Run an Angular app locally with Docker and Nginx







Drew Shirts @drewshirts



Drew Shirts
@drewshirts
Software Engineer
Church of Jesus Christ of Latter-Day Saints

Tools

- Node.js
- NPM
- Visual Studio Code (Or your preferred editor)
- Docker Desktop
- Angular CLI







https://nodejs.org/en/download/





Visual Studio Code

https://code.visualstudio.com/download



Docker Desktop

https://www.docker.com/products/docker-desktop

Validate install:

```
• • • $ docker --version
```



Angular CLI





Angular App



\$ ng new angular-nginx-docker --defaults

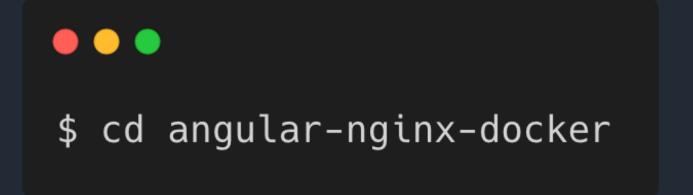
```
drewshirts ng-conf-2021 %ng new angular-nginx-docker --defaults
CREATE angular-nginx-docker/README.md (1027 bytes)
CREATE angular-nginx-docker/.editorconfig (274 bytes)
CREATE angular-nginx-docker/.gitignore (631 bytes)
CREATE angular-nginx-docker/angular.json (3647 bytes)
CREATE angular-nginx-docker/package.json (1210 bytes)
CREATE angular-nginx-docker/tsconfig.json (538 bytes)
CREATE angular-nginx-docker/tslint.json (3185 bytes)
CREATE angular-nginx-docker/.browserslistrc (703 bytes)
CREATE angular-nginx-docker/karma.conf.js (1437 bytes)
CREATE angular-nginx-docker/tsconfig.app.json (287 bytes)
CREATE angular-nginx-docker/tsconfig.spec.json (333 bytes)
CREATE angular-nginx-docker/src/favicon.ico (948 bytes)
CREATE angular-nginx-docker/src/index.html (304 bytes)
CREATE angular-nginx-docker/src/main.ts (372 bytes)
CREATE angular-nginx-docker/src/polyfills.ts (2830 bytes)
CREATE angular-nginx-docker/src/styles.css (80 bytes)
CREATE angular-nginx-docker/src/test.ts (753 bytes)
CREATE angular-nginx-docker/src/assets/.gitkeep (0 bytes)
CREATE angular-nginx-docker/src/environments/environment.prod.ts (51 bytes)
CREATE angular-nginx-docker/src/environments/environment.ts (662 bytes)
CREATE angular-nginx-docker/src/app/app.module.ts (314 bytes)
CREATE angular-nginx-docker/src/app/app.component.css (0 bytes)
CREATE angular-nginx-docker/src/app/app.component.html (25725 bytes)
CREATE angular-nginx-docker/src/app/app.component.spec.ts (982 bytes)
CREATE angular-nginx-docker/src/app/app.component.ts (224 bytes)
CREATE angular-nginx-docker/e2e/protractor.conf.js (904 bytes)
CREATE angular-nginx-docker/e2e/tsconfig.json (274 bytes)
CREATE angular-nginx-docker/e2e/src/app.e2e-spec.ts (671 bytes)
CREATE angular-nginx-docker/e2e/src/app.po.ts (274 bytes)

    Packages installed successfully.

    Successfully initialized git.
drewshirts ng-conf-2021 %
```



Angular App Validation





```
Initial Chunk Files | Names | Size vendor.js | vendor | 2.43 MB polyfills.js | polyfills | 128.80 kB main.js | main | 56.03 kB runtime.js | runtime | 6.15 kB styles.css | styles | 119 bytes | Initial Total | 2.62 MB
```

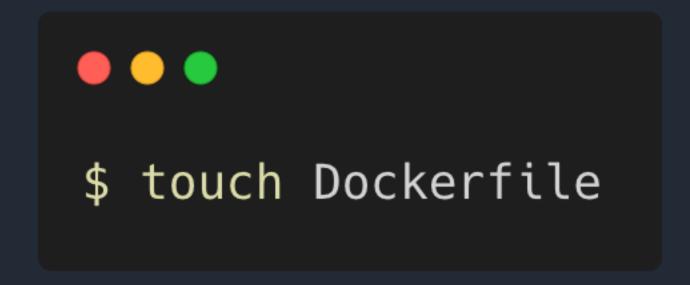
Build at: 2021-04-22T06:07:32.210Z - Hash: b217119e71be0af757fa - Time: 8060ms

** Angular Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ **

Compiled successfully.



