**Portainer**: https://localhost:9443

**Keycloak**: http://localhost:8081

**Create Token from Keycloak**

curl -s -X POST \

'http://localhost:8081/realms/dsa-lab/protocol/openid-connect/token' \

-d 'client\_id=rest-client' \

-d 'grant\_type=password' \

-d 'username=tvph1996' \

-d 'password=H.g.t.124' \

| jq -r .access\_token > token.jwt

**Add Item**

[curl -X POST \](https://localhost/api/items)

--cacert security/certs/ca.crt \

-H "Authorization: Bearer $(cat token.jwt)" \

-H "Content-Type: application/json" \

-d '{"id": 5, "name": "A Fifth Item"}' \

https://localhost/api/items

**Get Item**

curl --cacert security/certs/ca.crt \

-H "Authorization: Bearer $(cat token.jwt)" \

<https://localhost/api/items/?id=5>

**why curl needs the --cacert flag.**

The server (Traefik) always presents its own certificate, localhost.crt, to prove its identity to the client. Your browser has a trust store where you permanently added your ca.crt, so it automatically trusts anything signed by it. curl, however, does not use this trust store, so it has no knowledge of your self-made Certificate Authority. The --cacert ca.crt flag is your way of telling curl to temporarily trust your CA for this single command. This allows curl to verify that the localhost.crt it receives from the server is legitimate because it was signed by a trusted authority.

**Create new key and crt**

openssl req -new -newkey rsa:2048 -nodes \

-keyout security/certs/rest-service.key -out security/certs/rest-service.csr \

-subj "/C=DE/O=FH-Anhalt/CN=rest-service"

openssl x509 -req -in security/certs/rest-service.csr \

-CA security/certs/ca.crt -CAkey security/certs/ca.key -CAcreateserial \

-out security/certs/rest-service.crt -days 180

**Path**

Port 443 is the universal standard port for HTTPS traffic

**→**

In docker-compose.yml, host machine's port 443 is mapped to the Traefik container's port 443

**→**

Also in docker-compose.yml, Traefik container's port 443 is routed to rest-service if the call is to /api (it always check for rest-service.crt first nevertheless)

**Self-signed cert required dynamic config in newer release of Traefik**