



BEA WebLogic Server™

Using Web Server Plug-Ins with WebLogic Server

Release 8.1
Revised: March 27, 2006

Copyright

Copyright © 2005 BEA Systems, Inc. All Rights Reserved.

Restricted Rights Legend

This software and documentation is subject to and made available only pursuant to the terms of the BEA Systems License Agreement and may be used or copied only in accordance with the terms of that agreement. It is against the law to copy the software except as specifically allowed in the agreement. This document may not, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form without prior consent, in writing, from BEA Systems, Inc.

Use, duplication or disclosure by the U.S. Government is subject to restrictions set forth in the BEA Systems License Agreement and in subparagraph (c)(1) of the Commercial Computer Software-Restricted Rights Clause at FAR 52.227-19; subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013, subparagraph (d) of the Commercial Computer Software--Licensing clause at NASA FAR supplement 16-52.227-86; or their equivalent.

Information in this document is subject to change without notice and does not represent a commitment on the part of BEA Systems. THE SOFTWARE AND DOCUMENTATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FURTHER, BEA Systems DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE, OR THE RESULTS OF THE USE, OF THE SOFTWARE OR WRITTEN MATERIAL IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE.

Trademarks or Service Marks

BEA, BEA JRockit, BEA Liquid Data for WebLogic, BEA WebLogic Server, Built on BEA, Jolt, JoltBeans, SteelThread, Top End, Tuxedo, and WebLogic are registered trademarks of BEA Systems, Inc. BEA AquaLogic, BEA AquaLogic Data Services Platform, BEA AquaLogic Enterprise Security, BEA AquaLogic Service Bus, BEA AquaLogic Service Registry, BEA Builder, BEA Campaign Manager for WebLogic, BEA eLink, BEA Manager, BEA MessageQ, BEA WebLogic Commerce Server, BEA WebLogic Enterprise, BEA WebLogic Enterprise Platform, BEA WebLogic Enterprise Security, BEA WebLogic Express, BEA WebLogic Integration, BEA WebLogic Java Adapter for Mainframe, BEA WebLogic JDriver, BEA WebLogic JRockit, BEA WebLogic Log Central, BEA WebLogic Personalization Server, BEA WebLogic Platform, BEA WebLogic Portal, BEA WebLogic Server Process Edition, BEA WebLogic WorkGroup Edition, BEA WebLogic Workshop, and Liquid Computing are trademarks of BEA Systems, Inc. BEA Mission Critical Support is a service mark of BEA Systems, Inc. All other company and product names may be the subject of intellectual property rights reserved by third parties.

All other trademarks are the property of their respective companies.

About This Document

Audience	vii
e-docs Web Site	viii
How to Print the Document	viii
Contact Us!	viii
Documentation Conventions	ix

1. Overview of Using Web Server Plug-Ins With WebLogic Server

What Are Plug-Ins?	1-1
Plug-Ins Included with WebLogic Server	1-2
How Web Server Plug-ins Work with WebLogic Server	1-2
Proxying Requests	1-3

2. Installing and Configuring the Apache HTTP Server Plug-In

Overview of the Apache HTTP Server Plug-In	2-1
Limitations in Apache Version 1.3.x	2-2
Keep-Alive Connections Not Supported	2-2
Inconsistent States	2-2
Keep-Alive Connections Supported in Apache Version 2.0	2-3
Certifications	2-4
Installing the Apache HTTP Server Plug-In	2-4
Installing the Apache HTTP Server Plug-In as a Dynamic Shared Object	2-4
Installing the Apache HTTP Server Plug-In as a Statically Linked Module	2-9
Configuring the Apache HTTP Server Plug-In	2-11
Editing the httpd.conf File	2-11
Including a weblogic.conf File in the httpd.conf File	2-14
Creating weblogic.conf Files	2-14
Sample weblogic.conf Configuration Files	2-16

Template for the Apache HTTP Server httpd.conf File	2-18
Setting Up Perimeter Authentication	2-19
Using SSL with the Apache Plug-In	2-20
Configuring SSL Between the Apache HTTP Server Plug-In and WebLogic Server	2-20
Issues with SSL-Apache Configuration	2-21
Connection Errors and Clustering Failover	2-23
Possible Causes of Connection Failures	2-23
Tuning to Reduce Connection_Refused Errors	2-24
Failover with a Single, Non-Clustered WebLogic Server	2-25
The Dynamic Server List	2-25
Failover, Cookies, and HTTP Sessions	2-25

3. Installing and Configuring the Microsoft IIS Plug-In

Overview of the Microsoft Internet Information Server Plug-In	3-1
Connection Pooling and Keep-Alive	3-2
Certifications	3-2
Installing and Configuring the Microsoft Internet Information Server Plug-In	3-2
Proxying Requests from Multiple Virtual Websites to WebLogic Server	3-8
Sample iisproxy.ini File	3-9
Setting Up Perimeter Authentication	3-10
Using SSL with the Microsoft Internet Information Server Plug-In	3-11
Proxying Servlets from IIS to WebLogic Server	3-12
Testing the Installation	3-13
Connection Errors and Clustering Failover	3-14
Possible Causes of Connection Failures	3-14
Connection Errors with Non-Clustered Servers	3-14
The Dynamic Server List	3-14
Failover, Cookies, and HTTP Sessions	3-15

4. Installing and Configuring the Netscape Enterprise Server Plug-In

Overview of the Netscape Enterprise Server Plug-In	4-1
Connection Pooling and Keep-Alive	4-2
Certifications	4-2
Installing and Configuring the Netscape Enterprise Server Plug-In	4-3
Guidelines for Modifying the obj.conf File	4-8
Sample obj.conf File (Not Using a WebLogic Cluster)	4-9
Sample obj.conf File (Using a WebLogic Cluster)	4-11
Setting Up Perimeter Authentication	4-14
Using SSL with the NES Plug-In	4-14
Connection Errors with Single Non-Clustered WebLogic Server Instances	4-15
Connection Errors and Clustering Failover	4-16
Possible Causes of Connection Failures	4-16
The Dynamic Server List	4-16
Failover, Cookies, and HTTP Sessions	4-16
Failover Behavior When Using Firewalls and Load Directors	4-17

5. Proxying Requests from WebLogic Server to Another Web Server

Overview of Proxying Requests to Another Web Server	5-1
Setting Up a Proxy to a Secondary Web Server	5-1
Sample Deployment Descriptor for the Proxy Servlet	5-2

6. Parameters for Web Server Plug-Ins

Entering Parameters in Web Server Plug-In Configuration Files	6-1
General Parameters for Web Server Plug-Ins	6-1
SSL Parameters for Web Server Plug-Ins	6-13
Configuring Web Applications and Clusters for the Plug-in	6-17

About This Document

This document explains how to use the plug-ins provided with WebLogic Server to proxy requests from Apache, Netscape, and Microsoft Web servers to WebLogic Server. It is organized as follows:

- [Chapter 1, “Overview of Using Web Server Plug-Ins With WebLogic Server,”](#) describes the plug-ins available for use with WebLogic Server.
- [Chapter 2, “Installing and Configuring the Apache HTTP Server Plug-In,”](#) explains how to install and configure the WebLogic Server Apache plug-in.
- [Chapter 3, “Installing and Configuring the Microsoft IIS Plug-In,”](#) explains how to install and configure the WebLogic Server plug-in for the Microsoft Internet Information Server.
- [Chapter 4, “Installing and Configuring the Netscape Enterprise Server Plug-In,”](#) explains how to install and configure the Netscape Enterprise Server proxy plug-in.
- [Chapter 6, “Parameters for Web Server Plug-Ins,”](#) discusses the parameters for Web server plug-ins.
- [Chapter 5, “Proxying Requests from WebLogic Server to Another Web Server,”](#) describes the use of WebLogic Server as a proxy, forwarding HTTP requests to other Web servers.

Audience

This document is intended mainly for system administrators who manage WebLogic Server and its various subsystems.

e-docs Web Site

BEA product documentation is available on the BEA corporate Web site. From the BEA Home page, click on Product Documentation.

How to Print the Document

You can print a copy of this document from a Web browser, one main topic at a time, by using the File—Print option on your Web browser.

A PDF version of this document is available on the WebLogic Server documentation Home page on the e-docs Web site (and also on the documentation CD). You can open the PDF in Adobe Acrobat Reader and print the entire document (or a portion of it) in book format. To access the PDFs, open the WebLogic Server documentation Home page, click Download Documentation, and select the document you want to print.

Adobe Acrobat Reader is available at no charge from the Adobe Web site at <http://www.adobe.com>.

Contact Us!

Your feedback on BEA documentation is important to us. Send us e-mail at docsupport@bea.com if you have questions or comments. Your comments will be reviewed directly by the BEA professionals who create and update the documentation.

In your e-mail message, please indicate the software name and version you are using, as well as the title and document date of your documentation. If you have any questions about this version of BEA WebLogic Server, or if you have problems installing and running BEA WebLogic Server, contact BEA Customer Support through BEA WebSupport at <http://www.bea.com>. You can also contact Customer Support by using the contact information provided on the Customer Support Card, which is included in the product package.

When contacting Customer Support, be prepared to provide the following information:

- Your name, e-mail address, phone number, and fax number
- Your company name and company address
- Your machine type and authorization codes
- The name and version of the product you are using
- A description of the problem and the content of pertinent error messages

Documentation Conventions

The following documentation conventions are used throughout this document.

Convention	Usage
Ctrl+Tab	Keys you press simultaneously.
<i>italics</i>	Emphasis and book titles.
monospace text	Code samples, commands and their options, Java classes, data types, directories, and file names and their extensions. Monospace text also indicates text that you enter from the keyboard. <i>Examples:</i> <pre>import java.util.Enumeration; chmod u+w * config/examples/applications .java config.xml float</pre>
<i>monospace italic text</i>	Variables in code. <i>Example:</i> <pre>String CustomerName;</pre>
UPPERCASE TEXT	Device names, environment variables, and logical operators. <i>Examples:</i> <pre>LPT1 BEA_HOME OR</pre>
{ }	A set of choices in a syntax line.
[]	Optional items in a syntax line. <i>Example:</i> <pre>java utils.MulticastTest -n name -a address [-p portnumber] [-t timeout] [-s send]</pre>

Convention	Usage
	Separates mutually exclusive choices in a syntax line. <i>Example:</i> <code>java weblogic.deploy [list deploy undeploy update] password {application} {source}</code>
...	Indicates one of the following in a command line: <ul style="list-style-type: none">• An argument can be repeated several times in the command line.• The statement omits additional optional arguments.• You can enter additional parameters, values, or other information
.	Indicates the omission of items from a code example or from a syntax line.

Overview of Using Web Server Plug-Ins With WebLogic Server

The following sections give an overview of the plug-ins provided by BEA Systems for use with WebLogic Server:

- [“What Are Plug-Ins?” on page 1-1](#)
- [“Plug-Ins Included with WebLogic Server” on page 1-2](#)
- [“How Web Server Plug-ins Work with WebLogic Server” on page 1-2](#)

What Are Plug-Ins?

WebLogic Server plug-ins are modules that you add to your third-party Web server installation and configure to enable interactions between WebLogic Server and applications running on Apache HTTP Server, Netscape Enterprise Server, and Microsoft Internet Information Server.

Plug-ins usually use one of the two following architectures to enable applications running on third-party Web servers to use the capabilities of WebLogic Server:

- As a load balancer for the Web server (proxying the requests to the backend servers)
- To proxy requests for dynamic content to backend servers (the Web server can supply only static content and relies on WebLogic Server for dynamic content)

In most cases the requests are initiated by the browsers or Web services or applets (using t3 tunneling over HTTP).

In a typical scenario, a third-party Web server receives a request from a user application and routes an HTTP request to the WebLogic Server plug-in, which uses its configuration information

to route the request to the WebLogic Server instance, server cluster, or array of unclustered servers. The targeted WebLogic Server instance or cluster processes the request (parses the headers, performs a requested action) and then returns a response via the plug-in to the third-party Web server.

WebLogic Server Plug-Ins do not support two-way SSL. However, the Plug-Ins can be set up to require the client certificate and pass it on to WebLogic Server. For example:

```
apache ssl  
  
SSLVerifyClient require  
  
SSLVerifyDepth 10  
  
SSLOptions +FakeBasicAuth +ExportCertData +CompatEnvVars +StrictRequire
```

Plug-Ins Included with WebLogic Server

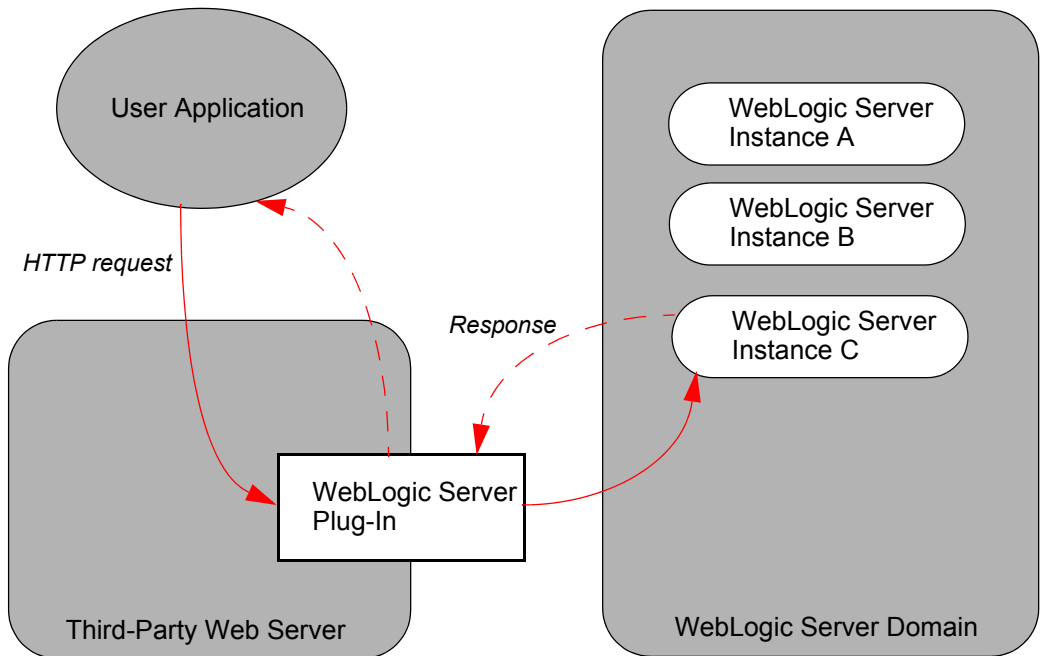
As of WebLogic Server 6.1 SP6, 7.0 SP5, and 8.1 SP2, the WebLogic Server plug-ins are now certified to proxy to any version of WebLogic Server, including 5.1

WebLogic Server includes plug-ins for the following Web servers:

- Apache HTTP Server: a shared object
- Microsoft Internet Information Server: a dynamic link library and an .ini file.
- Netscape Enterprise Server:

How Web Server Plug-ins Work with WebLogic Server

In Figure 1-1, a user application running on a third-party Web server generates an HTTP request, which the Web server routes to the WebLogic Server plug-in. The plug-in sends the HTTP request based on configuration information that specifies a WebLogic Server cluster or instance. The WebLogic Server instance processes the request and returns a response to the user application through the plug-in.

Figure 1-1 Role of WebLogic Server Plug-In

In this scenario, the WebLogic Server plug-in configuration parameter `WebLogicHost` specifies WebLogic Server instance C as the recipient of the HTTP request.

You target a WebLogic Server instance using the `WebLogicHost` and `WebLogicPort` parameters in the plug-in configuration file. You target a WebLogic Server cluster or group of non-clustered servers using the `WebLogicCluster` parameter. For information about setting plug-in parameters, see [“Parameters for Web Server Plug-Ins” on page 6-1](#).

Proxying Requests

The plug-ins proxy requests to WebLogic Server based on configuration information that you specify. You can proxy requests based on either the URL of the request or a portion of the URL. This is called proxying by *path*.

You can also proxy a request based on the *MIME type* of the requested file, which called proxying by file extension.

You can also enable both methods. If you do enable both methods and a request matches both criteria, the request is proxied by path.

You can also specify additional parameters for requests that define additional behavior of the plug-in. For more information, see the following sections on how to configure each plug-in:

- [“Configuring the Apache HTTP Server Plug-In” on page 2-11](#)
- [“Installing and Configuring the Microsoft Internet Information Server Plug-In” on page 3-2](#)
- [“Installing and Configuring the Netscape Enterprise Server Plug-In” on page 4-3](#)

Installing and Configuring the Apache HTTP Server Plug-In

The following sections describe how to install and configure the Apache HTTP Server Plug-In:

- [“Overview of the Apache HTTP Server Plug-In” on page 2-1](#)
- [“Installing the Apache HTTP Server Plug-In” on page 2-4](#)
- [“Configuring the Apache HTTP Server Plug-In” on page 2-11](#)
- [“Template for the Apache HTTP Server httpd.conf File” on page 2-18](#)
- [“Sample weblogic.conf Configuration Files” on page 2-16](#)
- [“Setting Up Perimeter Authentication” on page 2-19](#)
- [“Using SSL with the Apache Plug-In” on page 2-20](#)
- [“Issues with SSL-Apache Configuration” on page 2-21](#)
- [“Connection Errors and Clustering Failover” on page 2-23](#)

Overview of the Apache HTTP Server Plug-In

The Apache HTTP Server Plug-In proxies requests from an Apache HTTP Server to a WebLogic Server cluster or instance. The plug-in enhances an Apache installation by enabling WebLogic Server to handle load-balancing or requests that require the dynamic functionality of WebLogic Server. You target a WebLogic Server instance using the `WebLogicHost` and `WebLogicPort` parameters in the plug-in configuration file. You target a WebLogic Server cluster or group of

non-clustered servers using the `WebLogicCluster` parameter. For information about setting plug-in parameters, see [“Parameters for Web Server Plug-Ins” on page 6-1](#).

The plug-in is intended for use in an environment where an Apache Server serves static pages, and another part of the document tree (dynamic pages best generated by HTTP Servlets or JavaServer Pages) is delegated to WebLogic Server, which may be operating in a different process, possibly on a different host. To the end user—the browser—the HTTP requests delegated to WebLogic Server still appear to be coming from the same source.

HTTP-tunneling, a technique that gives HTTP requests and responses access through a company’s firewall, can operate through the plug-in. See [“Editing the `httpd.conf` File” on page 2-11](#).

The Apache HTTP Server Plug-In operates as an Apache module within an Apache HTTP Server. An Apache module is loaded by Apache Server at startup, and then certain HTTP requests are delegated to it. Apache modules are similar to HTTP servlets, except that an Apache module is written in code native to the platform.

Limitations in Apache Version 1.3.x

Version 1.3.x of the Apache HTTP Server has several limitations that affect the WebLogic Server plug-in. These limitations do not exist in later versions.

Keep-Alive Connections Not Supported

Version 1.3.x of the Apache HTTP Server Plug-In creates a socket for each request and closes the socket after reading the response. Because Apache HTTP Server is multiprocessed, connection pooling and keep-alive connections between WebLogic Server and the Apache HTTP Server Plug-In cannot be supported.

