Introduction to Tomcat

Overview

Warnings:

- We **strongly** recommend that only experienced Tomcat administrators install Tomcat.
- If you select the *MPM ITK* option in the *EasyApache 3* interface (*Home* >> *Software* >> *EasyApache 3*), you **cannot** install Tomcat.
- The Tomcat service requires the you add the `tomcat` user to the `nobody` user group. If you already use Tomcat, EasyApache will change the group ID of the `tomcat` user to the `nobody` user group.
- Tomcat is **not** available on servers that run CentOS 7, CloudLinux™ 7, or Red Hat® Enterprise Linux (RHEL) 7.
- EasyApache 3 does **not** support new installations of Tomcat.
- As of cPanel & WHM version 76, EasyApache 4 now supports Tomcat 8.5. For more information, read our Tomcat documentation.

Note:
This document is for Tomcat 7. For information on Tomcat 5.5, read our Migrate from Tomcat 5.5 to Tomcat 7 documentation.

Apache Tomcat is an Apache module that provides a web server in addition to the Apache web server. The Tomcat web server supports Java Servlets and JavaServer pages.

For more information about the Apache Tomcat open-source project, visit the Apache Tomcat web site.

How Tomcat works

EasyApache configures the Tomcat server to listen on port `8009`, port `80`, and, if you use SSL, port `443`. The Tomcat web server listens on port 8080 for direct requests.

Important:
Your server's firewall **must** allow internal connections on port `8009`.

For more information on the topics in the following sections, read Apache Tomcat's The Apache Tomcat Connector - Reference Guide documentation.

For more information on how Apache works, read our Apache documentation.

Port 80 or 443

If a client browser sends a request on port `80` or `443`, the Apache web server receives the request and the following actions occur:

Diagram of process over port 80 or 443:

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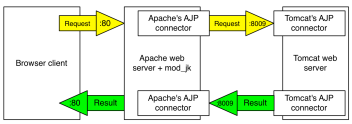
Important:
EasyApache 3 does **not** support new installations of Tomcat.

As of cPanel & WHM version 76, EasyApache 4 now supports Tomcat 8.5. For more information, read our Tomcat documentation.

1. Apache reads the request. If the request is for content that requires the Tomcat web server, Apache translates the request from the HTTP protocol to the AJP protocol. Then, Apache sends the request to port 8009.



> **Note:**
> Apache can translate to the AJP protocol and send the request to port `8009` bec ause of the configuration of the `mod_jk` Apache module.

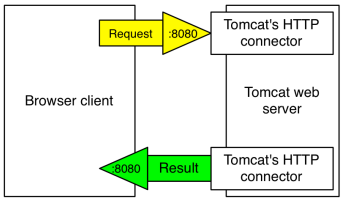
2. The Tomcat web server uses Tomcat's Apache connector with the AJP/1.3 protocol to listen on port `8009` for requests from Apache. It receives the request, reads it, translates the request so that a Tomcat worker can read it, and sends the request to a Tomcat worker.
3. The Tomcat worker handles the request, and then returns the results of the request to the Tomcat's Apache connector on the Tomcat web server.
4. Tomcat's Apache connector translates the results of the request so that the Apache web server can read it, and sends the results out of the Tomcat server on port `8009`.
5. Apache's Tomcat connector receives the results, translates it to the HTTP protocol, and directs the Apache web server to send the information to the browser client.

Port `8080`

If a client browser sends a request on port `8080`, the Tomcat web server responds to the request directly.

> **Note:**
> The Tomcat connector that listens on port `8080` uses the HTTP/1.1 protocol.

Diagram of process over port 8080:



How to install Tomcat

Installation requirements

You **must** have `root`-level access to install Tomcat.

> **Remember:**
> Tomcat is **not** available on servers that run CentOS 7, CloudLinux 7, or RHEL 7.

Installation steps

> **Note:**
> In the following examples, `example.com` represents your domain.

Step 1: Install Tomcat

To install Tomcat, select the *Tomcat 7* option in the *Short Options List* stage of WHM's *EasyApache 3* interface *(Home >> Software >> EasyApache 3.*

EasyApache automatically inserts the `mod_jk.so` module directive into your Apache configuration.

Step 2: Enable Java servlets on your sites

Enable Java servlets via WHM

To enable Java servlets for a site via WHM, perform the following steps:

1. Navigate to WHM's *Install Servlets* interface (*Home >> Account Functions >> Install Servlets).*

Important:
This option does **not** appear until you install Tomcat on your server.

2. Select the account in the *Account Selection* table and click *Install*.
3. Navigate to the `http://www.example.com/jsptest.jsp` URL for your domain to test the installation.

Notes:

- You can **only** add servlet support to domains and subdomains.
  - To add servlet support to a parked domain (alias), add servlet support to the primary domain.
  - To add servlet support to an addon domain, add servlet support to the associated subdomain.
- You **cannot** add servlet support to subdomains via WHM. Use the command line interface to add servlet support to subdomains.

Enable Java servlets via CLI

To enable Java servlets for a site via the command line, run the following command as the `root` user:

```
/scripts/addservlets --domain=example.com
```

To enable Java servlets for a subdomain or addon domain, run the following command on the associated subdomain:

```
/scripts/addservlets --domain=subdomain.example.com
```

If you enable Java servlets for a domain, cPanel & WHM performs the following actions:

- cPanel & WHM creates a container for the site in the `server.xml` file.
- cPanel & WHM creates a default `cp_jkmount.conf` file for the site.
- cPanel & WHM copies the `jsptest.jsp` file into the site's document root.

