What will we need?
Eclipse, Java and Struts2
Tomcat
Import a Sample App and Test

STRUTS 2 - Practical examples

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Spis treści

What will we need?
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What will we need?

- Eclipse IDE for Java EE Developers
  (Can be normal Eclipse with Web Tools Platform)
- Java version 5 or newer
- Apache Tomcat Server v6
- Struts2 Framework

What will we need?
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Eclipse, Java and Struts2

- Download Eclipse IDE for Java EE Developers and unpack it.
- Download the latest version of Java and install it.
- Download the Struts2 framework and unpack it.

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Installation
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Tell Eclipse about Tomcat

Tomcat

- Installation
- Configuration
  - Change the Port to 80
  - Turn on Servlet Reloading
  - Enable the Invoker Servlet
  - Turn on Directory Listings
- Tell Eclipse about Tomcat

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Tomcat: Installation

- Change the port from 8080 to 80
  - This lets you enter URLs of the form
    http://localhost/...
    instead of *http://localhost:8080/....*
- If this is not done during installation, it can be configured later on if need be.
- Don't start the server after installation is complete.

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Tomcat: Configuration (1)

- **The port is changed from 8080 to 80.** This lets you enter URLs of the form
  http://localhost/... instead of
  http://localhost:8080/....

- **The invoker servlet is enabled.** This lets run servlets with a URL of the form
  http://localhost/appName/servlet/packageName.servletName.
  That is, the invoker servlet saves you from editing web.xml to give a servlet-mapping to your servlet.

  - When you download Tomcat from the Apache site, the invoker servlet is disabled. You definitely want the invoker servlet disabled on a server used for a deployed application, but having it enabled on your development server is very convenient for quick testing.

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Tomcat: Configuration (1)

- **Tomcat monitors struts-config.xml and faces-config.xml.**
  Whenever either of these files changes, Tomcat reloads the
  Web application. This saves you from restarting the server
  when you change these files.
  - If you do not use Struts or JSF, this change will not be
    beneficial to you. But it does not hurt either way.
- **Directory listings are turned on.** If you type a URL ending
  in / and there is no welcome file, Tomcat shows a directory
  listing.
  - Directory listings were on by default in previous Tomcat
    versions. They are not required but are convenient, especially
    during development.

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Tomcat: Configuration (2)

Change the Port to 80

- edit *install_dir/conf/server.xml*
  and change the port attribute of the Connector element from
  8080 to 80, yielding a result similar to that below:

  <Connector port="80" protocol="HTTP/1.1"
  connectionTimeout="20000"
  redirectPort="8443" />

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Tomcat: Configuration (3)

Turn on Servlet Reloading

- The next step is to tell Tomcat to check the modification dates of the class files of requested servlets, and reload ones that have changed since they were loaded into the server's memory. This slightly degrades performance in deployment situations, so is turned off by default. However, if you fail to turn it on for your development server, you'll have to restart the server every time you recompile a servlet that has already been loaded into the server's memory. Since this tutorial discusses the use of Tomcat for development, this change is strongly recommended. To turn on servlet reloading, edit *install_dir/conf/context.xml* and change:

  <Context>

  to

  <Context reloadable="true" privileged="true">

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Tomcat: Configuration (3)

- Note that the privileged entry is really to support the invoker servlet (see the following section), so you can omit that entry if you do not use the invoker.

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Tomcat: Configuration (4)

Enable the Invoker Servlet

- To enable the invoker servlet, uncomment the following servlet and servlet-mapping elements in *install_dir/conf/web.xml* .
  <servlet>
          <servlet-name>
          invoker
          </servlet-name>
          <servlet-class>
          org.apache.catalina.servlets.InvokerServlet
          </servlet-class>
  . . .
  </servlet>
  . . .
  <servlet–mapping>
          <servlet-name>
          invoker
          </servlet-name>
          <url–pattern>
          /servlet/*
          </url–pattern>
  </servlet–mapping>

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Tomcat: Configuration (4)

- In Tomcat 6 (but not Tomcat 5.5), you also need the privileged="true" entry in the Context element of *context.xml.*

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Tomcat: Configuration (5)

Turn on Directory Listings

- In previous Tomcat versions, if you entered a URL ending in a slash (/) and there was no welcome-file in the directory (or servlet-mapping that matched the URL), Tomcat displayed a directory listing. In Tomcat 6, the default was changed from true to false for these directory listings. Many developers find it convenient to turn directory listings back on.
  To make this change, edit *install_dir/conf/web.xml* and change the init-param value of listings for the default servlet, as below.

