installation directory of PowerServer Web Component (C:\Program Files\Apeon\WebComponent2017) and manually copy the entire **apeon** folder to the IIS Web root.

2. Creating a virtual directory.

Step 1: Open **Control Panel | Administrative Tools | Internet Information Service (IIS) Manager**.

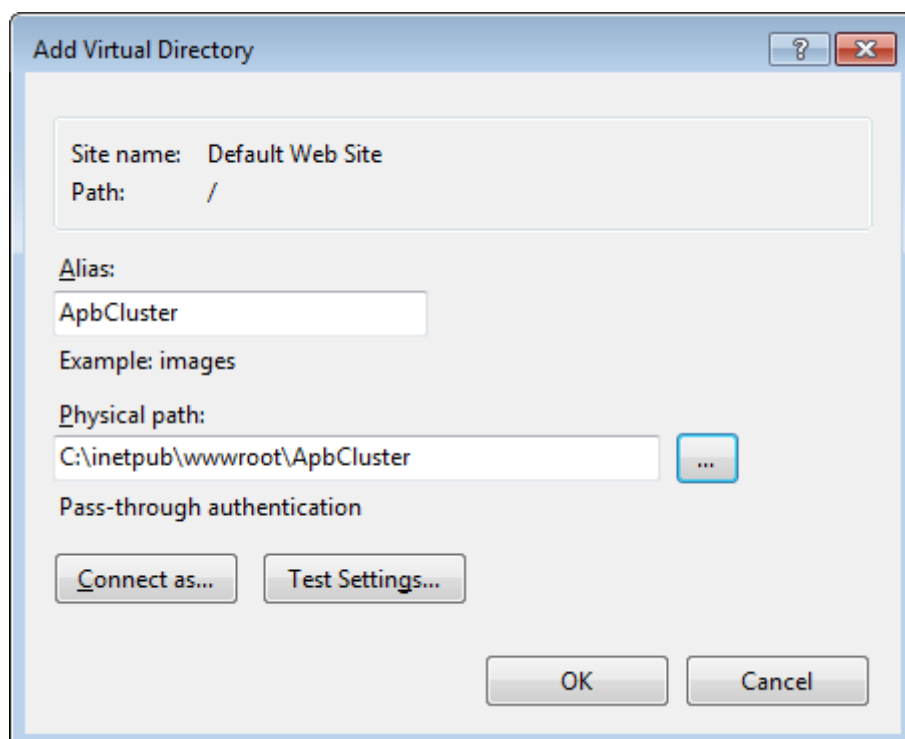
Step 2: Right click the **Default Web Site** and select **Add Virtual Directory**.

Step 3: Input the alias name, for example, "**ApbCluster**".

Step 4: Choose a local path in the **Physical path** box; for example, "**C:\inetpub\wwwroot\ApbCluster**".

Step 5: Click **OK**.

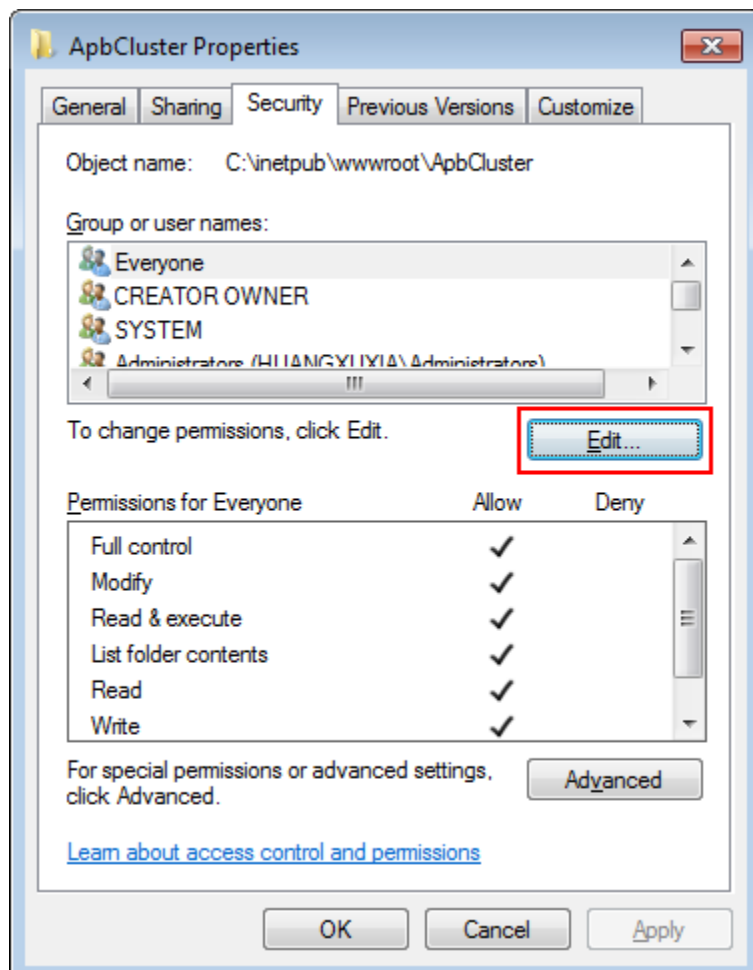
Figure 2.1: Add virtual directory



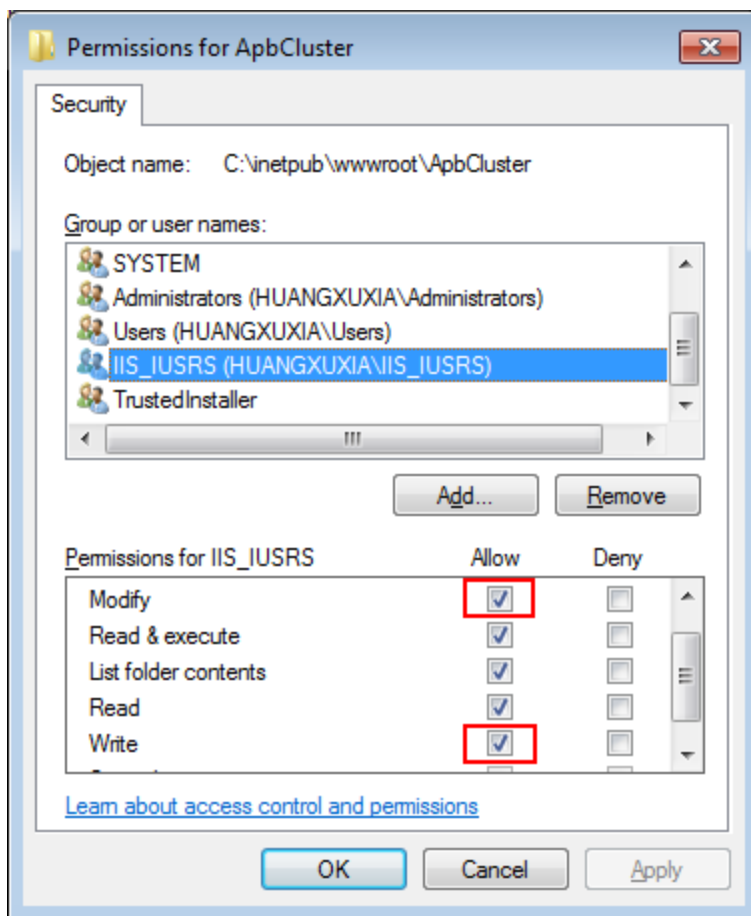
Step 6: Right click the **ApbCluster** virtual directory and select **Edit Permissions**.

Step 7: Choose the **Security** tab, and then click the **Edit** button.

Figure 2.2: ApbCluster properties



Step 8: Select **IIS_IUSRS**, for example, **IIS_IUSRS (HUANGXUXIA\IIS_IUSRS)** from the **Group or user names** list, and then select the **Allow** check box for **Modify** and **Write** in the **Permissions for IIS_IUSRS** list.

Figure 2.3: ApbCluster permissions

Step 9: Click **OK** to go back to the IIS window.

3. Copying the Apeon plug-in (**ApbCluster.dll** or **ApbCluster64.dll**).

Copy the **ApbCluster.dll** (for 32-bit OS) or **ApbCluster64.dll** (for 64-bit OS) plug-in from **apeon\IISsupport\modules** to the newly created virtual directory (**C:\inetpub\wwwroot\ApbCluster** in this guide).

In the 64-bit OS, you can either use **ApbCluster.dll** or **ApbCluster64.dll**. If you use **ApbCluster.dll**, you will need to set the **Enable 32-Bit Applications** to **True** for the application pool used by the current Web site. If you use **ApbCluster64.dll**, then set this option to **False**.

4. Creating the Apeon cluster configuration file (**cluster-config.xml**).

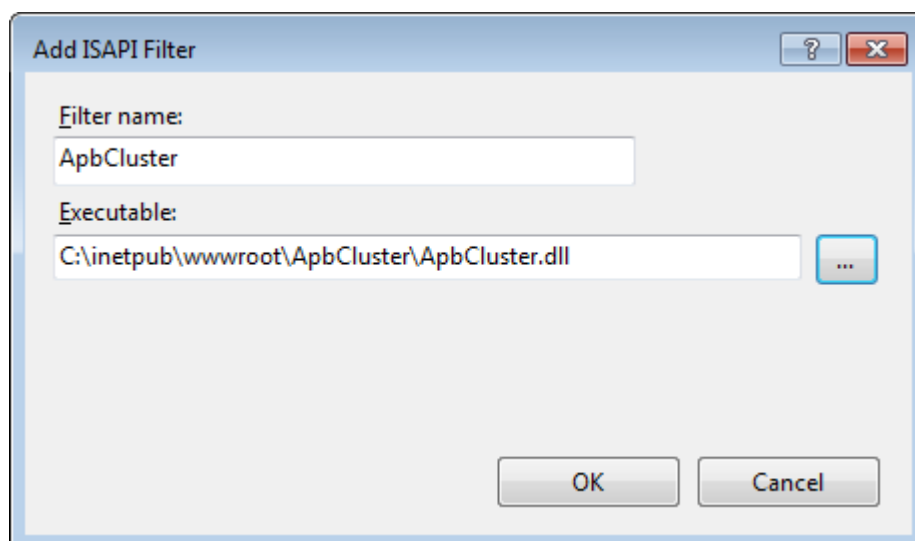
Create the **cluster-config.xml** file in the newly created virtual directory (**C:\inetpub\wwwroot\ApbCluster** in this guide). The **cluster-config.xml** file acts as the redirector configuration file which helps the Web server redirect requests to the PowerServer according to the IP addresses/ports of PowerServer, and the load balancing algorithm that it stores.

```
<?xml version="1.0" encoding="UTF-8" ?>
<cluster-config local="true" log="debug" timeout="30" polling="5"
  arithmetic="sequence">
  <extention>/ApbCluster/ApbCluster.dll</extention>
```

```
<filters>
  <filter>/AEM</filter>
  <filter>/servlet</filter>
  <filter>/reportfile</filter>
  <filter>/imagefile</filter>
  <filter>/dwfile</filter>
  <filter>/ajsdown</filter>
</filters>
<app-servers>
  <app-server host="192.0.0.168" port="88" />
  <app-server host="192.0.3.131" port="80" />
  <app-server host="192.0.3.145" port="80" />
</app-servers>
</cluster-config>
```

Notes:

- **local** specifies whether to read the configurations on the local server or the cloud server. For the cloud server, set **Local** to **False**.
 - **log** specifies the level of information to be recorded in the log file. It can be set to the following level: **debug**, **info**, **warning**, **error**, or **off**.
 - **timeout** specifies the number of seconds the Web server waits between sending an HTTP request to PowerServer and receiving information from it. The HTTP connection timeout value is 2 times of this value.
 - **polling** indicates the number of seconds when the configurations will be read again.
 - **arithmetic**="random" indicates that the random algorithm is used to pick a PowerServer; **arithmetic**="sequence" indicates that the round-robin algorithm is used.
 - **extention** specifies the location of the virtual directory which contains ApbCluster.dll (or ApbCluster64.dll), that is */virtual-directory-alias-name/ApbCluster.dll* (**ApbCluster/ApbCluster.dll** in this guide).
 - **filter** specifies the type of pages to redirect.
 - **host** indicates the IP address (recommended) or machine name of the PowerServer.
 - **port** indicates the port number of the PowerServer.
5. Installing the Apeon plug-in as ISAPI Filters.
- Step 1: Open **Control Panel | Administrative Tools | Internet Information Services (IIS) Manager**.
- Step 2: Select **Default Web Site** and then double-click **ISAPI Filters** on the right side.
- Step 3: Right-click the blank area on the **ISAPI Filters** page, and click **Add**.
- Step 4: Input **ApbCluster** in the **Filter name** box and specify **ApbCluster.dll** (or **ApbCluster64.dll**) as the ISAPI filter in the **Executable** box (**C:\inetpub\wwwroot\ApbCluster\ApbCluster.dll** in this guide). Click **OK**.