Inconsistent States

The Apache HTTP Server has a multi-process architecture, and the state of the plug-in cannot be synchronized across multiple child processes. The following types of problems may occur:

- In a clustered environment, a plug-in may dispatch requests to an unavailable WebLogic Server instance because the `DynamicServerList` is not current in all plug-in processes.

`DynamicServerList=ON` works with a single Apache server (`httpd` daemon process), but for more than one server, such as `StartServers=5`, the dynamic server list will not be updated across all `httpd` instances until they have all tried to contact a WebLogic Server instance. This is because they are separate processes. This delay in updating the dynamic

server list could allow an Apache httpd process to contact a server that another httpd process has marked as dead. Only after such an attempt will the server list will be updated within the proxy. One possible solution if this is undesirable is to set the `DynamicServerList` to OFF.

- In a non-clustered environment, a plug-in may lose the stickiness of a session created after restarting WebLogic Server instances, because some plug-in processes do not have the new JVMID of those restarted servers, and treat them as unknown JVMIDs.

To temporarily correct inconsistencies of this type, restart or send a HUP signal (`kill -HUP`) to the Apache server to refresh all plug-in processes.

To avoid these issues, upgrade to Apache 2.0.x and configure Apache to use the multi-threaded and single-process model, `mpm_worker_module`. An example `httpd.conf` configuration for this module:

```
<IfModule worker.c>

StartServers          1
MaxClients            75
MinSpareThreads       25
MaxSpareThreads       75
ThreadsPerChild       25
MaxRequestsPerChild   0

ServerLimit 3

</IfModule>
```

For information about this module, see [Apache MPM worker](http://httpd.apache.org/docs-2.0/mod/worker.html) at <http://httpd.apache.org/docs-2.0/mod/worker.html>.

Keep-Alive Connections Supported in Apache Version 2.0

Version 2.0 of the Apache HTTP Server Plug-In improves performance by using a reusable pool of connections from the plug-in to WebLogic Server. The plug-in implements HTTP 1.1 keep-alive connections between the plug-in and WebLogic Server by reusing the same connection in the pool for subsequent requests from the same client. If the connection is inactive for more than 30 seconds, (or a user-defined amount of time) the connection is closed and returned to the pool. You can disable this feature if desired.

Certifications

The Apache HTTP Server Plug-In is supported on the Linux, Solaris, AIX, Windows, and HP-UX11 platforms. Plug-ins are not supported on all operating systems for all releases. For information on platform support for specific versions of Apache, see [Platform Support for WebLogic Server Plug-ins and Web Servers](#) in *Supported Configurations for WebLogic Server 8.1*.

Installing the Apache HTTP Server Plug-In

You install the Apache HTTP Server Plug-In as an Apache module in your Apache HTTP Server installation. There are two ways that this module can be compiled and linked to Apache—as a statically linked module (available only for Apache version 1.3.x), or as a Dynamic Shared Object (DSO).

Keep the following in mind when selecting which type of module to use:

- Statically linking a plug-in module requires recompiling Apache, which may be inconvenient.
- A Dynamic Shared Object is compiled as a library that is dynamically loaded by the server at run time, and can be installed without recompiling Apache.

Installing the Apache HTTP Server Plug-In as a Dynamic Shared Object

The Apache plug-in is distributed as a shared object (.so) for Solaris, Linux, Windows, AIX and HP-UX11 platforms. WebLogic supplies versions of shared object files that vary according to platform, to whether or not SSL is to be used between the client and Apache, and to the SSL encryption strength (128-bit versions are only installed if you install the 128-bit version of WebLogic Server).

[Table 2-1, “Locations of Plug-In Shared Object Files,” on page 2-5](#) shows the directories of your WebLogic Server installation that contain shared object files for various platforms (where WL_HOME is the top-level installation directory for the WebLogic platform).

[Table 2-2, “Apache Plug-In Shared Object File Versions,” on page 2-6](#) identifies the WebLogic Server Apache Plug-In modules for different versions of Apache HTTP Server and different encryption strengths.

Table 2-1 Locations of Plug-In Shared Object Files

Operating System	Shared Object Location
Solaris	WL_HOME/server/lib/solaris
Linux	WL_HOME/server/lib/linux/i686 WL_HOME/server/lib/linux/ia64 WL_HOME/server/lib/linux/s390
Windows	WL_HOME\server\bin WL_HOME\server\bin\win64
AIX	WL_HOME/server/lib/aix
HPUX11	WL_HOME/server/lib/hpux11

Warning: If you are running Apache 2.0.x server on HP-UX11, set the environment variables specified below before you build the Apache server. Because of a problem with the order in which linked libraries are loaded on HP-UX, a core dump can result if the load order is not preset as an environment variable before building. Set the following environment variables before proceeding with the Apache `configure`, `make`, and `make install` steps, (described in Apache HTTP Server documentation at <http://httpd.apache.org/docs-2.1/install.html#configure>):

```
export EXTRA_LDFLAGS="-lstd -lstream -lCsup -lm -lcl
-lldd -lpthread"
```

Choose the appropriate version of the plug-in shared object from the following table.

Table 2-2 Apache Plug-In Shared Object File Versions

Apache Version	Regular Strength Encryption	128-bit Encryption
Standard Apache Version 1.x	mod_wl.so	mod_wl128.so
Apache w/ SSL/EAPI Version 1.x (Stronghold, modssl etc.)	mod_wl_ssl.so	mod_wl128_ssl.so
Apache + Raven SSL Version 1.x Required because Raven SSL applies frontpage patches that makes the plug-in incompatible with the standard shared object	mod_wl_ssl_raven.so	mod_wl128_ssl_raven.so
Standard Apache Version 2.x	mod_wl_20.so	mod_wl128_20.so

To install the Apache HTTP Server Plug-In as a dynamic shared object:

1. In your WebLogic Server installation, locate the shared object directory for your platform using [Table 2-1, “Locations of Plug-In Shared Object Files,” on page 2-5](#).
2. Identify the plug-in shared object file for your version of Apache in [Table 2-2, “Apache Plug-In Shared Object File Versions,” on page 2-6](#).
3. Verify that the WebLogic Server Apache HTTP Server Plug-In `mod_so.c` module is enabled.

The Apache HTTP Server Plug-In will be installed in your Apache HTTP Server installation as an Apache Dynamic Shared Object (DSO). DSO support in Apache is based on a module `mod_so.c`, which must be enabled before `mod_wl.so` is loaded. If you installed Apache HTTP Server using the script supplied by Apache, `mod_so.c` is already enabled. Verify that `mod_so.c` is enabled by executing the following command:

```
APACHE_HOME\bin\apache -l
```

(Where `APACHE_HOME` is the directory containing your Apache HTTP Server installation.)

This command lists all enabled modules. If `mod_so.c` is not listed, you must rebuild your Apache HTTP Server, making sure that the following options are configured:

```
...
--enable-module=so
--enable-rule=SHARED_CORE
...
```

See *Apache 1.3 Shared Object (DSO) Support* at <http://httpd.apache.org/docs/dso.html>.

4. Install the Apache HTTP Server Plug-In module.
 - For Apache 1.x, use a command shell to navigate to the directory in your WebLogic Server installation that contains the shared object for your platform and activate the `weblogic_module` by issuing this command (note that you must have Perl installed to run this Perl script):

```
perl APACHE_HOME\bin\apxs -i -a -n weblogic mod_wl.so
```

This command copies the `mod_wl.so` file to the `APACHE_HOME\libexec` directory. It also adds two lines of instructions for `weblogic_module` to the `httpd.conf` file and activates the module. Make sure that the following lines were added to your `APACHE_HOME/conf/httpd.conf` file in your Apache 1.x server installation:

```
LoadModule weblogic_module      libexec/mod_wl.so
AddModule mod_weblogic.c
```

For information about the Apache utility `apxs` (APache eXtenSion) see <http://httpd.apache.org/docs/programs/apxs.html>.

- For Apache 2.x, install the plug-in by copying the `mod_wl_20.so` file to the `APACHE_HOME\modules` directory and adding the following line to your `APACHE_HOME/conf/httpd.conf` file manually:
- ```
LoadModule weblogic_module modules/mod_wl_20.so
```
5. In `httpd.conf`, define any additional parameters for the Apache HTTP Server Plug-In as described in “[Configuring the Apache HTTP Server Plug-In](#)” on page 2-11.
 

The Apache HTTP Server Plug-In recognizes the parameters listed in “[General Parameters for Web Server Plug-Ins](#)” on page 6-1.
  6. Restart Weblogic Server.
  7. Start (or restart if you have changed the configuration) Apache HTTP Server.

## Installing and Configuring the Apache HTTP Server Plug-In

8. Test the plug-in by opening a browser and setting the URL to the Apache Server + “/weblogic/”, which should bring up the default WebLogic Server HTML page, welcome file, or default servlet, as defined for the default Web Application on WebLogic Server. For example:

`http://myApacheserver.com/weblogic/`



## Installing the Apache HTTP Server Plug-In as a Statically Linked Module

To install the Apache HTTP Server Plug-In as a statically linked module:

1. Unpack the Apache Plug-In distribution using the following command:  

```
tar -xvf apache_1.3.x.tar
```
2. Within the unpacked distribution switch to the `src/modules` directory.
3. Create a directory called `weblogic`.
4. Locate the linked library file for your platform.

Each library file is distributed as a separate version, depending on the platform and the encryption strength for SSL (128-bit versions are only installed if you install the 128-bit version of WebLogic Server). The library files are located in the following directories of your WebLogic Server installation.

**Table 2-3 Locations of Plug-In Files**

| Operating System | Shared Object Location     |
|------------------|----------------------------|
| Solaris          | WL_HOME/Server/lib/solaris |

**Table 2-3** Locations of Plug-In Files

| Operating System | Shared Object Location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Linux            | WL_HOME/Server/lib/linux                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                  | <b>Note:</b> You also need to set the following environment variable:<br>LDFLAGS = “-lpthread”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| HPUX11           | WL_HOME/Server/lib/hpux11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                  | <b>Warning:</b> If you are running Apache 2.0.x server on HP-UX11, set the environment variables specified below before you build the Apache server. Because of a problem with the order in which linked libraries are loaded on HP-UX, a core dump can result if the load order is not preset as an environment variable before building. Set the following environment variables before proceeding with the Apache configure, make, and make install steps, (described in Apache HTTP Server documentation at <a href="http://httpd.apache.org/docs-2.1/install.html#configure">http://httpd.apache.org/docs-2.1/install.html#configure</a> ):<br><br><pre>export EXTRA_LDFLAGS="-lstd -lstream -lcup -lm -lcl -ldld -lpthread"</pre> |

Choose the appropriate shared object from the following table.

**Table 2-4** Statically Linked Modules for Different Levels of Encryption

| Apache Version                | Regular Strength Encryption | 128-bit Encryption |
|-------------------------------|-----------------------------|--------------------|
| Standard Apache Version 1.3.x | libweblogic.a               | libweblogic128.a   |

If you are using the Gnu C Compiler (gcc), gcc 2.95.x is the recommended version.

- Copy Makefile.libdir, Makefile.tmpl from the lib directory of your WebLogic Server installation to src\modules\weblogic.
- Copy libweblogic.a (use libweblogic128.a instead, if you are using 128 bit security.) from the same directory containing the linked library file to src\modules\weblogic.

7. If you are using regular (such as 56-bit or 40-bit) 56-bit or 40-bit, execute the following command from the Apache 1.3 home directory:

```
configure --activate-module=src\modules\weblogic\libweblogic.a
```

If you are using 128-bit encryption, execute the following command (on a single line) from the Apache 1.3 home directory:

```
configure--activate-module=
src\modules\weblogic\libweblogic128.a
```

8. Execute the following command:

```
make
```

9. Execute the following command:

```
make install
```

10. Define parameters for the Apache HTTP Server Plug-In as described in [“Configuring the Apache HTTP Server Plug-In” on page 2-11](#).

## Configuring the Apache HTTP Server Plug-In

After installing the plug-in in the Apache HTTP Server, configure the WebLogic Server Apache Plug-In and configure the Apache server to use the plug-in. This section explains how to edit the Apache `httpd.conf` file to instruct the Apache server to load the WebLogic Server library for the plug-in as an Apache module, and to specify the application requests that should be handled by the module.

### Editing the `httpd.conf` File

Edit the `httpd.conf` file in your Apache HTTP server installation to configure the Apache HTTP Server Plug-In.

This section explains how to locate and edit the `httpd.conf` file, to configure the Apache server to use the WebLogic Server Apache Plug-In, to proxy requests by path or by MIME type, to enable HTTP tunneling, and to use other WebLogic Server plug-in parameters.

1. Open the `httpd.conf` file.

The file is located at `APACHE_HOME\conf\httpd.conf` (where `APACHE_HOME` is the root directory of your Apache HTTP server installation). See a sample `httpd.conf` file at [“Template for the Apache HTTP Server `httpd.conf` File” on page 2-18](#).

2. Ensure that the WebLogic Server modules are included.

- For Apache 1.x, verify that the following two lines were added to the `httpd.conf` file when you ran the `apxs` utility, or add them manually:

```
LoadModule weblogic_module libexec/mod_wl.so
AddModule mod_weblogic.c
```

- For Apache 2.x, manually add the following line to the `httpd.conf` file:

```
LoadModule weblogic_module modules/mod_wl_20.so
```

### 3. Add an `IfModule` block that defines one of the following:

For a *non-clustered* WebLogic Server instance:

The `WebLogicHost` and `WebLogicPort` parameters.

For a *cluster* of WebLogic Servers instances:

The `WebLogicCluster` parameter.

For example:

```
<IfModule mod_weblogic.c>
 WebLogicHost myweblogic.server.com
 WebLogicPort 7001
</IfModule>
```

### 4. To proxy requests by MIME type, add a `MatchExpression` line to the `IfModule` block. Note that if both MIME type and proxying by path are enabled, proxying by path takes precedence over proxying by MIME type.

For example, the following `IfModule` block for a non-clustered WebLogic Server specifies that all files with MIME type `.jsp` are proxied:

```
<IfModule mod_weblogic.c>
 WebLogicHost myweblogic.server.com
 WebLogicPort 7001
 MatchExpression *.jsp
</IfModule>
```

You can also use multiple `MatchExpressions`, for example:

```
<IfModule mod_weblogic.c>
 WebLogicHost myweblogic.server.com
 WebLogicPort 7001
 MatchExpression *.jsp
 MatchExpression *.xyz
</IfModule>
```

If you are proxying requests by MIME type to a cluster of WebLogic Servers, use the [WebLogicCluster](#) parameter instead of the [WebLogicHost](#) and [WebLogicPort](#) parameters. For example:

```
<IfModule mod_weblogic.c>
 WebLogicCluster wls1.com:7001,wls2.com:7001,wls3.com:7001
 MatchExpression *.jsp
 MatchExpression *.xyz
</IfModule>
```

5. To proxy requests by path, use the `Location` block and the `SetHandler` statement. `SetHandler` specifies the handler for the Apache HTTP Server Plug-In module. For example the following `Location` block proxies all requests containing `/weblogic` in the URL:

```
<Location /weblogic>
 SetHandler weblogic-handler
 PathTrim /weblogic
</Location>
```

The `PathTrim` parameter specifies a string trimmed from the beginning of the URL before the request is passed to the WebLogic Server instance (see [“General Parameters for Web Server Plug-Ins” on page 6-1](#)).

6. Optionally, enable HTTP tunneling for t3 or IIOP.
  - a. To enable HTTP tunneling if you are using the t3 protocol and `weblogic.jar`, add the following `Location` block to the `httpd.conf` file:

```
<Location /HTTPCInt>
 SetHandler weblogic-handler
</Location>
```

- b. To enable HTTP tunneling if you are using IIOP, the only protocol used by the WebLogic Server thin client, `wlclient.jar`, add the following `Location` block to the `httpd.conf` file:

```
<Location /iiop>
 SetHandler weblogic-handler
</Location>
```

7. Define any additional parameters for the Apache HTTP Server Plug-In.

The Apache HTTP Server Plug-In recognizes the parameters listed in [“General Parameters for Web Server Plug-Ins” on page 6-1](#). To modify the behavior of your Apache HTTP Server Plug-In, define these parameters either:

- In a `Location` block, for parameters that apply to proxying by *path*, or

– In an `IfModule` block, for parameters that apply to proxying by *MIME type*.

8. Verify the syntax of the `APACHE_HOME\conf\httpd.conf` file with the following commands:

```
For Apache 1.x, APACHE_HOME\bin\apachectl configtest
```

```
For Apache 2.x, APACHE_HOME\bin\Apache -t
```

The output of this command reports any errors in your `httpd.conf` file or returns:

```
Syntax OK
```

9. Restart Weblogic Server.
10. Start (or restart if you have changed the configuration) Apache HTTP Server.
11. Test the plug-in by opening a browser and setting the URL to the Apache Server + `"/weblogic/"`, which should bring up the default WebLogic Server HTML page, welcome file, or default servlet, as defined for the default Web Application on WebLogic Server. For example:

```
http://myApacheserver.com/weblogic/
```

## Including a `weblogic.conf` File in the `httpd.conf` File

If you want to keep several separate configuration files so that you can quickly switch among different stored configurations, you can define parameters in a separate configuration file called `weblogic.conf` file, and invoke specific `weblogic.conf` files by using the Apache `Include` directive in an `IfModule` block in the `httpd.conf` file:

```
<IfModule mod_weblogic.c>
 # Config file for WebLogic Server that defines the parameters
 Include conf/weblogic.conf
</IfModule>
```

The syntax of `weblogic.conf` files is the same as that for the `httpd.conf` file.

This section describes how to create `weblogic.conf` files, and includes sample `weblogic.conf` files.

## Creating `weblogic.conf` Files

Be aware of the following when constructing a `weblogic.conf` file.

- If you are using SSL between the Apache HTTP Server Plug-In and WebLogic Server, you cannot define parameters in a file accessed, as the `weblogic.conf` file is, through the Apache `Include` directive. Thus you can not use both SSL and `weblogic.conf` files.

- Enter each parameter on a new line. Do not put '=' between a parameter and its value. For example:

```
PARAM_1 value1
PARAM_2 value2
PARAM_3 value3
```

- If a request matches both a MIME type specified in a `MatchExpression` in an `IfModule` block and a path specified in a `Location` block, the behavior specified by the `Location` block takes precedence.
- If you define the `CookieName` parameter (see [http://e-docs.bea.com/wls/docs81/webapp/weblogic\\_xml.html#session-decriptor](http://e-docs.bea.com/wls/docs81/webapp/weblogic_xml.html#session-decriptor)), you must define it in an `IfModule` block.
- If you use an Apache HTTP Server `<VirtualHost>` block, you must include all configuration parameters (`MatchExpression`, for example) for the virtual host within the `<VirtualHost>` block (see [Apache Virtual Host documentation](#)).
- If you want to have only one log file for all the virtual hosts configured in your environment, you can achieve it using global properties. Instead of specifying the same `Debug`, `WLLogFile` and `WLTempDir` properties in each virtual host you can specify them just once in the `<IfModule>` tag
- Sample `httpd.conf` file:

```
<IfModule mod_weblogic.c>

 WebLogicClusteragarwalp02:8005,agarwalp02:8006

 Debug ON

 WLLogFile c:/tmp/global_proxy.log

 WLTempDir "c:/myTemp"

 DebugConfigInfo On

 KeepAliveEnabled ON

 KeepAliveSecs 15

</IfModule>

<Location /jurl>

 SetHandler weblogic-handler

 WebLogicCluster agarwalp01:7001
```

## Installing and Configuring the Apache HTTP Server Plug-In

```
</Location>

<Location /web>

 SetHandler weblogic-handler

 PathTrim /web

 Debug OFF

 WLLogFile c:/tmp/web_log.log

</Location>

<Location /foo>

 SetHandler weblogic-handler

 PathTrim /foo

 Debug ERR

 WLLogFile c:/tmp/foo_proxy.log

</Location>
```

- All the requests which match /jurl/\* will have Debug Level set to ALL and log messages will be logged to c:/tmp/global\_proxy.log file. All the requests which match /web/\* will have Debug Level set to OFF and no log messages will be logged. All the requests which match /foo/\* will have Debug Level set to ERR and log messages will be logged to c:/tmp/foo\_proxy.log file
- BEA recommends that you use the MatchExpression statement instead of the <files> block.