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Tomcat: Configuration (5)

```
<servlet>
        <servlet-name>
            default
        </servlet-name>
        <servlet-class>
            org.apache.catalina.servlets.DefaultServlet
        </servlet-class>
        <init-param>
            <param-name>debug</param-name>
            <param-value>0</param-value>
        </init-param>
        <init-param>
            <param-name>listings</param-name>
            <param-value>true</param-value>
        </init-param>
        <load-on-startup>1</load-on-startup>
</servlet>
```

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Tell Eclipse about Tomcat (1)

- Start Eclipse and select "Workbench".
- Click on Servers tab at the bottom, then:
  Right-click ->
  New ->
  Server ->
  Apache ->
  Tomcat v6.0 ->
  to folder ->OK.

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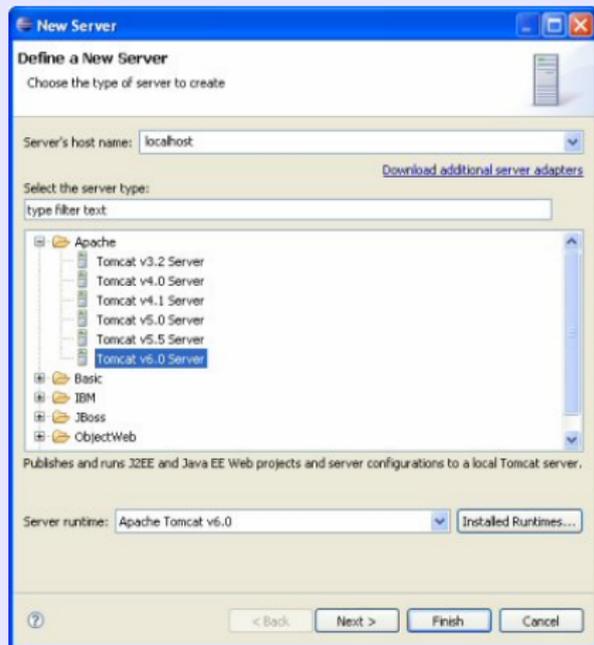
Tell Eclipse about Tomcat (2)

- Click on Servers tab at bottom.
- R-click on Tomcat v6.0, choose "Start".
- Open http://localhost/ in a browser: you should see an empty page showing a blank directory listing (but *not* a 404 error).

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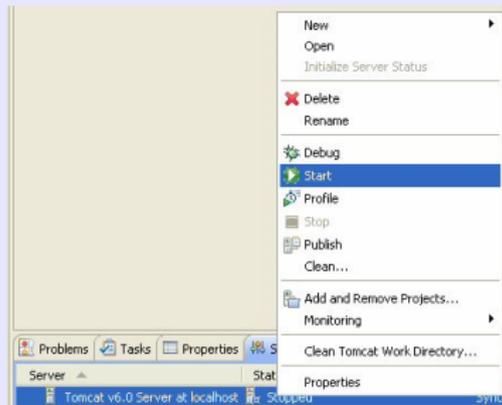
Import a Sample App and Test

- Use File, Import, Web, WAR file.
- Then click Browse and navigate to the folder where you unpacked the Struts2 framework.
- Go to . . . \apps and select the struts2-blank-2.x.x.war application. Give the project a name, for example: Struts2Demo.
- Click on Servers tab at bottom. Right-click on Tomcat v6.0 Server, choose "Add and Remove Projects". Choose Struts2Demo. Start Tomcat if not already running. Try the following URL in a browser:
  http://localhost/Struts2Demo