To confirm that Java servlets work for the domain, navigate to the `http://www.example.com/jsptest.jsp` URL for your domain. The page should appear similar to the following example:

Example output from the `jsptest.jsp` url

How to remove Tomcat servlets from a site

To remove Tomcat servlets from a site via the command line, run the following script as the `root` user:

```
/scripts/remservlets --domain=example.com
```

Note:
This script removes the container for the site from the `/usr/local/easy/etc/easy-tomcat7/server.xml` Tomcat server configuration file, and removes the `cp_jkmount.conf` site configuration file from each subdirectory for the domain within the `/usr/local/apache/conf/userdata/` directory.

For example, the script removes `cp_jkmount.conf` file from the following directories:

- `/usr/local/apache/conf/userdata/std/2/$user/$domain/`
- `/usr/local/apache/conf/userdata/ssl/2/$user/$domain/`

How to deploy Java applications

After you enable Java servlets for a domain, the user can deploy Java applications on their web site. Java distributes many applications in convenient WAR packages that you can easily to install on your server.

For more information on how to deploy Java applications, read our How to Deploy Java Applications documentation.

How to manually deploy a WAR file

To manually deploy a WAR file, put the WAR file into the user's `public_html` directory. Once placed, you can access the application through the following address: `http://example.com:8080/appname`

Then, add a `JkMount` entry for the application in the `mod_jk` file:

```
<IfModule mod_jk.c>
JkMount /*.jsp ajp13
JkMount /servlet/* ajp13
JkMount /servlets/* ajp13
JkMount /*.do ajp13
JkMount /appname/* ajp13
</IfModule>
```

You **must** restart the `httpd` daemon to reload the `mod_jk` file with the new entry.

ROOT.war does not deploy automatically

`ROOT.war` does not deploy automatically. The index context of all cPanel & WHM hosts is hardcoded to the `$CATALINA_HOME/conf/server.xml` file.

For example:

```
<Host name="reseller.example" appBase="/home/reseller/public_html">
<Alias>www.reseller.example</Alias>
<Context path="" reloadable="true" docBase="/home/reseller/public_html"
debug="1"/>
<Context path="/manager" debug="0" privileged="true"
docBase="/usr/local/jakarta/tomcat/server/webapps/manager">
</Context>
</Host>
```

Tomcat components

Tomcat will install the following components on your server:

Component	Location	Description
The Java Development Kit (JDK)	The vendor RPM determines this location.	This directory contains the Java Runtime Environment (JRE).
The Binary Tomcat Distribution	The `/usr/local/easy/share/easy-tomcat7/` directory	This distribution is precompiled Java byte code, which Tomcat downloads and extracts. The `$CATALINA_HOME` and `$CATALINA_BASE` variables point to this location.
Apache Tomcat Connectors (mod_jk)	`mod_jk.so` in the Apache modules directory	These connectors allow Apache to communicate with Tomcat.
cPanel-Provisioned Maintenance Scripts		cPanel & WHM uses these maintenance scripts instead of the Tomcat initialization scripts. They create and remove Tomcat virtual hosts.

Important Tomcat files and directories

File name or directory	Description
`/var/log/easy-tomcat7/catalina.out`	The Tomcat output log.

`/var/log/easy-tomcat7/catalina.err`	The Tomcat error log.
	The error log marks errors with the following seve
	• `SEVERE`
	• `WARNING`
	• `INFO`
	The following command returns any SEVERE or `W`
	`tail -f /var/log/easy-tc`
	`'(SEVERE|WARNING):' &`
	Tomcat uses cPanel & WHM's default logging fac
	Tomcat also uses the CentOS-provided `logrota`
	them for one year.

`/usr/local/apache/logs/mod_jk.log`	Apache's log for the `mod_jk` Apache module.
`/var/cpanel/tomcat.options`	Tomcat's options file. Each argument in the options file is defined on a • For more information about JSVC Options in `/usr/local/easy/bin/j` • For more information about JVM Hotspot Op
`/usr/local/easy/share/easy-tomcat7/conf/`	The Tomcat server configuration file directory.
`/usr/local/easy/share/easy-tomcat7/conf/server.xml`	Configures Virtual Hosts, Connectors, and more. cPanel & WHM **only** supports a single instance o
`/usr/local/apache/conf/jk.conf`	The configuration file for the `mod_jk` Apache mo HTTP Server HowTo documentation.
`/usr/local/easy/share/easy-tomcat7/conf/workers.properties`	Defines the parameters that Apache uses to com Apache Tomcat's Apache HTTP Server HowTo d

`/usr/local/apache/conf/userdata/std/2/$user/$domain/cp_jkmount.conf`
 	
and
 	
`/usr/local/apache/conf/userdata/ssl/2/$user/$domain/cp_jkmount.conf`
	The site configuration file. This file exists for each
	
	Each site with Java Servlets or JavaServer contai
	
	• `/usr/local/apache/conf/userdata/s`
	• `/usr/local/apache/conf/userdata/s`
	
	The `cp_jkmount.conf` file contains a contextua
	
	When EasyApache builds your Apache configurat `d.conf` file to include the `cp_jkmount.conf` fil
	
	`Include "/usr/local/apache/conf/`
	
	The following is an example of a `cp_jkmount.c`
	
	`<IfModule mod_jk.c>`
	`JkMount /*.jsp ajp13`
	`JkMount /servlet/* ajp13`
	`JkMount /servlets/* ajp1`
	`JkMount /*.do ajp13`
	`</IfModule>`
	
	For more information on the include file format for entation.