## Sample weblogic.conf Configuration Files

The following examples of `weblogic.conf` files may be used as templates that you can modify to suit your environment and server. Lines beginning with # are comments.

### Example Using WebLogic Clusters

```
These parameters are common for all URLs which are
directed to the current module. If you want to override
these parameters for each URL, you can set them again in
the <Location> or <Files> blocks. (Except WebLogicHost,
WebLogicPort, WebLogicCluster, and CookieName.)
```



```
<IfModule mod_weblogic.c>
 WebLogicCluster wls1.com:7001,wls2.com:7001,wls3.com:7001
 ErrorPage http://myerrorpage.mydomain.com
 MatchExpression *.jsp
</IfModule>
#####
```

## Example Using Multiple WebLogic Clusters

In this example, the `MatchExpression` parameter syntax for expressing the filename pattern, the WebLogic Server host to which HTTP requests should be forwarded, and various other parameters is as follows:

```
MatchExpression [filename pattern] [WebLogicHost=host] |
[paramName=value]
```

The first `MatchExpression` parameter below specifies the filename pattern `*.jsp`, and then names the single `WebLogicHost`. The `paramName=value` combinations following the pipe symbol specify the port at which WebLogic Server is listening for connection requests, and also activate the Debug option. The second `MatchExpression` specifies the filename pattern `*.html` and identifies the `WebLogicCluster` hosts and their ports. The `paramName=value` combination following the pipe symbol specifies the error page for the cluster.

```
These parameters are common for all URLs which are
directed to the current module. If you want to override
these parameters for each URL, you can set them again in
the <Location> or <Files> blocks (Except WebLogicHost,
WebLogicPort, WebLogicCluster, and CookieName.)

<IfModule mod_weblogic.c>
 MatchExpression *.jsp WebLogicHost=myHost|WebLogicPort=7001|Debug=ON
 MatchExpression
*.html WebLogicCluster=myHost1:7282,myHost2:7283|ErrorPage=
 http://www.xyz.com/error.html
</IfModule>
```

## Example Without WebLogic Clusters

```
These parameters are common for all URLs which are
directed to the current module. If you want to override
these parameters for each URL, you can set them again in
```

## Installing and Configuring the Apache HTTP Server Plug-In

```
the <Location> or <Files> blocks (Except WebLogicHost,
WebLogicPort, WebLogicCluster, and CookieName.)

<IfModule mod_weblogic.c>
 WebLogicHost myweblogic.server.com
 WebLogicPort 7001
 MatchExpression *.jsp
</IfModule>
```

### Example Configuring Multiple Name-Based Virtual Hosts

```
VirtualHost1 = localhost:80
<VirtualHost 127.0.0.1:80>
 DocumentRoot "C:/test/VirtualHost1"
 ServerName localhost:80<IfModule mod_weblogic.c>
 #... WLS parameter ...
 WebLogicCluster localhost:7101,localhost:7201
 # Example: MatchExpression *.jsp <some additional parameter>
 MatchExpression *.jsp PathPrepend=/test2
 </IfModule>
</VirtualHost>

VirtualHost2 = 127.0.0.2:80
<VirtualHost 127.0.0.2:80>
 DocumentRoot "C:/test/VirtualHost1"
 ServerName 127.0.0.2:80
 <IfModule mod_weblogic.c>
 #... WLS parameter ...
 WebLogicCluster localhost:7101,localhost:7201
 # Example: MatchExpression *.jsp <some additional parameter>
 MatchExpression *.jsp PathPrepend=/test2
 #... WLS parameter ...
 </IfModule>
</VirtualHost><IfModule mod_weblogic.c>
```

You must define a unique value for 'ServerName' or some Plug-In parameters will not work as expected.

### Template for the Apache HTTP Server httpd.conf File

This section contains a sample httpd.conf file for Apache 1.3. You can use this sample as a template and modify it to suit your environment and server. Lines beginning with # are comments.

Note that Apache HTTP Server is not case sensitive.

```
#####
APACHE-HOME/conf/httpd.conf file
#####

LoadModule weblogic_module libexec/mod_wl.so

AddModule mod_weblogic.c

<Location /weblogic>
 SetHandler weblogic-handler
 PathTrim /weblogic
 ErrorPage http://myerrorpage1.mydomain.com
</Location>

<Location /servletimages>
 SetHandler weblogic-handler
 PathTrim /something
 ErrorPage http://myerrorpage1.mydomain.com
</Location>

<IfModule mod_weblogic.c>
 MatchExpression *.jsp
 WebLogicCluster wls1.com:7001,wls2.com:7001,wls3.com:7001
 ErrorPage http://myerrorpage.mydomain.com
</IfModule>
```

## Setting Up Perimeter Authentication

Use perimeter authentication to secure WebLogic Server applications that are accessed via the Apache Plug-In.

A WebLogic Identity Assertion Provider authenticates tokens from outside systems that access your WebLogic Server application, including users who access your WebLogic Server application through the Apache HTTP Server Plug-In. Create an Identity Assertion Provider that will safely secure your Plug-In as follows:

1. Create a custom Identity Assertion Provider for your WebLogic Server application. See [How to Develop a Custom Identity Assertion Provider](#) in *Developing Security Providers for WebLogic Server*.

2. Configure the custom Identity Assertion Provider to support the Cert token type and make Cert the active token type. See [How to Create New Token Types](#) in *Developing Security Providers for WebLogic Server*.

Set `clientCertProxy` to `True` in the `web.xml` deployment descriptor file for the Web application (or, if using a cluster, optionally set the `Client Cert Proxy Enabled` attribute to `true` for the whole cluster in the Administration Console). This parameter can be used with a third party proxy server such as a load balancer or an SSL accelerator to enable 2-way SSL authentication. For more information about the `clientCertProxy` attribute, see [context-param](#) in *Developing Web Applications for WebLogic Server*.

3. Once you have set `clientCertProxy`, be sure to use a connection filter to ensure that WebLogic Server accepts connections only from the machine on which the Apache Plug-In is running. See [Using Network Connection Filters](#) in *Programming WebLogic Security*.

See [Identity Assertion Providers](#) in *Developing Security Providers for WebLogic Server*.

## Using SSL with the Apache Plug-In

You can use the Secure Sockets Layer (SSL) protocol to protect the connection between the Apache HTTP Server Plug-In and WebLogic Server. The SSL protocol provides confidentiality and integrity to the data passed between the Apache HTTP Server Plug-In and WebLogic Server. If you use `weblogic.conf` files, you cannot use SSL (see [Including a weblogic.conf File in the httpd.conf File](#)).

The Apache HTTP Server Plug-In does *not* use the transport protocol (`http` or `https`) specified in the HTTP request (usually by the browser) to determine whether or not the SSL protocol is used to protect the connection between the Apache HTTP Server Plug-In and WebLogic Server.

Although two-way SSL can be used between the HTTP client and Apache HTTP server, note that one-way SSL is used between Apache HTTP Server and WebLogic Server.

**Note:** Using the `<Location>` tag in Red Hat Apache 2.0.x, results in a core dump. Instead, use the `MATCH` expression to proxy requests by path or MIME type.

## Configuring SSL Between the Apache HTTP Server Plug-In and WebLogic Server

To use the SSL protocol between Apache HTTP Server Plug-In and WebLogic Server:

1. Configure WebLogic Server for SSL. For more information, see [Configuring the SSL Protocol](#) at <http://e-docs.bea.com/wls/docs81/secmanage/ssl.html>.

2. Configure the WebLogic Server SSL listen port. For more information, see *Configuring the SSL Protocol* at <http://e-docs.bea.com/wls/docs81/secmanage/ssl.html>.
3. In the Apache Server, set the `WebLogicPort` parameter in the `httpd.conf` file to the WebLogic Server SSL listen port configured in [step 2](#).
4. In the Apache Server, set the `SecureProxy` parameter in the `httpd.conf` file to `ON`.
5. Set any additional parameters in the `httpd.conf` file that define information about the SSL connection. For a complete list of the SSL parameters that you can configure for the plug-in, see [SSL Parameters for Web Server Plug-Ins](#).
6. Web server plug-ins require a trusted Certificate Authority file in order to use SSL between the plug-in and WebLogic Server. Use Sun Microsystems' `keytool` utility to export a trusted Certificate Authority file from the `DemoTrust.jks` keystore file that resides in `BEA_HOME/weblogic81/server/lib`.
  - a. To extract the `wlsdemoca` file, for example, use the command:
 

```
keytool -export -file trustedcafile.der -keystore DemoTrust.jks -alias wlsdemoca
```

 Change the alias name to obtain a different trusted CA file from the keystore.  
 To look at all of the keystore's trusted CA files, use:
 

```
keytool -list -keystore DemoTrust.jks
```

 Press enter if prompted for password.
  - b. To convert the Certificate Authority file to pem format:
 

```
java utils.der2pem trustedcafile.der
```

## Issues with SSL-Apache Configuration

The following are known issues that may arise when you configure the Apache plug-in to use SSL.

- To prepare the plugin configuration, double click the lock and go to the certificates path:
  - \* Select the root CA (at the top)
  - \* Display it
  - \* Detail and then copy this certificate to a file using the Coded "Base 64 X509" option

\* Save the file, for example, to `MyWeblogicCAToTrust.cerý` (which is also a PEM file)

- The `PathTrim` parameter (see [“General Parameters for Web Server Plug-Ins” on page 6-1](#)) must be configured inside the `<Location>` tag.

The following configuration is **incorrect**:

```
<Location /weblogic>
 SetHandler weblogic-handler
</Location>

<IfModule mod_weblogic.c>
 WebLogicHost localhost
 WebLogicPort 7001
 PathTrim /weblogic
</IfModule>
```

The following configuration is the **correct** setup:

```
<Location /weblogic>
 SetHandler weblogic-handler
 PathTrim /weblogic
</Location>
```

- The `Include` directive does not work with Apache SSL. You must configure all parameters directly in the `httpd.conf` file. Do not use the following configuration when using SSL:

```
<IfModule mod_weblogic.c>
 MatchExpression *.jsp
 Include weblogic.conf
</IfModule>
```

- If you use precompiled OpenSSL from Sunfreeware.com, failover may not work properly when the plug-in tries to connect to a backend instance of WebLogic Server. If you encounter such a failure, rebuild OpenSSL and `modssl` and Apache using the following configuration settings.

– For building OpenSSL:

```
./Configure solaris-sparcv8-gcc -fexceptions
--prefix=/home/egross/solaris/ssl shared
make
make install
```

– For building `modssl` and Apache:

```

cd ..
cd mod_ssl-2.8.12-1.3.27
export LD_LIBRARY_PATH=/home/egross/solaris/ssl/lib
./configure "--with-apache=../apache_1.3.27"
"--with-ssl=/home/egross/solaris/ssl"
"--prefix=/usr/local/apache_so"
"--enable-rule=SHARED_CORE" "--enable-shared=ssl"
"--enable-module=so" "$@"
cd ../apache_1.3.27
make
make install

```

- The current implementation of the WebLogic Server Apache Plug-In does not support the use of multiple certificate files with Apache SSL.

## Connection Errors and Clustering Failover

When the Apache HTTP Server Plug-In attempts to connect to WebLogic Server, the plug-in uses several configuration parameters to determine how long to wait for connections to the WebLogic Server host and, after a connection is established, how long the plug-in waits for a response. If the plug-in cannot connect or does not receive a response, the plug-in attempts to connect and send the request to other WebLogic Server instances in the cluster. If the connection fails or there is no response from any WebLogic Server in the cluster, an error message is sent.

[Figure 2-1 “Connection Failover” on page 2-27](#) demonstrates how the plug-in handles failover.

## Possible Causes of Connection Failures

Failure of the WebLogic Server host to respond to a connection request could indicate the following problems:

- Physical problems with the host machine
- Network problems
- Other server failures

Failure of all WebLogic Server instances to respond could indicate the following problems:

- WebLogic Server is not running or is unavailable

- A hung server
- A database problem
- An application-specific failure

## Tuning to Reduce Connection\_Refused Errors

Under load, an Apache plug-in may receive CONNECTION\_REFUSED errors from a back-end WebLogic Server instance. Follow these tuning tips to reduce CONNECTION\_REFUSED errors:

- Increase the `AcceptBackLog` setting in the configuration of your WebLogic Server domain. See [Tuning Connection Backlog Buffering](#).
- On Apache 2.x, set the `KeepAlive` directive in the `httpd.conf` file to `On`. For example:

```
KeepAlive: Whether or not to allow persistent connections (more than
one request per connection). Set to "Off" to deactivate.
#
KeepAlive On
```

See Apache HTTP Server 2.0 documentation at <http://httpd.apache.org/docs-project/>.

Apache 1.3.x does not support this feature.

- Decrease the time wait interval. This setting varies according to the operating system you are using. For example:
  - On Windows NT, set the `TcpTimedWaitDelay` on the proxy and WebLogic Server servers to a lower value. Set the `TIME_WAIT` interval in Windows NT by editing the registry key under `HKEY_LOCAL_MACHINE`:

```
SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\TcpTimedWaitDelay
```

If this key does not exist you can create it as a `DWORD` value. The numeric value is the number of seconds to wait and may be set to any value between 30 and 240. If not set, Windows NT defaults to 240 seconds for `TIME_WAIT`.
  - On Windows 2000, lower the value of the `TcpTimedWaitDelay` by editing the registry key under `HKEY_LOCAL_MACHINE`:

```
SYSTEM\CurrentControlSet\Services\Tcpip\Parameters
```
  - On Solaris, reduce the setting `tcp_time_wait_interval` to one second (for both the WebLogic Server machine and the Apache machine, if possible):



```
$ndd /dev/tcp
 param name to set - tcp_time_wait_interval
 value=1000
```

- Increase the open file descriptor limit on your machine. This limit varies by operating system. Using the `limit (.csh)` or `ulimit (.sh)` directives, you can make a script to increase the limit. For example:

```
#!/bin/sh
ulimit -S -n 100
exec httpd
```

- On Solaris, increase the values of the following tunables on the WebLogic Server machine:
  - `tcp_conn_req_max_q`
  - `tcp_conn_req_max_q0`

## Failover with a Single, Non-Clustered WebLogic Server

If you are running only a single WebLogic Server instance the plug-in only attempts to connect to the server defined with the `WebLogicHost` parameter. If the attempt fails, an `HTTP 503` error message is returned. The plug-in continues trying to connect to that same WebLogic Server instance until `ConnectTimeoutSecs` is exceeded.

## The Dynamic Server List

When you use the `WebLogicCluster` parameter in your `httpd.conf` or `weblogic.conf` file to specify a list of WebLogic Servers, the plug-in uses that list as a starting point for load balancing among the members of the cluster. After the first request is routed to one of these servers, a dynamic server list is returned containing an updated list of servers in the cluster. The updated list adds any new servers in the cluster and deletes any that are no longer part of the cluster or that have failed to respond to requests. This list is updated automatically with the HTTP response when a change in the cluster occurs.

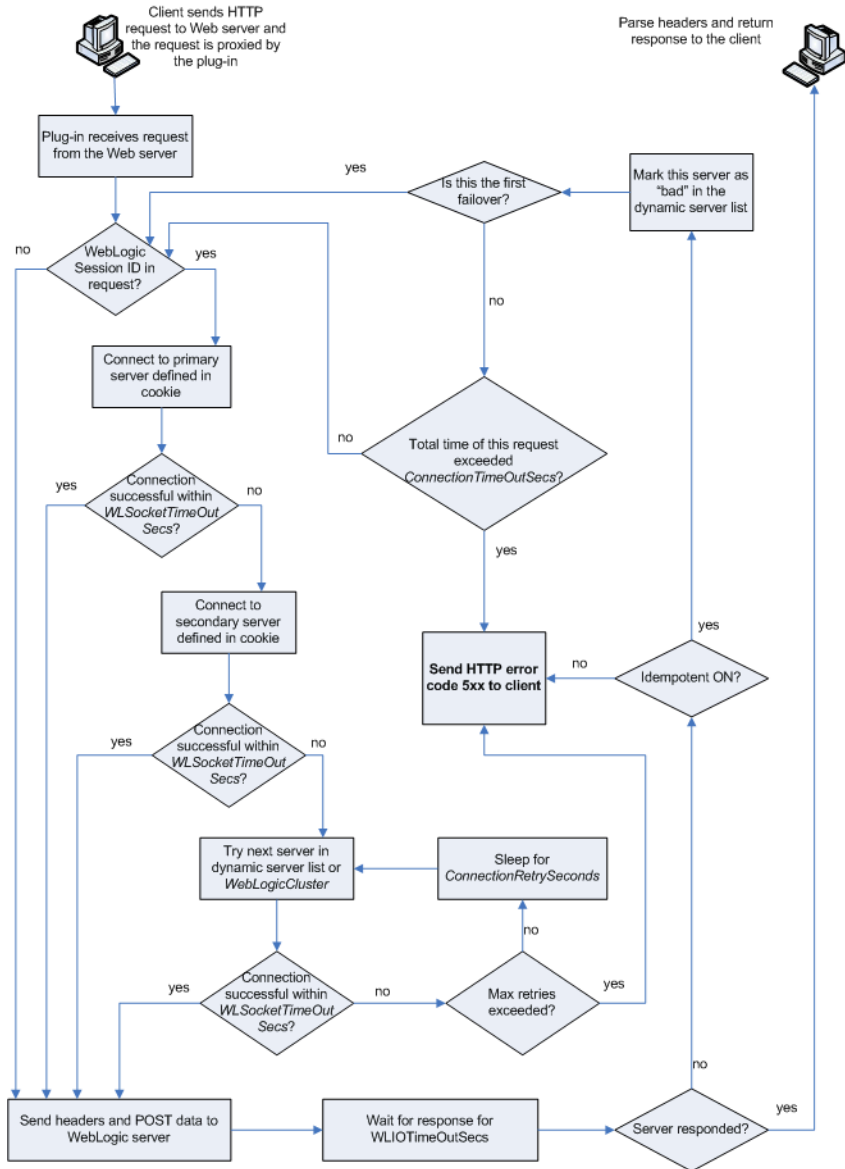
## Failover, Cookies, and HTTP Sessions

When a request contains session information stored in a cookie or in the POST data, or encoded in a URL, the session ID contains a reference to the specific server instance in which the session was originally established (called the *primary* server) and a reference to an additional server where the original session is replicated (called the *secondary* server). A request containing a

cookie attempts to connect to the primary server. If that attempt fails, the request is routed to the secondary server. If both the primary and secondary servers fail, the session is lost and the plug-in attempts to make a fresh connection to another server in the dynamic cluster list. See [Figure 2-1 “Connection Failover” on page 2-27](#).

