Spring Security

IT Learning &
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Summary

- What is Spring Security
- Architecture
- Examples

Spring Security

Authorization vs. Authentication

- **Authentication** is the process of verifying who you are. When you log on to a PC with a user name and password you are authenticating.

- **Authorization** is the process of verifying that you have access to something. Gaining access to a resource (e.g. directory on a hard disk) because the permissions configured on it allow you access is authorization.

Spring Security Intro

Spring Security is a framework which provides various security features like: authentication, authorization to create secure Java Enterprise Applications.
It is a sub-project of Spring framework which was started in 2003 by Ben Alex. Later on, in 2004, It was released under the Apache License as Spring Security 2.0.0.

It overcomes all the problems that come during creating non spring security applications and manage new server environment for the application.

This framework targets two major areas of application are authentication and authorization. Authentication is the process of knowing and identifying the user that wants to access.

Spring Security Support

Spring Security framework supports wide range of authentication models. These models either provided by third parties or framework itself. Spring Security supports integration with all of these technologies.

HTTP BASIC authentication headers
HTTP Digest authentication headers
HTTP X.509 client certificate exchange
LDAP (Lighweight Directory Access Protocol)
Form-based authentication
OpenID authentication
Automatic remember-me authentication
Kerberos
JOSSO (Java Open Source Single Sign-On)
AppFuse
AndroMDA
Mule ESB
DWR(Direct Web Request)

Advantages

Features

LDAP (Lightweight Directory Access Protocol)

It is an open application protocol for maintaining and accessing distributed directory information services over an Internet Protocol.

Single sign-on

This feature allows a user to access multiple applications with the help of single account(user name and password).

JAAS (Java Authentication and Authorization Service) LoginModule

It is a Pluggable Authentication Module implemented in Java. Spring Security supports it for its authentication process.

Basic Access Authentication

Spring Security supports Basic Access Authentication that is used to provide user name and password while making request over the network.

Features

Digest Access Authentication

This feature allows us to make authentication process more secure than Basic Access Authentication. It asks to the browser to confirm the identity of the user before sending sensitive data over the network.

Remember-me

Spring Security supports this feature with the help of HTTP Cookies. It remember to the user and avoid login again from the same machine until the user logout.

Web Form Authentication

In this process, web form collect and authenticate user credentials from the web browser. Spring Security supports it while we want to implement web form authentication.

And more features

Authorization

Spring Security provides the this feature to authorize the user before accessing resources. It allows developers to define access policies against the resources.

Software Localization

This feature allows us to make application user interface in any language.

HTTP Authorization

Spring provides this feature for HTTP authorization of web request URLs using Apache Ant paths or regular expressions.

Features since 5.0

OAuth 2.0 Login

This feature provides the facility to the user to login into the application by using their existing account at GitHub or Google. This feature is implemented by using the Authorization Code Grant that is specified in the OAuth 2.0 Authorization Framework.

Reactive Support

From version Spring Security 5.0, it provides reactive programming and reactive web runtime support and even, we can integrate with Spring WebFlux.

Modernized Password Encoding

Spring Security 5.0 introduced new Password encoder **DelegatingPasswordEncoder** which is more modernize and solve all the problems of previous encoder **NoOpPasswordEncoder**.

Architecture

In Spring Security, the Security module is divided into separate jar files. The purpose is to divide jar files based on their functionalities, so the developer can integrate according to their requirement.

TODO: check documentation, everything needed is here: https://docs.spring.io/spring-security/site/docs/5.0.3.RELEASE/reference/htmlsingle/

Registration with Spring Security: Password encoding

http://www.baeldung.com/spring-security-registration-password-encoding-bcrypt

Examples

https://spring.io/guides/gs/securing-web/

Lots of nice tutorials here:
http://www.baeldung.com/security-spring

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