Figure 2.4: Add ISAPI filter

6. Copying the redirector configuration file (**ApbCluster.cfg**).

Copy the **ApbCluster.cfg** redirector configuration file from **apeon\IISsupport\conf** to the virtual directory (**C:\inetpub\wwwroot\ApbCluster** in this guide) and edit the file when necessary.

```
Extension_URI=/ApbCluster/ApbCluster.dll
MatchExpression=/AEM
MatchExpression=/servlet
MatchExpression=/reportfile
MatchExpression=/imagefile
MatchExpression=/dwfile
MatchExpression=/ajsdown
Log=On
```

Notes:

- The **Extension_URI** command points to the virtual directory where **ApbCluster.dll** (or **ApbCluster64.dll**) resides, that is */virtual-directory-alias-name/ApbCluster.dll* (**ApbCluster/ApbCluster.dll** in this guide).
- The **MatchExpression** command specifies the pages to be redirected.
- The **Log** command specifies whether logging is enabled. On indicates logging is enabled; Off indicates logging is disabled.
- The commands and parameters are case insensitive.

7. Setting ISAPI and CGI Restrictions.

Step 1: Open **Control Panel | Administrative Tools | Internet Information Services (IIS) Manager**.

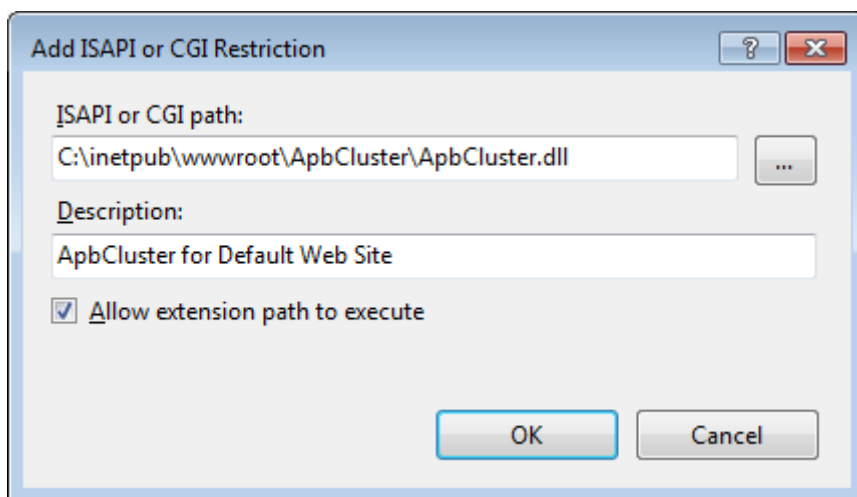
Step 2: Select the local machine (the top node), and then double-click **ISAPI and CGI Restrictions** on the right side.

Step 3: Right-click the blank area of the **ISAPI and CGI Restrictions** page and click **Add**.

Step 4: Specify the local path of **ApbCluster.dll** (or **ApbCluster64.dll**) in the **ISAPI or CGI path** box and input the descriptive text in the **Description** box, and then select **Allow extension path to execute**.

Step 5: Click **OK**.

Figure 2.5: Add ISAPI or CGI



8. Enabling ISAPI-dll.

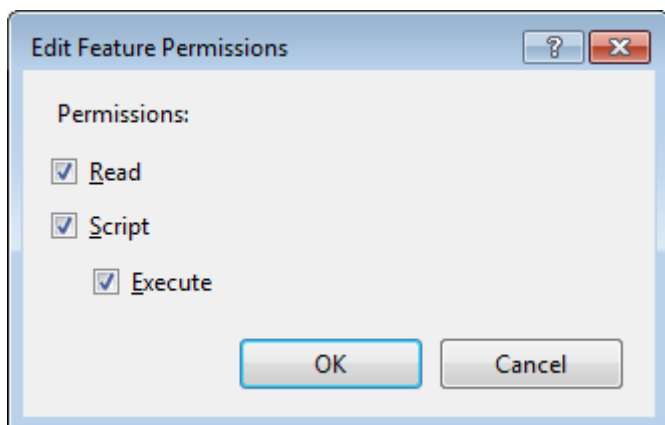
Step 1: Open **Control Panel | Administrative Tools | Internet Information Services (IIS) Manager**.

Step 2: Expand **Default Web Site**, select **ApbCluster**, and then double-click **Handler Mappings** on the right side.

Step 3: Right-click **ISAPI-dll**, and select **Edit Feature Permissions**.

Step 4: Select **Read, Script, Execute**, and click **OK**.

Figure 2.6: Edit feature permissions



9. Adding MIME type for loading the pages without extension names or pages without MIME types defined.

Step 1: Select **Default Web Site** and then double-click **MIME Types** on the right of the page.

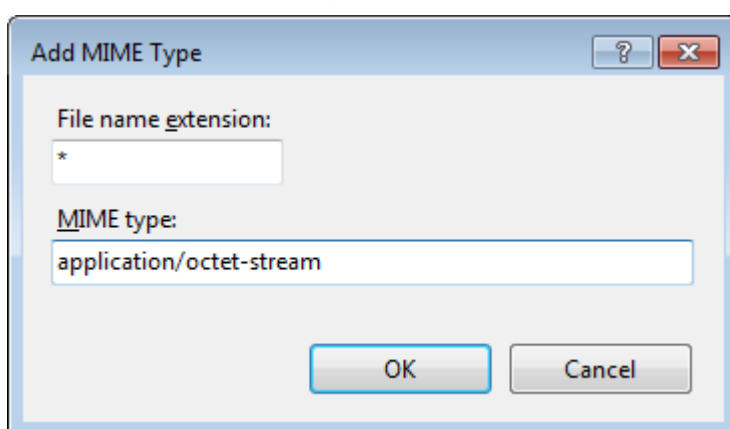
Step 2: Right-click the blank area of the **MIME Types** page, and click **Add**.

Step 3: Specify the following settings:

- Extension: *
- MIME Type: application/octet-stream

Step 4: Click **OK**.

Figure 2.7: Add MIME type



10. Restarting IIS.

Restart IIS to make the new settings effective.

2.2.2 Configuring IIS with JBoss

The **Default Web Site** of the IIS server is used as examples in this section. You can choose another existing Web site, or create a new Web site.

2.2.2.1 Installing PowerServer Web Component to the IIS Web root

Run the Apeon setup program and install **PowerServer Web Component** to the Web root of the IIS Web site, for example, the Web root for the **Default Web site** is **C:\Inetpub\wwwroot**.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire "**apeon**" folder from the installation directory of PowerServer Web Component to the IIS Web root.

2.2.2.2 Creating a virtual directory

Step 1: Open **Control Panel | Administrative Tools | Internet Information Service (IIS) Manager**.

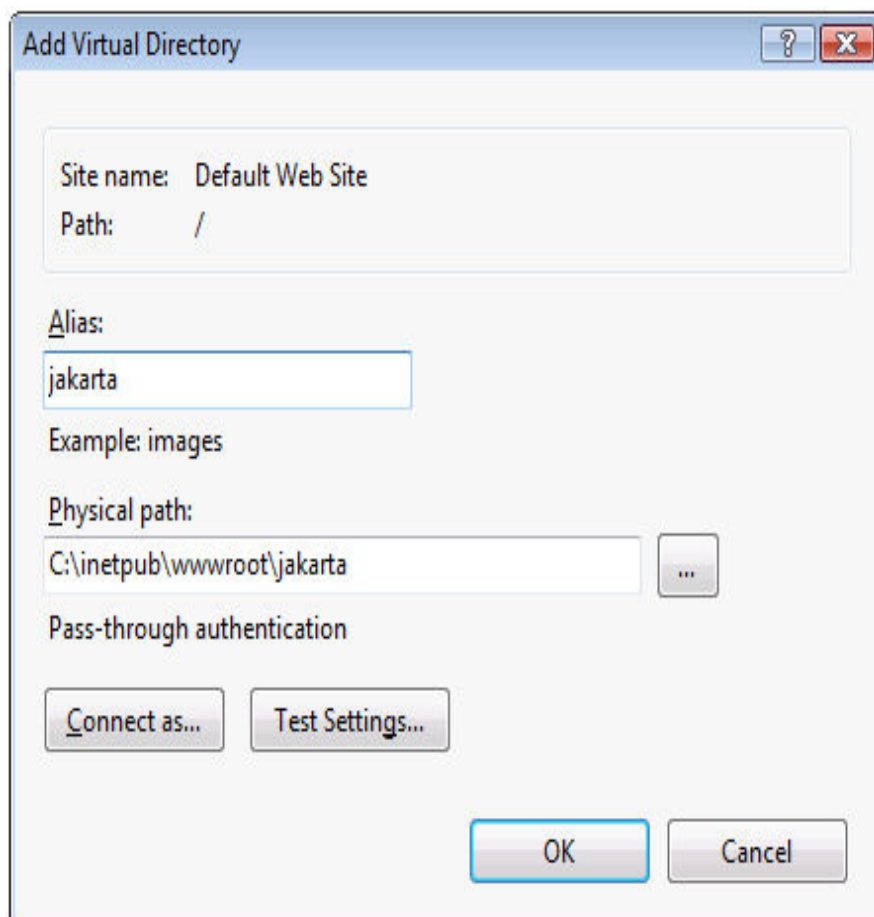
Step 2: Right click the **Default Web Site** and select **Add Virtual Directory**.

Step 3: Input the alias name, for example, **jakarta**.

Step 4: Choose a local path in the **Physical path** box, for example, **C:\inetpub\wwwroot\jakarta**.