**Note:** If the POST data is larger than 64K, the plug-in will not parse the POST data to obtain the session ID. Therefore, if you store the session ID in the POST data, the plug-in cannot route the request to the correct primary or secondary server, resulting in possible loss of session data.

Figure 2-1 Connection Failover



### Notes:

The HTTP error code thrown by the plug-in depends on the situation. Plug-in will return the HTTP error code 500 in the following conditions:

- Neither `WebLogicCluster` nor `WebLogicPort` was specified in the `httpd.conf` file.
- Unable to resolve the `WebLogicHost` parameter specified in the `httpd.conf` file.
- Port number specified by `WebLogicPort`, in the `httpd.conf` file, exceeds 65535.
- Unsuccessful in parsing the request while applying the `PathTrim` property.
- The request header is of type *Unknown Transfer-Encoding*.
- Failed to read the chunked request.
- Encountered an error reading `POST` data from client.
- Failed to open a temporary(temp) file.
- Failed to write `POST` data to the temp file.
- Encountered an error reading `POST` data from the temp file.
- `POST` timed out.
- SSL was specified without the parameter `trustedCAFile`.

On the other hand, the HTTP error code 503 is returned when:

- The maximum number of retries is exceeded. This value is computed by dividing `ConnectTimeoutSecs` by `ConnectRetrySecs`.
- `Idempotent` is OFF.

# Installing and Configuring the Microsoft IIS Plug-In

The following sections describe how to install and configure the Microsoft Internet Information Server Plug-In:

- [“Overview of the Microsoft Internet Information Server Plug-In” on page 3-1](#)
- [“Certifications” on page 3-2](#)
- [“Installing and Configuring the Microsoft Internet Information Server Plug-In” on page 3-2](#)
- [“Proxying Requests from Multiple Virtual Websites to WebLogic Server” on page 3-8](#)
- [“Sample iisproxy.ini File” on page 3-9](#)
- [“Setting Up Perimeter Authentication” on page 3-10](#)
- [“Using SSL with the Microsoft Internet Information Server Plug-In” on page 3-11](#)
- [“Proxying Servlets from IIS to WebLogic Server” on page 3-12](#)
- [“Testing the Installation” on page 3-13](#)
- [“Connection Errors and Clustering Failover” on page 3-14](#)

## Overview of the Microsoft Internet Information Server Plug-In

The Microsoft Internet Information Server Plug-In proxies requests from a Microsoft Internet Information Server (IIS) to WebLogic Server. The plug-in enhances an IIS installation by allowing WebLogic Server to handle those requests that require the dynamic functionality of WebLogic Server.

You use the Microsoft Internet Information Server Plug-In in an environment where the Internet Information Server (IIS) serves static pages such as HTML pages, while dynamic pages such as HTTP Servlets or JavaServer Pages are served by WebLogic Server. WebLogic Server may be operating in a different process, possibly on a different host. To the end user—the browser—the HTTP requests delegated to WebLogic Server still appear to be coming from IIS. The HTTP-tunneling facility of the WebLogic client-server protocol also operates through the plug-in, providing access to all WebLogic Server services.

You target a WebLogic Server instance using the `WebLogicHost` and `WebLogicPort` parameters in the plug-in configuration file. You target a WebLogic Server cluster or group of non-clustered servers using the `WebLogicCluster` parameter. For information about setting plug-in parameters, see [“Parameters for Web Server Plug-Ins” on page 6-1](#).

## Connection Pooling and Keep-Alive

The Microsoft Internet Information Server Plug-In improves connection performance by using a pool of connections from the plug-in to WebLogic Server. The plug-in implements HTTP 1.1 keep-alive connections between the plug-in and WebLogic Server by re-using the same connection for subsequent requests from the same client. If the connection is inactive for more than 30 seconds, (or a user-defined amount of time) the connection is closed. The connection with the client can be reused to connect to the same client at a later time if it has not timed out. You can disable this feature if desired. For more information, see [“KeepAliveEnabled” on page 6-6](#).

## Certifications

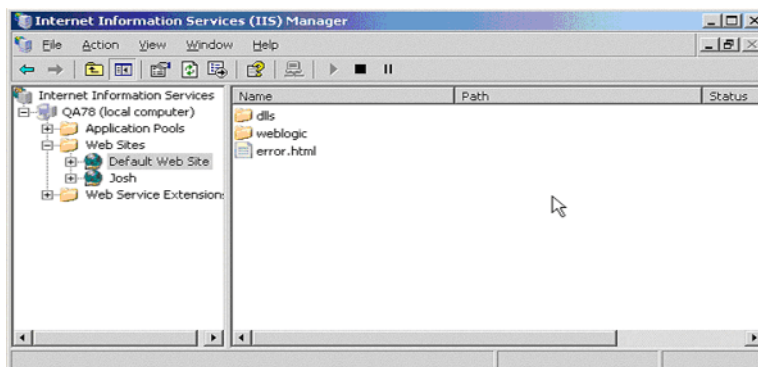
The Microsoft Internet Information Server Plug-In is supported on Windows. Plug-ins are not supported on all operating systems for all releases. For information on platform support for specific versions of Microsoft Internet Information Server Plug-In, see [Platform Support for WebLogic Server Plug-ins and Web Servers](#) in *Supported Configurations for WebLogic Server 8.1*.

## Installing and Configuring the Microsoft Internet Information Server Plug-In

The WebLogic Server plug-in module for the Microsoft Internet Information Server is a dynamic link library called `iisproxy.dll`. It is supported by an `iisproxy.ini` file that contains name=value pairs that define configuration parameters for the plug-in.

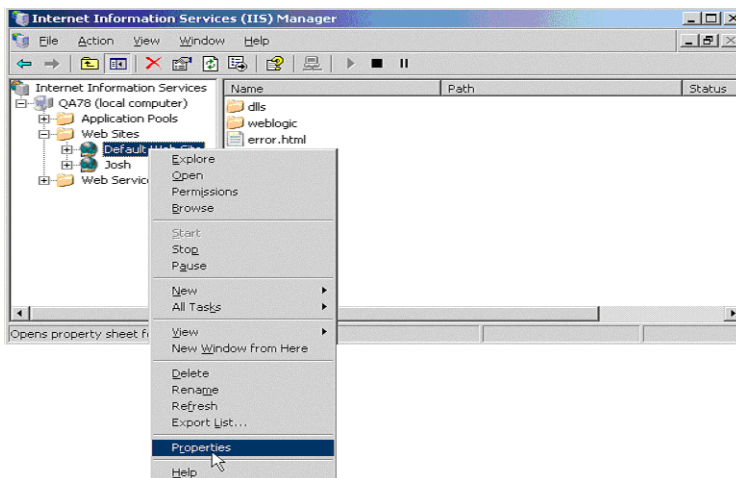
To install the Microsoft Internet Information Server Plug-In:

1. Copy the `iisproxy.dll` file from the `WL_HOME/server/bin` directory of your WebLogic Server installation (where `WL_HOME` represents the top-level directory for the WebLogic Platform and Server and contains the WebLogic Server installation files) into a convenient directory that is accessible to IIS. BEA recommends that this directory also contain the `iisproxy.ini` file that you will create in step 4. Set the user permissions for the `iisproxy.dll` file to include the name of the user who will be running IIS. One way to do this is by right-clicking on the `iisproxy.dll` file and selecting Permissions, then adding the username of the person who will be running IIS.
2. If you want to configure proxying by file extension (MIME type) complete this step. (You can configure proxying by path in addition to or instead of configuring by MIME type. See [step 3.](#) )
  - a. Start the Internet Information Service Manager by selecting it from the Start menu.
  - b. In the left panel of the Service Manager, select your IIS Web site (the default is “Default Web Site”).

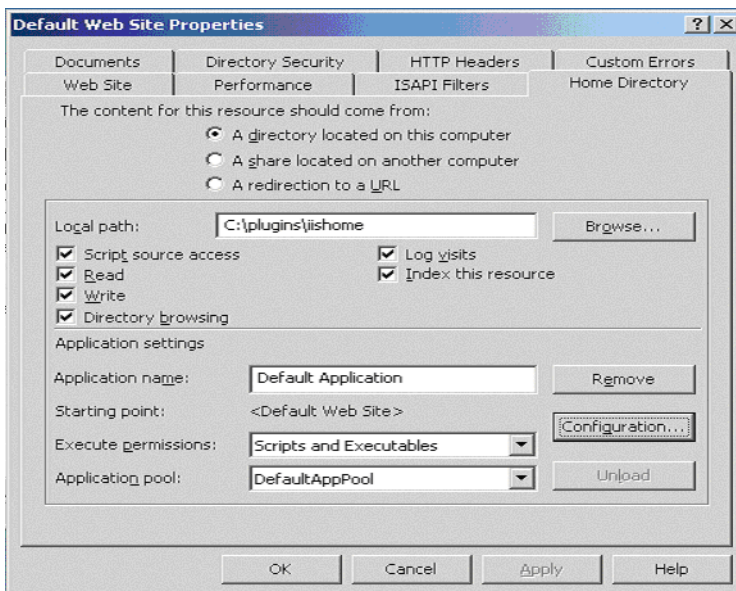


- c. Click the “Play” arrow in the toolbar to start.
- d. Open the properties for the selected Web site by right-clicking the Web site selection in the left panel and selecting Properties.

## Installing and Configuring the Microsoft IIS Plug-In

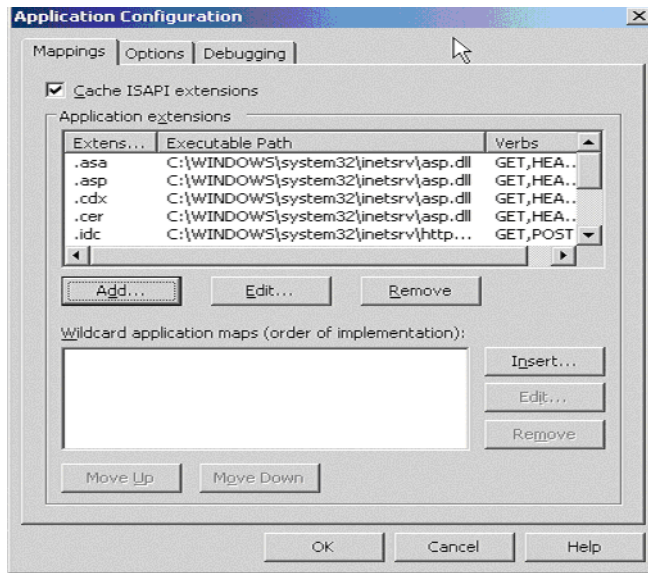


- e. In the Properties panel, select the Home Directory tab, and click the Configuration button in the Applications Settings section.



- f. On the Mappings tab, click the Add button.





- g. In the Add dialog box, browse to the `iisproxy.dll` file.
- h. Set the Extension to the type of file that you want to proxy to WebLogic Server.
- i. If you are configuring for IIS 6.0 or later, be sure to deselect the “Check that file exists” check box. The behavior of this check has changed from earlier versions of IIS: it used to check that the `iisproxy.dll` file exists; now it checks that files requested from the proxy exist in the root directory of the Web server. If the check does not find the files there, the `iisproxy.dll` file will not be allowed to proxy requests to WebLogic Server.
- j. In the Directory Security tab, set the Method exclusions as needed to create a secure installation.
- k. When you finish, click the OK button to save the configuration.
- l. When you finish configuring file types, click the OK button to close the Properties panel.

**Note:** In the URL, any path information you add after the server and port is passed directly to WebLogic Server. For example, if you request a file from IIS with the URL:

`http://myiis.com/jspfiles/myfile.jsp`

it is proxied to WebLogic Server with a URL such as

`http://mywebLogic:7001/jspfiles/myfile.jsp`

**Note:** To avoid out-of-process errors, do not deselect the "Cache ISAPI Applications" check box.

3. If you want to configure proxying by path complete this step. (In addition to proxying by file type, you can configure the Microsoft Internet Information Server Plug-In to serve files based on their *path* by specifying some additional parameters in the `iisproxy.ini` file.) Proxying by path takes precedence over proxying by MIME type.

You can also proxy multiple websites defined in IIS by path. For more information, see [“Proxying Requests from Multiple Virtual Websites to WebLogic Server” on page 3-8.](#)

To configure proxying by path:

- a. Start the Internet Information Service Manager by selecting it from the Start menu.
- b. Place the `iisforward.dll` file in the same directory as the `iisproxy.dll` file and add the `iisforward.dll` file as a filter service in IIS (WebSite *Properties* → *ISAPI Filters* tab → *Add the iisforward.dll*). Set the user permissions for the `iisforward.dll` file to include the name of the user who will be running IIS. One way to do this is by right clicking on the `iisproxy.dll` file and selecting *Permissions*, then adding the username of the person who will be running IIS.
- c. Register `.wlforward` as a special file type to be handled by `iisproxy.dll` in IIS.
- d. Define the property `WlForwardPath` in `iisproxy.ini`. `WlForwardPath` defines the path that is proxied to WebLogic Server, for example: `WlForwardPath=/weblogic`.
- e. Set the `PathTrim` parameter to trim off the `WlForwardPath` when necessary. For example, using

```
WlForwardPath=/weblogic
PathTrim=/weblogic
```

trims a request from IIS to Weblogic Server. Therefore, `/weblogic/session` is changed to `/session`.
- f. If you want requests that do not contain extra path information (in other words, requests containing only a host name), set the `DefaultFileName` parameter to the name of the welcome page of the Web Application to which the request is being proxied. The value of this parameter is appended to the URL.
- g. If you need to debug your application, set the `Debug=ON` parameter in `iisproxy.ini`. A `c:\tmp\iisforward.log` is generated containing a log of the plug-in's activity that you can use for debugging purposes.

4. In WebLogic Server, create the `iisproxy.ini` file.

The `iisproxy.ini` file contains name=value pairs that define configuration parameters for the plug-in. The parameters are listed in [“General Parameters for Web Server Plug-Ins” on page 6-1](#).

Use the example `iisproxy.ini` file in this section ([“Sample iisproxy.ini File” on page 3-9](#)) as a template for your `iisproxy.ini` file.

**Note:** Changes in the parameters will not go into effect until you restart the “IIS Admin Service” (under *services*, in the control panel).

BEA recommends that you locate the `iisproxy.ini` file in the same directory that contains the `iisproxy.dll` file. If you place the file elsewhere, note that WebLogic Server searches for `iisproxy.ini` in the following directories, in the following order:

- a. in the same directory where `iisproxy.dll` is located
- b. in the home directory of the most recent version of WebLogic Server that is referenced in the Windows Registry

(If WebLogic Server does not find the `iisproxy.ini` file in the home directory, it continues looking in the Windows Registry for older versions of WebLogic Server and looks for the `iisproxy.ini` file in the home directories of those installations.)

- c. in the directory `c:\weblogic`, if it exists

5. Define the WebLogic Server host and port number to which the Microsoft Internet Information Server Plug-In proxies requests. Depending on your configuration, there are two ways to define the host and port:

- If you are proxying requests to a single WebLogic Server instance, define the `WebLogicHost` and `WebLogicPort` parameters in the `iisproxy.ini` file. For example:

```
WebLogicHost=localhost
WebLogicPort=7001
```

- If you are proxying requests to a cluster of WebLogic Servers, define the `WebLogicCluster` parameter in the `iisproxy.ini` file. For example:

```
WebLogicCluster=myweblogic.com:7001,yourweblogic.com:7001
```

Where `myweblogic.com` and `yourweblogic.com` are instances of Weblogic Server running in a cluster.

6. Optionally, enable HTTP tunneling by following the instructions for proxying by path (see step 3 above), substituting the WebLogic Server host name and the WebLogic Server port number, or the name of a WebLogic Cluster that you wish to handle HTTP tunneling requests.
  - a. If you are using `weblogic.jar` and the T3 protocol, set `WlForwardPath` to this URL pattern:

```
WlForwardPath=*/HTTPCInt*
```
  - b. If you are using IIOP, which is the only protocol used by the WebLogic Server thin client, `wlclient.jar`, set the value of `WlForwardPath` to `*/iiop*`:

```
WlForwardPath=*/iiop*
```

You do not need to use the `PathTrim` parameter.

7. Set any additional parameters in the `iisproxy.ini` file. A complete list of parameters is available in the appendix [“General Parameters for Web Server Plug-Ins”](#) on page 6-1.
8. If you are proxying servlets from IIS to WebLogic Server and you are not proxying by path, read the section [“Proxying Servlets from IIS to WebLogic Server”](#) on page 3-12.
9. The installed version of IIS with its initial settings does not allow the `iisproxy.dll`. Use the IIS Manager console to enable the Plug-In:
  - a. Open the IIS Manager console.
  - b. Select Web Service Extensions.
  - c. Set “All Unknown ISAPI Extensions” to Allowed.

**Note:** Step 9 is applicable only if you are trying to configure IIS 6.0.

## Proxying Requests from Multiple Virtual Websites to WebLogic Server

To proxy requests from multiple websites (defined as virtual directories in IIS) to WebLogic Server:

1. Create a new directory for the virtual directories. This directory will contain `dll` and `ini` files used to define the proxy.
2. Copy `iisforward.dll` to the directory you created in step 1.
3. Register the `iisforward.dll` for each website with IIS.

4. Create a file called `iisforward.ini`. Place this file in the same directory that contains `iisforward.dll`. This file should contain the following entry for each virtual website defined in IIS:

```
vhostN=websiteName:port
websiteName:port=dll_directory/iisproxy.ini
```

Where:

- *N* is an integer representing the virtual website. The first virtual website you define should use the integer 1 and each subsequent website should increment this number by 1.
- *websiteName* is the name of the virtual website as registered with IIS.
- *port* is the port number where IIS listens for HTTP requests.
- *dll\_directory* is the path to the directory you created in step 1 of [“Installing and Configuring the Microsoft Internet Information Server Plug-In”](#) on page 3-2.

For example:

```
vhost1=strawberry.com:7001
strawberry.com:7001=c:\strawberry\iisproxy.ini
vhost2=blueberry.com:7001
blueberry.com:7001=c:\blueberry\iisproxy.ini
...
```

5. Create an `iisproxy.ini` file for the virtual Web sites, as described in step 4 of this procedure. Copy this `iisproxy.ini` file to the directory you created in step 1 of this procedure.
6. Copy `iisproxy.dll` to the directory you created in step 1 of this procedure.
7. In IIS, set the value for the Application Protection option to high (isolated). If the Application Protection option is set to Medium(pooled), the `iisproxy.dll` that registered as the first website will always be invoked. In this event, all the requests will be proxied to the same WLS instances defined in the `iisproxy.ini` of the first website.

