

## Spring Security

SpringBoot 기준으로 서술

Java, Spring

### Overview

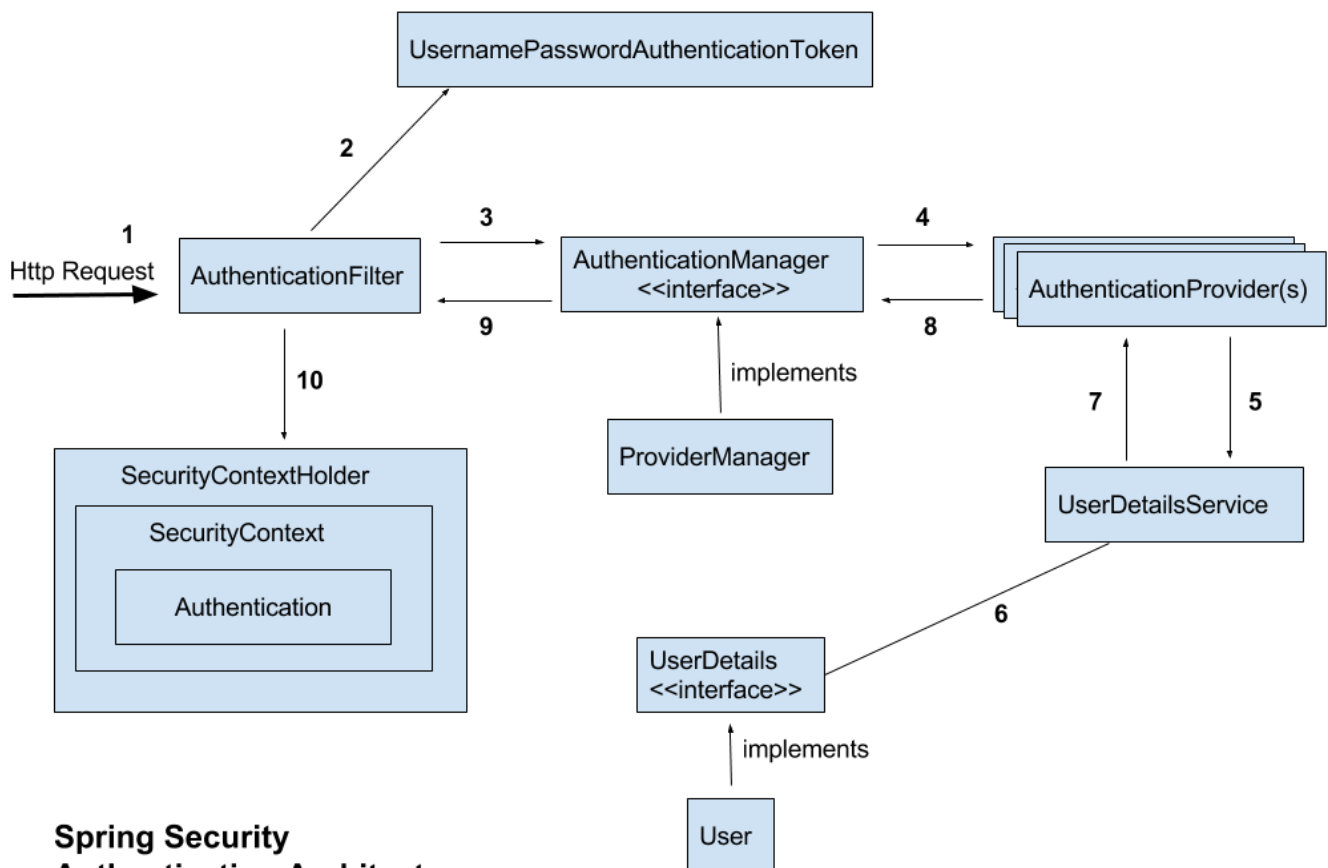
- Authentication : 인증. “유효한 사용자인가?”
- Authorization : 허가(권한 부여). 유효한 사용자가 이 작업을 할 수 있는가?

