

Migrate from Tomcat 5.5 to Tomcat 7

Overview

Apache Tomcat is the Java web server for Apache. This document includes information on Tomcat compatibility, and changes between Tomcat 5.5 and Tomcat 7.

For more information on Tomcat, read our [Introduction to Tomcat](#) documentation.

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.

Versions of Tomcat

Use the following table to determine which versions of Tomcat are available for your configuration:

Version of cPanel & WHM	Current Apache Version	Current Tomcat Version	You may install
11.36 or earlier	Any	None	Tomcat 5.5
11.36 or earlier	Any	Tomcat 5.5	Tomcat 5.5
11.38.0.8 or later	2.2 or later	None	Tomcat 7*
11.38.0.8 or later	2.2 or later	Tomcat 5.5	Tomcat 7*
11.38.0.8 or later	2.2 or later	Tomcat 7	*Tomcat 7

Warnings:

- If you upgrade to Tomcat 7, you **cannot** downgrade back to Tomcat 5.5 through EasyApache.
- Tomcat 7 will appear as an option in all releases of cPanel & WHM version 11.38, but will only install correctly for cPanel & WHM version 11.38.0.8 or later.

Note:

You **cannot** run Tomcat 5.5 and Tomcat 7 simultaneously.

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Differences between Tomcat 5.5 and Tomcat 7

OpenJDK 7

Tomcat uses a Java Development Kit (JDK). Tomcat 5.5 uses the Sun-implemented JDK. Tomcat 7 uses the community-developed OpenJDK 7 RPM that your operating system provides. CentOS and Red Hat® versions 5.9, 6.3, 6.4, or later include the OpenJDK 7 RPM that Tomcat 7 requires.

Warning:

If your operating system does not support the OpenJDK 7 RPM, you **cannot** use Tomcat 7.

For more information on OpenJDK 7, visit the [OpenJDK](#) website.

EasyApache uses RPM files to install Tomcat 7

EasyApache uses the `mod_jk` Apache module to install Tomcat 5.5.

Note:

We will continue to distribute the `mod_jk` Apache module by tarball to ensure compatibility.

EasyApache uses RPM files to install Tomcat 7. EasyApache installs the Tomcat 7 software in the `/usr/local/easy` directory. A Tomcat 7 installation includes the following RPM files:

- Tomcat 7
- JSVC
- MySQL® Connector/J

The RPM files follow the following naming convention:

```
easy-<PACKAGE.VERSION.RELEASE>.rpm
```

For example:

```
easy-tomcat7-7.0.41.0.rpm
```

Note:

The functionality of EasyApache does **not** change when it uses an RPM to install software.

Automatic updates without rebuilding EasyApache

One of the benefits to Tomcat 7 is that you can update the software without performing an EasyApache build. If you wish to update Tomcat 7 to the latest version and do not wish to rebuild EasyApache, perform the following steps:

1. Run EasyApache in the *EasyApache 3* interface (*Home >> Software >> EasyApache 3*)
 - The first step EasyApache performs is to update the EasyApache software, the EasyApache configuration files, and the RPM versions list.
 - For more information on EasyApache, view our [EasyApache](#) documentation.
2. After the update is complete, EasyApache will display the *Profile* interface. Exit EasyApache.
 - To exit EasyApache, select any other interface in WHM.
3. Run either the `upcp` script or the `check_cpanel_rpms` script.

Tomcat software versions

Tomcat 7 includes newer versions of the following software:

- Servlet 3.0
- Expression Language 2.2
- JavaServer Pages 2.2

Your applications may require modifications before they will work in the new environments.

Tomcat 7 compiles JavaServer Pages (JSPs) with the Eclipse Compiler for Java (`ecj`) on Java 6. Your JSPs may require modifications to work in Tomcat 7.

Manager and admin roles

Tomcat 5.5 uses the *manager* and *admin* roles. Tomcat 7 replaces the *manager* and *admin* roles with the following roles:

Admin roles:

- admin-gui
- admin-script

Manager roles:

- manager-gui
- manager-jmx
- manager-script
- manager-status

Warning:

You **must** assign roles manually because EasyApache does **not** migrate the user definition database from Tomcat 5.5 to Tomcat 7. Tomcat 7 applications rely on specific permissions that are assigned to roles.

