How to use log4j in Spring MVC

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Log4j is a popular and widely-used logging framework for Java development. It’s pretty easy to setup and use log4j in a Spring MVC application, just by following a few steps described below.

1. Adding log4j library jar file

First, download log4j distribution, extract the zip archive and add the `log4j-1.2.17.jar` file into the `WEB-INF\lib` directory of your Spring MVC web application.

If you are using Maven, add the following entry into `pom.xml` file:

```
<dependency>
  <groupId>log4j</groupId>
  <artifactId>log4j</artifactId>
  <version>1.2.17</version>
  <scope>runtime</scope>
</dependency>
```

2. Creating log4j configuration file

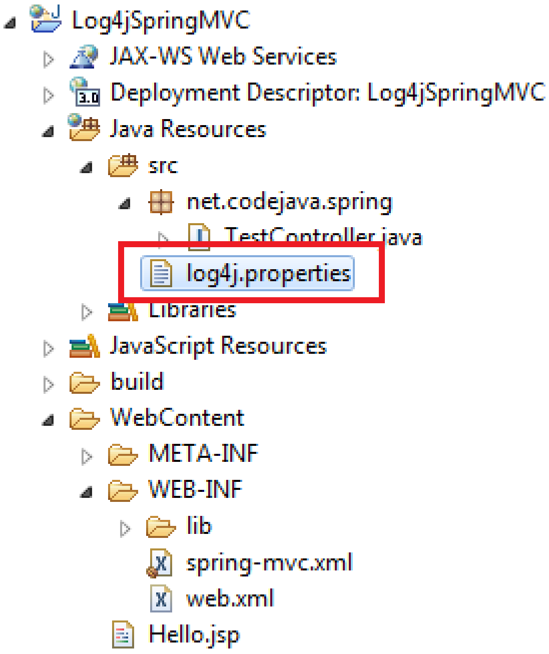
Create a `log4j.properties` file with the following content:

```
# LOG4J configuration
log4j.rootLogger=INFO, Appender1, Appender2

log4j.appender.Appender1=org.apache.log4j.ConsoleAppender
log4j.appender.Appender1.layout=org.apache.log4j.PatternLayout
log4j.appender.Appender1.layout.ConversionPattern=%-7p %d [%t] %c %x - %m%n

log4j.appender.Appender2=org.apache.log4j.FileAppender
log4j.appender.Appender2.File=D:/Logs/SpringMVC.log
log4j.appender.Appender2.layout=org.apache.log4j.PatternLayout
log4j.appender.Appender2.layout.ConversionPattern=%-7p %d [%t] %c %x - %m%n
```

That specifies log level as INFO and configures two appenders: one for console logging and one for file logging (Path of the log file is `D:/Logs/SpringMVC.log`, so make sure the directory exists). If you prefer XML, here’s the equivalent version in XML (`log4j.xml`):

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE log4j:configuration PUBLIC "-//log4j/log4j Configuration//EN" "log4j.dtd">

<log4j:configuration xmlns:log4j="http://jakarta.apache.org/log4j/">

    <appender name="Appender1" class="org.apache.log4j.ConsoleAppender">
       <layout class="org.apache.log4j.PatternLayout">
          <param name="ConversionPattern" value="%-7p %d [%t] %c %x - %m%n"/>
       </layout>
    </appender>

    <appender name="Appender2" class="org.apache.log4j.FileAppender">
       <param name="File" value="D:/Logs/SpringMVC2.log" />
       <layout class="org.apache.log4j.PatternLayout">
          <param name="ConversionPattern" value="%-7p %d [%t] %c %x - %m%n"/>
       </layout>
    </appender>

    <root>
        <priority value="INFO"/>
        <appender-ref ref="Appender1" />
        <appender-ref ref="Appender2" />
    </root>

</log4j:configuration>
```

Then put the `log4j.properties` file or `log4j.xml` file under the root of the classpath (under `WEB-INF\classes` directory of your web application). In Eclipse, put it under `src` directory like in the following screenshot:



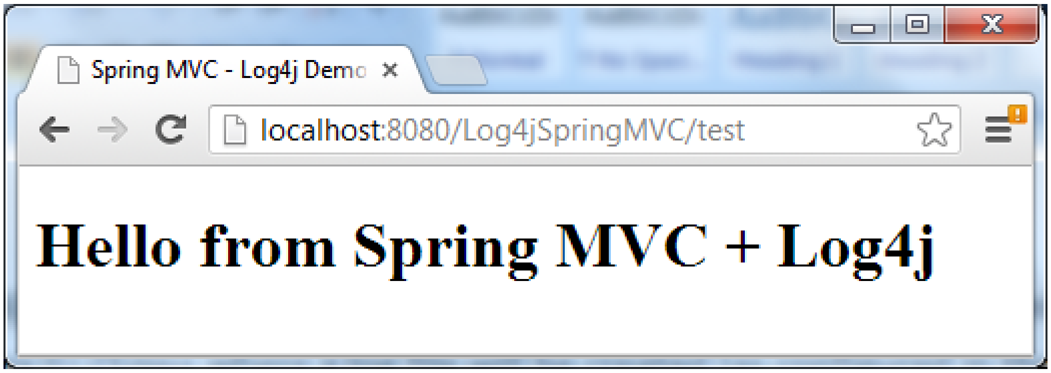
And that's all! Now we can write some code in a Spring controller class to use log4j as follows:

```
package net.codejava.spring;

import org.apache.log4j.Logger;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.servlet.ModelAndView;

@Controller
public class TestController {

        private Logger logger = Logger.getLogger(TestController.class);

        @RequestMapping(value = "/test", method = RequestMethod.GET)
        public ModelAndView test() {
                ModelAndView model = new ModelAndView("Hello");

                logger.info("This is an info log entry");
                logger.error("This is an error log entry");

                return model;
        }
}
```

Now let's test it out. For the demo application in this tutorial, type the following URL into browser's address bar:

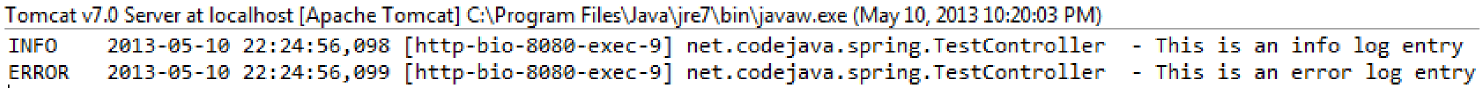
http://localhost:8080/Log4jSpringMVC/test

Output in the browser:



Hello from Spring MVC + Log4j

And notice some log entries are appended to the server's console as follows:



```
Tomcat v7.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jre7\bin\javaw.exe (May 10, 2013 10:20:03 PM)
INFO    2013-05-10 22:24:56,098 [http-bio-8080-exec-9] net.codejava.spring.TestController  - This is an info log entry
ERROR   2013-05-10 22:24:56,099 [http-bio-8080-exec-9] net.codejava.spring.TestController  - This is an error log entry
```

And the log entries are also written to the log in the `D:/Logs/SpringMVC.log file` file.

You may be also interested in:

- Understanding the core of Spring framework
- How to use log4j in Struts2
- How to initialize log4j for Java web application
- How to configure log4j as logging mechanism in Java
- How to enable Spring MVC in web.xml

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Attachments:

Log4jSpringMVC.zip [ ] 3873 kB