

```
package ch.std.fileservice.rest;
import java.nio.channels.FileChannel;
import java.nio.charset.StandardCharsets;
import java.nio.file.Files;
import java.nio.file.Paths;
import java.nio.file.StandardOpenOption;
import java.util.List;
import javax.activation.MimetypesFileTypeMap;
import org.springframework.core.io.buffer.DataBuffer;
import org.springframework.core.io.buffer.DataBufferFactory;
import org.springframework.core.io.buffer.DataBufferUtils;
import org.springframework.http.server.reactive.ServerHttpResponse;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;
import org.springframework.web.server.ServerWebExchange;
import reactor.core.publisher.Flux;
import org.springframework.web.servlet.mvc.annotation.annotation.AnnotationMethodMapping;

@RestController
@RequestMapping(value = "/rest/file")
public class ReactiveFileService {
    public static final int defaultBufferSize = 1 <& 12;
    public ReactiveFileService() {
        super();
    }
    @GetMapping
    public Flux<DataBuffer> get(ServerWebExchange webExchange) throws Exception {
        List pathList = webExchange.getRequest().getQueryParams().get("path");
        ServerHttpResponse serverHttpResponse = webExchange.getResponse();
        DataBufferFactory dataBufferFactory = webExchange.getResponse().bufferFactory();
        if (pathList == null) {
            serverHttpResponse.getHeaders().add("Content-Type", "text/html; charset=UTF-8");
            DataBuffer replyDataBuffer = dataBufferFactory.allocateBuffer(defaultBufferSize);
            .write(path is null.getBytes(StandardCharsets.UTF_8));
            return Flux.just(replyDataBuffer);
        }
        String path = pathList.get(0);
        String mimeType = Files.probeContentType(Paths.get(path));
        if (mimeType == null) {
            MimetypesFileTypeMap mimeTypeMap = new MimetypesFileTypeMap();
            mimeType = mimeTypeMap.getContentType(path);
        }
        serverHttpResponse.getHeaders().add("Content-Type", mimeType);
        Flux result = DataBufferUtils.readByteChannel() -> FileChannel.open(Paths.get(path), StandardOpenOption.READ), dataBufferFactory, defaultBufferSize);
        .onErrorResume(ex -> {
            serverHttpResponse.getHeaders().add("Content-Type", "text/html; charset=UTF-8");
            DataBuffer replyDataBuffer = dataBufferFactory.allocateBuffer(defaultBufferSize);
            .write(path + path + " not found, ex = " + ex.getMessage()).getBytes(StandardCharsets.UTF_8));
            return Flux.just(replyDataBuffer);
        });
        return result;
    }
}

Das folgende Listing zeigt die Spring Boot Application:
package ch.std.fileservice;
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class ReactiveFileServiceApplication {
    public static void main(String[] args) {
        SpringApplication.run(ReactiveFileServiceApplication.class, args);
    }
}
```

Das folgende Listing zeigt den dazu passenden Spring Boot Reactive File Service Client entwickelt als Command Line Applikation:

```
package ch.std.fileservice.client;

import java.io.FileOutputStream;
import java.net.URL;
import org.springframework.boot.ApplicationArguments;
```

```
org.springframework.boot.ApplicationRunner;
org.springframework.boot.SpringApplication;
org.springframework.boot.WebApplicationType;
org.springframework.boot.autoconfigure.SpringBootApplication;
org.springframework.core.io.buffer.DataBuffer;
org.springframework.core.io.buffer.DataBufferUtils;
org.springframework.web.reactive.function.client.WebClient;
reactor.core.publisher.Flux;
@SpringBootApplication
public class ReactiveFileServiceClient implements ApplicationRunner {
    public static void main(String[] args) throws Exception {
        SpringApplication app = new SpringApplication(ReactiveFileServiceClient.class);
        app.setWebApplicationType(WebApplicationType.NONE);
        app.run(args);
    }
    @Override
    public void run(ApplicationArguments args) throws Exception {
        URL url = null;
        try {
            url = new URL(args.getOptionValues("--url").get(0));
        } catch (Exception e) {
            System.err.println("missing --url option argument");
            this.help();
            return;
        }
        String out = null;
        try {
            out = args.getOptionValues("--out").get(0);
        } catch (Exception e) {
        }
        String surl = url.getProtocol() + "://" + url.getHost() + url.getPort() + url.getFile();
        Flux<DataBuffer> data = WebClient.create(surl).get().uri(path).retrieve().bodyToFlux(DataBuffer.class);
        if (out != null) {
            try (FileOutputStream fos = new FileOutputStream(out)) {
                DataBufferUtils.write(data, fos).map(DataBufferUtils::release).blockLast();
            }
            System.out.println("result written to file " + out);
        }
        private void help() {
            System.out.println("usage java -jar reactivefileclient-0.0.1-SNAPSHOT.jar --url= --out=");
            System.out.println("example:");
            System.out.println("java -jar reactivefileclient-0.0.1-SNAPSHOT.jar --url=http://localhost:8080/rest/file?path=in/bigimage.jpg --out=out/bigimage.jpg");
        }
    }
    Das File bigimage.jpg kann ersetzt werden durch eine real existierende Datei analog kann der Output Pfad angepasst werden.
```

Client und Service sind am besten in 2 separaten Spring Boot Projekten zu programmieren z.B. mit der Eclipse IDE.

## Feedback

War dieser Blog für Sie wertvoll. Wir danken für jede Anregung und Feedback

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