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Secure Communication with HTTPS

Secure Communication

- We would like to have secure communication for our app
- In the future, we'd like to process credit cards

https://localhost:4200

What is HTTPS?

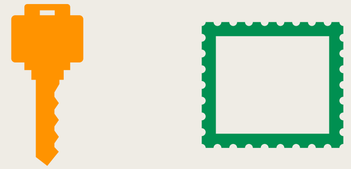
- HTTPS is the Hypertext Transfer Protocol Secure
  - HTTPS is the protocol for encrypting data between web browser and server
  - HTTPS uses the TLS protocol (Transport Layer Security)

- TLS is the successor of SSL. TLS is more secure than SSL.
  - However, in the industry people still use these terms interchangeably
  - TLS / SSL

Using HTTPS

- There are no changes required to the source code
- Configure your server to run using secure keys and certificate
- Then you'll be able access your site with `https://localhost:4200`
- Make note of the use of `https`

Keys and Certs



- To run securely, you will need keys and certificates
  - Provides proof of your server's identity (domain name)
  - Reviewed and signed by a trusted certificate authority (godaddy, verisign, etc)

- In the real-world, you normally have to pay for a certificate
  - For dev/demo purposes, we are going to save money :-)
  - We will create self-signed certificates
  - Browser's will warn about this, but we can safely ignore for dev/demo purposes

Development Process

1. Generate key and self-signed certificate
2. Run Angular App with the key and self-signed certificate
3. Update Spring Boot app with new URL

Step 1: Generate key and self-signed certificate

- Use the free utility: openssl

```
$ openssl req -keyout localhost.key -out localhost.crt ...
```

Name of output keyfile

Name of output certificate

More configs

www.luv2code.com/openssl-setup

Step 2: Run Angular App with the key and self-signed certificate

File: package.json

```
"scripts": {
    "ng": "ng",
    "start": "ng serve --ssl=true --sslKey=./ssl-localhost/localhost.key --sslCert=./ssl-localhost/localhost.crt",
    "build": "ng build",
    "test": "ng test",
    "lint": "ng lint",
    "e2e": "ng e2e"
  },
```

Enable ssl mode

keyfile

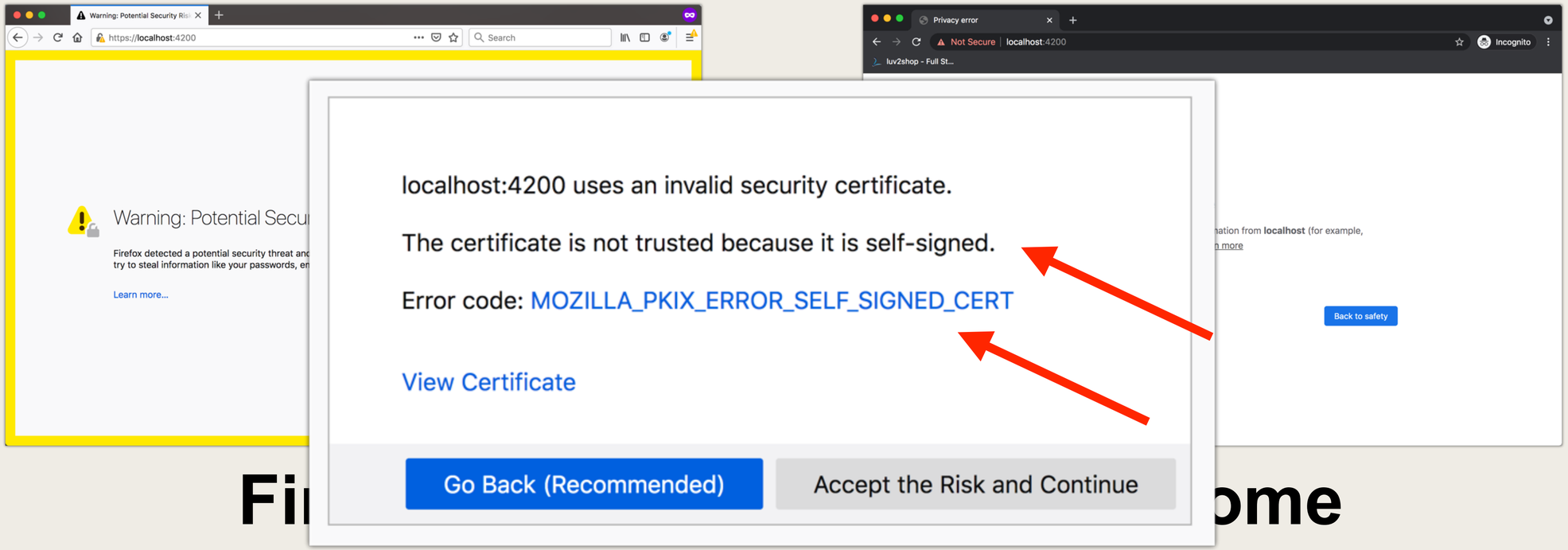
certificate

```
$ npm start
```

New command for starting our Angular app

Web Browser Warning

- Web browser will warn you when using self-signed certificates



Fi ome

Step 3: Update Spring Boot app with new URL

File: application.properties

```
...

allowed.origins=https://localhost:4200


...
```

Note the https

Since our Angular app will run using https

Additional Resources

- What is HTTPS, SSL, TLS?
- Keys and certificates

www.luv2code.com/https-additional-resources