Docker setup: Dockerfile





Docker setup: .dockerignore

```
• • • • 
$ echo "node_modules" > .dockerignore
```



Docker setup: Dockerfile Node Stage

```
Dockerfile > ...
      # Create the node stage with the name "builder"
      FROM node: latest as builder
  3
      # Set the working directory
      WORKDIR /app
      # Copy files from current directory to working directory
  6
      COPY . .
      # Run npm install and build all assets
      RUN npm i && npm run ng build
  8
  9
```



Docker setup: Dockerfile Nginx Stage

```
Dockerfile > ...
      # Create the nginx stage for serving content
 10
      FROM nginx:alpine
 11
      # Set the working directory to nginx asset directory
 12
 13
      WORKDIR /usr/share/nginx/html
 14
      # Remove default nginx static assets
 15
      RUN rm -rf ./*
 16
      # Copy static assets from builder stage
 17
      COPY -- from = builder /app/dist/angular - nginx - docker .
 18
      # Containers run nginx with global directives and daemon off
      ENTRYPOINT ["nginx", "-g", "daemon off;"]
 19
```



Build Docker Image



\$ docker build -t angular-nginx-docker .

0.0s

0.0s

0.0s

0.0s

1.4s

0.0s

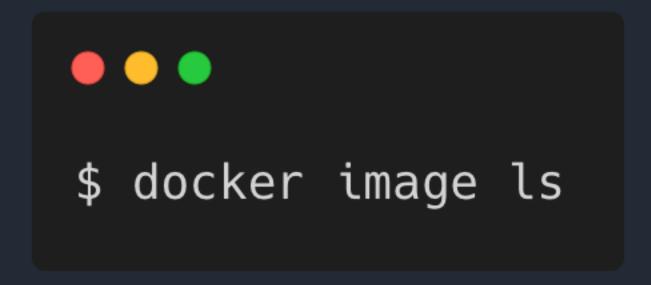
```
drewshirts angular-nginx-docker %docker build -t angular-nginx-docker .
```

```
[+] Building 1.5s (14/14) FINISHED
```

- => [internal] load build definition from Dockerfile
- => => transferring dockerfile: 37B => [internal] load .dockerianore
- => => transferring context: 34B
- => [internal] load metadata for docker.io/library/node:latest
- => [internal] load metadata for docker.io/library/nginx:alpine
- => [builder 1/4] FROM docker.io/library/node:latest@sha256:6cbc150709d59d2667f5d34cbf03fb4594dc
- => [stage-1 1/4] FROM docker.io/library/nginx:alpine
- => [internal] load build context
- => => transferring context: 6.61kB
- => CACHED [stage-1 2/4] WORKDIR /usr/share/nginx/html => CACHED [stage-1 3/4] RUN rm -rf ./*
- => CACHED [builder 2/4] WORKDIR /app
- => CACHED [builder 3/4] COPY . .
- => CACHED [builder 4/4] RUN npm i && npm run ng build => CACHED [stage-1 4/4] COPY --from=builder /app/dist/angular-nginx-docker .
- => exporting to image
- => => exporting layers
- => => writing image sha256:af7561fc75d33832d291e07f8e1023614d1fbf895b05c984c63512b22270cb3f => => naming to docker.io/library/angular-nginx-docker
- Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them drewshirts angular-nginx-docker %



Docker Validation





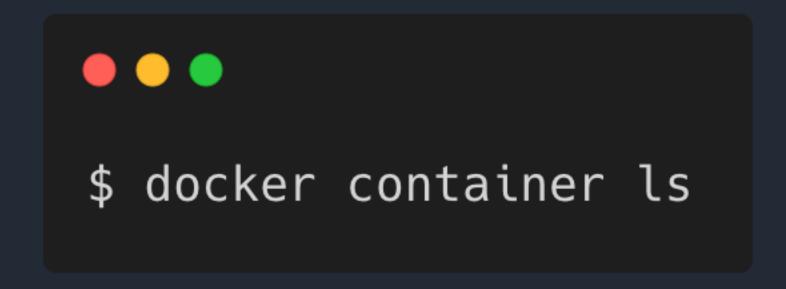
Docker Startup



\$ docker run --rm -it -p 8080:80 angular-nginx



Docker Startup Validation





Docker Management



- \$ docker container stop af756
- \$ docker container rm af756



Thank You!!

Drew Shirts

@drewshirts

Software Engineer

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