### Documents

- [Spring Security Architecture](#)
- [Spring Security : Authentication Architecture](#)
- [\[Docs\] Spring Security - Servlet Applications](#)
- [Samples](#)

### Authentication

Docs



### Spring Security Authentication Architecture

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- 모두 Interface

```
classDiagram
    class AuthenticationManager {
        authenticate(Authentication authentication)
        Authentication
    }
    class AuthenticationProvider {
        authenticate(Authentication authentication)
        Authentication supports(Class? ~ authentication)
        boolean
    }
    class UserDetailsService {
        loadUserByUsername(String username)
        UserDetails
    }
    class UserDetails {
        getAuthorities()
        Collection~?
    }
    AuthenticationManager --> AuthenticationProvider : authRequest
    AuthenticationManager --> UserDetailsService : 서비스 주입 후 authenticate()에서 사용자 정보를 꺼내어 사용
    UserDetails
```

## AuthenticationManager

- AuthenctaionManager
  - 기본 구현체 : [ProviderManager](#)
  - [AuthenticationManagerBuilder](#) : [WebSecurityConfigurerAdapter](#) 의 `configure(AuthenticationManagerBuilder auth)` Method로 “auth” 인자를 사용할 수 있는데, 이 인자의 “userDetailsService(T userDetailsService)”로 “UserDetailsService” 주입이 가능함.

```
AuthenticationManager - org.springframework.security.authentication
AuthenticationManagerDelegator - org.springframework.security.config.annotation.authentication.configuration.AuthenticationConfiguration
AuthenticationManagerDelegator - org.springframework.security.config.method.GlobalMethodSecurityBeanDefinitionParser
AuthenticationManagerDelegator - org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter
NoOpAuthenticationManager - org.springframework.security.oauth2.client.filter.OAuth2ClientAuthenticationProcessingFilter
NoOpAuthenticationManager - org.springframework.security.access.intercept.AbstractSecurityInterceptor
OAuth2AuthenticationManager - org.springframework.security.oauth2.provider.authentication
ProviderManager - org.springframework.security.authentication
```

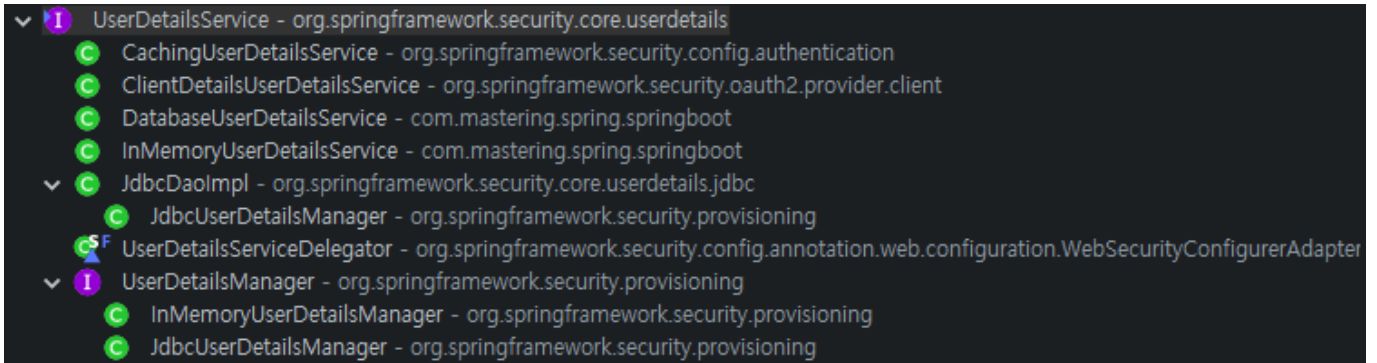
## AuthenticationProvider

- AuthenticationProvider

```
AuthenticationProvider - org.springframework.security.authentication
AbstractJaasAuthenticationProvider - org.springframework.security.authentication.jaas
DefaultJaasAuthenticationProvider - org.springframework.security.authentication.jaas
JaasAuthenticationProvider - org.springframework.security.authentication.jaas
AbstractUserDetailsAuthenticationProvider - org.springframework.security.authentication.dao
DaoAuthenticationProvider - org.springframework.security.authentication.dao
AnonymousAuthenticationProvider - org.springframework.security.authentication
NullAuthenticationProvider - org.springframework.security.config.authentication.AuthenticationManagerBeanDefinitionParser
OidcAuthenticationRequestChecker - org.springframework.security.config.annotation.web.configurers.oauth2.client.OAuth2LoginConfigurer
PreAuthenticatedAuthenticationProvider - org.springframework.security.web.authentication.preauth
RememberMeAuthenticationProvider - org.springframework.security.authentication
RemoteAuthenticationProvider - org.springframework.security.authentication.rcp
RunAsImplAuthenticationProvider - org.springframework.security.access.intercept
TestingAuthenticationProvider - org.springframework.security.authentication
```

## UserDetailsService

“UserDetailsService에는 UserDetails loadUserByUsername(String username)”만 있는데, 여기서 UserDetails는 이름, 비밀번호, 인증/인가등의 기본적인 사용자 정보를 담는 Class.