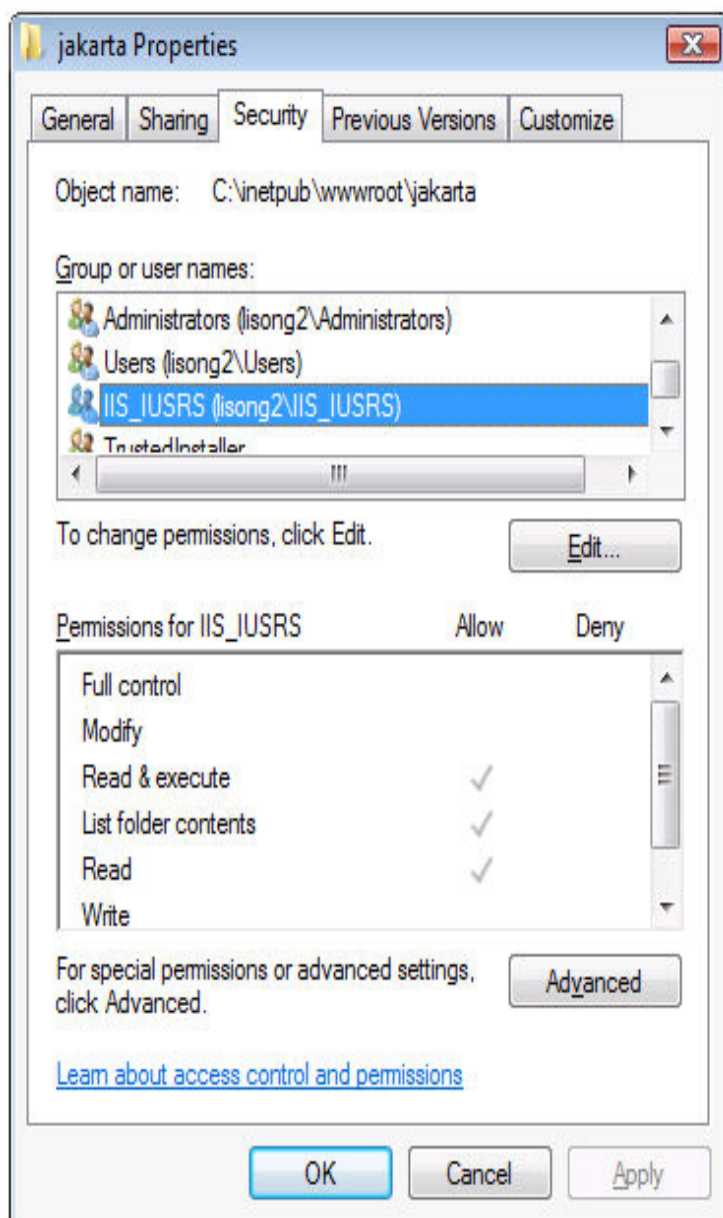
Step 5: Click **OK**.

Figure 2.8: Add virtual directory

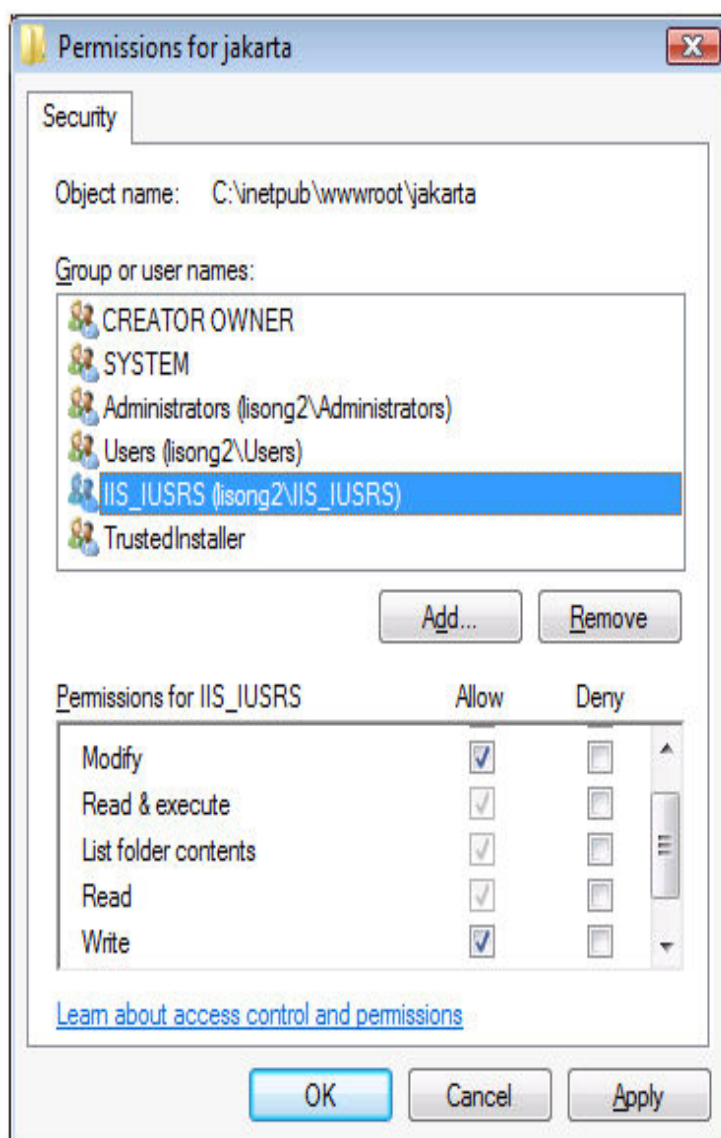


Step 6: Right click the **jakarta** virtual directory and select **Edit Permissions**.

Step 7: Choose the **Security** tab page, select **IIS_IUSRS (WIN-TDTR6ISYCD \IIS_IUSRS)** in the **Group or user names** list box, and then click the **Edit** button.

Figure 2.9: jakarta properties

Step 8: Select **IIS_IUSRS (WIN-TDTR6ISIIYCD\IIS_IUSRS)** in the **Group or user names** list box, and then select **Modify** and **Write** in the **Allow** column of the **Permissions for IIS_IUSRS** list box.

Figure 2.10: permissions for jakarta

Step 9: Click **OK** to go back to the IIS window.

2.2.2.3 Copying plug-in (isapi_redirect.dll)

Step 1: Download the required plug-in from <http://archive.apache.org/dist/jakarta/tomcat-connectors/jk/binaries/win32>.

Step 2: Paste it to the newly created virtual directory: **C:\inetpub\wwwroot\jakarta** in this section.

2.2.2.4 Installing plug-in as ISAPI Filters

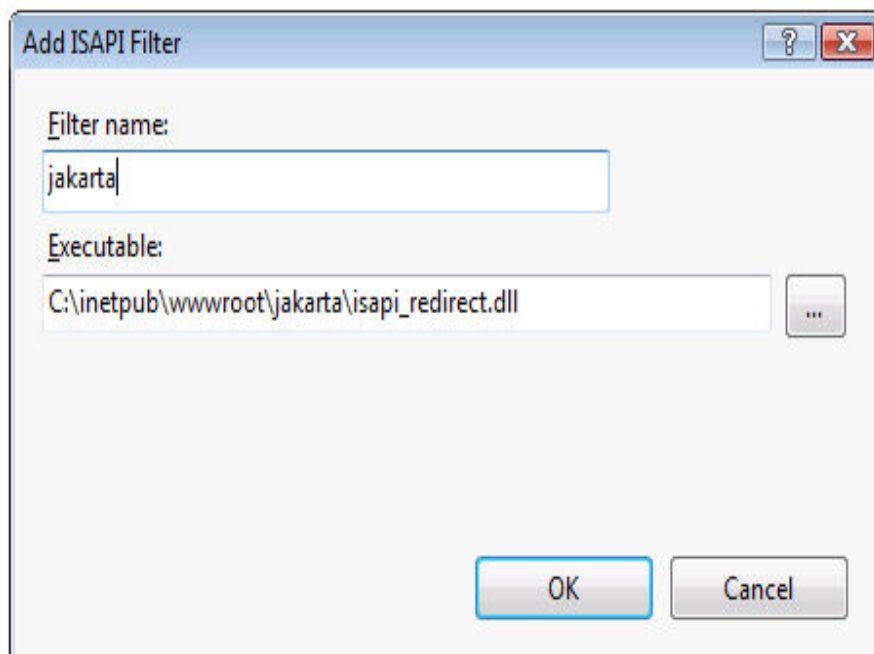
Step 1: Open **Control Panel | Administrative Tools | Internet Information Service (IIS) Manager**.

Step 2: Click the **Default Web Site** and then double-click **ISAPI Filters** on the right side.

Step 3: Right-click the blank area on the **ISAPI Filters** page, and click **Add**.

Step 4: Input **jakarta** in the **Filter name** box and select **isapi_redirect.dll** as the ISAPI filter in the **Executable** box (C:\inetpub\wwwroot\jakarta\isapi_redirect.dll in this section). Click **OK**.

Figure 2.11: Add ISAPI filter



2.2.2.5 Creating the redirector configuration file

Step 1: Go to **%IIS_REDIRECT%\conf**. %IIS_REDIRECT% indicates the location of the plug-in.

Step 2: In **%IIS_REDIRECT%\conf**, create the **uriworker.properties** file and add the following scripts to it:

```
# uriworker.properties -  
#  
# This file provides sample mappings for example  
# ajpl3w worker defined in workermap.properties.minimal  
/AEM/*=node1  
/servlet/*=node1  
/AEM=node1  
/servlet=node1
```

Step 3: In **%IIS_REDIRECT%\conf**, create the **workers.properties.minimal** file and add the following scripts to it:

```
# workers.properties.minimal -  
#  
# This file provides minimal jk configuration properties needed to  
# connect to Tomcat.  
#  
# The workers that jk should create and work with  
#  
worker.list= node1  
#  
# Defining a worker named node1 and of type ajpl3  
# Note that the name and the type do not have to match.
```

```
#  
worker. node1.type=ajp13  
# IP of JBoss server  
worker. node1.host=192.0.2.217  
# ajp13 port of JBoss server  
worker. node1.port=8009
```

2.2.2.6 Setting ISAPI and CGI Restrictions

Step 1: Open **Control Panel | Administrative Tools | Internet Information Service (IIS) Manager**.

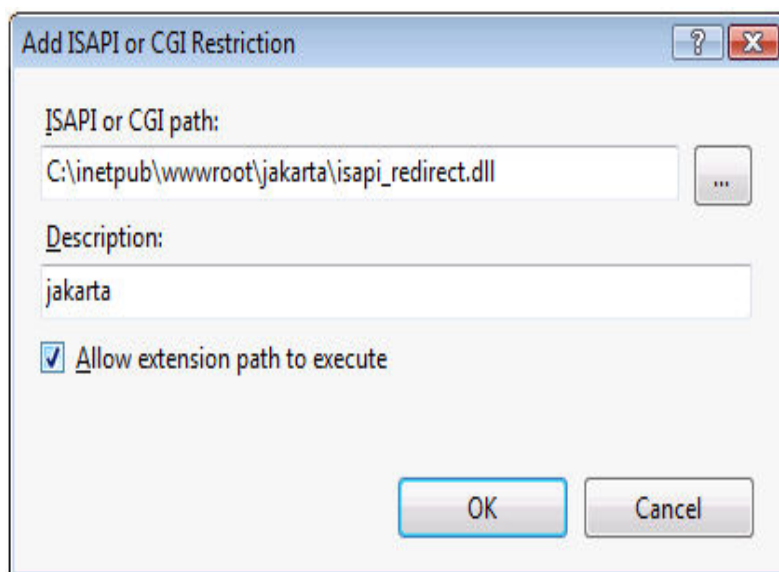
Step 2: Right-click the local machine, and then double-click **ISAPI and CGI Restrictions** on the right side.

Step 3: Right-click the blank area of the **ISAPI and CGI Restrictions** page and click **Add**.

Step 4: Specify the local path of **isapi_redirect.dll** in the **ISAPI or CGI path** box and input **jakarta** in the **Description** box, and then select **Allow extension path to execute**.

Step 5: Click **OK**.

Figure 2.12: Add ISAPI or CGI restriction



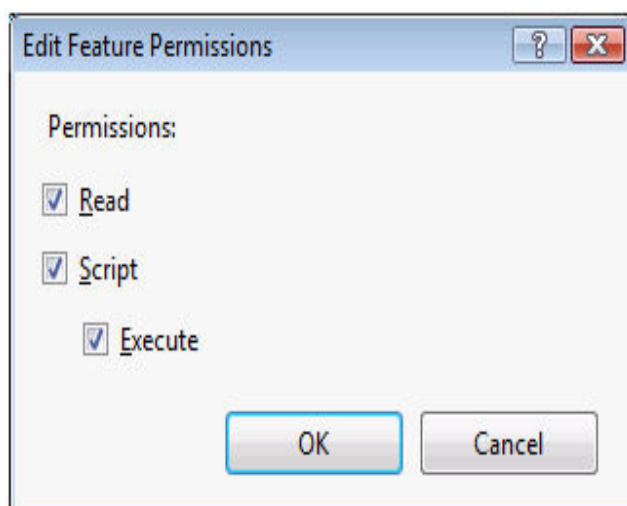
2.2.2.7 Enabling ISAPI-dll

Step 1: Open **Control Panel | Administrative Tools | Internet Information Service (IIS) Manager**.