## Sample iisproxy.ini File

Here is a sample `iisproxy.ini` file for use with a single, non-clustered WebLogic Server. Comment lines are denoted with the “#” character.

```
This file contains initialization name/value pairs
for the IIS/WebLogic plug-in.
```

## Installing and Configuring the Microsoft IIS Plug-In

```
WebLogicHost=localhost
WebLogicPort=7001
ConnectTimeoutSecs=20
ConnectRetrySecs=2
```

Here is a sample `iisproxy.ini` file with clustered WebLogic Servers. Comment lines are denoted with the “#” character.

```
This file contains initialization name/value pairs
for the IIS/WebLogic plug-in.

WebLogicCluster=myweblogic.com:7001,yourweblogic.com:7001
ConnectTimeoutSecs=20
ConnectRetrySecs=2
```

**Note:** If you are using SSL between the plug-in and WebLogic Server, the port number should be defined as the SSL listen port.

## Setting Up Perimeter Authentication

Use perimeter authentication to secure your WebLogic Server applications that are accessed through the Microsoft Internet Information Server Plug-In.

A WebLogic Identity Assertion Provider authenticates tokens from outside systems that access your WebLogic Server application, including users who access your WebLogic Server application through the Microsoft Internet Information Server Plug-In. Create an Identity Assertion Provider that will safely secure your Plug-In as follows:

1. Create a custom Identity Assertion Provider on your WebLogic Server application. See [How to Develop a Custom Identity Assertion Provider](#) in *Developing Security Providers for WebLogic Server*.
2. Configure the custom Identity Assertion Provider to support the "Cert" token type and make it the active token type. See [How to Create New Token Types](#) in *Developing Security Providers for WebLogic Server*.
3. Set the `clientCertProxy` attribute to `True` in the `web.xml` deployment descriptor file for the Web application (if using a cluster, you can instead set the `ClientCertProxyEnabled` attribute to `true` for the whole cluster on the Administration Console Cluster-->Configuration-->General tab). See [context-param](#) in *Developing Web Applications for WebLogic Server*.

4. Once you have set `clientCertProxy`, be sure to use a connection filter to ensure that WebLogic Server accepts connections only from the machine on which the Microsoft Internet Information Server Plug-In is running. See [Using Network Connection Filters](#) in *Programming WebLogic Security*.

See [Identity Assertion Providers](#) in *Developing Security Providers for WebLogic Server* for more information about Identity Assertion Providers.

## Using SSL with the Microsoft Internet Information Server Plug-In

You can use the Secure Sockets Layer (SSL) protocol to protect the connection between WebLogic Server and the Microsoft Internet Information Server Plug-In. The SSL protocol provides confidentiality and integrity to the data passed between the Microsoft Internet Information Server Plug-In and WebLogic Server.

The Microsoft Internet Information Server Plug-In does not use the transport protocol (`http` or `https`) to determine whether the SSL protocol will be used to protect the connection between the proxy plug-in and the Microsoft Internet Information Server. In order to use the SSL protocol with the Microsoft Internet Information Server Plug-In, configure the WebLogic Server instance receiving the proxied requests to use the SSL protocol. The port on the WebLogic Server that is configured for secure SSL communication is used by the Microsoft Internet Information Server Plug-In to communicate with the Microsoft Internet Information Server.

To use the SSL protocol between Microsoft Internet Information Server Plug-In and WebLogic Server:

1. Configure WebLogic Server for SSL. For more information, see [Configuring the SSL Protocol](#) at <http://e-docs.bea.com/wls/docs81/secmanage/ssl.html>.
2. Configure the WebLogic Server SSL listen port. For more information, see [Configuring the SSL Protocol](#) at <http://e-docs.bea.com/wls/docs81/secmanage/ssl.html>.
3. Set the `WebLogicPort` parameter in the `iisproxy.ini` file to the listen port configured in step 2.
4. Set the `SecureProxy` parameter in the `iisproxy.ini` file to `ON`.
5. Web server plug-ins require a trusted Certificate Authority file in order to use SSL between the plug-in and WebLogic Server. Use Sun Microsystem's `keytool` utility to export a trusted Certificate Authority file from the `DemoTrust.jks` keystore file that resides in `BEA_HOME/weblogic81/server/lib`.

- a. To extract the `wlsdemoca` file, for example, use the command:

```
keytool -export -file trustedcafile.der -keystore DemoTrust.jks -alias wlsdemoca
```

Change the alias name to obtain a different trusted CA file from the keystore.

To look at all of the keystore's trusted CA files, use:

```
keytool -list -keystore DemoTrust.jks
```

Press enter if prompted for password.

- b. To convert the Certificate Authority file to pem format:

```
java utils.der2pem trustedcafile.der
```

6. Set additional parameters in the `iisproxy.ini` file that define the SSL connection. For a complete list of parameters, see [“SSL Parameters for Web Server Plug-Ins”](#) on page 6-13.

For example:

```
WebLogicHost=myweblogic.com
WebLogicPort=7002
SecureProxy=ON
```

## Proxying Servlets from IIS to WebLogic Server

You can proxy servlets by path if the `iisforward.dll` is registered as a filter service in IIS (WebSite Properties-->ISAPI-->Filters tab). You would then invoke your servlet with a URL similar to the following:

```
http://IISserver/weblogic/myServlet
```

To proxy servlets if `iisforward.dll` is not registered as a filter, you must configure servlet proxying by file type. To proxy servlets by file type:

1. Register an arbitrary file type (extension) with IIS to proxy the request to the WebLogic Server, as described in [step 2](#), under [“Installing and Configuring the Microsoft Internet Information Server Plug-In”](#) on page 3-2.
2. Register your servlet in the appropriate Web Application. For more information on registering servlets, see [Configuring Servlets](#) at <http://e-docs.bea.com/wls/docs81/webapp/components.html#configuring-servlets>.
3. Invoke your servlet with a URL formed according to this pattern:

```
http://www.myserver.com/virtualName/anyfile.ext
```



where *virtualName* is the URL pattern defined in the `<servlet-mapping>` element of the Web Application deployment descriptor (`web.xml`) for this servlet and *ext* is a file type (extension) registered with IIS for proxying to WebLogic Server. The *anyfile* part of the URL is ignored in this context.

**Note:**

- If the image links called from the servlet are part of the Web Application, you must also proxy the requests for the images to WebLogic Server by registering the appropriate file types (probably `.gif` and `.jpg`) with IIS. You can, however, choose to serve these images directly from IIS if desired.
- If the servlet being proxied has links that call other servlets, then these links must also be proxied to WebLogic Server, conforming to the pattern described in step 3.

## Testing the Installation

After you install and configure the Microsoft Internet Information Server Plug-In, follow these steps for deployment and testing:

1. Make sure WebLogic Server and IIS are running.
2. Save a JSP file into the document root of the default Web Application.
3. Open a browser and set the URL to the IIS + `filename.jsp` as shown in this example:

`http://myii.server.com/filename.jsp`

If `filename.jsp` is displayed in your browser, the plug-in is functioning.

## Connection Errors and Clustering Failover

When the Microsoft Internet Information Server Plug-In attempts to connect to WebLogic Server, the plug-in uses several configuration parameters to determine how long to wait for connections to the WebLogic Server host, and, after a connection is established, how long the plug-in waits for a response. If the plug-in cannot connect or does not receive a response, the plug-in attempts to connect and sends the request to other WebLogic Servers in the cluster. If the connection fails or there is no response from any WebLogic Server instance in the cluster, an error message is sent.

[Figure 3-1 “Connection Failover” on page 3-15](#) demonstrates how the plug-in handles failover.

## Possible Causes of Connection Failures

Failure of the WebLogic Server host to respond to a connection request could indicate problems with the host machine, networking problems, or other server failures.

Failure of any WebLogic Server instance in the cluster to respond, could indicate that WebLogic Server is not running or is unavailable, a hung server, a database problem, or other application failure.

## Connection Errors with Non-Clustered Servers

If you are running a single instance or multiple non-clustered instances of WebLogic Server, the plug-in only attempts to connect to the server defined with the [WebLogicHost](#) parameter. If the attempt fails, an HTTP 503 error message is returned. The plug-in continues trying to connect to WebLogic Server until [ConnectTimeoutSecs](#) is exceeded.

## The Dynamic Server List

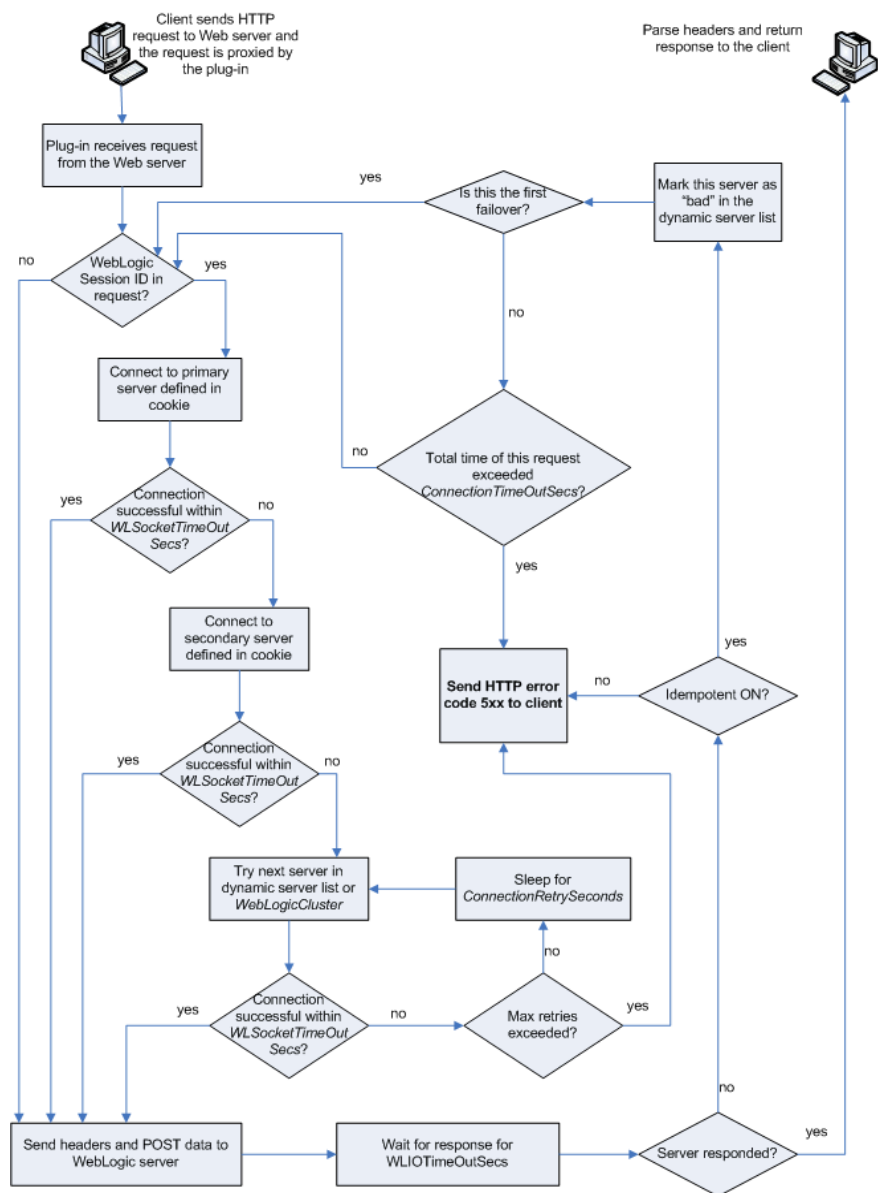
When you specify a list of WebLogic Server instances in the [WebLogicCluster](#) parameter, the plug-in uses that list as a starting point for load balancing among the members of the cluster. After the first request is routed to one of these servers, a dynamic server list is returned containing an updated list of servers in the cluster. The updated list adds any new servers in the cluster and deletes any that are no longer part of the cluster or that have failed to respond to requests. This list is updated automatically with the HTTP response when a change in the cluster occurs.

## Failover, Cookies, and HTTP Sessions

When a request contains a session information stored in a cookie, in the POST data, or by URL encoding, the session ID contains a reference to the specific server in which the session was originally established (called the *primary* server) and a reference to an additional server where the original session is replicated (called the *secondary* server). A request containing a cookie attempts to connect to the primary server. If that attempt fails, the request is routed to the secondary server. If both the primary and secondary servers fail, the session is lost and the plug-in attempts to make a fresh connection to another server in the dynamic cluster list. For more information see [Figure 3-1 “Connection Failover” on page 3-15](#).

**Note:** If the POST data is larger than 64K, the plug-in will not parse the POST data to obtain the session ID. Therefore, if you store the session ID in the POST data, the plug-in cannot route the request to the correct primary or secondary server, resulting in possible loss of session data.

Figure 3-1 Connection Failover



**Notes:**

The HTTP error code thrown by the plug-in depends on the situation. Plug-in will return the HTTP error code 500 in the following conditions:

- Neither `WebLogicCluster` nor `WebLogicPort` was specified in the `httpd.conf` file.
- Unable to resolve the `WebLogicHost` parameter specified in the `httpd.conf` file.
- Port number specified by `WebLogicPort`, in the `httpd.conf` file, exceeds 65535.
- Unsuccessful in parsing the request while applying the `PathTrim` property.
- The request header is of type *Unknown Transfer-Encoding*.
- Failed to read the chunked request.
- Encountered an error reading `POST` data from client.
- Failed to open a temporary(temp) file.
- Failed to write `POST` data to the temp file.
- Encountered an error reading `POST` data from the temp file.
- `POST` timed out.
- SSL was specified without the parameter `trustedCAFile`.

On the other hand, the HTTP error code 503 is returned when:

- The maximum number of retries is exceeded. This value is computed by dividing `ConnectTimeoutSecs` by `ConnectRetrySecs`.
- `Idempotent` is OFF.

## Installing and Configuring the Microsoft IIS Plug-In

# Installing and Configuring the Netscape Enterprise Server Plug-In

The following sections describe how to install and configure the Netscape Enterprise Server (NES) proxy plug-in:

- [“Overview of the Netscape Enterprise Server Plug-In” on page 4-1](#)
- [“Installing and Configuring the Netscape Enterprise Server Plug-In” on page 4-3](#)
- [“Setting Up Perimeter Authentication” on page 4-14](#)
- [“Using SSL with the NES Plug-In” on page 4-14](#)
- [“Connection Errors and Clustering Failover” on page 4-16](#)
- [“Failover Behavior When Using Firewalls and Load Directors” on page 4-17](#)
- [“Sample obj.conf File \(Not Using a WebLogic Cluster\)” on page 4-9](#)
- [“Sample obj.conf File \(Using a WebLogic Cluster\)” on page 4-11](#)

## Overview of the Netscape Enterprise Server Plug-In

The Netscape Enterprise Server Plug-In proxies requests from Netscape Enterprise Server (NES, also called iPlanet) to WebLogic Server. The plug-in enhances an NES installation by allowing WebLogic Server to handle those requests that require the dynamic functionality of WebLogic Server.

The Netscape Enterprise Server Plug-In is designed for an environment where Netscape Enterprise Server serves static pages, and a Weblogic Server instance (operating in a different

process, possibly on a different machine) is delegated to serve dynamic pages, such as JSPs or pages generated by HTTP Servlets. The connection between WebLogic Server and the Netscape Enterprise Server Plug-In is made using clear text or Secure Sockets Layer (SSL). To the end user—the browser—the HTTP requests delegated to WebLogic Server appear to come from the same source as the static pages. Additionally, the HTTP-tunneling facility of WebLogic Server can operate through the Netscape Enterprise Server Plug-In, providing access to all WebLogic Server services (not just dynamic pages).

The Netscape Enterprise Server Plug-In operates as an [NES module](#) (see <http://home.netscape.com/servers/index.html>) within a Netscape Enterprise Server. The NES module is loaded by NES at startup, and then certain HTTP requests are delegated to it. NES is similar to an HTTP (Java) servlet, except that an NES module is written in code native to the platform.

You target a WebLogic Server instance using the `WebLogicHost` and `WebLogicPort` parameters in the plug-in configuration file. You target a WebLogic Server cluster or group of non-clustered servers using the `WebLogicCluster` parameter. For information about setting plug-in parameters, see [“Parameters for Web Server Plug-Ins” on page 6-1](#).

For more information on supported versions of Netscape Enterprise Server and iPlanet servers, see the [BEA WebLogic Server Supported Configurations Page](#).

## Connection Pooling and Keep-Alive

The WebLogic Server Netscape Enterprise Server Plug-In provides efficient performance by using a re-usable pool of connections from the plug-in to WebLogic Server. The NES plug-in automatically implements “keep-alive” connections between the plug-in and WebLogic Server. If a connection is inactive for more than 30 seconds or a user-defined amount of time, the connection is closed. You can disable this feature if desired. For more information, see [“KeepAliveEnabled” on page 6-6](#).

# Certifications

The Netscape Enterprise Server Plug-In is supported on Linux, Solaris, AIX, and Windows platforms. Plug-ins are not supported on all operating systems for all releases. For information on platform support for specific versions of Netscape Enterprise Server Plug-In, see [Platform](#)



[Support for WebLogic Server Plug-ins and Web Servers](#) in *Supported Configurations for WebLogic Server 8.1*.

## Installing and Configuring the Netscape Enterprise Server Plug-In

To install and configure the Netscape Enterprise Server Plug-In:

1. Copy the NES library from WebLogic Server to Netscape Enterprise Server.

The WebLogic NES plug-in module is distributed as a shared object (.so) on UNIX platforms and as a dynamic-link library (.dll) on Windows. These files are respectively located in the `WL_HOME/server/lib` or `WL_HOME/server/bin` directories of your WebLogic Server distribution. `WL_HOME` represents the top level installation directory for your WebLogic platform. The server directory contains installation files for WebLogic Server. The modules are:

- Linux: `lib/linux/i686/libproxy.so`
- AIX: `lib/aix/libproxy4x.so` or `lib/aix/libproxy4x_128.so`
- Solaris: `lib/solaris/libproxy.so`
- Windows: `server/bin/proxy36.dll`

For the Sun One Web Server version 6.1, the modules are as follows:

- Solaris: `sol_sparc_61/libproxy_61.so` or `sol_sparc_61/libproxy128_61.so`
- HP-UX: `hpux11_61/libproxy_61.sl` or `hpux11_61/libproxy128_61.sl`
- Windows: `nt_61/proxy61.dll` or `nt_61/proxy61128.dll`

2. Read [“Guidelines for Modifying the obj.conf File”](#) on page 4-8, then modify the NES `obj.conf` file as described in the following steps. The `obj.conf` file defines which requests are proxied to WebLogic Server and defines other configuration information.
3. Locate and open `obj.conf`.

The `obj.conf` file for your NES instance is in the following location:

`NETSCAPE_HOME/https-INSTANCE_NAME/config/obj.conf`

Where `NETSCAPE_HOME` is the root directory of the NES installation, and `INSTANCE_NAME` is the particular “instance” or server configuration that you are using. For example, on a UNIX machine called `myunixmachine`, the `obj.conf` file would be found here:

```
/usr/local/netscape/enterprise-351/
https-myunixmachine/config/obj.conf
```

4. Instruct NES to load the native library (the `.so` or `.dll` file) as an NES module.

If you are using iPlanet 4.x or earlier, add the following lines to the beginning of the `obj.conf` file.

```
Init fn="load-modules" funcs="wl_proxy,wl_init"\
shlib=/usr/local/netscape/plugins/SHARED_LIBRARY
Init fn="wl_init"
```

Where `SHARED_LIBRARY` is the shared object or `dll` (for example `libproxy.so`) that you installed in [step 1](#), under “Installing and Configuring the Netscape Enterprise Server Plug-In” on page 4-3. The function “load-modules” tags the shared library for loading when NES starts up. The values “wl\_proxy” and “wl\_init” identify the functions that the Netscape Enterprise Server Plug-In executes.

