
Test i forbindelse med ansættelsessamtale (Assignment 2 Client/Server)

Overblik

FEServer

FEServer er udviklet med frameworket Spring Boot og understøtter GET requests.

Applikationen indeholder en self-contained Tomcat, samt funktioner som henter systemtiden hvert minut og krypterer den.

Request: <http://grell.dk:8192/server>

Response: XcKZaISBxr9xGN4kl0fgD50TqvlPb9RkqogEKY534bl=

FEClient

FEClient er udviklet med frameworket Spring Boot og understøtter GET requests.

Applikationen indeholder en self-contained Tomcat, samt funktioner som henter en krypteret system-tid fra FEServer, funktion til dekryptering af modtaget system-tid, samt funktion som håndterer GET requests fra f.eks. en browser. /client kan kaldes på et vilkårligt tidspunkt, men reloades automatisk med intervaller, på et tilfældig tidspunkt mellem 1 og 30 sekunder.

Request: <http://grell.dk:8193/client>

Response: **Current date and time is:2022-06-04T07:34Z**
Next update in 27 seconds

FEServer og FEClient afvikles fra hver deres Tomcat og kan køres på hver deres server. Men da de svarer på hver deres port, kan de også afvikles fra samme server.

Nøglen til kryptering og dekryptering er kendt af både FEServer og FEClient, og er kodet ind i applikationer. En bedre løsning ville være at opbevare en krypteret nøglen i en fil, således at der kunne ske en løbende udskiftning af nøglen.

URL'en til FEServer er kodet ind i FEClient. En bedre løsning ville være at opbevare denne URL i en konfigurationsfil, evt. sammen med krypteringsnøglen, så applikationen ikke skal buildes og deployes ved serverskifte af FEServer.

Build

FEServer og FEClient buildes til en jar-fil med maven.

```
mvnw package

Picked up _JAVA_OPTIONS: -DLOG4J_FORMAT_MSG_NO_LOOKUPS=true
[INFO] Scanning for projects...
[INFO]
[INFO] -----< dk.grell:FEClient >-----
[INFO] Building FEClient 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:3.2.0:resources (default-resources) @ FEClient ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Using 'UTF-8' encoding to copy filtered properties files.
[INFO] Copying 1 resource
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.10.1:compile (default-compile) @ FEClient ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 5 source files to C:\clag\eclipse\playground\FEClient\target\classes
[INFO]
[INFO] --- maven-resources-plugin:3.2.0:testResources (default-testResources) @ FEClient ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Using 'UTF-8' encoding to copy filtered properties files.
[INFO] skip non existing resourceDirectory C:\clag\eclipse\playground\FEClient\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.10.1:testCompile (default-testCompile) @ FEClient ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to C:\clag\eclipse\playground\FEClient\target\test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ FEClient ---
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running dk.grell.FEClient.FEClientApplicationTests
.
.
.
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 2.59 s - in dk.grell.FEClient.FEClientApplicationTests
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- maven-jar-plugin:3.2.2:jar (default-jar) @ FEClient ---
[INFO] Building jar: C:\clag\eclipse\playground\FEClient\target\FEClient-0.0.1-SNAPSHOT.jar
[INFO]
[INFO] --- spring-boot-maven-plugin:2.7.0:repackage (repackage) @ FEClient ---
[INFO] Replacing main artifact with repackaged archive
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 7.033 s
[INFO] Finished at: 2022-06-04T00:27:56+02:00
[INFO] -----
```

GIT

Sourcecode til FEServer og FEClient opbevares og versioneres i GIT:

<https://github.com/ClausGrell/playground>

Deployment

FEServer og FEClient tjekkes ud fra GIT (evt. kun FEServer.jar og FEClient.jar).

```
git pull origin main:refs/FEClient/target/ FEClient.jar
```

```
git pull origin main:refs/FEServer/target/ FEServer.jar
```

FEServer.jar og FEClient.jar kopieres til serveren, hvorfra de ønskes afviklet.

Opstart af Server og Webclient

Opstart af FEServer: `java -jar FEServer.jar &`

Opstart af FEClient: `java -jar FEClient.jar &`

Log

FEServer og FEClient genererer logfiler, som indeholder tidspunkter for requests, samt hvilke data der er kommunikeret med.

FEServer.log:

```
2022-06-04T07:59:20Z: /server - returning frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI=
2022-06-04T07:59:34Z: /server - returning frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI=
2022-06-04T07:59:43Z: /server - returning frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI=
2022-06-04T07:59:50Z: /server - returning frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI=
2022-06-04T08:00:11Z: /server - returning ZKJYUBqs0hT8+7ILqy4aJJ0TqvlPb9RkqogEKY534bI=
2022-06-04T08:00:12Z: /server - returning ZKJYUBqs0hT8+7ILqy4aJJ0TqvlPb9RkqogEKY534bI=
2022-06-04T08:00:19Z: /server - returning ZKJYUBqs0hT8+7ILqy4aJJ0TqvlPb9RkqogEKY534bI=
```