Step 2: Expand the **Default Web Site**, click **jakarta**, and then double-click **Handler Mappings** on the right side.

Step 3: Right-click **ISAPI-dll**, and select **Edit Feature Permissions**.

Step 4: Select **Read, Script, Execute**, and click **OK**.

Figure 2.13: Edit feature permissions

2.2.2.8 Adding MIME type

Add a MIME type for loading the files with no extensions or MIME type definition.

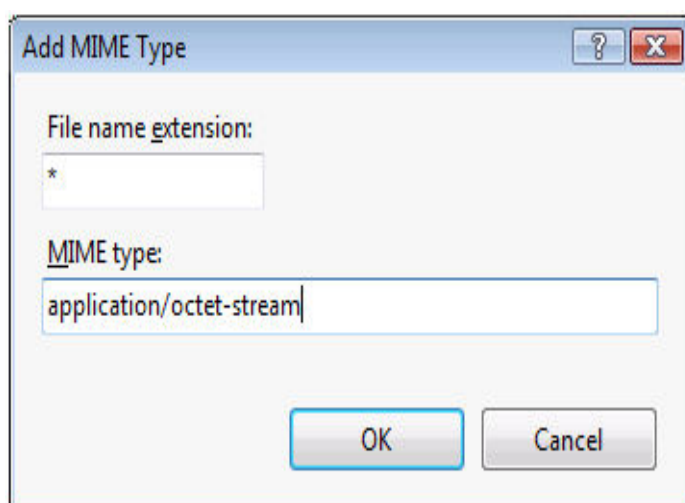
Step 1: Click the **Default Web Site** and then double-click **MIME Types** on the right of the page.

Step 2: Right-click the blank area of the **MIME Types** page, and click **Add**.

Step 3: Specify the following settings:

- Extension: *
- MIME Type: application/octet-stream

Step 4: Click **OK**.

Figure 2.14: Add MIME type

2.2.2.9 Restarting IIS

Restart IIS to make the new settings effective.

2.2.2.10 Configuring for DataWindow Data Cache

The DataWindow data cache feature is not available in IIS.

2.2.3 Configuring IIS with JEUS

The **Default Web Site** of the IIS server is used as examples in this section. You can choose another existing Web site, or create a new Web site.

2.2.3.1 Installing PowerServer Web Component to the IIS Web root

Run the Apeon setup program and install **PowerServer Web Component** to the Web root of the IIS Web site, for example, the Web root for the **Default Web site** is **C:\Inetpub\wwwroot**.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire "**apeon**" folder from the installation directory of PowerServer Web Component to the IIS Web root.

2.2.3.2 Installing the redirector plug-in

1. Download the redirector plug-in (for example, **isapi_redirect-1.2.10.exe**) from the Apache Website (<http://archive.apache.org/dist/jakarta/tomcat-connectors/jk/binaries/win32>). Install the redirector plug-in to the default installation directory (for example, **C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector**).
2. Open **Control Panel | Administrative Tools | Internet Service Manager**.
3. Right click **Default Web Site** and select **Properties** from the popup menu.
4. On the **Home Directory** tab, select **Scripts only** from the **Execute Permissions** dropdown list box.
5. On the **ISAPI Filters** tab, click **Add**, and install the redirector plug-in as an ISAPI filter. Filters are invoked in the order they are listed. Apeon recommends that the redirector plug-in be installed first in the list. Click **OK**.

For example,

Filter Name: jakarta

Executable: C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\bin**RedirectorPlug-in**. **RedirectorPlug-in** indicates the name of the redirector plug-in, for example, **isapi_redirect.dll**.

6. Restart IIS for the new configuration to take effect. Go to the **ISAPI Filters** tab and verify that the redirector plug-in is loaded successfully (indicated by a green arrow pointing upward while a red arrow pointing downward indicates that the DLL file was not successfully loaded).

2.2.3.3 Modifying the configuration files

1. Modify the **uriworker.properties** file in the "**conf**" folder under the default installation directory of the redirector plug-in (e.g. **C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\conf**):

For single PowerServer:

```
# uriworker.properties -
#
# This file provides sample mappings for example
# ajp13w worker defined in workermap.properties.minimal

/AEM=ajp13w
/AEM/*=ajp13w
/servlet=ajp13w
/servlet/*=ajp13w

# Now filter out all .jpeg files inside that context
# For no mapping the url has to start with exclamation (!)

!/servlets-examples/*.jpeg=ajp13w
```

For multiple PowerServer implementing load balancing:

```
# uriworkermap.properties - IIS
#
# This file provides sample mappings for example wlb
# worker defined in workermap.properties.minimal
# The general syntax for this file is:
# [URL]=[Worker name]
/AEM=cluster
/AEM/*=cluster
/servlet =cluster
/servlet/*=cluster
```

2. Modify the **workers.properties.minimal** file in the "**conf**" folder under the default installation directory of the redirector plug-in:

```
# workers.properties.minimal -
#
# This file provides minimal jk configuration properties needed to
# connect to Tomcat.
#
# The workers that jk should create and work with
#
worker.list=ajp13w
#
# Defining a worker named ajp13w and of type ajp13
# Note that the name and the type do not have to match.
#
worker.ajp13w.type=ajp13
worker.ajp13w.host=192.0.2.217 #for configuring the IP address of JEUS.
worker.ajp13w.port=8009 #for configuring the AJP port. The default is 8009.
worker.ajp13w.cachesize=200
```

For multiple PowerServer implementing load balancing:

The following script example shows that there are two JEUS application servers participating in load balancing, and their node names are jiangzeping and zhangjungang respectively. You can replace them with the real node names of JEUS application servers and add similar scripts to involve other JEUS application servers.

```
# workers.properties.minimal -
#
worker.list=jiangzeping_servlet_engine1,zhangjungang_servlet_engine1,cluster

worker.cluster.type=lb
```

```
worker.cluster.balance_workers=jiangzepeng_servlet_engine1,zhangjungang_servlet_engine1

worker.jiangzepeng_servlet_engine1.port=8009
worker.jiangzepeng_servlet_engine1.host=192.168.168.35
worker.jiangzepeng_servlet_engine1.type=ajp13
worker.jiangzepeng_servlet_engine1.lbfactor=1
worker.jiangzepeng_servlet_engine1.cachesize=200

worker.zhangjungang_servlet_engine1.port=8009
worker.zhangjungang_servlet_engine1.host=192.168.168.217
worker.zhangjungang_servlet_engine1.type=ajp13
worker.zhangjungang_servlet_engine1.lbfactor=1
worker.zhangjungang_servlet_engine1.cachesize=200
```

For detailed information on how to configure the directives in `workers.properties.minimal`, visit <http://tomcat.apache.org/connectors-doc/reference/workers.html>.

2.2.3.4 Additional configuration for IIS

1. Activate ISAPI:

- Open the **IIS manager**.
- Click **Web Service Extensions** on the left side of IIS manager.
- Select **All Unknown ISAPI extensions** on the right of the window and click the **Allow** button on the left.

2. Add a MIME type for loading the files with no extensions or MIME type definition:

- Right click **Default Web Site** and select **Properties** from the popup menu.
- Select the **HTTP Header** tab and click the **MIME Types** button.
- Click the **New** button to add a MIME type.

For example:

Extension: *

MIME type: application/octet-stream

2.2.3.5 Restarting IIS and JEUS

Restart IIS and JEUS for the new settings to take effect.

2.2.4 Configuring IIS with WebLogic

The **Default Web Site** of the IIS server is used as examples in this section. You can choose another existing Web site, or create a new Web site.

2.2.4.1 Installing PowerServer Web Component to the IIS Web root

Run the Apeon setup program and install **PowerServer Web Component** to the Web root of the IIS Web site, for example, the Web root for the **Default Web site** is `C:\inetpub\wwwroot`.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire "**apeon**" folder from the installation directory of PowerServer Web Component to the IIS Web root.

2.2.4.2 Installing redirector plug-in

Since IIS works only on the Windows platform, you must get redirector plug-ins from WebLogic running on Windows (not UNIX or Linux). For example, if you plan to use IIS as the Web server while PowerServer is installed to WebLogic on Sun Solaris, you must copy the redirector plug-in from WebLogic on Windows to the IIS Web server.

1. Copy the **iisproxy.dll** and **iisforward.dll** files from the **%WL_HOME%\server\bin** \ folder to any location of the IIS Web server. If IIS and WebLogic reside on the same machine, you do not need to copy them.
2. Open **Control Panel | Administrative Tools | Internet Services Manager**.
3. Right click **Default Web Site** and select **Properties** from the popup menu.
4. On the **Home Directory** tab, select **Scripts only** from the **Execute Permissions** dropdown listbox.
5. Click the **Configuration** button in the **Application Settings**.
6. Click the **Add** button to add the **iisproxy.dll** file. Input **.wlforward** in the **Extension** field. Click **OK** to return to the **Web Site Properties** window.
7. On the **ISAPI Filters** tab, click **Add**, and install **iisforward.dll** as an ISAPI filter. Click **OK**.
8. Restart IIS for the new configuration to take effect. Go to the **ISAPI Filters** tab and verify that **iisforward.dll** has been successfully loaded (indicated by a green arrow pointing upward, while a red arrow pointing downward indicates that the DLL file was not successfully loaded).

2.2.4.3 Creating and modifying the configuration file

Create the configuration file "**iisproxy.ini**" in the directory where the **iisproxy.dll** file is located.

If PowerServer is installed to a WebLogic cluster, add the following script:

```
WebLogicCluster=192.0.3.140:7001,192.0.3.141:7001
WlForwardPath=/AEM,/servlet
ConnectTimeoutSecs=20
ConnectRetrySecs=2
```

If PowerServer is installed to a single WebLogic server, add the following script:

```
WebLogicHost=192.0.3.141
WebLogicPort=7001
WlForwardPath=/AEM,/servlet
ConnectTimeoutSecs=20
```

ConnectRetrySecs=2

2.2.4.4 Additional configuration for IIS

1. Activate ISAPI:

- Open the **IIS manager**.
- Click **Web Service Extensions** on the left side of IIS manager.
- Select **All Unknown ISAPI extensions** on the right of the window and click the **Allow** button on the left.

2. Add a MIME type for loading the DataWindow files:

- Right click **Default Web Site** and select **Properties** from the popup menu.
- Select the **HTTP Header** tab and click the **MIME Types** button.
- Click the **New** button to add a MIME type.
For example:
Extension: *
MIME type: application/octet-stream
- Restart IIS for the new settings to take effect.

2.2.4.5 Configuring for DataWindow Data Cache for IIS

Under the installation directory of PowerServer Web Component (for example, **C:\Inetpub\wwwroot\apeon**), there is an **IISSupport** folder.

1. Copy the **apeoncache.conf** file from the **IISSupport\conf** folder and the **AppDataBuf.dll** file from the **IISSupport\modules** folder to the same folder, for example, **C:\Inetpub\scripts**.
2. If necessary, adjust the cache size in the **apeoncache.conf** file (The unit is MB).
3. Open **Control Panel | Administrative Tools | Internet Information Services Manager**.
4. Right click **Default Web Site** and select **Properties** from the pop-up menu.
5. On the **ISAPI Filters** tab, click **Add**, and install **AppDataBuf.dll** as an ISAPI filter. Click **OK**.
For example,
Filter name: **apeon_cache**
Executable: **C:\Inetpub\scripts\AppDataBuf.dll**
6. On the **Service** tab, select the **Run WWW service in IIS 5.0 isolation mode** option.
7. Restart IIS for the new configuration to take effect.