To use iPlanet 6.0, add the following lines to the beginning of the `magnus.conf` file. These lines instruct NES to load the native library (the `.so` or `.dll` file) as an NES module:

```
Init fn="load-modules" funcs="wl_proxy,wl_init"\
shlib=/usr/local/netscape/plugins/SHARED_LIBRARY
Init fn="wl_init"
```

Where `SHARED_LIBRARY` is the shared object or `dll` (for example `libproxy.so`) that you installed in [step 1](#), under “Installing and Configuring the Netscape Enterprise Server Plug-In” on page 4-3. The function “load-modules” tags the shared library for loading when NES starts up. The values “wl\_proxy” and “wl\_init” identify the functions that the Netscape Enterprise Server Plug-In executes.

5. If you want to proxy requests by URL, (also called proxying by *path*.) create a separate `<Object>` tag for each URL that you want to proxy and define the `PathTrim` parameter. (You can proxy requests by MIME type, in addition to or instead of proxying requests by path. See [step 6](#). Proxying by path supersedes proxying by MIME type.) The following is an example of an `<Object>` tag that proxies a request containing the string `*/weblogic/*`.

```
<Object name="weblogic" ppath="*/weblogic/*">
Service fn=wl_proxy WebLogicHost=myserver.com\
WebLogicPort=7001 PathTrim="/weblogic"
</Object>
```

To create an `<Object>` tag to proxy requests by URL:

- a. Specify a name for this object (optional) inside the opening `<Object>` tag using the `name` attribute. The `name` attribute is informational only and is not used by the Netscape Enterprise Server Plug-In. For example:

```
<Object name=myObject ...>
```

- b. Specify the URL to be proxied within the `<Object>` tag, using the `ppath` attribute. For example:

```
<Object name=myObject ppath="*/weblogic/*">
```

The value of the `ppath` attribute can be any string that identifies requests intended for Weblogic Server. When you use a `ppath`, every request that contains that path is redirected. For example, a `ppath` of “`*/weblogic/*`” redirects every request that begins “`http://enterprise.com/weblogic`” to the Netscape Enterprise Server Plug-In, which sends the request to the specified Weblogic Server instance or cluster.

**Note:** If the web application uses absolute URLs, ensure that the `ppath` string is included in the URL.

- c. Add the `Service` directive within the `<Object>` and `</Object>` tags. In the `Service` directive you can specify any valid parameters as `name=value` pairs. Separate multiple `name=value` pairs with *one and only one* space. For example:

```
Service fn=wl_proxy WebLogicHost=myserver.com\
WebLogicPort=7001 PathTrim="/weblogic"
```

For a complete list of parameters, see “[General Parameters for Web Server Plug-Ins](#)” on page 6-1. You *must* specify the following parameters:

For a *non-clustered* WebLogic Server:

The [WebLogicHost](#) and [WebLogicPort](#) parameters.

For a *cluster* of WebLogic Server instances:

The [WebLogicCluster](#) parameter.

Always begin the `Service` directive with `Service fn=wl_proxy`, followed by valid `name=value` pairs of parameters.

Here is an example of the object definitions for two separate `ppaths` that identify requests to be sent to different instances of WebLogic Server:

```
<Object name="weblogic" ppath="*/weblogic/*">
Service fn=wl_proxy WebLogicHost=myserver.com\
WebLogicPort=7001 PathTrim="/weblogic"
</Object>

<Object name="si" ppath="*/servletimages/*">
Service fn=wl_proxy WebLogicHost=otherserver.com\
WebLogicPort=7008
</Object>
```

**Note:** Parameters that are not required, such as [PathTrim](#), can be used to further configure the way the `ppath` is passed through the Netscape Enterprise Server Plug-In. For a complete list of plug-in parameters, see [“General Parameters for Web Server Plug-Ins” on page 6-1](#).

6. If you are proxying requests by MIME type, add any new MIME types referenced in the `obj.conf` file to the `MIME.types` file. You can add MIME types by using the Netscape server console or by editing the `MIME.types` file directly.

To directly edit the `MIME.types` file, open the file for edit and type the following line:

```
type=text/jsp exts=jsp
```

**Note:** For NES 4.0 (iPlanet), instead of adding the MIME type for JSPs, change the existing MIME type from

```
magnus-internal/jsp
```

to

```
text/jsp.
```

To use the Netscape console, select Manage Preferences→Mime Types, and make the additions or edits.

7. All requests with a designated MIME type extension (for example, `.jsp`) can be proxied to WebLogic Server, regardless of the URL. To proxy all requests of a certain file type to WebLogic Server:
  - a. In `obj.conf`, add a `Service` directive to the existing default `Object` definition.  
(`<Object name=default ...>`)

For example, to proxy all JSPs to a WebLogic Server instance, the following `Service` directive should be added *after* the last line that begins with:

```
NameTrans fn=...
```

and *before* the line that begins with:

```
PathCheck.
```

```
Service method="(GET|HEAD|POST|PUT)" type=text/jsp fn=wl_proxy\
WebLogicHost=192.1.1.4 WebLogicPort=7001 PathPrepend=/jspfiles
```

This `Service` directive proxies all files with the `.jsp` extension to the designated WebLogic Server, where they are served with a URL like this:

```
http://WebLogic:7001/jspfiles/myfile.jsp
```

The value of the [PathPrepend](#) parameter should correspond to the context root of a Web Application that is deployed on the WebLogic Server instance or cluster to which requests are proxied.

After adding entries for the Netscape Enterprise Server Plug-In, the default `Object` definition will be similar to the following example, with the additions shown in **bold**:

```
<Object name=default>
NameTrans fn=px2dir from=/ns-icons\
 dir="c:/Netscape/SuiteSpot/ns-icons"
NameTrans fn=px2dir from=/mc-icons\
 dir="c:/Netscape/SuiteSpot/ns-icons"
NameTrans fn="px2dir" from="/help" dir=\
 "c:/Netscape/SuiteSpot/manual/https/ug"
NameTrans fn=document-root root="c:/Netscape/SuiteSpot/docs"
Service method="(GET|HEAD|POST|PUT)" type=text/jsp\
 fn=wl_proxy WebLogicHost=localhost WebLogicPort=7001\
 PathPrepend=/jspfiles
PathCheck fn=nt-uri-clean
PathCheck fn="check-acl" acl="default"
PathCheck fn=find-pathinfo
PathCheck fn=find-index index-names="index.html,home.html"
If a required parameter is missing from the configuration, when the
object is invoked it issues an HTML error that notes the missing
parameter from the configuration.

ObjectType fn=type-by-extension
ObjectType fn=force-type type=text/plain
Service method=(GET|HEAD) type=magnus-internal/imagemap\ fn=imagemap
Service method=(GET|HEAD) \
 type=magnus-internal/directory fn=index-common
Service method=(GET|HEAD) \
 type=~magnus-internal/* fn=send-file
AddLog fn=flex-log name="access"
</Object>
```

- b. Add a similar `Service` statement to the default object definition for all other MIME types that you want to proxy to WebLogic Server.
- c. To configure proxy-by-MIME for the JSP, you must add the following entry to the `mime.types` file

```
type=text/jsp exts=jsp
```

For proxy-by-MIME to work properly you need to disable JAVA from the Sun One Web Server otherwise SUN One will try to serve all requests that end in `*.jsp` and will return a 404 error as it will fail to locate the resource under `$doc_root`.

To disable JAVA from the Sun One Web Server, comment out the following in the `obj.conf` file under the `name="default" #NameTrans fn="ntrans-j2ee" name="j2ee"` and restart the webserver.

8. Optionally, if you are proxying by path, enable HTTP-tunneling:

- a. If you are using `weblogic.jar` and tunneling the `t3` protocol, add the following object definition to the `obj.conf` file, substituting the WebLogic Server host name and the WebLogic Server port number, or the name of a WebLogic Cluster that you wish to handle HTTP tunneling requests.

```
<Object name="tunnel" ppath="*/HTTPCInt*">
Service fn=wl_proxy WebLogicHost=192.192.1.4\ WebLogicPort=7001
</Object>
```

- b. If you are tunneling IIOP, which is the only protocol used by the WebLogic Server thin client, `wlclient.jar`, add the following object definition to the `obj.conf` file, substituting the WebLogic Server host name and the WebLogic Server port number, or the name of a WebLogic Cluster that you wish to handle HTTP tunneling requests.

```
<Object name="tunnel" ppath="*/iiop*">
Service fn=wl_proxy WebLogicHost=192.192.1.4\ WebLogicPort=7001
</Object>
```

9. Deploy and test the Netscape Enterprise Server Plug-In.

- a. Start WebLogic Server.
- b. Start Netscape Enterprise Server. If NES is already running, you must either restart it or apply the new settings from the console in order for the new settings to take effect.
- c. To test the Netscape Enterprise Server Plug-In, open a browser and set the URL to the Netscape Enterprise Server + `/weblogic/`, which should bring up the default WebLogic Server HTML page, welcome file, or default servlet, as defined for the default Web Application as shown in this example:

```
http://myenterprise.server.com/weblogic/
```

For information on how to create a default Web Application, read [Configuring Web Application Components](http://e-docs.bea.com/wls/docs81/webapp/components.html) at <http://e-docs.bea.com/wls/docs81/webapp/components.html>.

## Guidelines for Modifying the `obj.conf` File

To use the Netscape Enterprise Server Plug-In, you must make several modifications to the `NES obj.conf` file. These modifications specify how requests are proxied to WebLogic Server. You

can proxy requests by URL or by MIME type. The procedure for each is described in [“Installing and Configuring the Netscape Enterprise Server Plug-In” on page 4-3](#).

The Netscape `obj.conf` file is very strict about the placement of text. To avoid problems, note the following regarding the `obj.conf` file:

- Eliminate extraneous leading and trailing white space. Extra white space can cause your Netscape server to fail.
- If you must enter more characters than you can fit on one line, place a backslash (`\`) at the end of that line and continue typing on the following line. The backslash directly appends the end of the first line to the beginning of the following line. If a space is necessary between the words that end the first line and begin the second line, be certain to use *one* space, either at the end of the first line (before the backslash), or at the beginning of the second line.
- Do not split attributes across multiple lines. (For example, all servers in a cluster must be listed in the same line, following `WebLogicCluster`.)

## Sample `obj.conf` File (Not Using a WebLogic Cluster)

Below is an example of lines that should be added to the `obj.conf` file if you are not using a cluster. You can use this example as a template that you can modify to suit your environment and server. Lines beginning with `#` are comments.

**Note:** Make sure that you do not include any extraneous white space in the `obj.conf` file. Copying and pasting from the samples below sometimes adds extra white space, which can create problems when reading the file.

You can read the full documentation on Enterprise Server configuration files in the Netscape Enterprise Server Plug-In documentation.

```
----- BEGIN SAMPLE OBJ.CONF CONFIGURATION -----
(no cluster)

The following line locates the NES library for loading at
startup, and identifies which functions within the library are
NES functions. Verify the path to the library (the value
of the shlib=<...> parameter) and that the file is
readable, or the server fails to start.

Init fn="load-modules" funcs="wl_proxy,wl_init"\
 shlib=/usr/local/netscape/plugins/libproxy.so
Init fn="wl_init"
```

## Installing and Configuring the Netscape Enterprise Server Plug-In

```
Configure which types of HTTP requests should be handled by the
NES module (and, in turn, by WebLogic). This is done
with one or more "<Object>" tags as shown below.

Here we configure the NES module to pass requests for
"/weblogic" to a WebLogic Server listening at port 7001 on
the host myweblogic.server.com.

<Object name="weblogic" ppath="*/weblogic/*">
Service fn=wl_proxy WebLogicHost=myweblogic.server.com\
 WebLogicPort=7001 PathTrim="/weblogic"
</Object>

Here we configure the plug-in so that requests that
match "/servletimages/" is handled by the
plug-in/WebLogic.

<Object name="si" ppath="*/servletimages/*">
Service fn=wl_proxy WebLogicHost=192.192.1.4 WebLogicPort=7001
</Object>

This Object directive works by file extension rather than
request path. To use this configuration, you must also add
a line to the mime.types file:
#
type=text/jsp exts=jsp
#
This configuration means that any file with the extension
".jsp" are proxied to WebLogic. Then you must add the
Service line for this extension to the Object "default",
which should already exist in your obj.conf file:

<Object name=default>
NameTrans fn=pfx2dir from=/ns-icons\
 dir="c:/Netscape/SuiteSpot/ns-icons"
NameTrans fn=pfx2dir from=/mc-icons\
 dir="c:/Netscape/SuiteSpot/ns-icons"
NameTrans fn="pfx2dir" from="/help" dir=\
 "c:/Netscape/SuiteSpot/manual/https/ug"
NameTrans fn=document-root root="c:/Netscape/SuiteSpot/docs"
Service method="(GET|HEAD|POST|PUT)" type=text/jsp fn=wl_proxy\
```



```

WebLogicHost=localhost WebLogicPort=7001 PathPrepend=/jspfiles
PathCheck fn=nt-uri-clean
PathCheck fn="check-acl" acl="default"
PathCheck fn=find-pathinfo
PathCheck fn=find-index index-names="index.html,home.html"
ObjectType fn=type-by-extension
ObjectType fn=force-type type=text/plain
Service method=(GET|HEAD) type=magnus-internal/imapemap\ fn=imapemap
Service method=(GET|HEAD) \
 type=magnus-internal/directory fn=index-common
Service method=(GET|HEAD) type=*~magnus-internal/* fn=send-file
AddLog fn=flex-log name="access"
</Object>

The following directive enables HTTP-tunneling of the
WebLogic protocol through the NES plug-in.

<Object name="tunnel" ppath="*/HTTPCln*">
Service fn=wl_proxy WebLogicHost=192.192.1.4 WebLogicPort=7001
</Object>

#
----- END SAMPLE OBJ.CONF CONFIGURATION -----

```

## Sample obj.conf File (Using a WebLogic Cluster)

Below is an example of lines that should be added to `obj.conf` if you are using a WebLogic Server cluster. You can use this example as a template that you can modify to suit your environment and server. Lines beginning with `#` are comments.

**Note:** Make sure that you do not include any extraneous white space in the `obj.conf` file. Copying and pasting from the samples below sometimes adds extra white space, which can create problems when reading the file.

**Note:** If you are proxying to more than one WebLogic Server cluster from a single Web server, each cluster must have a unique `CookieName` parameter, and each value should start with a unique string.

For more information, see the full documentation on Enterprise Server configuration files from Netscape.

```

----- BEGIN SAMPLE OBJ.CONF CONFIGURATION -----
(using a WebLogic Cluster)

```

## Installing and Configuring the Netscape Enterprise Server Plug-In

```
#
The following line locates the NES library for loading at
startup, and identifies which functions within the library are
NES functions. Verify the path to the library (the value
of the shlib=<...> parameter) and that the file is
readable, or the server fails to start.

Init fn="load-modules" func="wl_proxy,wl_init"\
 shlib=/usr/local/netscape/plugins/libproxy.so
Init fn="wl_init"

Configure which types of HTTP requests should be handled by the
NES module (and, in turn, by WebLogic). This is done
with one or more "<Object>" tags as shown below.

Here we configure the NES module to pass requests for
"/weblogic" to a cluster of WebLogic Servers.

<Object name="weblogic" ppath="*/weblogic/*">
Service fn=wl_proxy \
 WebLogicCluster="myweblogic.com:7001,yourweblogic.com:7001,\
 theirweblogic.com:7001" PathTrim="/weblogic"
</Object>

Here we configure the plug-in so that requests that
match "/servletimages/" are handled by the
plug-in/WebLogic.

<Object name="si" ppath="*/servletimages/*">
Service fn=wl_proxy \
WebLogicCluster="myweblogic.com:7001,yourweblogic.com:7001,\
 theirweblogic.com:7001"
</Object>

This Object directive works by file extension rather than
request path. To use this configuration, you must also add
a line to the mime.types file:
#
type=text/jsp exts=jsp
#
This configuration means that any file with the extension
".jsp" is proxied to WebLogic. Then you must add the
```

## Installing and Configuring the Netscape Enterprise Server Plug-In

```
Service line for this extension to the Object "default",
which should already exist in your obj.conf file:

<Object name=default>
NameTrans fn=pfx2dir from=/ns-icons\
 dir="c:/Netscape/SuiteSpot/ns-icons"
NameTrans fn=pfx2dir from=/mc-icons\
 dir="c:/Netscape/SuiteSpot/ns-icons"
NameTrans fn="pfx2dir" from="/help" dir=\
 "c:/Netscape/SuiteSpot/manual/https/ug"
NameTrans fn=document-root root="c:/Netscape/SuiteSpot/docs"
Service method="(GET|HEAD|POST|PUT)" type=text/jsp fn=wl_proxy\
 WebLogicCluster="myweblogic.com:7001,yourweblogic.com:7001,\
 theirweblogic.com:7001",PathPrepend=/jspfiles
PathCheck fn=nt-uri-clean
PathCheck fn="check-acl" acl="default"
PathCheck fn=find-pathinfo
PathCheck fn=find-index index-names="index.html,home.html"
ObjectType fn=type-by-extension
ObjectType fn=force-type type=text/plain
Service method=(GET|HEAD) type=magnus-internal/imap\ fn=imap
Service method=(GET|HEAD) \
 type=magnus-internal/directory fn=index-common
Service method=(GET|HEAD) type=*~magnus-internal/* fn=send-file
AddLog fn=flex-log name="access"
</Object>

The following directive enables HTTP-tunneling of the
WebLogic protocol through the NES plug-in.

<Object name="tunnel" ppath="*/HTTPCln*">
Service fn=wl_proxy WebLogicCluster="myweblogic.com:7001,\
 yourweblogic.com:7001,theirweblogic.com:7001"
</Object>

#
----- END SAMPLE OBJ.CONF CONFIGURATION -----
```

## Setting Up Perimeter Authentication

Use perimeter authentication to secure your WebLogic Server applications that are accessed via the Netscape Enterprise Server Plug-In.

A WebLogic Identity Assertion Provider authenticates tokens from outside systems that access your WebLogic Server application, including users who access your WebLogic Server application through the Netscape Enterprise Server Plug-In. Create an Identity Assertion Provider that will safely secure your Plug-In as follows:

1. Create a custom Identity Assertion Provider for your WebLogic Server application. See [How to Develop a Custom Identity Assertion Provider](#) in *Developing Security Providers for WebLogic Server*.
2. Configure the custom Identity Assertion Provider to support the "Cert" token type and make it the active token type. See [How to Create New Token Types](#) in *Developing Security Providers for WebLogic Server*.
3. Set the `clientCertProxy` attribute to `True` in the `web.xml` deployment descriptor file for the Web application (or, if using a cluster, you can instead set the `ClientCertProxyEnabled` attribute to `True` for the whole cluster on the Administration Console Cluster-->Configuration-->General tab). See [context-param](#) in *Developing Web Applications for WebLogic Server*.
4. Once you have set `clientCertProxy`, be sure to use a connection filter to ensure that WebLogic Server accepts connections only from the machine on which the Netscape Enterprise Server Plug-In is running. See [Using Network Connection Filters](#) in *Programming WebLogic Security*.