Install location

Tomcat 5.5

EasyApache installs Tomcat 5.5 in the `/usr/local/jakarta/apache-tomcat-5.5.XX` directory. The `/usr/local/jakarta/tomcat` file is a symlink to the Tomcat installation.

Tomcat 7

EasyApache installs Tomcat 7 in the `/usr/local/easy/share/easy-tomcat7` directory.

If you upgrade from Tomcat 5.5 to Tomcat 7, EasyApache will delete the `/usr/local/jakarta/tomcat` symlink, and the files that support Tomcat 5.5. The original Tomcat 5.5 directory and libraries will remain in place if you need to migrate old libraries to the new location.

Startup options file locations

Tomcat 5.5

The Tomcat 5.5 startup script looks for options in the `/var/cpanel/tomcat.options` file.

When the startup script starts the Java service (`jsvc`), the startup script passes these options to the `/usr/sbin/starttomcat` script.

Tomcat 7

The Tomcat 7 startup script looks for options in the `/usr/local/easy/share/easy-tomcat7/conf/tomcat.conf` file. The system administrator can override these options with the `/var/cpanel/tomcat.options` configuration file.

When the startup script starts the Java service (`jsvc`), the startup script passes the options to the `/etc/init.d/easy-tomcat7` script.

Environment variables

The `$CATALINA_HOME` environmental variable refers to the shared installation directory. The `$CATALINA_BASE` environmental variable refers to the root directory for a specific instance.

- In Tomcat 5.5, the `$CATALINA_HOME` environmental variable and the `$CATALINA_BASE` environmental variable point to the `/usr/local/jakarta/tomcat` directory.
- In Tomcat 7, the `$CATALINA_HOME` environmental variable and the `$CATALINA_BASE` environmental variable point to the `/usr/local/easy/share/easy-tomcat7` directory.

Reinstall and re-enable user servlets

After EasyApache completes an upgrade from Tomcat 5.5 to Tomcat 7, EasyApache will enable servlet support for any domains that had servlet support enabled prior to the upgrade.

You will need to reinstall and re-enable user servlets if you perform any of the following actions:

- Modify an account with servlets.
- Park a domain on an account with servlets.
- Unpark a domain from an account with servlets.

For more information about how to enable Tomcat Servlets, read our [Introduction to Tomcat](#) documentation.

Note:

We will automate this process in a future release of EasyApache.

Library directory changes

Tomcat 5.5

Tomcat 5.5 stores libraries in the following directory structure:

- Tomcat 5.5 stores each Java shared library in a separate directory.
- Individual `<classname>.class` files which are in the `$CATALINA_HOME/common/classes` directory.
- `<libraryname>.jar` files, which are in the `$CATALINA_HOME/common/lib` directory.

Tomcat 7

Tomcat 7 uses the `/usr/local/easy/share/easy-tomcat7/lib (lib)` directory. The `lib` directory replaces the following directories from Tomcat 5.5:

- `server`
- `shared`
- `common`

Tomcat 7 stores the following libraries in the `$CATALINA_HOME/lib` directory:

- Java shared libraries
- `<libraryname>.jar` files
- `<classname>.class` files – Each `class` file is in a sub directory inside the `$CATALINA_HOME/lib` directory, with a directory hierarchy that mimics the class name.
 - For example, the **My.Example.Name** class is in the `$CATALINA_BASE/lib/My/Example/Name.class` directory.

InvokerServlet changes

Tomcat 5.5

cPanel & WHM enables the `InvokerServlet` method for Tomcat 5.5 by default. The `InvokerServlet` method allows you to designate a directory for servlets. The cPanel & WHM configuration of Tomcat 5.5 maps the `InvokerServlet` method to the `httpServlet` and `httpServlets` directories.

To allow web users to invoke an `HttpServlet`-enabled servlet class files via URL, store the files in the `httpServlet` and `httpServlets` directories.

Tomcat 7

cPanel & WHM disables the use of the `InvokerServlet` method for Tomcat 7 by default.

Warning:

If you invoke a servlet through the `InvokerServlet` method, it will **not** function and Tomcat 7 will produce an error by default.

The change in functionality is due to how Tomcat 7 runs the `InvokerServlet` method. Tomcat 7 only allows the `InvokerServlet` method to run in privileged mode, which poses a significant security risk.

Warning:

We **strongly** recommend that you do not enable the `InvokerServlet` method. Instead, we recommend that you package servlets in WAR files.