2.2.5 Configuring IIS with WebSphere

The **Default Web Site** of the IIS server is used as examples in this section. You can choose another existing Web site, or create a new Web site.

2.2.5.1 Installing PowerServer Web Component to the IIS Web root

Run the Apeon setup program and install **PowerServer Web Component** to the Web root of the IIS Web site, for example, the Web root for the **Default Web site** is **C:\Inetpub\wwwroot**.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire "**apeon**" folder from the installation directory of PowerServer Web Component to the IIS Web root.

2.2.5.2 Installing the redirector plug-in

Since IIS works on the Windows platform only, you must get redirector plug-ins from WebSphere running on Windows (not UNIX or Linux). For example, if you plan to use IIS as the Web server while PowerServer is installed to WebSphere on Sun Solaris, you must copy the redirector plug-in from WebSphere on Windows to the IIS Web server.

1. Copy the **iisWASPlugin_http.dll** file from the **%WAS_HOME%\bin** folder to any location of the IIS Web server, for example, **C:\Inetpub\wwwroot\ApeonWeb**. If IIS and WebSphere reside on the same machine, you do not need to copy the file.
2. Open **Control Panel | Administrative Tools | Internet Service Manager**.
3. Right click the **Default Web Site** and select **New | Virtual Directory** from the popup menu.
4. Create a virtual directory using the name "**sePlugins**" and set the virtual directory to the folder where the **iisWASPlugin_http.dll** file is located.
For example,
Alias: **sePlugins**
Directory: **C:\Inetpub\wwwroot\ApeonWeb**
5. Enable **Read, Run script, and Execute** permissions on the virtual directory.
6. Right click **Default Web Site** and select **Properties** from the popup menu.
7. On the **ISAPI Filters** tab, click **Add**, and install **iisWASPlugin_http.dll** as an ISAPI filter. Filters are invoked in the listed order. Apeon recommends that you install **iisWASPlugin_http.dll** first in the list. Click **OK**.
For example,
Filter Name: **apeon_filter**
Executable: **C:\Inetpub\wwwroot\ApeonWeb\iisWASPlugin_http.dll**
8. Restart IIS for the new configuration to take effect. Go to the **ISAPI Filters** tab and verify that **iisWASPlugin_http.dll** has been loaded successfully (indicated by a green arrow

pointing upward while a red arrow pointing downward indicates that the DLL file was not successfully loaded).

2.2.5.3 Adding virtual host in WebSphere console

1. Click **Environment > Virtual Host** in the navigation tree of the **WebSphere Administrative Console**.
2. Click the **New** button in the page that displays.
3. Input the IP address of the Web server in the **Host Name** field and port number in the **Port** field.
4. Click **Environment > Update Web Server Plug-in** in the console navigation tree.
5. Click **OK** to update the Web server plug-in.
6. Save the new configuration and restart the WebSphere server.

2.2.5.4 Configuring the plugin-cfg.xml file

Copy the **plugin-cfg.xml** file from the **%WAS_HOME%\config\cells** folder to the virtual directory and modify the following directives according to the **PowerServer\WebSphere** environment:

Configure the log file location. For example:

```
<Log LogLevel="Error" Name="C:/Inetpub/wwwroot/_vti_log/http_plugin.log"/>
```

Configure the IP address and port number of the PowerServer\WebSphere. For example:

```
<Transport Hostname="192.0.0.39" Port="9080" Protocol="http"/>
<Transport Hostname="192.0.0.39" Port="9443" Protocol="https">
  <Property name="keyring" value="C:/Websphere/AppServer/etc/plugin-key.kdb"/>
  <Property name="stashfile" value="C:/Websphere/AppServer/etc/plugin-key.sth"/>
</Transport>
```

Configure the context path. For example:

```
<UriGroup Name="server1_Cluster_URIs">
  <Uri Name="/servlet/*"/>
  <Uri Name="/AEM/*"/>
</UriGroup>
```

2.2.5.5 Creating the registry key

In the registry of the IIS Web server, locate the **"HKEY_LOCAL_MACHINE \SOFTWARE\IBM\WebSphere Application Server\5.1.0.0"** key (if any of these are missing, create them), add the **"Plugin Config"** string and set the value to the directory of the **plugin-cfg.xml** file.

2.2.5.6 Additional configuration for IIS

1. Activate ISAPI:
 - Open the IIS manager.

- Click **Web Service Extensions** on the left side of IIS manager.
 - Select **All Unknown ISAPI extensions** on the right of the window and click the **Allow** button on the left.
2. Add a MIME type for loading the DataWindow files:
 - Right click **Default Web Site** and select **Properties** from the popup menu.
 - Select the **HTTP Header** tab and click the **MIME Types** button.
 - Click the **New** button to add a MIME type.
For example:
Extension: *
MIME type: application/octet-stream
 - Restart IIS for the new settings to take effect.

2.2.5.7 Configuring for DataWindow Data Cache for IIS

Under the installation directory of PowerServer Web Component (for example, **C:\Inetpub\wwwroot\apeon**), there is an **IISSupport** folder.

1. Copy the **apeoncache.conf** file from the **IISSupport\conf** folder and the **AppDataBuf.dll** file from the **IISSupport\modules** folder to the same folder, for example, **C:\Inetpub\scripts**.
2. If necessary, adjust the cache size in the **apeoncache.conf** file (The unit is MB).
3. Open **Control Panel | Administrative Tools | Internet Information Services Manager**.
4. Right click **Default Web Site** and select **Properties** from the popup menu.
5. On the **ISAPI Filters** tab, click **Add**, and install **AppDataBuf.dll** as an ISAPI filter. Click **OK**.
For example,
Filter name: **apeon_cache**
Executable: **C:\Inetpub\scripts\AppDataBuf.dll**
6. On the **Service** tab, select the **Run WWW service in IIS 5.0 isolation mode** option.
7. Restart IIS for the new configuration to take effect.

3 Configuring Apache

This section provides instructions of

- [Configuring for PowerServer cluster](#)

Detailed instructions are provided in Chapter 6, *Tutorial 5: Configure PowerServer Cluster* in *PowerServer Mobile Tutorials*.

- [Configuring for single PowerServer](#)

Each sub-section will try to cover the following aspects:

- Redirector plug-in configuration, which enables Web server to redirect requests to a PowerServer.
- Load balancing configuration. Load balancing can be implemented using the Web server redirector plug-in or the Apeon plug-in. This section will only describe how to implement load balancing with multiple PowerServer (not PowerServer cluster) using the Web server redirector plug-in. Description of implementing load balancing (and failover) with PowerServer cluster using the Apeon plug-in will be described in the [Configuring for PowerServer cluster](#) section.
- DataWindow data cache configuration. The Web server must be configured properly to support the DataWindow data cache feature.

3.1 Configuring for PowerServer Cluster

PowerServer cluster is a feature provided by Apeon for implementing load balancing and failover with the Apeon plug-in. It will not interfere with the existing application server cluster, such as WebLogic, WebSphere, JBoss, or JEUS cluster.

For detailed instructions on configuring Apache with the PowerServer cluster, please refer to Chapter 6, *Tutorial 5: Configure PowerServer Cluster* in *PowerServer Mobile Tutorials*. The instructions are exactly the same for both PowerServer Web and PowerServer Mobile.

3.2 Configuring for single PowerServer

This section provides configuration for Apache with single PowerServer. Each sub-section will try to cover the following aspects:

- Redirector plug-in configuration, which enables Web server to redirect requests to a PowerServer.
- Load balancing configuration. Load balancing can be implemented using the Web server redirector plug-in or the Apeon plug-in. This section will only describe how to implement load balancing with multiple PowerServer (not PowerServer cluster) using the Web server redirector plug-in. Description of implementing load balancing (and failover) with PowerServer cluster using the Apeon plug-in will be described in the [Configuring for PowerServer cluster](#) section.
- DataWindow data cache configuration. The Web server must be configured properly to support the DataWindow data cache feature.

3.2.1 Configuring Apache with JBoss

The following configuration steps apply to Windows/Linux/UNIX platforms.

Step 1: Run the Apeon setup program and install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, %Apache%\htdocs\.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **apeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

Step 2: Download the required plug-ins from <http://archive.apache.org/dist/jakarta/tomcat-connectors/jk/binaries>.

Step 3: Copy the downloaded plug-ins to the <APACHE>\modules folder and rename it to **mod_jk.so**.

Step 4: Go to the <APACHE>\conf folder, open the **httpd.conf** file with a text editor, and add the following script to the end of this file.

```
#####
#                               JBOSS Plug-In
#####
# Include mod_jk configuration file
Include conf/mod_jk.conf
```

Step 5: In the <APACHE>\conf folder, create the **workers.properties** file and add the following scripts to it.

```
# Define Node1
worker.list=node1
# ajp13 port of JBoss server
worker.node1.port=8009
# IP of JBoss server
worker.node1.host=192.0.2.217
worker.node1.type=ajp13
worker.node1.lbfactor=1
#worker.node1.local_worker=1 (1)
worker.node1.cachesize=10
```

Step 6: In the <APACHE>\conf folder, create the redirector file **mod_jk.conf** and add the following scripts to it.

```
#####
#                               JBOSS Plug-In
#####
# Load mod_jk module
# Specify the filename of the mod_jk lib
LoadModule jk_module modules/mod_jk.so
# Where to find workers.properties
JkWorkersFile conf/workers.properties
# Where to put jk logs
JkLogFile logs/mod_jk.log
# Set the jk log level [debug/error/info]
JkLogLevel info
# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y]"
# JkOptions indicates to send SSK KEY SIZE
JkOptions +ForwardKeySize +ForwardURICompat -ForwardDirectories
# JkRequestLogFormat
JkRequestLogFormat "%w %V %T"
#redirect
```

```
JkMount /AEM node1
JkMount /AEM/* node1
JkMount /servlet/* node1
JkMount /servlet node1
JkMount /reportfile/* node1
JkMount /reportfile node1
JkMount /imagefile/* node1
JkMount /imagefile node1
JkMount /dwfile/* node1
JkMount /dwfile node1
JkMount /ajsdown/* node1
JkMount /ajsdown node1
```

Step 7: Go to <JBossHome>\standalone\configuration\ (for example, C:\wildfly-10.0.0.Final\standalone\configuration\), open the **standalone.xml** file with a text editor, find the following line in the file:

```
<subsystem xmlns="urn:jboss:domain:web:1.1" default-virtual-server="default-host"
native="false">
```

Add the following line under the above line:

```
<connector name="ajp" protocol="AJP/1.3" scheme="http" socket-binding="ajp"/>
```

Step 8: Save the file and restart JBoss application server.

Step 9: Add the following scripts into the **httpd.conf** file in <Apache>\conf folder:

```
#Apeon Configuration:for 10X Web file compression#
<LocationMatch /gzip/*>
Header append Content-Encoding gzip
</LocationMatch>
#end of Apeon Configuration for 10X Web file compression#
```

In addition, remove the character "#" in front of the following script in the **httpd.conf** file:

```
LoadModule headers_module modules/mod_headers.so
```

3.2.1.1 Configuring DataWindow Data Cache (supports Windows platform only)

Under the installation directory of PowerServer Web Component (for example, C:\Inetpub\wwwroot\apeon), there are **Apache20Support** and **Apache22Support** folders.

