



Professional

Apache Tomcat 5

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Tomcat and IIS

Chapter 12 discussed how Apache could be used as a front end to Tomcat. This chapter details the use of Internet Information Services (IIS) with Tomcat. IIS is a popular Web server for Web sites hosted on Microsoft platforms, and is used for deploying server-side solutions developed in ASP, C#, and other Microsoft technologies. The advantage of using IIS is that it allows service providers to support heterogeneous server-side solutions (for example, both ASPs and JSPs) on the same platform.

The Jakarta project provides an Internet Services Application Programming Interface (ISAPI) filter for connecting IIS and Tomcat. ISAPI filters are components or plug-ins for third-party products to communicate with IIS. This chapter covers installation, configuration, and tuning of the ISAPI filter to connect Tomcat with IIS, including the following topics:

- ☐ Role of the ISAPI filter
- ☐ Configuration of Tomcat
- ☐ Settings, installation, and configuration of the ISAPI filter for IIS
- ☐ Testing and setup
- ☐ Troubleshooting tips

The configuration described in this chapter has been tested using Tomcat 5.0.19, Microsoft IIS 5.0, ISAPI filter (`isapi_redirector2.dll`) version 2.0.1, and Sun J2SDK 1.4.0 on Microsoft Windows 2000 Professional and Server editions. For the configuration discussed in this chapter, it is assumed that Tomcat and IIS are already installed, configured, and running on the system. The following locations are used in this chapter for configuration-related discussions:

- ☐ JAVA_HOME—D:\Apps\j2sdk1.4.0
- ☐ CATALINA_HOME—D:\Apps\Tomcat5
- ☐ IIS Document Root—c:\Inetpub\wwwroot

Tuning the AJP Connector

Another optimization you can perform is configuring the number of request-processing threads in the Tomcat worker. The AJP13 Connector defined in the `server.xml` file enables you to set the minimum and maximum number of threads, as shown here:

```
<Connector className=" org.apache ajp.tomcat4.Ajp13Connector"
    port=" 8009"
    minProcessors="5"
    maxProcessors="75"
    acceptCount="10"
    debug=" 0" />
```

The `<Connector>` tag has attributes such as `minProcessors`, `maxProcessors`, and `acceptCount`, which can be tuned for performance. A general rule of thumb is to set the number of `maxProcessors` to the maximum number of concurrent users expected per Tomcat worker. Set `minProcessors` to the average number of concurrent users expected per Tomcat worker. The `acceptCount` attribute controls the number of threads initialized at startup. If these values are too high, then the operating system suffers the overhead required for allocating memory and CPU for these threads. If these values are set too low, then user requests will be queued or not serviced at all.

Load-Balanced AJP Workers

In addition to the AJP worker, a load-balanced worker consisting of multiple `ajp13` workers can be defined. Chapter 12 describes the details for setting up a load-balanced environment. The concepts discussed in Chapter 12 are specified for Apache and Tomcat, but are applicable regardless of the Web server used. More advanced load balancing configurations are covered in Chapter 19.

Using SSL

Secure Socket Layers (SSL) provides a secure communication channel between the browser and the Web server. Chapter 10 discusses how SSL is set up for the HTTP Connector. When IIS is used with Tomcat, you can use SSL at either the IIS end or the Tomcat end. Using SSL with IIS is often preferred, as other Web pages and deployed applications (for example, ASP applications) on the same server can use it, too.

- ❑ *Configuring SSL in Tomcat* — This configuration is explained in detail in Chapter 15. In brief, it involves the following steps:
 1. Download and install an SSL implementation.
 2. Create a certificate keystore and add a self-signed certificate to it.
 3. Purchase a certificate from a certificate authority (such as VeriSign, Thawte, or Trustcenter). The self-signed certificate created the preceding step is used to generate a certificate-signing request.
 4. Configure Tomcat for SSL.
- ❑ *Configuring SSL in IIS* — Refer to the documentation provided with your IIS installation for details.