Spring Security Example

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In this tutorial, we will show you how to integrate Spring Security with a Spring MVC web application to secure a URL access. After implementing Spring Security, to access the content of an “admin” page, users need to key in the correct “username” and “password”.

Technologies used :

1. Spring 3.2.8.RELEASE
2. Spring Security 3.2.3.RELEASE
3. Eclipse 4.2
4. JDK 1.6
5. Maven 3

Note
Spring Security 3.0 requires Java 5.0 Runtime Environment or higher

1. Project Demo

2. Directory Structure

Review the final directory structure of this tutorial.

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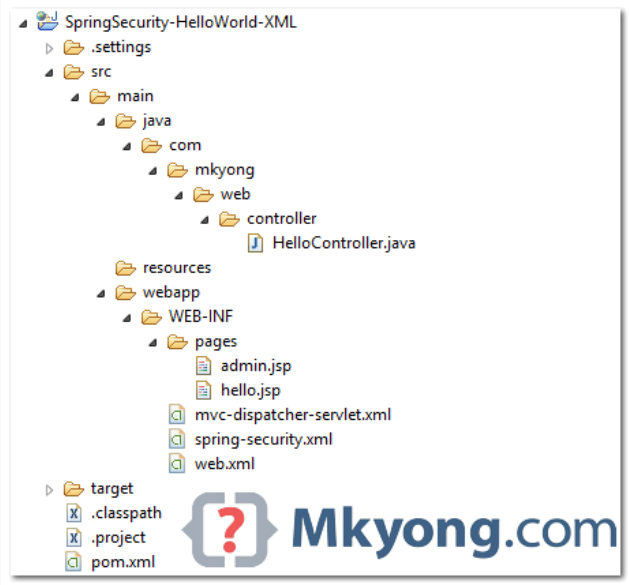

3. Spring Security Dependencies

To use Spring security, you need `spring-security-web` and `spring-security-config`.

pom.xml

```
<properties>
 <jdk.version>1.6</jdk.version>
 <spring.version>3.2.8.RELEASE</spring.version>
 <spring.security.version>3.2.3.RELEASE</spring.security.version>
 <jstl.version>1.2</jstl.version>
</properties>

<dependencies>

 <!-- Spring dependencies -->
 <dependency>
  <groupId>org.springframework</groupId>
  <artifactId>spring-core</artifactId>
  <version>${spring.version}</version>
 </dependency>

 <dependency>
  <groupId>org.springframework</groupId>
  <artifactId>spring-web</artifactId>
  <version>${spring.version}</version>
 </dependency>

 <dependency>
  <groupId>org.springframework</groupId>
  <artifactId>spring-webmvc</artifactId>
  <version>${spring.version}</version>
 </dependency>

 <!-- Spring Security -->
 <dependency>
  <groupId>org.springframework.security</groupId>
  <artifactId>spring-security-web</artifactId>
  <version>${spring.security.version}</version>
 </dependency>

 <dependency>
  <groupId>org.springframework.security</groupId>
  <artifactId>spring-security-config</artifactId>
  <version>${spring.security.version}</version>
 </dependency>

 <!-- jstl for jsp page -->
 <dependency>
  <groupId>jstl</groupId>
  <artifactId>jstl</artifactId>
  <version>${jstl.version}</version>
 </dependency>

</dependencies>
```

4. Spring MVC Web Application

A simple controller :

1. If URL = `/welcome` or `/` , return hello page.
2. If URL = `/admin` , return admin page.

Later, we will show you how to use Spring Security to secure the “/admin” URL with a user login form.

HelloController.java

```
package com.mkyong.web.controller;

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 HelloController {

 @RequestMapping(value = { "/", "/welcome**" }, method = RequestMethod.GET)
 public ModelAndView welcomePage() {

  ModelAndView model = new ModelAndView();
  model.addObject("title", "Spring Security Hello World");
  model.addObject("message", "This is welcome page!");
  model.setViewName("hello");
  return model;

 }

 @RequestMapping(value = "/admin**", method = RequestMethod.GET)
 public ModelAndView adminPage() {

  ModelAndView model = new ModelAndView();
  model.addObject("title", "Spring Security Hello World");
  model.addObject("message", "This is protected page!");
  model.setViewName("admin");

  return model;

 }

}
```

Two JSP pages.