1. Copy the **apeoncache.conf** file from **Apache20Support\conf** or **Apache22Support\conf** to the %Apache%\conf folder. And make the appropriate configuration under the instructions provided in the file.
2. Copy the **modcache2.dll** or **modcache22.dll** file from **Apache20Support\modules** or **Apache22Support\modules** folder to %Apache%\modules folder.
3. Add the following script into the **httpd.conf** file in %Apache%\conf folder to load **apeoncache.conf** and **modcache2.dll** or **modcache22.dll**:

```
# Cache Module Apeon Data Cache function, AX only
#-----mod_cache for web cache configuration-----#
LoadModule data_cache_module modules/modcache2.dll
<IfModule mod_cache.c>
include conf/apeoncache.conf
</IfModule>
```

```
#-----End configuration-----#
```

3.2.2 Configuring Apache with JEUS

3.2.2.1 Configuring Windows Apache 2.0/2.2 with Windows JEUS

3.2.2.1.1 Installing PowerServer Web Component to the Apache document root

Run the Apeon setup program and install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, %Apache%\htdocs\.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **apeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.2.1.2 Configuring Ajp13 Listener in JEUS Web Manager

1. Start JEUS and log into **JEUS Web Manager**. Select **Nodename | Engine Containers | Node name_container1 | Engines | Servlet Engine | MyGroup** in the left treeview. **Nodename** indicates the node name of JEUS.
2. Click **Web Listener** on the right page of **JEUS Web Manager**.
3. On the **Web Listener** page, click **Creating a new Web Listener**.
4. On the **Listener Type** page, select **Ajp13** and click **Next**.
5. On the **General** page, specify **Listener ID** and **Port**, for example, Listener ID: ajp13, Port: 8009, and click **Next**.
6. On the **Thread Pool** page, specify **Min**, for example, Min: 2, and click **Next**.
7. Click **Create** to create the listener. A message box will pop up and indicate whether the listener has been successfully created.

3.2.2.1.3 Modifying WEBMain.xml (for load balancing)

1. Locate the **WEBMain.xml** file in the %JEUS_HOME%\config\nodename\nodename_servlet_engine1. **nodename** indicates the node name of JEUS.
2. Change the following script in the **WEBMain.xml** file.

Original script:

```
<session-cluster>
<session-routing>>false</session-routing>
</session-cluster
```

Change to:

```
<session-cluster>
<session-routing>>true</session-routing>
```



```
</session-cluster>
```

3.2.2.1.4 Installing the redirector plug-in

1. Download the plug-in file from the Apache Website (<http://archive.apache.org/dist/jakarta/tomcat-connectors/jk/binaries>). For example, the plug-in file for Apache 2.0.54 is **mod_jk-1.2.10-apache-2.0.53.so**.
2. Place the plug-in file in the **%APACHE%\modules** folder and rename it **mod_jk.so**.

3.2.2.1.5 Configuring the httpd.conf file

1. Open the **httpd.conf** file in the **%Apache%\conf** directory.
2. Add the following script to the **httpd.conf** file.

For single PowerServer:

```
#####
# JEUS Plug-In
#####
# Load mod_jk module
# Specify the filename of the mod_jk lib
LoadModule jk_module modules/mod_jk.so

# Where to find workers.properties
JkWorkersFile conf/workers.properties

# Where to put jk logs
JkLogFile logs/mod_jk.log

# Set the jk log level [debug/error/info]
JkLogLevel info

# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y]"

# JkOptions indicates to send SSK KEY SIZE
JkOptions +ForwardKeySize +ForwardURICompat -ForwardDirectories

# JkRequestLogFormat
JkRequestLogFormat "%w %V %T"

#redirect
JkMount /AEM node1
JkMount /AEM/* node1
JkMount /servlet node1
JkMount /servlet/* node1
```

For multiple PowerServer implementing load balancing:

```
#####
# JEUS Plug-In
#####
# Load mod_jk module
# Specify the filename of the mod_jk lib
LoadModule jk_module modules/mod_jk.so

# Where to find workers.properties
JkWorkersFile conf/workers.properties
```

```

# Where to put jk logs
JkLogFile logs/mod_jk.log

# Set the jk log level [debug/error/info]
JkLogLevel info

# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y]"

# JkOptions indicates to send SSK KEY SIZE
JkOptions +ForwardKeySize +ForwardURICompat -ForwardDirectories

# JkRequestLogFormat
JkRequestLogFormat "%w %V %T"

#redirect
JkMount /AEM cluster
JkMount /AEM/* cluster
JkMount /servlet cluster
JkMount /servlet/* cluster

```

3.2.2.1.6 Creating the workers.properties file

1. Create the **workers.properties** file in the **%APACHE%\conf** folder.
2. Add the following scripts to it.

For single PowerServer:

```

# Define Node1
worker.list=node1
worker.node1.port=8009
worker.node1.host=192.0.2.217
worker.node1.type=ajp13
worker.node1.lbfactor=1
#worker.node1.local_worker=1 (1)
worker.node1.cachesize=200

```

For multiple PowerServer implementing load balancing:

The following script example shows that there are two JEUS application servers participating in load balancing, and their node names are jiangzeping and zhangjungang respectively. You can replace them with the real node names of JEUS application servers and add similar scripts to involve other JEUS application servers.

```

worker.list=jiangzeping_servlet_engine1,zhangjungang_servlet_engine1,cluster
worker.cluster.type=lb
worker.cluster.balance_workers=jiangzeping_servlet_engine1,zhangjungang_servlet_engine1
worker.jiangzeping_servlet_engine1.port=8009
worker.jiangzeping_servlet_engine1.host=192.168.168.35
worker.jiangzeping_servlet_engine1.type=ajp13
worker.jiangzeping_servlet_engine1.lbfactor=1
worker.jiangzeping_servlet_engine1.cachesize=200
worker.zhangjungang_servlet_engine1.port=8009
worker.zhangjungang_servlet_engine1.host=192.168.168.217
worker.zhangjungang_servlet_engine1.type=ajp13
worker.zhangjungang_servlet_engine1.lbfactor=1
worker.zhangjungang_servlet_engine1.cachesize=200

```

For detailed information on how to configure the directives in **workers.properties**, visit <http://tomcat.apache.org/connectors-doc/reference/workers.html>.

3.2.2.1.7 Creating the easerverinit.conf file (for load balancing)

Create the **easerverinit.conf** file in the **%Apache%\conf** directory and add the following scripts:

```
# The redirector log file level.
#
# This directive determines the amount of redirector logging that is sent
# to the Web server log file
# You must also set the logging level for the Apache Web server in the httpd.conf
# file to either "info" or "error" for the redirector to produce any logging.
# The syntax is:
#
# LogLevel [ debug | info | notice | warn | error | crit ]
#
Connector.LogLevel inform
```

3.2.2.1.8 Restarting Apache and JEUS

Restart Apache and JEUS to make the settings effective.

3.2.2.2 Configuring Windows Apache 1.3 with Windows JEUS

3.2.2.2.1 Installing PowerServer Web Component to the Apache document root

Run the Apeon setup program and install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, **%Apache%\htdocs**.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire "**apeon**" folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.2.2.2 Configuring Ajp13 Listener in JEUS Web Manager

1. Start JEUS and log into **JEUS Web Manager**. Select **Nodename | Engine Containers | Node name_container1 | Engines | Servlet Engine | MyGroup** in the left treeview. **Nodename** indicates the node name of JEUS.
2. Click **Web Listener** on the right page of **JEUS Web Manager**.
3. On the **Web Listener** page, click **Creating a new Web Listener**.
4. On the **Listener Type** page, select **Ajp13** and click **Next**.
5. On the **General** page, specify **Listener ID** and **Port**, for example, Listener ID: ajp13, Port: 8009, and click **Next**.
6. On the **Thread Pool** page, specify **Min**, for example, Min: 2, and click **Next**.
7. Click **Create** to create the listener. A message box will pop up and indicate whether the listener has been successfully created.

3.2.2.2.3 Modifying WEBMain.xml (for load balancing)

1. Locate the **WEBMain.xml** file in the **%JEUS_HOME%\config\nodename \nodename_servlet_engine1**. **nodename** indicates the node name of JEUS.

2. Change the following script in the **WEBMain.xml** file.

Original script:

```
<session-cluster>
<session-routing>>false</session-routing>
</session-cluster>
```

Change to:

```
<session-cluster>
<session-routing>>true</session-routing>
</session-cluster>
```

3.2.2.2.4 Installing the redirector plug-in

1. Download the plug-in file from the Apache Website (<http://archive.apache.org/dist/jakarta/tomcat-connectors/jk/binaries>). For example, the plug-in file for Apache 1.3.33 is **mod_jk-1.2.10-apache-1.3.33.so**.
2. Place the plug-in file in the **%APACHE%\modules** folder and rename it **mod_jk.so**.

3.2.2.2.5 Configuring the httpd.conf file

1. Open the **httpd.conf** file in the **%Apache%\conf** directory.
2. Add the following script to the **httpd.conf** file.

For single PowerServer:

```
#####
# JEUS Plug-In
#####
# Load mod_jk module
# Specify the filename of the mod_jk lib
LoadModule jk_module modules/mod_jk.so

# Where to find workers.properties
JkWorkersFile conf/workers.properties

# Where to put jk logs
JkLogFile logs/mod_jk.log

# Set the jk log level [debug/error/info]
JkLogLevel info

# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y]"

# JkOptions indicates to send SSK KEY SIZE
JkOptions +ForwardKeySize +ForwardURICompat -ForwardDirectories

# JkRequestLogFormat
JkRequestLogFormat "%w %V %T"

#redirect
JkMount /AEM node1
JkMount /AEM/* node1
JkMount /servlet node1
JkMount /servlet/* node1
```

For multiple PowerServer implementing load balancing:

```
#####
#                               JEUS Plug-In
#####
# Load mod_jk module
# Specify the filename of the mod_jk lib
LoadModule jk_module modules/mod_jk.so

# Where to find workers.properties
JkWorkersFile conf/workers.properties

# Where to put jk logs
JkLogFile logs/mod_jk.log

# Set the jk log level [debug/error/info]
JkLogLevel info

# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y]"

# JkOptions indicates to send SSK KEY SIZE
JkOptions +ForwardKeySize +ForwardURICompat -ForwardDirectories

# JkRequestLogFormat
JkRequestLogFormat "%w %V %T"

#redirect
JkMount /AEM cluster
JkMount /AEM/* cluster
JkMount /servlet cluster
JkMount /servlet/* cluster
```

3.2.2.2.6 Creating the workers.properties file

1. Create the **workers.properties** file in the **%APACHE%\conf** folder.
2. Add the following scripts to it.

For single PowerServer:

```
# Define Node1
worker.list=node1
worker.node1.port=8009
worker.node1.host=192.0.2.217
worker.node1.type=ajp13
worker.node1.lbfactor=1
#worker.node1.local_worker=1 (1)
worker.node1.cachesize=200
```

For multiple PowerServer implementing load balancing:

The following script example shows that there are two JEUS application servers participating in load balancing, and their node names are jiangzeping and zhangjungang respectively. You can replace them with the real node names of JEUS application servers and add similar scripts to involve other JEUS application servers.

```
worker.list=jiangzeping_servlet_engine1,zhangjungang_servlet_engine1,cluster
worker.cluster.type=lb
worker.cluster.balance_workers=jiangzeping_servlet_engine1,zhangjungang_servlet_engine1
worker.jiangzeping_servlet_engine1.port=8009
```

```
worker.jiangzepeng_servlet_engine1.host=192.168.168.35
worker.jiangzepeng_servlet_engine1.type=ajp13
worker.jiangzepeng_servlet_engine1.lbfactor=1
worker.jiangzepeng_servlet_engine1.cachesize=200
worker.zhangjungang_servlet_engine1.port=8009
worker.zhangjungang_servlet_engine1.host=192.168.168.217
worker.zhangjungang_servlet_engine1.type=ajp13
worker.zhangjungang_servlet_engine1.lbfactor=1
worker.zhangjungang_servlet_engine1.cachesize=200
```

For detailed information on how to configure the directives in **workers.properties**, visit <http://tomcat.apache.org/connectors-doc/reference/workers.html>.

3.2.2.2.7 Creating the easerverinit.conf file (for load balancing)

Create the **easerverinit.conf** file in the **%Apache%\conf** directory and add the following scripts:

```
# The redirector log file level.
#
# This directive determines the amount of redirector logging that is sent
# to the Web server log file
# You must also set the logging level for the Apache Web server in the httpd.conf
# file to either "info" or "error" for the redirector to produce any logging.
# The syntax is:
#
# LogLevel [ debug | info | notice | warn | error | crit ]
#
Connector.LogLevel inform
```

3.2.2.2.8 Restarting Apache and JEUS

Restart Apache and JEUS to make the settings effective.

