Configuring Microsoft IIS 5.0 With Pramati Server

Microsoft Internet Information Services 5.0 is a built-in web server that comes with Windows 2000 operating system. An earlier version, IIS 4.0, is available for Windows NT operating systems.

If you have an IIS running on your network, you can use Pramati Server to add clustering failover and dynamic content service capability to the installation.

IIS allows you to configure an ISAPI filter for proxying requests to another server. To use Pramati Server, Pramati WebGate is configured as an ISAPI filter on IIS. The filter directs requests for dynamic content to Pramati Server, while IIS continues to serve static pages.

WebGate is provided by Pramati and can be downloaded from http://www.pramati.com. It is distributed as a dynamic link library (DLL).

Version and Platform Support

WebGate can be used with IIS Version 4.0 or 5.0. The plug-in is available for each of these platforms as:

OS Version	IIS Version
Windows NT	IIS 4.0
Windows 2000	IS 5.0

How to get the plug-in

The WebGate plug-in can be obtained from the following sources:

- The binary is available with the server build in the `add_ons` directory of the installation home. This is available from Pramati Server 3.5's service pack 5 onwards.
- Downloadable binaries available on the website at (http://www.pramati.com/index.jsp?id=downloads). Note that you can find all versions of the binaries from the website.

The WebGate plug-in for IIS contains the following files:

- The plug-in itself (WebGate.dll)
- A plug-in properties file (`iisplugin.props`)
- Various library JAR files used by the WebGate plug-in.
- A copy of a `web-lbconfig.xml` file used by the LoadBalancer.

Installing WebGate

Pramati WebGate must be configured on the IIS installation. This is done in two steps:

1. Configuring ISAPI filter (Pramati WebGate)
2. Configuring Extension (maps file extensions for re-direction)

To reconfigure IIS for WebGate, you must first stop the web server. This is done from the command prompt by running `net stop w3svc`. The configuration changes are then made in the Internet Service Manager of IIS.

Note: *WebGate file must be downloaded to the host machine of IIS web server.*

Also, note that if you are using the WebGate plug-in 2.0, you need to add `<JAVA_HOME>/jre/bin/client` to your system's path.

Configuring ISAPI Filter

An ISAPI filter is a program that responds to events during the processing of an HTTP request, and resides in-memory on the IIS web server. Pramati WebGate is set up as the ISAPI filter to be used.

1. On Windows 2000, select Start >Settings > Control Panel. In the Control Panel window, double click on the Administrative Tools icon and choose the Internet Services Manager. The Internet Service Manager starts, along with the IIS Management Console. On Windows NT, select Programs > Windows NT 4.0 Option Pack > Internet Information Server > Internet Service Manager.
2. On the IIS Management Console, select the system on which the WebGate plug-in must be installed. Right click on the system and select Properties to bring up the Properties window.
3. Select WWW Service from the Master Properties list and click Edit to open the WWW Service Master Properties dialog.
4. Select the ISAPI Filter tab and click Add to specify a name and location for the ISAPI filter (in this case, `WebGate.dll`) and point it to the location of the DLL by clicking on the browse button.
5. Click OK.

Configuring Extension

Internet Service Manager provides an Add/Edit Application Extension Mappings facility for adding and modifying the mappings between a filename extension and the program or interpreter that must process such a file.

1. In the Internet Service Manager, select the 'Home Directory' tab.
2. To add an Extension Mapping, click 'Configuration' to start Application Configuration.

3 Select 'App Mapping' tab, click 'Add' and enter the following application mapping information:

Table 1: Application Mapping information

Field	Entry
Executable	WebGate.dll
Extension	**.pmt** (Note that for prior releases of the WebGate Plugin (versions 1.x.x) , the extension was .jsp). The version of the WebGate plug-in can be found in the logs generated by the plug-in.
Method exclusions	leave empty

4 Choose the 'Script Engine' option and click 'OK'.

Your IIS is now configured to work along with Pramati Server. Browser requests for Java ServerPages will be redirected to Pramati Server while static pages will be served by IIS.

Starting IIS

Start IIS by running the command `net start w3svc` from the command prompt. This starts the World Wide Web Publishing service and loads WebGate as an ISAPI filter.

Verifying the installation

Look for a green arrow against WebGate filter in the WWW Service Master Properties. This indicates successful installation of WebGate. A red arrow indicates installation was unsuccessful. If you don't see the green arrow, make sure you've added `<JAVA_HOME>/jre/bin/client` to your system's path.