To disable the the `InvokerServlet` method, cPanel & WHM comments out the mapping for the `InvokerServlet` method. To enable the `InvokerServlet` method, remove the commenting markup around the `InvokerServlet` mapping.

Log changes

Tomcat 5.5

Tomcat 5.5 uses the cPanel & WHM default logging facility, Valve, which stores logs in the `/usr/local/jakarta/logs/` directory.

Tomcat 7

Tomcat 7 also uses the Valve logging facility, but stores logs in the `/var/log/easy-tomcat7` directory. The `logrotate.d` application manages log rotation for Tomcat 7. Your operating system provides the `logrotate.d` application.

The `logrotate.d` application rotates Tomcat 7 logs weekly and keeps them for one year.

Account transfers

The following table includes information about how to transfer Tomcat accounts from one server to another:

cPanel & WHM version of destination server	Servlet behavior
11.38.1.3 or later	cPanel & WHM automatically enables Servlets.
11.38.1.2 or earlier	You must manually enable Servlets.

Warning:

You **must** install Tomcat on the destination server before you transfer the accounts.

For more information about how to enable Tomcat Servlets, read our [Introduction to Tomcat](#) documentation.

WAR file deployment changes

Tomcat 5.5

In a Tomcat 5.5 installation, you unpack and deploy WAR files into the the `work` directory. For example, to unpack and deploy a WAR file named `filename` for the domain `example.com`, unpack the file into the `/usr/local/jakarta/tomcat/work/Catalina/example.com/filename/` directory.

Tomcat 7

cPanel & WHM disables the `unpackWARs` option in Tomcat 7 installations for permissions reasons. The process to unpack and deploy WAR files did not change for Tomcat 7.

The `work` directory has changed to the `/var/cache/easytomcat7/Catalina/example.com/filename/` directory.

Warning:

If you re-enable the `unpackWARs` option, WAR files will fail to deploy properly and you will see an error that is similar to the following:

```
Jun 26, 2013 2:34:34 PM
org.apache.catalina.loader.WebappClassLoader clearReferencesJdbc
WARNING: JDBC driver de-registration failed for web application
[/foo]
java.lang.NullPointerException
    at
org.apache.catalina.loader.WebappClassLoader.clearReferencesJdbc(W
ebappClassLoader.java:2054)
    at
org.apache.catalina.loader.WebappClassLoader.clearReferences(Webap
pClassLoader.java:1990)
    at
org.apache.catalina.loader.WebappClassLoader.stop(WebappClassLoade
r.java:1902)
    at
org.apache.catalina.loader.WebappLoader.stopInternal(WebappLoader.
java:662)
    at
org.apache.catalina.util.LifecycleBase.stop(LifecycleBase.java:232
)
    at
org.apache.catalina.core.StandardContext.stopInternal(StandardCont
ext.java:5616)
    at
org.apache.catalina.util.LifecycleBase.stop(LifecycleBase.java:232
)
    at
org.apache.catalina.core.ContainerBase$StopChild.call(ContainerBas
e.java:1575)
    at
org.apache.catalina.core.ContainerBase$StopChild.call(ContainerBas
e.java:1564)
    at
java.util.concurrent.FutureTask$Sync.innerRun(FutureTask.java:334)
    at
java.util.concurrent.FutureTask.run(FutureTask.java:166)
    at
java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecut
or.java:1145)
    at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecu
tor.java:615)
    at java.lang.Thread.run(Thread.java:724)
```

Test accounts

Tomcat 5.5

If you install servlet support in Tomcat 5.5, Tomcat copies two files to the user's `public_html` directory:

- `jspstest.jsp` – To access this file, use the `http://example.com/jspstest.jsp` address.
- `ServletsTestPage.class` — To access this file, use the `http://example.com/servlet/ServletsTestPage` address.

Note:

In the above examples, replace `example.com` with the user's domain.

Tomcat 7

If you install servlet support in Tomcat 7, Tomcat copies only the `jspstest.jsp` file to the user's `public_html` directory.

deployXML disabled

cPanel & WHM sets the `deployXML` variable to `false` for Tomcat 7 installations.

Related documentation

- [Apache Tomcat](#) – For more information on the Apache Tomcat web server, view Apache's Tomcat website.
- [Apache Tomcat Migration Guide](#) – For more information on how to migrate the Apache Tomcat web server, read Apache's Tomcat Migration Guide documentation.