3.2.3 Configuring Apache with WebLogic

3.2.3.1 Configuring Windows Apache 2.0/2.2 with Windows WebLogic

3.2.3.1.1 Installing PowerServer Web Component to the Apache document root

Run the Apeon setup program and install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, **%Apache%\htdocs**.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **apeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.3.1.2 Installing the redirector plug-in

Copy the **mod_wl_20.so** or **mod_wl_22.so** file from the **%WebLogic%\server\bin** to the **%APACHE%\modules** folder.

3.2.3.1.3 Configuring the httpd.conf file

1. Add the following scripts to the **httpd.conf** file (located in the **%APACHE%\conf** folder):

If PowerServer is installed to a WebLogic cluster, add the following scripts:

```
#Load the Apache HTTP Server Plug-In
LoadModule weblogic_module      modules/mod_wl_20.so

#Configuring the Apache HTTP Server Plug-In
##### WebLogic Cluster settings#####
<IfModule mod_weblogic.c>
    MatchExpression /AEM
    MatchExpression /servlet
    WebLogicCluster 192.0.3.140:7001,192.0.3.141:7001
</IfModule>
```

If PowerServer is installed to a single WebLogic, add the following scripts:

```
#Load the Apache HTTP Server Plug-In
LoadModule weblogic_module      modules/mod_wl_20.so

#Configuring the Apache HTTP Server Plug-In<![endif]>
##### Single WebLogic settings #####
<IfModule mod_weblogic.c>
    MatchExpression /AEM
    MatchExpression /servlet
    WebLogicHost 192.0.3.141
    WebLogicPort 7001
</IfModule>
```

2. Specify an appropriate timeout period in the "**Timeout**" script in the **httpd.conf** file. The default value is 300 seconds.

3.2.3.1.4 Configuring for Apeon DataWindow Data Cache

Under the installation directory of PowerServer Web Component (for example, **C:\Inetpub\wwwroot\apeon**), there are **Apache20Support** and **Apache22Support** folders.

1. Copy the **apeoncache.conf** file from the **\Apache20Support\conf** or **\Apache22Support\conf** folder to the **%APACHE%\conf** folder.
 - The **cachesize** property is 100MB by default (and minimum). If you set the size to a value smaller than 100MB, the cache size will still be regarded as 100MB. For the Web server cache to keep enough DataWindow data, the larger the cache size, the better, but you need to make sure the cache size is no larger than the available memory on the server.
 - The **cache_temp_dir** property is "C:\tmp" by default. Make sure "C:\tmp" exists on your computer, or change the default value to the physical path of an existing directory.
 - The encoding formats for the cached data include UTF-8 and UTF-16LE. If you use the plug-in from the application server, DataWindow Data Cache will fail to cache data in UTF-8 and UTF-16LE at the same time, and requires you to set the encoding format. If the Apeon cluster plug-in is used, you must comment out the setting as shown in the code example below, so that DataWindow Data Cache can cache data in UTF-8 and UTF-16LE at the same time.

```
#cache capacity, unit is M Bytes, must larger than 100
cachesize 100
#the switcher for print log info or not, on for use log, off close log;
log on
## Working directory for temporary files and the compression cache
```

```
## if not specified, the following default values are used:
## [Win32=c:\tmp], [UNIX=/tmp], the directory must exist
## this item just for apache
cache_temp_dir /tmp
## encoding type , it can be utf-8 or utf-16le, the default value is utf-8;
## if you use Apeon's cluster plug-in, you should comment the setting
encoding utf-8
```

2. Copy the **modcache2.dll** or **modcache22.dll** file from the **\Apache20Support\modules** or **\Apache22Support\modules** folder to the **%APACHE%\modules** folder.
3. Add the following script to the **httpd.conf** file in the **%APACHE%\conf** folder:

```
# Cache Module Apeon Data Cache function, AX only
#-----mod_cache for web cache configuration-----#
LoadModule data_cache_module modules/modcache2.dll
<IfModule mod_cache.c>
include conf/appeoncache.conf
</IfModule>
#-----End configuration-----#
```

The scripts load the **modcache2.dll** or **modcache22.dll** file and include the **appeoncache.conf** file.

3.2.3.2 Configuring UNIX Apache 2.0/2.2 with UNIX WebLogic

3.2.3.2.1 Installing PowerServer Web Component to the Apache document root

Install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, **\$APACHE/htdocs/**, by following the instructions in Installation Guide for .NET.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **appeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.3.2.2 Installing redirector plug-in

Go to the **\$WebLogic/server/lib/** folder and select the folder indicating the operating system of the PowerServer/WebLogic in use. For example, if PowerServer runs on WebLogic on Sun Solaris, click the "solaris" folder under the **\$WebLogic/server/lib/** folder and copy the **mod_wl_20.so** or **mod_wl_22.so** file to the **\$APACHE/modules/** folder.

3.2.3.2.3 Configuring httpd.conf file

1. Add the following scripts to the **httpd.conf** file (located in the **\$APACHE/conf/** folder):

If PowerServer is installed to a WebLogic cluster, add the following scripts (take **mod_wl_20.so** as an example):

```
#Load the Apache HTTP Server Plug-In
LoadModule weblogic_module      modules/mod_wl_20.so

#Configuring the Apache HTTP Server Plug-In
##### WebLogic Cluster settings #####
<IfModule mod_weblogic.c>
  MatchExpression /AEM
  MatchExpression /servlet
  WebLogicCluster 192.0.3.140:7001,192.0.3.141:7001
```



```
</IfModule>
```

If PowerServer is installed to a single WebLogic, add the following scripts (take **mod_wl_20.so** as an example):

```
#Load the Apache HTTP Server Plug-In
LoadModule weblogic_module      modules/mod_wl_20.so

#Configuring the Apache HTTP Server Plug-In
##### Single WebLogic settings #####
<IfModule mod_weblogic.c>
    MatchExpression /AEM
    MatchExpression /servlet
    WebLogicHost 192.0.3.141
    WebLogicPort 7001
</IfModule>
```

2. Specify an appropriate timeout period in the "**Timeout**" script in the **httpd.conf** file. The default value is 300 seconds.

3.2.3.2.4 Configuring for DataWindow Data Cache

The DataWindow data cache feature is not available in UNIX and Linux.

3.2.3.3 Configuring Windows Apache 1.3 with Windows WebLogic

Note that if PowerServer is installed to WebLogic 8.1.6 on Windows, Apache 1.3 on Windows cannot be used as the Web server because WebLogic 8.1.6 on Windows does not provide appropriate redirector plug-ins for it, instead, use Apache 1.3 on UNIX or Apache 2.0.

3.2.3.4 Configuring UNIX Apache 1.3 with UNIX/LINUX WebLogic

3.2.3.4.1 Installing PowerServer Web Component to the Apache document root

Install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, **\$APACHE/htdocs/**, by following the instructions in the Installation Guide for .NET.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **apeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.3.4.2 Installing redirector plug-in

Go to the **\$WebLogic/server/lib/** folder and select the folder indicating the operating system of the PowerServer/WebLogic in use. For example, if PowerServer runs on WebLogic for Sun Solaris, click the "**solaris**" folder under the **\$WebLogic/server/lib/** directory and copy the **mod_wl.so** file to the **\$APACHE/modules** folder.

3.2.3.4.3 Configuring httpd.conf file

1. Add the following scripts to the **httpd.conf** file (located in the **\$APACHE/conf** folder):

If PowerServer is installed to a WebLogic cluster, add the following script:

```
#Load the Apache HTTP Server Plug-In
```

```
LoadModule weblogic_module      modules/mod_wl.so

#Configuring the Apache HTTP Server Plug-In
##### WebLogic Cluster settings#####
<IfModule mod_weblogic.c>
    MatchExpression /AEM
    MatchExpression /servlet
    WebLogicCluster 192.0.3.140:7001,192.0.3.141:7001
</IfModule>
```

If PowerServer is installed to a single WebLogic, add the following script:

```
#Load the Apache HTTP Server Plug-In
LoadModule weblogic_module      modules/mod_wl.so

#Configuring the Apache HTTP Server Plug-In
##### Single WebLogic settings #####
<IfModule mod_weblogic.c>
    MatchExpression /AEM
    MatchExpression /servlet
    WebLogicHost 192.0.3.141
    WebLogicPort 7001
</IfModule>
```

2. Specify an appropriate timeout period in the "**Timeout**" script in the **httpd.conf** file. The default value is 300 seconds.

3.2.3.4.4 Configuring for DataWindow Data Cache

The DataWindow data cache feature is not available in UNIX and Linux.

3.2.4 Configuring Apache with WebSphere

3.2.4.1 Configuring Windows Apache 2.0/2.2 with Windows WebSphere

3.2.4.1.1 Installing PowerServer Web Component to the Apache document root

Run the Apeon setup program and install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, %Apache%\htdocs\.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **apeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.4.1.2 Installing the Redirector Plug-in

In WebSphere 5.1: Copy the **mod_was_ap20_http.dll** or **mod_was_ap22_http.dll** file from the %WAS_HOME%\bin\ folder to the %APACHE%\modules\ folder.

In WebSphere 6.0: Download the installation program and set up for Apache 2.0 or 2.2. For detailed information, refer to WebSphere user document.

3.2.4.1.3 Adding virtual host in WebSphere console

1. Click **Environment > Virtual Host** in the navigation tree of the **WebSphere Administrative Console**.
2. Click the **New** button in the page that displays.

3. Input the IP address of the Web server in the **Host Name** field and port number in the **Port** field.
4. Click **Environment > Update Web Server Plug-in** in the console navigation tree.
5. Click **OK** to update the Web server plug-in.
6. Save the new configuration and restart WebSphere server.

3.2.4.1.4 Configuring the plugin-cfg.xml file

Copy the **plugin-cfg.xml** file from the **%WAS_HOME%\config\cells** folder to the **%APACHE%\conf** folder and modify the following directives according to the PowerServer/WebSphere environment:

Configure the log file location. For example:

```
<Log LogLevel="Error" Name="%APACHE%/logs/http_plugin.log"/>
```

Configure the **IP address** and **port number** of the PowerServer\WebSphere. For example:

```
<Transport Hostname="192.0.0.39" Port="9080" Protocol="http"/>
<Transport Hostname="192.0.0.39" Port="9443" Protocol="https">
  <Property name="keyring" value="C:/Websphere/AppServer/etc/plugin-key.kdb"/>
  <Property name="stashfile" value="C:/Websphere/AppServer/etc/plugin-key.sth"/>
</Transport>
```

Configure the context path. For example:

```
<UriGroup Name="server1_Cluster_URIs">
  <Uri Name="/servlet/*"/>
  <Uri Name="/AEM/*"/>
</UriGroup>
```

3.2.4.1.5 Configuring the httpd.conf file

1. Add the following scripts to the **httpd.conf** file (located in the **%APACHE%\conf** folder):

Take **was_ap20_module** as an example:

```
#Loading the plug-in file
LoadModule was_ap20_module modules/mod_was_ap20_http.dll
WebSpherePluginConfig conf/plugin-cfg.xml
```

2. Specify an appropriate timeout period in the **"Timeout"** script in the **httpd.conf** file. The default value is 300 seconds.

3.2.4.1.6 Configuring for Apeon DataWindow Data Cache

Under the installation directory of PowerServer Web Component (for example, **C:\inetpub\wwwroot\apeon**), there are **Apache20Support** and **Apache22Support** folders.