See [Identity Assertion Providers](#) in *Developing Security Providers for WebLogic Server* for more information about Identity Assertion Providers.

## Using SSL with the NES Plug-In

You can use the Secure Sockets Layer (SSL) protocol to protect the connection between the Netscape Enterprise Server Plug-In, and WebLogic Server. The SSL protocol provides confidentiality and integrity to the data passed between the Netscape Enterprise Server Plug-In and WebLogic Server.

The Netscape Enterprise Server Plug-In does *not* use the transport protocol (`http` or `https`) specified in the HTTP request (usually by the browser) to determine whether or not the SSL protocol will be used to protect the connection between the Netscape Enterprise Server Plug-In and WebLogic Server.

To use the SSL protocol between Netscape Enterprise Server Plug-In and WebLogic Server:

1. Configure WebLogic Server for SSL. For more information, see [Configuring the SSL Protocol](http://e-docs.bea.com/wls/docs81/secmanage/ssl.html) at <http://e-docs.bea.com/wls/docs81/secmanage/ssl.html>.
2. Configure the WebLogic Server SSL listen port. For more information, see [Configuring the SSL Protocol](http://e-docs.bea.com/wls/docs81/secmanage/ssl.html) at <http://e-docs.bea.com/wls/docs81/secmanage/ssl.html>.
3. Set the `WebLogicPort` parameter in the `Service` directive in the `obj.conf` file to the listen port configured in [step 2](#).
4. Set the `SecureProxy` parameter in the `Service` directive in the `obj.conf` file to `ON`.
5. Web server plug-ins require a trusted Certificate Authority file in order to use SSL between the plug-in and WebLogic Server. Use Sun Microsystem's `keytool` utility to export a trusted Certificate Authority file from the `DemoTrust.jks` keystore file that resides in `BEA_HOME/weblogic81/server/lib`.

- a. To extract the `wlsdemoca` file, for example, use the command:

```
keytool -export -file trustedcafile.der -keystore DemoTrust.jks -alias wlsdemoca
```

Change the alias name to obtain a different trusted CA file from the keystore.

To look at all of the keystore's trusted CA files, use:

```
keytool -list -keystore DemoTrust.jks
```

Press enter if prompted for password.

- b. To convert the Certificate Authority file to `pem` format:

```
java utils.der2pem trustedcafile.der
```

6. Set additional parameters in the `Service` directive in the `obj.conf` file that define information about the SSL connection. For a complete list of parameters, see [“SSL Parameters for Web Server Plug-Ins” on page 6-13](#).

## Connection Errors with Single Non-Clustered WebLogic Server Instances

If you are running a single WebLogic Server instance, the plug-in attempts to connect to that server which is defined with the `WebLogicHost` parameter. If the attempt fails, an `HTTP 503` error message is returned. The plug-in continues trying to connect to WebLogic Server until `ConnectTimeoutSecs` is exceeded.

## Connection Errors and Clustering Failover

When the Netscape Enterprise Server Plug-In attempts to connect to WebLogic Server, the plug-in uses several configuration parameters to determine how long to wait for connections to the WebLogic Server host, and, after a connection is established, how long the plug-in waits for a response. If the plug-in cannot connect or does not receive a response, the plug-in attempts to connect and send the request to other WebLogic Servers in the cluster. If the connection fails or there is no response from any WebLogic Server in the cluster, an error message is sent.

[Figure 4-1 “Connection Failover” on page 4-17](#) demonstrates how the plug-in handles failover.

## Possible Causes of Connection Failures

Failure of the WebLogic Server host to respond to a connection request could indicate possible problems with the host machine, networking problems, or other server failures.

Failure of all WebLogic Server instances to respond, could indicate that WebLogic Server is not running or is unavailable, a hung server, a database problem, or other application failure.

## The Dynamic Server List

When you specify a list of WebLogic Server instances in the `webLogicCluster` parameter, the plug-in uses that list as a starting point for load balancing among the members of the cluster. After the first request is routed to one of these servers, a dynamic server list is returned containing an updated list of servers in the cluster. The updated list adds any new servers in the cluster and deletes any that are no longer part of the cluster or that have failed to respond to requests. This list is updated automatically with the HTTP response when a change in the cluster occurs.

## Failover, Cookies, and HTTP Sessions

When a request contains session information stored in a cookie, in the POST data, or by URL encoding, the session ID contains a reference to the specific server in which the session was originally established (called the *primary* server) and a reference to an additional server where the original session is replicated (called the *secondary* server). A request containing a cookie attempts to connect to the primary server. If that attempt fails, the request is routed to the secondary server. If both the primary and secondary servers fail, the session is lost and the plug-in attempts to make a fresh connection to another server in the dynamic cluster list. For more information, see [Figure 4-1 “Connection Failover” on page 4-17](#).

**Note:** If the POST data is larger than 64K, the plug-in will not parse the POST data to obtain the session ID. Therefore, if you store the session ID in the POST data, the plug-in cannot

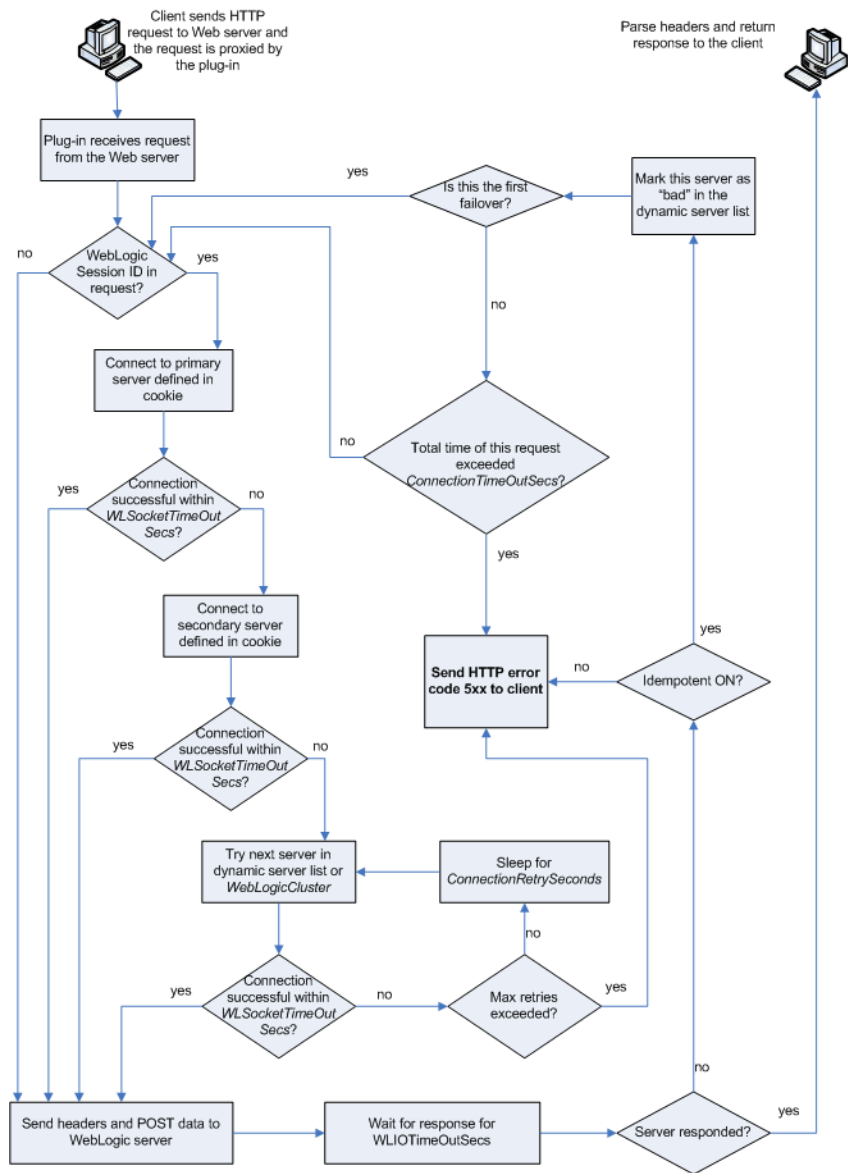
route the request to the correct primary or secondary server, resulting in possible loss of session data.

## Failover Behavior When Using Firewalls and Load Directors

In most configurations, the Netscape Enterprise Server Plug-In sends a request to the primary instance of a cluster. When that instance is unavailable, the request fails over to the secondary instance. However, in some configurations that use combinations of firewalls and load-directors, any one of the servers (firewall or load-directors) can accept the request and return a successful connection while the primary instance of WebLogic Server is unavailable. After attempting to direct the request to the primary instance of WebLogic Server (which is unavailable), the request is returned to the plug-in as “connection reset.”

Requests running through combinations of firewalls (with or without load-directors) are handled by WebLogic Server. In other words, responses of `connection reset` fail over to a secondary instance of WebLogic Server. Because responses of `connection reset` fail over in these configurations, servlets must be idempotent. Otherwise duplicate processing of transactions may result.

Figure 4-1 Connection Failover





**Notes:**

The HTTP error code thrown by the plug-in depends on the situation. Plug-in will return the HTTP error code 500 in the following conditions:

- Neither `WebLogicCluster` nor `WebLogicPort` was specified in the `httpd.conf` file.
- Unable to resolve the `WebLogicHost` parameter specified in the `httpd.conf` file.
- Port number specified by `WebLogicPort`, in the `httpd.conf` file, exceeds 65535.
- Unsuccessful in parsing the request while applying the `PathTrim` property.
- The request header is of type *Unknown Transfer-Encoding*.
- Failed to read the chunked request.
- Encountered an error reading `POST` data from client.
- Failed to open a temporary(temp) file.
- Failed to write `POST` data to the temp file.
- Encountered an error reading `POST` data from the temp file.
- `POST` timed out.
- SSL was specified without the parameter `trustedCAFile`.

On the other hand, the HTTP error code 503 is returned when:

- The maximum number of retries is exceeded. This value is computed by dividing `ConnectTimeoutSecs` by `ConnectRetrySecs`.
- `Idempotent` is OFF.

## Installing and Configuring the Netscape Enterprise Server Plug-In

# Proxying Requests from WebLogic Server to Another Web Server

The following sections discuss how to proxy HTTP requests from WebLogic Server to another Web server:

- [“Overview of Proxying Requests to Another Web Server” on page 5-1](#)
- [“Setting Up a Proxy to a Secondary Web Server” on page 5-1](#)
- [“Sample Deployment Descriptor for the Proxy Servlet” on page 5-2](#)

## Overview of Proxying Requests to Another Web Server

When you use WebLogic Server as your primary Web server, you may also want to configure WebLogic Server to pass on, or proxy, certain requests to a secondary Web server, such as Netscape Enterprise Server, Apache, or Microsoft Internet Information Server. Any request that gets proxied is redirected to a specific URL. You can even proxy to another Web server on a different machine. You proxy requests based on the URL of the incoming request.

The `HttpProxyServlet` (provided as part of the distribution) takes an HTTP request, redirects it to the proxy URL, and sends the response to the client's browser back through WebLogic Server. To use the `HttpProxyServlet`, you must configure it in a Web Application and deploy that Web Application on the WebLogic Server instance that is redirecting requests.

## Setting Up a Proxy to a Secondary Web Server

To set up a proxy to a secondary HTTP server:

1. Register the `proxy` servlet in your Web Application deployment descriptor (see “[Sample web.xml for Use with ProxyServlet](#)” on page 5-2). The Web Application must be the default Web Application of the server instance that is responding to requests. The class name for the proxy servlet is `weblogic.servlet.proxy.HttpProxyServlet`. For more information, see [Developing Web Applications and Application Resources at](#) <http://e-docs.bea.com/wls/docs81/webapp/index.html>.
2. Define an initialization parameter for the `ProxyServlet` with a `<param-name>` of `redirectURL` and a `<param-value>` containing the URL of the server to which proxied requests should be directed.
3. Map the `ProxyServlet` to a `<url-pattern>`. Specifically, map the file extensions you wish to proxy, for example `*.jsp`, or `*.html`. Use the `<servlet-mapping>` element in the `web.xml` Web Application deployment descriptor.  
  
If you set the `<url-pattern>` to `“/”`, then any request that cannot be resolved by WebLogic Server is proxied to the remote server. However, you must also specifically map the following extensions: `*.jsp`, `*.html`, and `*.html` if you want to proxy files ending with those extensions.
4. Deploy the Web Application on the WebLogic Server instance that redirects incoming requests.

## Sample Deployment Descriptor for the Proxy Servlet

The following is a sample of a Web application deployment descriptor for using the Proxy Servlet.

### Listing 5-1 Sample web.xml for Use with ProxyServlet

---

```
<!DOCTYPE web-app PUBLIC "-//Sun Microsystems, Inc.
/DTD Web Application 2.3//EN"
"http://java.sun.com/j2ee/dtds/web-app_2_3.dtd">

<web-app>

<servlet>
 <servlet-name>ProxyServlet</servlet-name>
 <servlet-class>weblogic.servlet.proxy.HttpProxyServlet</servlet-class>

 <init-param>
 <param-name>redirectURL</param-name>
```

```
<param-value>
 http://myserver:7001
</param-value>
</init-param>
</servlet>
<servlet-mapping>
 <servlet-name>ProxyServlet</servlet-name>
 <url-pattern>/</url-pattern>
</servlet-mapping>
<servlet-mapping>
 <servlet-name>ProxyServlet</servlet-name>
 <url-pattern>*.jsp</url-pattern>
</servlet-mapping>
<servlet-mapping>
 <servlet-name>ProxyServlet</servlet-name>
 <url-pattern>*.htm</url-pattern>
</servlet-mapping>
<servlet-mapping>
 <servlet-name>ProxyServlet</servlet-name>
 <url-pattern>*.html</url-pattern>
</servlet-mapping>
</web-app>
```

---

## Proxying Requests from WebLogic Server to Another Web Server

# Parameters for Web Server Plug-Ins

The following sections describe the parameters that you use to configure the Apache, Netscape, and Microsoft IIS Web server plug-ins:

- [Entering Parameters in Web Server Plug-In Configuration Files](#)
- [General Parameters for Web Server Plug-Ins](#)
- [SSL Parameters for Web Server Plug-Ins](#)

## Entering Parameters in Web Server Plug-In Configuration Files

You enter the parameters for each Web server plug-in in special configuration files. Each Web server has a different name for this configuration file and different rules for formatting the file. For details, see the following sections on each plug-in:

- [“Installing and Configuring the Apache HTTP Server Plug-In” on page 2-1](#)
- [“Installing and Configuring the Microsoft IIS Plug-In” on page 3-1](#)
- [“Installing and Configuring the Netscape Enterprise Server Plug-In” on page 4-1](#)

## General Parameters for Web Server Plug-Ins

**Note:** Parameters are case sensitive.

Table 6-1 Plug-In Parameters

Parameter	Default	Description
ConnectRetrySecs	2	<p>Interval in seconds that the plug-in should sleep between attempts to connect to the WebLogic Server host. Make this number less than the ConnectTimeoutSecs. The number of times the plug-in tries to connect before returning an HTTP 503/Service Unavailable response to the client is calculated by dividing <a href="#">ConnectTimeoutSecs</a> by ConnectRetrySecs.</p> <p>To specify no retries, set ConnectRetrySecs equal to ConnectTimeoutSecs. However, the plug-in attempts to connect at least twice.</p> <p>You can customize the error response by using the <a href="#">ErrorPage</a> parameter.</p>
ConnectTimeoutSecs	10	<p>Maximum time in seconds that the plug-in should attempt to connect to the WebLogic Server host. Make the value greater than <a href="#">ConnectRetrySecs</a>. If ConnectTimeoutSecs expires without a successful connection, even after the appropriate retries (see ConnectRetrySecs), an HTTP 503/Service Unavailable response is sent to the client.</p> <p>You can customize the error response by using the <a href="#">ErrorPage</a> parameter.</p>
CookieName	JSESSIONID	<p>If you change the name of the WebLogic Server session cookie in the WebLogic Server Web application, you need to change the CookieName parameter in the plug-in to the same value. The name of the WebLogic session cookie is set in the WebLogic-specific deployment descriptor, in the <a href="#">&lt;session-descriptor&gt;</a> (see <a href="http://e-docs.bea.com/wls/docs81/webapp/weblogic_xml.html#session-descriptor">http://e-docs.bea.com/wls/docs81/webapp/weblogic_xml.html#session-descriptor</a>) element.</p> <p><b>Note:</b> The CookieName parameter has been renamed as WLCookieName. A warning message is issued if you continue to use the old parameter name.</p>



**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
Debug	OFF	<p>Sets the type of logging performed for debugging operations. The debugging information is written to the /tmp/wlproxy.log file on UNIX systems and c:\TEMP\wlproxy.log on Windows NT/2000 systems. Override this location and filename by setting the <a href="#">WLLogFile</a> parameter to a different directory and file. Ensure that the tmp or TEMP directory has write permission assigned to the user who is logged in to the server.</p> <p>ON</p> <p>The plug-in logs informational and error messages.</p> <p>OFF</p> <p>No debugging information is logged.</p>
DebugConfigInfo	OFF	<p>Enables the special query parameter “__WebLogicBridgeConfig”. Use it to get details about configuration parameters from the plug-in.</p> <p>For example, if you enable “__WebLogicBridgeConfig” by setting DebugConfigInfo and then send a request that includes the query string ?__WebLogicBridgeConfig, then the plug-in gathers the configuration information and run-time statistics and returns the information to the browser. The plug-in does not connect to WebLogic Server in this case.</p> <p>This parameter is strictly for debugging and the format of the output message can change with releases. For security purposes, keep this parameter turned OFF in production systems.</p>

**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
DefaultFileName	none	<p>If the URI is “/” then the plug-in performs the following steps:</p> <ol style="list-style-type: none"> <li>1. Trims the path specified with the <a href="#">PathTrim</a> parameter.</li> <li>2. Appends the value of DefaultFileName.</li> <li>3. Prepends the value specified with <a href="#">PathPrepend</a>.</li> </ol> <p>This procedure prevents redirects from WebLogic Server.</p> <p>Set the DefaultFileName to the default welcome page of the Web Application in WebLogic Server to which requests are being proxied. For example, If the DefaultFileName is set to welcome.html, an HTTP request like “http://somehost/weblogic” becomes “http://somehost/weblogic/welcome.html”. For this parameter to function, the same file must be specified as a welcome file in all the Web Applications to which requests are directed. For more information, see “<a href="#">Configuring Welcome Pages</a>” at <a href="http://e-docs.bea.com/wls/docs81/webapp/comp onents">http://e-docs.bea.com/wls/docs81/webapp/comp onents</a>.</p> <p>Note for Apache users: If you are using Stronghold or Raven versions, define this parameter inside of a Location block, and not in an IfModule block.</p>
DynamicServerList	ON	<p>When set to OFF, the plug-in ignores the dynamic cluster list used for load balancing requests proxied from the plug-in and only uses the static list specified with the <a href="#">WebLogicCluster</a> parameter. Normally this parameter should remain set to ON.</p> <p>There are some implications for setting this parameter to OFF:</p> <ul style="list-style-type: none"> <li>• If one or more servers in the static list fails, the plug-in could waste time trying to connect to a dead server, resulting in decreased performance.</li> <li>• If you add a new server to the cluster, the plug-in cannot proxy requests to the new server unless you redefine this parameter. WebLogic Server automatically adds new servers to the dynamic server list when they become part of the cluster.</li> </ul>
ErrorPage	none	<p>You can create your own error page that is displayed when your Web server is unable to forward requests to WebLogic Server.</p>

