Struts 2.3 to 2.5 migration

Dependencies

Update Struts dependencies to 2.5.

Remove the following plugin dependencies because they were dropped and aren't supported anymore.

- Dojo Plugin
- Codebehind Plugin
- JSF Plugin
- Struts1 Plugin

Please be aware that the framework is using Log4j2 now as a main logging layer, the existing old logging layer is deprecated and will be removed soon. Log4j2 supports many different logging implementations, please check documentations for more details.

StrutsPrepareAndExecuteFilter

The `org.apache.struts2.dispatcher.ng.filter.StrutsPrepareAndExecuteFilter` was moved to `org.apache.struts2.dispatcher.filter.StrutsPrepareAndExecuteFilter`.

In web.xml replace this:

```
<filter>
    <filter-name>struts2</filter-name>
    <filter-class>org.apache.struts2.dispatcher.ng.filter.StrutsPrepareAndExecuteFilter</filter-class>
</filter>
```

with that:

```
<filter>
    <filter-name>struts2</filter-name>
    <filter-class>org.apache.struts2.dispatcher.filter.StrutsPrepareAndExecuteFilter</filter-class>
</filter>
```

There were other package changes, please read Version Notes 2.5 for more details.

DTD

Struts DTD was updated to 2.5 version.

In struts.xml replace 2.3 DTD version:

```
<!DOCTYPE struts PUBLIC
        "-//Apache Software Foundation//DTD Struts Configuration 2.3//EN"
        "http://struts.apache.org/dtds/struts-2.3.dtd">
```

with 2.5:

```
<!DOCTYPE struts PUBLIC
        "-//Apache Software Foundation//DTD Struts Configuration 2.5//EN"
        "http://struts.apache.org/dtds/struts-2.5.dtd">
```

HTML 5

All the core themes are now HTML 5 compliant which means using a `required` attribute in your tags will produce a proper browser's validation.

Tags attributes

The `id` attribute was replaced with `var` attribute in the following tags.

- `<s:action>`
- `<s:append>`
- `<s:bean>`
- `<s:date>`
- `<s:generator>`
- `<s:iterator>`
- `<s:merge>`
- `<s:number>`
- `<s:set>`
- `<s:sort>`
- `<s:subset>`
- `<s:text>`
- `<s:url>`

If you have something like that in your code:

```
<s:url id="url" action="login">
```

change it to:

```
<s:url var="url" action="login">
```

The `<s:set>` tag `name` attribute is replaced with `var` attribute.

From:

```
<s:set id="str1" value="'string1 value'" />
<s:set name="str2" value="'string2 value'" />
```

to:

```
<s:set var="str1" value="'string1 value'" />
<s:set var="str2" value="'string2 value'" />
```

Also `escape` attribute was renamed to `escapeHtml` attribute.

From:

```
<s:property escape="true" var="someProperty"/>
```

to:

```
<s:property escapeHtml="true" var="someProperty"/>
```

Div tag

The `<s:div>` tag was dropped.

Replace `<s:div>` with plain HTML `<div>` tag.

Field names

If you have field names which starts with single lower case letter, for example:

```
private String sTrng;
public String getSTrng() {...}
public void setSTrng(String str) {...}
```

change accessors to `getsTrng` and `setsTrng`.

Or better yet, change field names to not contain single lower case letter:

```
private String strng;
public String getStrng() {...}
public void setStrng(String str) {...}
```

For additional info see WW-3909.

Tiles

Depending on from which version of struts you upgrade and whether you used `tiles-plugin` or `tiles3-plugin` you may need to do different steps.

Struts 2.5 just provides a `tiles-plugin` which uses Tiles3. So support for Tiles2 has been dropped as well as the name `tiles3-plugin`.

Now the only maven dependency looks like this:

maven dependecy for tiles-plugin

```
        <dependency>
            <groupId>org.apache.struts</groupId>
            <artifactId>struts2-tiles-plugin</artifactId>
            <version>${struts2.version}</version>
        </dependency>
```

You may need to update DTD in your `tiles.xml` files to Tiles3:

tiles3 dtd

```
<!DOCTYPE tiles-definitions PUBLIC
       "-//Apache Software Foundation//DTD Tiles Configuration 3.0//EN"
       "http://tiles.apache.org/dtds/tiles-config_3_0.dtd">
```

A Listener in `web.xml` is required. It is not necessary to configure paths to `tiles.xml` files here as they are picked up automatically.

StrutsTilesListener in web.xml

```
<listener>
  <listener-class>org.apache.struts2.tiles.StrutsTilesListener</listener-class>
</listener>
```

Optionally you may remove TilesDefinitions from XML and annotate actions instead. See Tiles Plugin for more details.

Temp/Work directory of ApplicationServer/ServletContainer

Users reported it was necessary for them to remove temp/work directory of their ApplicationServer/ServletContainer. Likely to force server to recompile JSPs.

New Locale aware conversion logic

As from Struts 2.5.12 a new conversion logic was introduced which can affect your applications when using uncommon solutions. One of these is to use `a number literals` in Freemarker template. In such case Freemarker treats them as numbers (as `BigDecimal`s) and Struts logic converts them to a string with decimal zero, see the example below:

```
<@s.textfield name="userId" value=35/>
```

this snippet will produce the following Html control:

```
<input type="text" name="userId" value="35.0"/>
```

To resolves this problem you must add quotes around the value:

```
<@s.textfield name="userId" value="35"/>
```

This is due how Freemarker treats a number literals.