1. Copy the **apeoncache.conf** file from the **Apache20Support\conf** or **Apache22Support\conf** folder to the **%APACHE%\conf** folder.
 - The **cachesize** property is 100MB by default (and minimum). If you set the size to a value smaller than 100MB, the cache size will still be regarded as 100MB. For the Web

server cache to keep enough DataWindow data, the larger the cache size, the better, but you need to make sure the cache size is no larger than the available memory on the server.

- The **cache_temp_dir** property is "C:\tmp" by default. Make sure "C:\tmp" exists on your computer, or change the default value to the physical path of an existing directory.
- The encoding formats for the cached data include UTF-8 and UTF-16LE. If you use the plug-in from the application server, DataWindow Data Cache will fail to cache data in UTF-8 and UTF-16LE at the same time, and requires you to set the encoding format. If the Apeon cluster plug-in is used, you must comment out the setting as shown in the code example below, so that DataWindow Data Cache can cache data in UTF-8 and UTF-16LE at the same time.

```
#cache capacity, unit is M Bytes, must larger than 100
cachesize 100
#the switcher for print log info or not, on for use log, off close log;
log on
## Working directory for temporary files and the compression cache
## if not specified, the following default values are used:
## [Win32=c:\tmp], [UNIX=/tmp], the directory must exist
## this item just for apache
cache_temp_dir /tmp
## encoding type , it can be utf-8 or utf-16le, the default value is utf-8;
## if you use Apeon's cluster plug-in, you should comment the setting
encoding utf-8
```

2. Copy the **modcache2.dll** or **modcache22.dll** file from the **Apache20Support\modules** or **Apache22Support\modules** folder to the **%APACHE%\modules** folder.
3. Add the following script to the **httpd.conf** file in the **%APACHE%\conf** folder:

Take **modcache2.dll** as an example:

```
# Cache Module Apeon Data Cache function, AX only
#-----mod_cache for web cache configuration-----#
LoadModule data_cache_module modules/modcache2.dll
<IfModule mod_cache.c>
include conf/appeoncache.conf
</IfModule>
#-----End configuration-----#
```

The scripts load the **modcache2.dll** or **modcache22.dll** file and include the **appeoncache.conf** file.

3.2.4.2 Configuring UNIX Apache 2.0/2.2 with UNIX/LINUX WebSphere

3.2.4.2.1 Installing PowerServer Web Component to the Apache document root

Install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, **\$APACHE/htdocs/**, by following the instructions in Installation Guide for .NET.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **appeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.4.2.2 Installing Redirector Plug-in

In WebSphere 5.1: Copy the **mod_was_ap20_http.so** or **mod_was_ap22_http.so** file from the **\$WAS_HOME/bin/** folder to the **\$APACHE/modules/** folder.

In WebSphere 6.0: Download the installation program and set up for Apache 2.0 or 2.2. For detailed information, refer to WebSphere user document.

In certain UNIX operating systems (such as Sun Solaris), the plug-in file requires **libgsk7*.so** to work. Download and install **GSKit7.x** from the IBM Website (<http://www.ibm.com/>).

3.2.4.2.3 Adding virtual host in WebSphere console

1. Click **Environment > Virtual Host** in the navigation tree of the **WebSphere Administrative Console**.
2. Click the **New** button in the page that displays.
3. Input the IP address of the Web server in the **Host Name** field and port number in the **Port** field.
4. Click **Environment > Update Web Server Plug-in** in the console navigation tree.
5. Click **OK** to update the Web server plug-in.
6. Save the new configuration and restart WebSphere server.

3.2.4.2.4 Configuring plugin-cfg.xml file

Copy the **plugin-cfg.xml** file from the **\$WAS_HOME/config/cells/** folder to the **\$APACHE/conf/** folder and modify the following directives according to the PowerServer/WebSphere environment:

Configure the log file location. For example:

```
<Log LogLevel="Error" Name="$APACHE/logs/http_plugin.log"/>
```

Configure the **IP address** and **port number** of the PowerServer\WebSphere. For example:

```
<Transport Hostname="192.0.0.39" Port="9080" Protocol="http"/>
<Transport Hostname="192.0.0.39" Port="9443" Protocol="https">
  <Property name="keyring" value="$WAS_HOME/etc/plugin-key.kdb"/>
  <Property name="stashfile" value="$WAS_HOME/etc/plugin-key.sth"/>
</Transport>
```

Configure the context path. For example:

```
<UriGroup Name="server1_Cluster_URIs">
  <Uri Name="/servlet/*"/>
  <Uri Name="/AEM/*"/>
</UriGroup>
```

3.2.4.2.5 Configuring httpd.conf file

1. Add the following scripts to the **httpd.conf** file (located in the **\$APACHE/conf** folder):
Take **mod_was_ap20_http.so** as an example:

```
#Loading the plug-in file
```

```
LoadModule was_ap20_module modules/mod_was_ap20_http.so
WebSpherePluginConfig conf/plugin-cfg.xml
```

2. Specify an appropriate timeout period in the "**Timeout**" script in the **httpd.conf** file. The default value is 300 seconds.

3.2.4.2.6 Configuring for DataWindow Data Cache

The DataWindow data cache feature is not available in UNIX and Linux.

3.2.4.3 Configuring Windows Apache 1.3 with Windows WebSphere

3.2.4.3.1 Installing PowerServer Web Component to the Apache document root

Run the Apeon setup program and install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, %Apache%\htdocs\.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **apeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.4.3.2 Installing redirector plug-in

Copy the **mod_app_server_http.dll** file from the %WAS_HOME%\bin to the %APACHE%\modules folder.

3.2.4.3.3 Adding virtual host in WebSphere console

1. Click **Environment > Virtual Host** in the navigation tree of the **WebSphere Administrative Console**.
2. Click the **New** button in the page that displays.
3. Input the IP address of the Web server in the **Host Name** field and port number in the **Port** field.
4. Click **Environment > Update Web Server Plug-in** in the console navigation tree.
5. Click **OK** to update the Web server plug-in.
6. Save the new configuration and restart WebSphere server.

3.2.4.3.4 Configuring the plugin-cfg.xml file

Copy the **plugin-cfg.xml** file from the %WAS_HOME%\config\cells\ folder to the %APACHE%\conf\ folder and modify the following directives according to the PowerServer\WebSphere environment:

Configure the log file location. For example:

```
<Log LogLevel="Error" Name="%APACHE%/logs/http_plugin.log"/>
```

Configure the IP address and port number of the PowerServer\WebSphere. For example:

```
<Transport Hostname="192.0.0.39" Port="9080" Protocol="http"/>
<Transport Hostname="192.0.0.39" Port="9443" Protocol="https">
```

```
<Property name="keyring" value="C:/Websphere/AppServer/etc/plugin-key.kdb"/>
<Property name="stashfile" value="C:/Websphere/AppServer/etc/plugin-key.sth"/>
</Transport>
```

Configure the context path. For example:

```
<UriGroup Name="server1_Cluster_URIs">
  <Uri Name="/servlet/*" />
  <Uri Name="/AEM/*" />
</UriGroup>
```

3.2.4.3.5 Configuring the httpd.conf file

1. Add the following script to the **httpd.conf** file (located at the **%APACHE%\conf** folder):

```
#Loading the plug-in file
LoadModule app_server_http_module modules/mod_app_server_http.dll
WebSpherePluginConfig conf/plugin-cfg.xml
```

2. Specify an appropriate timeout period in the "**Timeout**" script in the **httpd.conf** file. The default value is 300 seconds.

3.2.4.3.6 Configuring for Apeon DataWindow Data Cache

Under the installation directory of PowerServer Web Component (for example, **C:\Inetpub\wwwroot\apeon**), there is an **Apache13Support** folder.

1. Copy the **apeoncache.conf** file from the **Apache13Support\conf** folder to the **%APACHE%\conf** folder.
 - The **cachesize** property is 100MB by default (and minimum). If you set the size to a value smaller than 100MB, the cache size will still be regarded as 100MB. For the Web server cache to keep enough DataWindow data, the larger the cache size, the better, but you need to make sure the cache size is no larger than the available memory on the server.
 - The **cache_temp_dir** property is "C:\tmp" by default. Make sure "C:\tmp" exists on your computer, or change the default value to the physical path of an existing directory.

```
#cache capacity, unit is M Bytes, must larger than 100
cachesize 100
#the switcher for print log info or not, on for use log, off close log;
log on
## Working directory for temporary files and the compression cache
## if not specified, the following default values are used:
## [Win32=c:\tmp], [UNIX=/tmp], the directory must exist
## this item just for apache
cache_temp_dir /tmp
```

2. Copy the **modcache.dll** file from the **%APACHE%\htdocs\apeon\Apache13Support\modules** folder to the **%APACHE%\modules** folder.
3. Add the following script to the **httpd.conf** file in the **%APACHE%\conf** folder:

```
# Cache Module Apeon Data Cache function, AX only
#-----mod_cache for web cache configuration-----#
```

```
LoadModule data_cache_module modules/modcache.dll
<IfModule mod_cache.c>
include conf/appeoncache.conf
</IfModule>
#-----End configuration-----#
```

The scripts load the **modcache.dll** file and include the **appeoncache.conf** file.

3.2.4.4 Configuring UNIX Apache 1.3 with UNIX/LINUX WebSphere

3.2.4.4.1 Installing PowerServer Web Component to the Apache document root

Install **PowerServer Web Component** to the document root of the Apache HTTP Server, for example, **\$APACHE/htdocs/**, by following the instructions in Installation Guide for .NET.

If you have installed **PowerServer Web Component** to another location, then you should copy the entire **appeon** folder from the installation directory of PowerServer Web Component to the Apache document root.

3.2.4.4.2 Installing the redirector plug-in

Copy the **mod_app_server_http.so** file from the **\$WAS_HOME/bin/** folder to the **\$APACHE/modules** folder.

In certain UNIX operating systems (such as Sun Solaris), the plug-in file requires **libgsk7*.so** to work. Download and install **GSKit7.x** from the IBM Website (<http://www.ibm.com/>).

3.2.4.4.3 Adding virtual host in WebSphere console

1. Click **Environment > Virtual Host** in the navigation tree of the **WebSphere Administrative Console**.
2. Click the **New** button in the page that displays.
3. Input the IP address of the Web server in the **Host Name** field and port number in the **Port** field.
4. Click **Environment > Update Web Server Plug-in** in the console navigation tree.
5. Click **OK** to update the Web server plug-in.
6. Save the new configuration and restart WebSphere server.

3.2.4.4.4 Configuring the plugin-cfg.xml file

1. Copy the **plugin-cfg.xml** file from the **\$WAS_HOME/config/cells/** folder to the **\$APACHE/conf/** folder and modify the following directives according to your PowerServer/WebSphere environments:

Configure the log file location. For example:

```
<Log LogLevel="Error" Name="$APACHE/logs/http_plugin.log"/>
```

Configure the **IP address** and **port number** of the PowerServer\WebSphere. For example:


```
<Transport Hostname="192.0.0.39" Port="9080" Protocol="http"/>
<Transport Hostname="192.0.0.39" Port="9443" Protocol="https">
  <Property name="keyring" value="$WAS_HOME/etc/plugin-key.kdb"/>
  <Property name="stashfile" value="$WAS_HOME/etc/plugin-key.sth"/>
</Transport>
```

Configure the **context path**. For example:

```
<UriGroup Name="server1_Cluster_URIs">
  <Uri Name="/servlet/*"/>
  <Uri Name="/AEM/*"/>
</UriGroup>
```

2. Specify an appropriate timeout period in the "**Timeout**" script in the **httpd.conf** file. The default value is 300 seconds.

3.2.4.4.5 Configuring the httpd.conf file

Add the following script to the **httpd.conf** file (located in the **\$APACHE/conf** folder):

```
#Loading the plug-in file
LoadModule app_server_http_module modules/mod_app_server_http.so
WebSpherePluginConfig conf/plugin-cfg.xml
```

3.2.4.4.6 Configuring for DataWindow Data Cache

The DataWindow data cache feature is not available in UNIX and Linux.

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