Configuring WebGate

WebGate properties are contained in `iisplugin.props`. This file must be extracted to the same directory as the DLL files. It contains the following configurable parameters required for serving dynamic content from Pramati Server:

Table 2: Configurable parameters for iisplugin.props

Parameter	Description
Logging	This parameter can take three values - *None, Medium,* or *Verbose*. Recommended value is None. Log files are not generated if this value is *None*. If you specify *Verbose*, a log file (WebGateFilter.log) is generated in the directory as specified in the LogFileName entry (below) and contains information including headers.
LogFileName	The path to the Log file that will be generated. Example: C://PServer/add_ons/webgate/iis/WebGateFilter.log
'CachingEnabled	A boolean value that enables static content caching at plug-in. Values accepted are true and false.
InvalidateCacheAfter	The images will be refetched after this period. Values permitted are seconds/hours/days. For example, *60 seconds* or *1 hour* or *2 days*.

Table 2: Configurable parameters for iisplugin.props

Parameter	Description
WebGateHost	Machine names on which the Pramati Server is running. In case of multiple machines, use a comma ',' to separate the names. For example, *Host:port*
SecureConnection	This property tells the plug-in if a secure connection should be established with WebGate hosts. The default is false.
ServerAuthRequired	This property is used to enable or disable server authentication. The default is false.
TrustedCAFile	This property specifies a list of CAs to be trusted by the Plug-in. To know more about how to set up a certificate authority, please refer to the chapter on Pramati Server Security Framework in the Technical Reference Guide.
MaxSockPool	The maximum socket pool size.
Context	The context root of applications that are deployed on the application server. You can specify a maximum of ten context roots that are separated by a 'space'. For example: bankWeb ecperf /. If all the requests to the IIS need to be forwarded to the Pramati Server, specify '@'.
MaxSockPool	The maximum socket pool size.
CacheContentType	A comma separated list of content types that will be cached. For example, .jpg, .gif, .bmp, .htm, .html.
ErrorPage	The page that is displayed if none of the nodes is running in the WebGate Host.

Directing requests from IIS to multiple Pramati Servers

By modifying the `iisplugin.props` file, you can make WebGate for IIS redirect requests to more than one Pramati Server, based on the context root in the request URL. Here's an example:

```
[node-info-begin]
     WebGateHost localhost:8181
     SecureConnection true
     ServerAuthRequired true
     TrustedCAFile C:/IISPlugin/defaultCAStore/default.pem
     MaxSockPool 20
     Context admin Administrator
     CacheContentType  .jpg,.gif,.bmp,.htm,.css
     ErrorPage C:/PServer/add_ons/webgate/iis/error.htm
[node-info-end]
```

The requests under specified context roots will then be redirected to the specified WebGate host.

WebGate failover for Pramati Server

When WebGate is loaded, it tries to create a pool of connections to a node that is specified first in the comma separated list of nodes. If it successfully creates the connection, it serves the request using the pool. Here is a sample entry of Pramati Server Cluster Nodes in iisplugin-props:

```
[node-info-begin]
```

```
        WebGateHost localhost:8181, johnsmith:8381, joe:8182
        SecureConnection true
        ServerAuthRequired true
        TrustedCAFile C:/IISPlugin/defaultCAStore/default.pem
        MaxSockPool 20
        Context readtest bankWeb Administrator
        MaxSockPool 10
        #The following content types separated with a comma will be cached.
        CacheContentType  .jpg,.gif,.bmp,.htm,.html
        ErrorPage C:/PServer/add_ons/webgate/iis/error.htm
[node-info-end]
```

If localhost goes down, the plug-in performs a failover routine and attempts to create a connection pool for johnsmith, the next node in sequence. If all connections fail, or no node responds, an error message is sent.

Tuning Pramati Server for IIS

Closing Idle Sockets on Pramati Server

With WebGate running, Pramati Server can be tuned for better performance with IIS. These parameters are mostly modified in the Pramati Server configuration file, server-config.xml, located under the Server installation directory. The most signficant property has to do with closing idle sockets that may be open on Pramati Server. The tag in the web configuration file is shown below:

Table 3: Setting socket time out for Pramati Server with IIS

Parameter	Default Value	Set Tag in web-config.xml
keepalive-timeout-millis (in milliseconds)	1000 ms	<keepalive-timeout-millis>30000</keepalive-timeout-millis>

Setting the send/receive buffer size

Table 4: Setting send and recieve buffer size for Pramati Server with IIS

Parameter	Default Value	Set Tag in web-config.xml
send-buffer-size-bytes	1024	<send-buffer-size-bytes>65536</send-buffer-size-bytes>
received-buffer-size-bytes	1024	<received-buffer-size-bytes>65536</received-buffer-size-bytes>

Secure Connection

If the connection between the webgate plugin and Pramati Server is to be secure, the `SecureConnection` property in the `iisplugin.props` file needs to be set to true. Also, the Server should be started in secure mode by setting the following value to true.