FEClient.log:

```
2022-06-04T05:59:18Z: doGet() - frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:58Z
2022-06-04T05:59:20Z: doGet() - frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:58Z
2022-06-04T05:59:34Z: doGet() - frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:58Z
2022-06-04T05:59:43Z: doGet() - frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:58Z
2022-06-04T05:59:50Z: doGet() - frStyPJOTzWDTW21bUPzwJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:58Z
2022-06-04T06:00:11Z: doGet() - ZKJYUBqs0hT8+7ILqy4aJJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:59Z
2022-06-04T06:00:12Z: doGet() - ZKJYUBqs0hT8+7ILqy4aJJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:59Z
2022-06-04T06:00:19Z: doGet() - ZKJYUBqs0hT8+7ILqy4aJJ0TqvlPb9RkqogEKY534bI= -> 2022-06-04T07:59Z
```

Aktiviterne på serverne skrives også til Spring Boot loggen med `LoggerFactory.getLogger(this.getClass())`:

FEClient:

```
2022-06-04 12:33:03.564 INFO 46634 --- [main] dk.grell.FEClient.FeClientApplication : Starting FeClientApplication v0.0.1-SNAPSHOT using Java 17.0.3 on nuc-oracle
with PID 46634 (/home/oracle/FE/FEClient.jar started by oracle in /home/oracle/FE)
2022-06-04 12:33:03.568 INFO 46634 --- [main] dk.grell.FEClient.FeClientApplication : No active profile set, falling back to 1 default profile: "default"
2022-06-04 12:33:05.130 INFO 46634 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8281 (http)
2022-06-04 12:33:05.148 INFO 46634 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2022-06-04 12:33:05.149 INFO 46634 --- [main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.63]
2022-06-04 12:33:05.271 INFO 46634 --- [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2022-06-04 12:33:05.271 INFO 46634 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1555 ms
2022-06-04 12:33:05.864 INFO 46634 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8281 (http) with context path ''
2022-06-04 12:33:05.880 INFO 46634 --- [main] dk.grell.FEClient.FeClientApplication : Started FeClientApplication in 3.026 seconds (JVM running for 3.632)
```

```

2022-06-04 12:33:14.712 INFO 46634 --- [nio-8281-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2022-06-04 12:33:14.712 INFO 46634 --- [nio-8281-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2022-06-04 12:33:14.713 INFO 46634 --- [nio-8281-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 1 ms
2022-06-04 12:33:15.240 INFO 46634 --- [nio-8281-exec-1] dk.grell.FEClient.ClientController : doGet() - EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI= -> 2022-06-04T12:33Z
2022-06-04 12:33:18.839 INFO 46634 --- [nio-8281-exec-3] dk.grell.FEClient.ClientController : doGet() - EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI= -> 2022-06-04T12:33Z
2022-06-04 12:33:45.983 INFO 46634 --- [nio-8281-exec-2] dk.grell.FEClient.ClientController : doGet() - EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI= -> 2022-06-04T12:33Z

```

FESever:

```

2022-06-04 12:32:09.351 INFO 46475 --- [      main] dk.grell.FESever.FeServerApplication : No active profile set, falling back to 1 default profile: "default"
2022-06-04 12:32:10.832 INFO 46475 --- [      main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8280 (http)
2022-06-04 12:32:10.851 INFO 46475 --- [      main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2022-06-04 12:32:10.852 INFO 46475 --- [      main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.63]
2022-06-04 12:32:10.974 INFO 46475 --- [      main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2022-06-04 12:32:10.975 INFO 46475 --- [      main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1530 ms
2022-06-04 12:32:11.486 INFO 46475 --- [      main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8280 (http) with context path ''
2022-06-04 12:32:11.498 INFO 46475 --- [      main] dk.grell.FESever.FeServerApplication : Started FeServerApplication in 2.837 seconds (JVM running for 3.419)
2022-06-04 12:33:15.084 INFO 46475 --- [nio-8280-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2022-06-04 12:33:15.084 INFO 46475 --- [nio-8280-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2022-06-04 12:33:15.086 INFO 46475 --- [nio-8280-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 2 ms
2022-06-04 12:33:15.173 INFO 46475 --- [nio-8280-exec-1] dk.grell.FESever.ServerController : /server - returning EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI=
2022-06-04 12:33:18.834 INFO 46475 --- [nio-8280-exec-2] dk.grell.FESever.ServerController : /server - returning EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI=
2022-06-04 12:33:45.978 INFO 46475 --- [nio-8280-exec-3] dk.grell.FESever.ServerController : /server - returning EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI=
2022-06-04 12:34:05.131 INFO 46475 --- [nio-8280-exec-4] dk.grell.FESever.ServerController : /server - returning EoPIEptyHcUvfxOb5Bv2xp0TqvlPb9RkqogEKY534bI=
2022-06-04 12:34:15.237 INFO 46475 --- [nio-8280-exec-5] dk.grell.FESever.ServerController : /server - returning fKmnaNaRUxrOpj26tRMnLJ0TqvlPb9RkqogEKY534bI=
2022-06-04 12:34:18.339 INFO 46475 --- [nio-8280-exec-6] dk.grell.FESever.ServerController : /server - returning fKmnaNaRUxrOpj26tRMnLJ0TqvlPb9RkqogEKY534bI=
2022-06-04 12:34:35.536 INFO 46475 --- [nio-8280-exec-7] dk.grell.FESever.ServerController : /server - returning fKmnaNaRUxrOpj26tRMnLJ0TqvlPb9RkqogEKY534bI=

```