또 다른 사용자 정보를 담는 Bean을 만들기보다 이를 상속해서 사용하는게 일을 덜 할 수 있으리라 판단된다.

마음에 드는 구현체가 없다면 이 Interface를 상속받아서 재정의.

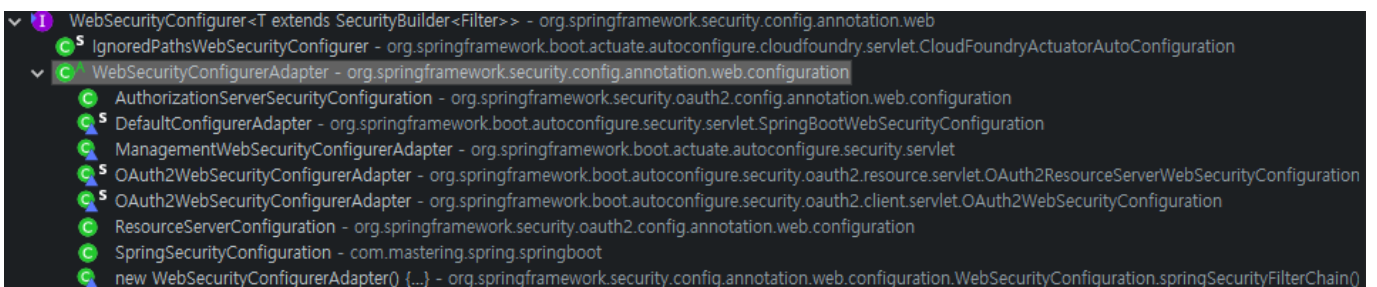
자식 Interface인 [UserDetailsManager](#)는 비밀번호 변경, 사용자 생성/삭제/갱신, 사용자 존재 여부등의 기능이 추가로 있음.

## WebSecurityConfigurerAdapter

전역적인(globally) authentication이 필요할 때 사용.

[WebSecurityConfigurerAdapter](#)를 상속해서 사용한다. 여기서 주의깊게 봐야 하는 Method는 “configure”인데, 3개의 종류를 가진다.

- **protected void configure(AuthenticationManagerBuilder auth)**
  - Used by the default implementation of authenticationManager() to attempt to obtain an AuthenticationManager.
- **protected void configure(HttpSecurity http)**
  - Override this method to configure the HttpSecurity.
- **void configure(WebSecurity web)**
  - Override this method to configure WebSecurity.



- WebSecurityConfigurerAdapter, AbstractConfiguredSecurityBuilder, AbstractSecurityBuilder : abstract class
- WebSecurity : final class

```
classDiagram
    class SecurityConfigurer~O, B extends SecurityBuilder~O~ {
        init(B builder)
        configure(B builder)
    }
    class WebSecurityConfigurer~T extends SecurityBuilder~Filter~ {
        build() O
    }
    class AbstractSecurityBuilder~O~ {
        build() O
    }
    class AbstractSecurityBuilder~O~ {
        build() O
    }
```

```
AbstractConfiguredSecurityBuilder~O, B extends SecurityBuilder~O~ class WebSecurity
SecurityConfigurer <|-- WebSecurityConfigurer : ~Filter, T extends SecurityBuilder~Filter~
WebSecurityConfigurer <|-- WebSecurityConfigurerAdapter : ~WebSecurity~ SecurityBuilder <|--
AbstractSecurityBuilder AbstractSecurityBuilder <|-- AbstractConfiguredSecurityBuilder
AbstractConfiguredSecurityBuilder <|-- WebSecurity : ~Filter, WebSecurity~ Aware <|--
ApplicationContextAware SecurityBuilder <|-- WebSecurity : ~Filter~ ApplicationContextAware <|--
WebSecurity
```

## Authorization

[Docs](#)

## Protection Against Exploits

[Docs](#)

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