

Capacitor + Spring Boot HTTPS & CORS Troubleshooting Guide

WHEN THIS DOC APPLIES:

- Mixed Content error
- SSL handshake failed
- NET::ERR_CERT_AUTHORITY_INVALID
- Failed to fetch
- CORS blocked in Capacitor

PART 1 – MAKE SPRING BOOT HTTPS (LOCAL DEV)

1. Generate trusted local certificate (mkcert):

```
mkcert -install && mkcert 192.168.1.42
```

2. Convert to Spring Boot format (.p12):

```
openssl pkcs12 -export -in 192.168.1.42.pem -inkey 192.168.1.42-key.pem -out keystore.p12  
-name localssl
```

3. Move keystore to Spring Boot resources:

(move keystore.p12 into src/main/resources/)

4. application.properties:

```
server.port=8443  
server.ssl.key-store=classpath:keystore.p12  
server.ssl.key-store-password=YOUR_PASSWORD  
server.ssl.key-store-type=PKCS12  
server.ssl.key-alias=localssl
```

5. Restart Spring Boot

6. Verify in browser:

<https://192.168.1.42:8443/api>

PART 2 – TRUST MKCERT IN ANDROID (CAPACITOR)

1. Copy root CA to Android:

```
(copy C:\Users\AppData\Local\mkcert\rootCA.pem to  
android/app/src/main/res/raw/mkcrt_root_ca.pem)
```

2. Create network_security_config.xml:

android/app/src/main/res/xml/network_security_config.xml

Content:

192.168.1.42

3. Link in AndroidManifest:

```
(add android:networkSecurityConfig="@xml/network_security_config" inside )
```

4. Resync Capacitor:

```
npx cap sync android && npx cap run android
```

PART 3 – CAPACITOR CONFIG (INSTALLED APP MODE)

capacitor.config.ts:

```
appId: "com.example.app"  
appName: "edusphere-management"  
webDir: "dist"
```

PART 4 – FRONTEND API URL

```
export const API_BASE_URL = "https://192.168.1.42:8443/api";
```

PART 5 – SPRING BOOT CORS CONFIG

CorsConfig.java:

```
config.setAllowedOriginPatterns(List.of(  
    "https://localhost",  
    "http://localhost",  
    "capacitor://localhost",  
    "https://192.168.1.*",  
    "http://192.168.1.*"  
));  
config.setAllowedMethods(List.of("GET", "POST", "PUT", "DELETE", "OPTIONS"));  
config.setAllowCredentials(true);  
config.setAllowedHeaders(List.of("*"));  
config.setExposedHeaders(List.of("Set-Cookie"));
```

If using Spring Security:

```
http.cors(Customizer.withDefaults());
```

FINAL REBUILD:

```
npm run build && npx cap sync android && npx cap run android
```

QUICK DEBUG CHECKLIST:

Mixed Content -> Use HTTPS everywhere

SSL Error -> Trust mkcert in Android

CORS Error -> Fix CorsConfig

Web page not available -> Remove server.url or point to laptop IP

Failed to fetch -> Check API URL and backend running