Enabling HTTPS in an Nginx container:

**Step 1:**

We need SSl certificate to enable https. We can try testing using self-signed certificate. We can get it using openssl command. For real use we need to get SSL certificate from a Certificate Authority (CA),

- Example of generating a self-signed certificate:

openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout nginx.key -out nginx.crt

This creates two files: `nginx.crt` (certificate) and `nginx.key` (private key).

**Step 2:**

- Update the Nginx configuration file (`nginx.conf` or a site-specific configuration) to include HTTPS settings:

```nginx

server {

listen 443 ssl;

server\_name yourdomain.com;

ssl\_certificate /etc/nginx/ssl/nginx.crt;

ssl\_certificate\_key /etc/nginx/ssl/nginx.key;

location / {

proxy\_pass http://your\_backend\_service;

}

}

server {

listen 80;

server\_name yourdomain.com;

return 301 https://$host$request\_uri;

}

```

**Step 3:**

Now we need to add this certificate files into our container so that nginx container can use it.

First we need to keep our certificate and key file under a directory in our locatl system and then we need to map this into our container. Also change the permissions of file. If files don’t have correct permission then we cant access the files inside the container.

Chmod 666 nginx.crt nginx.key

Ex:

mkdir ssl

cp nginx.crt nginx.key ./ssl

**Step 4:**

Now we can update our docker-compose file or Dockerfile to use the certificate.

Modify Your Docker Setup

- If you're using a Dockerfile, copy the certificate and key into the container:

```dockerfile

FROM nginx:latest

COPY ./ssl /etc/nginx/ssl

COPY ./nginx.conf /etc/nginx/nginx.conf

```

- Or, use a `docker-compose.yml` file and mount the SSL directory:

```yaml

version: "3"

services:

nginx:

image: nginx:latest

ports:

- "80:80"

- "443:443"

volumes:

- ./ssl:/etc/nginx/ssl

- ./nginx.conf:/etc/nginx/nginx.conf

```

**Step 5:**

Run the Container

- Build and start your container:

```bash

docker-compose up -d

```

Or if using Docker CLI:

```bash

docker build -t my-nginx .

docker run -d -p 80:80 -p 443:443 my-nginx

```

**Step 6:**

\*\*Test HTTPS\*\*

- Open your browser and navigate to `https://yourdomain.com` to verify HTTPS is enabled.

If you are using self-signed certificate , we can access the site using https but still we get message it is not secure. To overcome that we need to buy certificate from trusted site.