hello.jsp

```
<%@page session="false"%>
<html>
<body>
 <h1>Title : ${title}</h1>
 <h1>Message : ${message}</h1>
</body>
</html>
```

admin.jsp

```
<%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<%@page session="true"%>
<html>
<body>
 <h1>Title : ${title}</h1>
 <h1>Message : ${message}</h1>

 <c:if test="${pageContext.request.userPrincipal.name != null}">
    <h2>Welcome : ${pageContext.request.userPrincipal.name}
          | <a href="<c:url value="/j_spring_security_logout" />" > Logout</a></h2>
 </c:if>
</body>
</html>
```

mvc-dispatcher-servlet.xml

```
<beans xmlns="http://www.springframework.org/schema/beans"
 xmlns:context="http://www.springframework.org/schema/context"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:schemaLocation="
        http://www.springframework.org/schema/beans
        http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
        http://www.springframework.org/schema/context
        http://www.springframework.org/schema/context/spring-context-3.0.xsd">

 <context:component-scan base-package="com.mkyong.*" />

 <bean
   class="org.springframework.web.servlet.view.InternalResourceViewResolver">
   <property name="prefix">
  <value>/WEB-INF/pages/</value>
   </property>
   <property name="suffix">
  <value>.jsp</value>
   </property>
 </bean>

</beans>
```

5. Spring Security : User Authentication

Create a Spring Security XML file.

spring-security.xml

```
<beans:beans xmlns="http://www.springframework.org/schema/security"
 xmlns:beans="http://www.springframework.org/schema/beans"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:schemaLocation="http://www.springframework.org/schema/beans
 http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
 http://www.springframework.org/schema/security
 http://www.springframework.org/schema/security/spring-security-3.2.xsd">

 <http auto-config="true">
  <intercept-url pattern="/admin**" access="ROLE_USER" />
 </http>

 <authentication-manager>
   <authentication-provider>
     <user-service>
  <user name="mkyong" password="123456" authorities="ROLE_USER" />
     </user-service>
   </authentication-provider>
 </authentication-manager>

</beans:beans>
```

It tells, only user “mkyong” is allowed to access the `/admin` URL.

6. Integrate Spring Security

To integrate Spring security with a Spring MVC web application, just declares `DelegatingFilterProxy` as a servlet filter to intercept any incoming request.

web.xml

```
<web-app id="WebApp_ID" version="2.4"
 xmlns="http://java.sun.com/xml/ns/j2ee"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:schemaLocation="http://java.sun.com/xml/ns/j2ee
 http://java.sun.com/xml/ns/j2ee/web-app_2_4.xsd">

 <display-name>Spring MVC Application</display-name>

 <!-- Spring MVC -->
 <servlet>
  <servlet-name>mvc-dispatcher</servlet-name>
  <servlet-class>org.springframework.web.servlet.DispatcherServlet
  </servlet-class>
  <load-on-startup>1</load-on-startup>
 </servlet>
 <servlet-mapping>
  <servlet-name>mvc-dispatcher</servlet-name>
  <url-pattern>/</url-pattern>
 </servlet-mapping>

 <listener>
  <listener-class>org.springframework.web.context.ContextLoaderListener
  </listener-class>
 </listener>

        <!-- Loads Spring Security config file -->
 <context-param>
  <param-name>contextConfigLocation</param-name>
  <param-value>
   /WEB-INF/spring-security.xml
  </param-value>
 </context-param>

 <!-- Spring Security -->
 <filter>
  <filter-name>springSecurityFilterChain</filter-name>
  <filter-class>org.springframework.web.filter.DelegatingFilterProxy
  </filter-class>
 </filter>

 <filter-mapping>
  <filter-name>springSecurityFilterChain</filter-name>
  <url-pattern>/*</url-pattern>
 </filter-mapping>

</web-app>
```

7. Demo

That's all, but wait… where's the login form? No worry, if you do not define any custom login form, Spring will create a simple login form automatically.

> **Custom Login Form**
> Read this "Spring Security form login example" to understand how to create a custom login form in Spring Security.

1. Welcome Page – `http://localhost:8080/spring-security-helloworld-xml/welcome`

2. Try to access `/admin` page, Spring Security will intercept the request and redirect to `/spring_security_login`, and a predefined login form is displayed.

3. If username and password is incorrect, error messages will be displayed, and Spring will redirect to this URL `/spring_security_login?login_error`.

4. If username and password are correct, Spring will redirect the request to the original requested URL and display the page.

Download Source Code

Download it – spring-security-helloworld-xml.zip (9 KB)

References

1. Spring Security Official Site
2. Spring 3 MVC hello world example
3. Spring Security form login example (authentication)

Tags : hello world | spring security

mkyong

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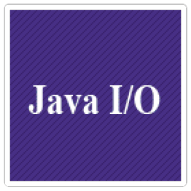

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