

Security + JWT

Installation

```
<dependency>
  <groupId>org.springframework.boot</groupId>
  <artifactId>spring-boot-starter-security</artifactId>
</dependency>
```

Configuration

```
@Configuration
@EnableWebSecurity
@EnableMethodSecurity
class SecurityConfig {

    @Autowired
    lateinit var rsaKeyConfigProperties: RsaKeyConfigProperties

    @Autowired
    lateinit var userDetailsService: JpaUserDetailsService

    @Value("\${cors.allowedOrigins}")
    private lateinit var allowedOrigins: String

    @Bean
    fun authManager(): AuthenticationManager {
        val authProvider = DaoAuthenticationProvider()
        authProvider.setUserDetailsService(userDetailsService)
        authProvider.setPasswordEncoder(passwordEncoder())
        return ProviderManager(authProvider)
    }

    @Bean
    @Throws(Exception::class)
    fun filterChain(http: HttpSecurity, introspector: HandlerMappingIntrospector?):
    SecurityFilterChain {
        return http
            .csrf { csrf: CsrfConfigurer<HttpSecurity> ->
                csrf.disable()
            }
            .cors(Customizer.withDefaults())
            .authorizeHttpRequests { auth ->
                auth.requestMatchers("/error/**").permitAll()
                auth.requestMatchers("/api/auth/**").permitAll()
            }
    }
}
```

```
        auth.requestMatchers("/h2-console/**").permitAll()
        auth.requestMatchers("/swagger-ui/**").permitAll()
        auth.requestMatchers("/api-docs/**").permitAll()
        auth.requestMatchers("/uploads/**").permitAll()
        auth.requestMatchers("/images/**").permitAll()

        auth.requestMatchers("/api/**").authenticated()

        auth.anyRequest().authenticated()
    }.headers { headers ->
        headers.frameOptions { it.disable() }
    }
    .sessionManagement { s: SessionManagementConfigurer<HttpSecurity?> ->
        s.sessionCreationPolicy(
            SessionCreationPolicy.STATELESS
        )
    }
    .oauth2ResourceServer { oauth2:
OAuth2ResourceServerConfigurer<HttpSecurity?> ->
        oauth2.jwt { jwt ->
            jwt.decoder(
                jwtDecoder()
            )
        }
    }
    .userDetailsService(userDetailsService)
    .httpBasic(Customizer.withDefaults())
    .build()
}

@Bean
fun jwtDecoder(): JwtDecoder {
    return
    NimbusJwtDecoder.withPublicKey(rsaKeyConfigProperties.publicKey).build()
}

@Bean
fun jwtEncoder(): JwtEncoder {
    val jwk: JWK =
    RSAKey.Builder(rsaKeyConfigProperties.publicKey).privateKey(rsaKeyConfigProperties.
privateKey).build()

    val jwks: JWKSSource<SecurityContext> = ImmutableJWKSet(JWKSet(jwk))
    return NimbusJwtEncoder(jwks)
}

@Bean
fun passwordEncoder(): PasswordEncoder {
    return BCryptPasswordEncoder()
}

@Bean
fun corsConfigurationSource(): CorsConfigurationSource {
    val source = UrlBasedCorsConfigurationSource()
    val config = CorsConfiguration()
}
```

```
        if (activeProfile == "dev") {
            config.allowedOrigins = allowedOrigins.split(",")
            config.allowedMethods = listOf("GET", "POST", "PUT", "DELETE",
"OPTIONS", "PATCH", "HEAD")
            config.allowedHeaders = listOf("**")
            config.allowCredentials = true
            source.registerCorsConfiguration("/api/**", config)
        }
        return source
    }

    companion object {

        private val log: Logger =
LoggerFactory.getLogger(SecurityConfig::class.java)
    }
}
```

AuthUser

```
class AuthUser(val user: User) : UserDetails {

    override fun getAuthorities(): MutableCollection<out GrantedAuthority> {
        return mutableListOf(SimpleGrantedAuthority("ROLE_${user.role.name}"))
    }

    override fun getPassword(): String? = user.password

    override fun getUsername(): String? = user.username

    override fun isAccountNonExpired(): Boolean = true

    override fun isAccountNonLocked(): Boolean = true

    override fun isCredentialsNonExpired(): Boolean = true

    override fun isEnabled(): Boolean = user.enabled
}
```

Services

```
@Service
class AuthService {

    @Autowired
    lateinit var jwtEncoder: JwtEncoder

    @Autowired
```

```
lateinit var JwtDecoder: JwtDecoder

@Autowired
lateinit var passwordEncoder: PasswordEncoder

@Autowired
lateinit var userRepository: UserRepository

fun generateToken(authentication: Authentication): String {
    val now = Instant.now()

    val scope: String = authentication.getAuthorities()
        .stream()
        .map { obj: GrantedAuthority -> obj.authority }
        .collect(Collectors.joining(" "))
    val user = (authentication.principal as AuthUser).user
    val claims = JwtClaimsSet.builder()
        .issuer("self")
        .issuedAt(now)
        .expiresAt(now.plus(10, ChronoUnit.HOURS))
        .subject(authentication.getName())
        .claim("scope", scope)
        .claim("sub", user.id)
        .claim("role", user.role.name)
        .claim("username", user.username)
        .build()

    return jwtEncoder.encode(JwtEncoderParameters.from(claims)).tokenValue
}

fun getActiveUser(token: String): User {
    val claims = JwtDecoder.decode(token).claims
    val userId = claims["sub"] as UUID
    return userRepository.findById(userId).orElseThrow { RuntimeException("User
not found") }
}

fun hashPassword(password: String): String {
    if (!isBCryptHash(password)) {
        return passwordEncoder.encode(password)
    }
    return password
}

fun isBCryptHash(password: String): Boolean {
    return password.matches(Regex("^\\$2[aby]\\$\\d{2}\\$[./A-Za-z0-9]{53}$"))
}
}
```

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