**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
FileCaching	ON	<p>When set to ON, and the size of the POST data in a request is greater than 2048 bytes, the POST data is first read into a temporary file on disk and then forwarded to the WebLogic Server in chunks of 8192 bytes. This preserves the POST data during failover, allowing all necessary data to be repeated to the secondary if the primary goes down.</p> <p>Note that when FileCaching is ON, any client that tracks the progress of the POST will see that the transfer has completed even though the data is still being transferred between the WebServer and WebLogic. So, if you want the progress bar displayed by a browser during the upload to reflect when the data is actually available on the WebLogic Server, you might not want to have FileCaching ON.</p> <p>When set to OFF and the size of the POST data in a request is greater than 2048 bytes, the reading of the POST data is postponed until a WebLogic Server cluster member is identified to serve the request. Then the Plugin reads and immediately sends the POST data to the WebLogic Server in chunks of 8192 bytes.</p> <p>Note that turning FileCaching OFF limits failover. If the WebLogic Server primary server goes down while processing the request, the POST data already sent to the primary cannot be repeated to the secondary.</p> <p>Finally, regardless of how FileCaching is set, if the size of the POST data is 2048 bytes or less the plugin will read the data into memory and use it if needed during failover to repeat to the secondary.</p>
FilterPriorityLevel (Microsoft Internet Information Server only)	2	<p>The values for this parameter are 0 (low), 1 (medium), and 2 (high). The default value is 2. This priority should be put in <code>iisforward.ini</code> file. This property is used to set the priority level for the <code>iisforward.dll</code> filter in IIS. Priority level is used by IIS to decide which filter will be invoked first, in case multiple filters match the incoming request.</p>

**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
Idempotent	ON	<p>When set to ON and if the servers do not respond within <a href="#">WLIOTimeoutSecs</a> (new name for <a href="#">HungServerRecoverSecs</a>), the plug-ins fail over.</p> <p>If set to “OFF” the plug-ins do not fail over. If you are using the Netscape Enterprise Server Plug-In, or Apache HTTP Server you can set this parameter differently for different URLs or MIME types.</p>
KeepAliveEnabled (Does not apply to Apache HTTP Server version 1.3.x)	true (Netscape and Microsoft IIS plug-ins)  ON (Apache plug-in)	<p>Enables pooling of connections between the plug-in and WebLogic Server.</p> <p>Valid values for the Netscape and Microsoft IIS plug-ins are <code>true</code> and <code>false</code>.</p> <p>Valid values for the Apache plug-in are <code>ON</code> and <code>OFF</code>.</p>
KeepAliveSecs (Does not apply to Apache HTTP Server version 1.3.x)	20	<p>The length of time after which an inactive connection between the plug-in and WebLogic Server is closed. You must set <code>KeepAliveEnabled</code> to <code>true</code> (ON when using the Apache plug-in) for this parameter to be effective.</p> <p>The value of this parameter must be less than or equal to the value of the <code>Duration</code> field set in the Administration Console on the <code>Server/HTTP</code> tab, or the value set on the <code>server</code> Mbean with the <code>KeepAliveSecs</code> attribute.</p>

**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
MatchExpression (Apache HTTP Server only)	none	<p>When proxying by MIME type, set the filename pattern inside of an <code>IfModule</code> block using the <code>MatchExpression</code> parameter.</p> <p>Example when proxying by MIME type:</p> <pre>&lt;IfModule mod_weblogic.c&gt;   MatchExpression *.jsp   WebLogicHost=myHost paramName=value &lt;/IfModule&gt;</pre> <p>Example when proxying by path:</p> <pre>&lt;IfModule mod_weblogic.c&gt;   MatchExpression /weblogic   WebLogicHost=myHost paramName=value &lt;/IfModule&gt;</pre> <p>It is possible to define a new parameter for <code>MatchExpression</code> using the following syntax:</p> <pre>MatchExpression *.jsp PathPrepend=/test PathTrim=/foo</pre>
MaxPostSize	-1	<p>Maximum allowable size of POST data, in bytes. If the content-length exceeds <code>MaxPostSize</code>, the plug-in returns an error message. If set to -1, the size of POST data is not checked. This is useful for preventing denial-of-service attacks that attempt to overload the server with POST data.</p>
MaxSkipTime	10	<p>If a <code>WebLogicServer</code> instance listed in either the <code>WebLogicCluster</code> parameter or a dynamic cluster list returned from WebLogic Server fails, the failed server is marked as “bad” and the plug-in attempts to connect to the next server in the list.</p> <p><code>MaxSkipTime</code> sets the amount of time after which the plug-in will retry the server marked as “bad.” The plug-in attempts to connect to a new server in the list each time a unique request is received (that is, a request without a cookie).</p>
PathPrepend	null	<p>String that the plug-in prepends to the beginning of the original URL, after <code>PathTrim</code> is trimmed and before the request is forwarded to WebLogic Server.</p>

Table 6-1 Plug-In Parameters

Parameter	Default	Description
PathTrim	null	<p>String trimmed by the plug-in from the beginning of the original URL, before the request is forwarded to WebLogic Server. For example, if the URL</p> <pre>http://myWeb.server.com/weblogic/foo</pre> <p>is passed to the plug-in for parsing and if PathTrim has been set to strip off /weblogic before handing the URL to WebLogic Server, the URL forwarded to WebLogic Server is:</p> <pre>http://myWeb.server.com:7001/foo</pre> <p>Note that if you are newly converting an existing third-party server to proxy requests to WebLogic Server using the plug-in, you will need to change application paths to /foo to include weblogic/foo. You can use PathTrim and <a href="#">PathPrepend</a> in combination to change this path.</p>
QueryFromRequest (Apache HTTP Server only)	OFF	<p>When set to ON, specifies that the Apache plug-in use (request_rec *)r-&gt;the request to pass the query string to WebLogic Server. (For more information, see your Apache documentation.) This behavior is desirable in the following situations:</p> <ul style="list-style-type: none"><li>• When a Netscape version 4.x browser makes requests that contain spaces in the query string</li><li>• If you are using Raven Apache 1.5.2 on HP</li></ul> <p>When set to OFF, the Apache plug-in uses (request_rec *)r-&gt;args to pass the query string to WebLogic Server.</p>
StatPath (Not available for the Microsoft Internet Information Server Plug-In)	false	<p>If set to true, the plug-in checks the existence and permissions of the translated path (“Proxy-Path-Translated”) of the request before forwarding the request to WebLogic Server.</p> <p>If the file does not exist, an HTTP 404 File Not Found response is returned to the client. If the file exists but is not world-readable, an HTTP 403/Forbidden response is returned to the client. In either case, the default mechanism for the Web server to handle these responses fulfills the body of the response. This option is useful if both the WebLogic Server Web Application and the Web Server have the same document root.</p> <p>You can customize the error response by using the <a href="#">ErrorPage</a> parameter.</p>

**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
<b>WebLogicCluster</b> (Required when proxying to a cluster of WebLogic Servers, or to multiple non-clustered servers.)	none	<p>List of WebLogic Servers that can be used for load balancing. The server or cluster list is a list of host:port entries. If a mixed set of clusters and unclustered servers is specified, the dynamic list returned for this parameter will return only the clustered servers.</p> <p>The method of specifying the parameter, and the required format vary by plug-in. See the examples in:</p> <ul style="list-style-type: none"> <li>• <a href="#">"Installing and Configuring the Netscape Enterprise Server Plug-In (NSAPI)"</a></li> <li>• <a href="#">"Installing and Configuring the Microsoft Internet Information Server (ISAPI) Plug-In"</a></li> <li>• <a href="#">"Installing and Configuring the Apache HTTP Server Plug-In"</a></li> </ul> <p>If you are using SSL between the plug-in and WebLogic Server, set the port number to the SSL listen port (see <a href="#">Configuring the SSL Protocol</a> at <a href="http://e-docs.bea.com/wls/docs81/secmanage/ssl.html">http://e-docs.bea.com/wls/docs81/secmanage/ssl.html</a>) and set the <a href="#">SecureProxy</a> parameter to ON.</p> <p>The plug-in does a simple round-robin between all available servers. The server list specified in this property is a starting point for the dynamic server list that the server and plug-in maintain. WebLogic Server and the plug-in work together to update the server list automatically with new, failed, and recovered cluster members.</p> <p>You can disable the use of the dynamic cluster list by setting the <a href="#">DynamicServerList</a> parameter to OFF</p> <p>The plug-in directs HTTP requests containing a cookie, URL-encoded session, or a session stored in the POST data to the server in the cluster that originally created the cookie.</p>
<b>WebLogicHost</b> (Required when proxying to a single WebLogic Server.)	none	<p>WebLogic Server host (or virtual host name as defined in WebLogic Server) to which HTTP requests should be forwarded.</p> <p>If you are using a WebLogic cluster, use the <a href="#">WebLogicCluster</a> parameter instead of <a href="#">WebLogicHost</a>.</p>

**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
WebLogicPort  (Required when proxying to a single WebLogic Server instance.)	none	Port at which the WebLogic Server host is listening for connection requests from the plug-in (or from other servers). (If you are using SSL between the plug-in and WebLogic Server, set this parameter to the SSL listen port (see <a href="#">Configuring the SSL Protocol</a> at <a href="http://e-docs.bea.com/wls/docs81/secmanage/ssl.html">http://e-docs.bea.com/wls/docs81/secmanage/ssl.html</a> ) and set the <a href="#">SecureProxy</a> parameter to ON).  If you are using a WebLogic Cluster, use the <a href="#">WebLogicCluster</a> parameter instead of WebLogicPort.
WLDNSRefreshInterval	0 (Lookup once, during startup)	Only applies to NSAPI and Apache.  If defined in the proxy configuration, specifies number of seconds interval at which WebLogic Server refreshes DNS name to IP mapping for a server. This can be used in the event that a WebLogic Server instance is migrated to a different IP address, but the DNS name for that server's IP remains the same. In this case, at the specified refresh interval the DNS<->IP mapping will be updated.
WLExcludePathOrMimeType	none	This parameter allows you to exclude certain requests, specified by path or MIME type, from proxying.  This parameter can be defined locally at the Location tag level as well as globally. When the property is defined locally, it does not override the global property but defines a union of the two parameters.
WlForwardPath  (Microsoft Internet Information Server only)	null	If WlForwardPath is set to "/" all requests are proxied. To forward any requests starting with a particular string, set WlForwardPath to the string. For example, setting WlForwardPath to /weblogic forwards all requests starting with /weblogic to Weblogic Server.  This parameter is required if you are proxying by path. You can set multiple strings by separating the strings with commas. For example: WlForwardPath=/weblogic,/bea.



**Table 6-1 Plug-In Parameters**

Parameter	Default	Description
WLIOTimeoutSecs (new name for HungServerRecoverSecs)	300	<p>Defines the amount of time the plug-in waits for a response to a request from WebLogic Server. The plug-in waits for HungServerRecoverSecs for the server to respond and then declares that server dead, and fails over to the next server. The value should be set to a very large value. If the value is less than the time the servlets take to process, then you may see unexpected results.</p> <p>Minimum value: 10 Maximum value: Unlimited</p>
WLLocalIP	none	<p>Defines the IP address to bind to when the plug-in connects to a WebLogic Server instance running on a multihomed machine.</p> <p>If WLLocalIP is not set, a random IP address on the multi-homed machine is used.</p>
WLLogFile	See the <a href="#">Debug</a> parameter	Specifies path and file name for the log file that is generated when the <a href="#">Debug</a> parameter is set to ON. You must create this directory before setting this parameter.
WLProxySSL	OFF	<p>Set this parameter to ON to maintain SSL communication between the plug-in and WebLogic Server when the following conditions exist:</p> <ul style="list-style-type: none"> <li>• An HTTP client request specifies the HTTPS protocol</li> <li>• The request is passed through one or more proxy servers (including the WebLogic Server proxy plug-ins)</li> <li>• The connection between the plug-in and WebLogic Server uses the HTTP protocol</li> </ul> <p>When WLProxySSL is set to ON, the location header returned to the client from WebLogic Server specifies the HTTPS protocol.</p>

Table 6-1 Plug-In Parameters

Parameter	Default	Description
WLSocketTimeoutSecs	2 (must be greater than 0)	Set the timeout for the socket while connecting, in seconds.
WLTempDir	See the <a href="#">Debug</a> parameter	<p>Specifies the directory where a <code>wlproxy.log</code> will be created. If the location fails, the Plug-In resorts to creating the log file under <code>C:/temp</code> in Windows and <code>/tmp</code> in all Unix platforms.</p> <p>Also specifies the location of the <code>_wl_proxy</code> directory for post data files.</p> <p>When both <code>WLTempDir</code> and <code>WLLogFile</code> are set, <code>WLLogFile</code> will override as to the location of <code>wlproxy.log</code>. <code>WLTempDir</code> will still determine the location of <code>_wl_proxy</code> directory.</p>

## SSL Parameters for Web Server Plug-Ins

Server Gated Cryptography certificates are not supported for use with WebLogic Server Proxy Plug-Ins. Non-SGC certificates work appropriately and allow SSL communication between WebLogic Server and the plug-in.

Parameters are case sensitive.

Table 6-2 SSL Parameters for Web Server Plug-Ins

Parameter	Default	Description
EnforceBasicConstraints	Strong	<p>This parameter closes a security hole which existed with SSL certificate validation where certificate chains with invalid V3 CA certificates would not be properly rejected. This allowed certificate chains with invalid intermediate CA certificates, rooted with a valid CA certificate to be trusted. X509 V3 CA certificates are required to contain the BasicConstraints extension, marked as being a CA, and marked as a critical extension. This checking protects against non-CA certificates masquerading as intermediate CA certificates.</p> <p>The levels of enforcement are as follows:</p> <p>OFF</p> <p>This level entirely disables enforcement and is not recommended. Most current commercial CA certificates should work under the default STRONG setting.</p> <p><code>EnforceBasicConstraints=off</code> <code>EnforceBasicConstraints=false</code></p> <p>STRONG</p> <p>Default. The BasicConstraints for V3 CA certificates are checked and the certificates are verified to be CA certificates.</p> <p><code>EnforceBasicConstraints=strong</code> <code>EnforceBasicConstraints=true</code></p> <p>STRICT</p> <p>This level does the same checking as the STRONG level, but in addition it also strictly enforces IETF RFC 2459 which specifies the BasicConstraints for CA certificates also must be marked as "critical". This is not the default setting because a number of current commercially available CA certificates don't conform to RFC 2459 and don't mark the BasicConstraints as critical. Set this if you want to strict conformance to RFC 2459.</p> <p><code>EnforceBasicConstraints=strict</code></p>

**Table 6-2 SSL Parameters for Web Server Plug-Ins**

Parameter	Default	Description
SecureProxy	OFF	<p>Set this parameter to ON to enable the use of the SSL protocol for all communication between the plug-in and WebLogic Server. Remember to configure a port on the corresponding WebLogic Server for the SSL protocol before defining this parameter.</p> <p>This parameter may be set at two levels: in the configuration for the main server and—if you have defined any virtual hosts—in the configuration for the virtual host. The configuration for the virtual host inherits the SSL configuration from the configuration of the main server if the setting is not overridden in the configuration for the virtual host.</p>
TrustedCAFile	none	<p>Name of the file that contains the digital certificates for the trusted certificate authorities for the plug-in. This parameter is required if the <a href="#">SecureProxy</a> parameter is set to ON.</p> <p>The filename must include the full directory path of the file.</p>

Table 6-2 SSL Parameters for Web Server Plug-Ins

Parameter	Default	Description
RequireSSLHostMatch	true	<p>Determines whether the host name to which the plug-in is connecting must match the Subject Distinguished Name field in the digital certificate of the WebLogic Server to which the proxy plug-in is connecting.</p> <p>When specifying SecureProxy=ON and RequireSSLHostMatch=true in the plug-in, then the value specified in the ListenAddress property should exactly match the hostname value specified in the certificate.</p> <p>When using the ExternalDNSName property for WebLogic Server and setting SecureProxy=ON and RequireSSLHostMatch=true in the plug-in, then the value specified in the ExternalDNSName property should exactly match the hostname value specified in the certificate.</p>
SSLHostMatchOID	22	<p>The ASN.1 Object ID (OID) that identifies which field in the Subject Distinguished Name of the peer digital certificate is to be used to perform the host match comparison. The default for this parameter corresponds to the CommonName field of the Subject Distinguished Name. Common OID values are:</p> <ul style="list-style-type: none"><li>• Sur Name—23</li><li>• Common Name—22</li><li>• Email—13</li><li>• Organizational Unit—30</li><li>• Organization—29</li><li>• Locality—26</li></ul>

# Configuring Web Applications and Clusters for the Plug-in

Set the following attributes on a cluster or a Web application to configure security for applications accessed via the plug-in.

- **WeblogicPluginEnabled**—If you set this attribute to true for a cluster or a Web application that receives requests from the `HttpClusterServlet`, the servlet will respond to `getRemoteAddr` calls with the address of the browser client from the proprietary `WL-Proxy-Client-IP` header, instead of returning the Web server address.
- **ClientCertProxy Enabled**—If you set this attribute to true for a cluster or a Web application that receives requests from `HttpClusterServlet`, the plug-in sends client certs to the cluster in the special `WL-Proxy-Client-Cert` header, allowing user authentication to be performed on the proxy server.

## Parameters for Web Server Plug-Ins



## A

### Apache plug-in 1

- and clusters 16, 17

- and SSL 21

- httpd.conf file 11

- installing 4

- parameters 7, 13

- sample httpd.conf file 18

## C

### Configuration

- Apache plug-in 7, 13

- Microsoft-IIS (proxy) plug-in 6

### ConnectionRetrySecs 2

### ConnectionTimeoutSecs 2

customer support contact information viii

## D

### Debug 3

### DebugConfigInfo 3

### DefaultFileName 4

documentation, where to find it viii

### DynamicServerList 4

## F

### FileCaching 5

## H

### HungServerRecoverSecs 11

## I

### Idempotent 6

### Introduction to Plug-Ins 1

## K

### KeepAliveSecs 6

## M

### MatchExpression 7

### MaxPostSize 7

### MaxSkips 7

### Microsoft-IIS (proxy) plug-in

Configuration 6

proxying requests 2

proxying servlets 12

testing 13

## N

Netscape (proxy) Plug-in 1

and clustering 17

MIME types 6

obj.conf file 8

sample obj.conf file 9

## P

PathPrepend 7

PathTrim 8

printing product documentation viii

proxying requests 1

Microsoft-IIS (proxy) plug-in 2

ProxyServlet 1

sample deployment descriptor 2

## Q

QueryFromRequest 8

## R

RequireSSLHostMatch 16

## S

SecureProxy 15

SSLHostMatchOID 16

StatPath 8

support

technical viii

## T

TrustedCAFile 15

## W

WebLogicCluster 9

WebLogicHost 9

WebLogicPort 10

What are Plug-Ins 1