Table 5: In server-config.xml

Parameter	Default Value	Set Parameter in server-config.xml to
ssl-enabled	false	<property name="ssl-enabled" value="true"/>.

If `ServerAuthentication` property is set to true, a Certificate Authority file needs to be generated. To know more about how to generate a Trusted CA file, refer to the chapter on Pramati Server Security Framework in Pramati Server 3.5 Technical Reference Guide.

Using Connection Pools

Instead of creating a new socket from WebGate to Pramati Server, a specified number of sockets can be created at start up and reused. This number is set in the `iisplugin.props` as `MaxSockPool`.

Caching static content

Static content such as images and HTML files can be cached by WebGate itself. The maximum image size that can be cached is 50K and the maximum cache size is 10 MB. Plug-in level caching is enabled by setting the directive `CachingEnabled` to '`true`' in `iisplugin.props`. The directive `InvalidateCacheAfter` specifies the time after which the cached content is refreshed.

Sample Configuration of WebGate for Microsoft IIS

```
Logging none
LogFileName C://PServer35/add_ons/webgate/iis/WebGate.log
CachingEnabled true
InvalidateCacheAfter 60 seconds
[node-info-begin]
     WebGateHost localhost:8181
     Context readtest bankWeb Mark
     SecureConnection false
```

```
    ServerAuthRequired false
    TrustedCAFile C:/IISPlugin/defaultCAStore/default.pem
    MaxSockPool 10
    Context admin
    CacheContentType  .jpg,.gif,.bmp,.htm,.html
    ErrorPage C:/PServer/add_ons/webgate/iis/error.htm
[node-info-end]

 #All requests under context roots admin and IShop2 will be re-directed to:
[node-info-begin]
    WebGateHost Pacific-v:8181
    SecureConnection false
    ServerAuthRequired false
    TrustedCAFile C:/IISPlugin/defaultCAStore/default.pem
    MaxSockPool 10
    Context admin IShop2
    CacheContentType .jpg,.gif,.bmp,.htm,.html
    ErrorPage C:\PServer1141\add_ons\webgate\error.htm
[node-info-end]
```

Achieving Loadbalancing using WebGate IIS Plug-in

Pramati WebGate plug-in can be configured to balance load among several backend nodes. One advantage of configuring loadbalancing at the plug-in level is that it would avoid an extra hop to the Load balancer node and the loadbalancing takes place right at the plug-in level. To learn more about concepts of loadbalancing refer to the chapter on *Request Dispatcher Architecture* in Pramati Server 3.5 Technical Reference Guide.

To enable loadbalancing of the WebGate Plug-in, unzip the downloadable archive at a convenient location on the machine on which it should be configured. Let this directory be `<webgate_home>`. You can also use the `PServer/add_ons/webgate/iis` directory as your `webgate_home`. To achieve loadbalancing, you need to set the `EnhancedLBEnabled` property to `true`, and configure the `web-lbconfig.xml` file to perform loadbalancing:

The following table shows the various Load balancer related properties provided in the `iisplugin.props` file:

Table 6: Plug-in Properties File

Property Name	Description
EnhanceLBEnabled	To enable/disable the enhanced LoadBalancer which maintains Session stickiness, balances load in a round robin fashion and performs failover by resending the request to another node. It can also detect a restarted node. If enabled, the configuration properties between [node-info-begin] and [node-info-end] will not be read. Default is false.
PluginInstallationHome	The plugin installation directory. The 'web-lbconfig.xml' file needed to configure the enhanced LB and the JAR files will be picked up from this directory.
EnhancedLBContexts	If 'EnhancedLBEnabled' is enabled, then a list of contexts which need to be redirected to the back-end Pramati Servers is specified here. Eg. EnhancedLBContexts admin. Use '@' for all contexts.

Here's a sample `iisplugin.props` enabling loadbalancing:

```
Logging verbose
LogFileName C:/PServer35/add_ons/webgate/iis/WebGate.log
AddClientHeaders true
EnhancedLBEnabled true
PluginInstallationHome C:/PServer35/add_ons/webgate/iis
EnhancedLBContexts test
```

Note that the `web-lbconfig.xml` file (in the `<webgate_home>` directory) should be configured to provide information about various backend nodes and their port numbers. To learn more about configuring backend nodes, refer to the chapter Administration Guide.