



As a Development Environment



What is Docker?

- ❖ An open source containerization platform/container engine
- ❖ Used to build or pull container images (Dockerfile, Docker Hub)
- ❖ Images used to spin up containers providing access to lightweight services
- ❖ Can be managed with Docker CLI, or (my favorite) docker-compose





Why is Docker?

Some quotes from Docker's website:

"Docker simplifies and accelerates your workflow, while giving developers the freedom to innovate with their choice of tools, application stacks, and deployment environments for each project."

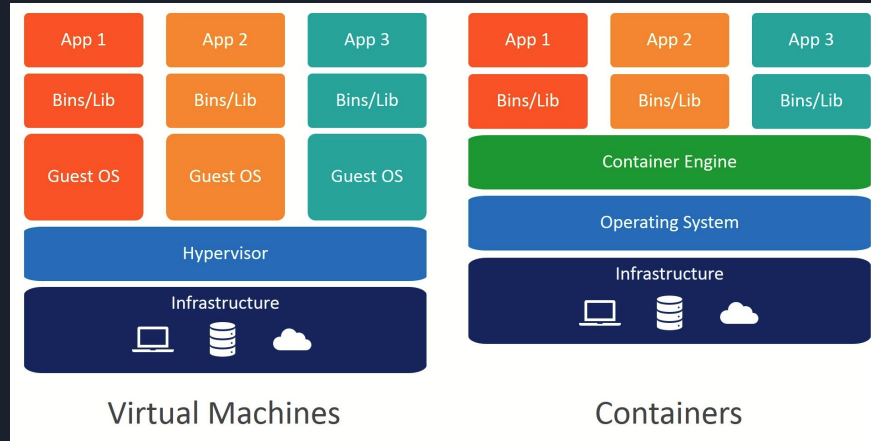
"Containers are a standardized unit of software that allows developers to isolate their app from its environment, solving the "it works on my machine" headache."

How does Docker?

[Thank you Garrett for you VMs vs Containers presentation!]

❖ As a quick refresher:

- VMs provide us a (nearly)full-fledged machine and operating system through interfacing with a hypervisor
- While containers would be better understood as processes interfacing with the operating system
 - Containing only the wanted processes/services and their dependencies



Who is Docker_(for)?



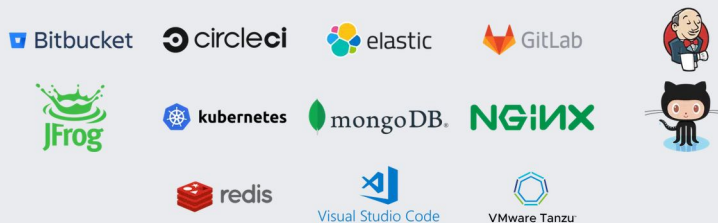
YOU

And them too...



What can Docker?

- ❖ While companies (like those listed before) use Docker because of its strong scalability in deployment, its use as a modular development environment is what I find most intriguing
- ❖ Any service you could think of can run inside of Docker, and likely already has an image available to be downloaded from the Hub



Why I Docker



- ❖ Freely create and destroy containers without a trace
- ❖ Run software without having it persist on your own computer
- ❖ Have as many VS Code servers as you want, each with their own extensions for all your different language and project needs





Dockerfile

```
FROM lscr.io/linuxserver/code-server
```

```
RUN apt-get update && \
    apt-get install -y \
        nodejs \
        npm && \
        npm cache clean -f && \
        npm install -g n && \
        n stable && \
        npm install -g typescript
```

docker-compose.yml

```
version: "3"

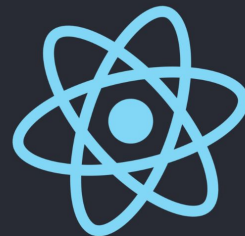
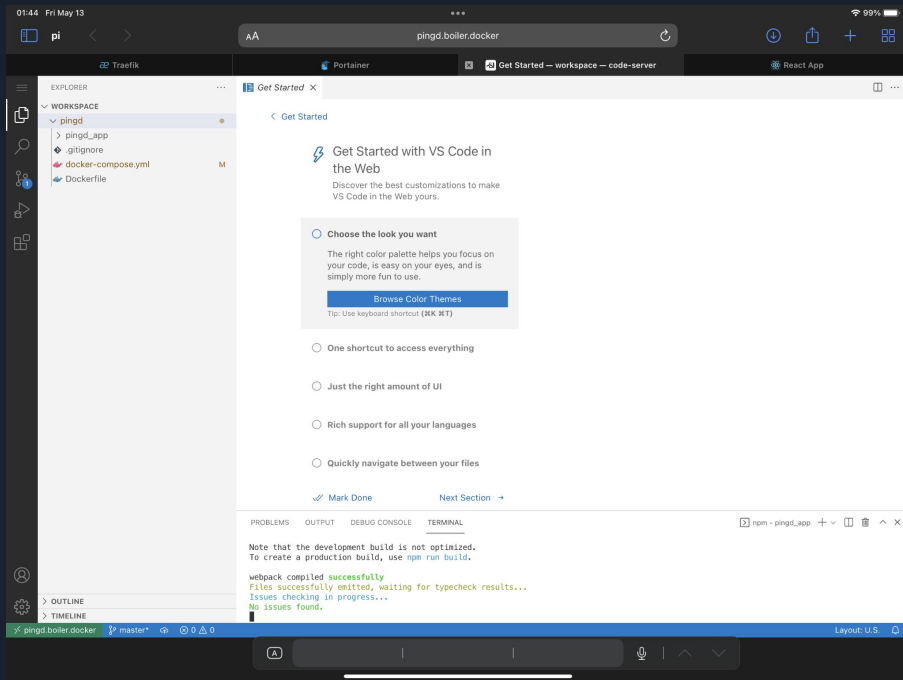
services:
  react-dev:
    container_name: pingd
    build: .
    image: alafya/nodejs-code-server
    networks:
      - traefik_proxy
    environment:
      - PUID=1000
      - PGID=1000
      - TZ=America/New_York
      - PASSWORD=password #optional
      - SUDO_PASSWORD=password #optional
    volumes:
      - config:/config
      - ./:/config/workspace/pingd
      - ~/.gitconfig:/etc/gitconfig
    labels:
      - "traefik.enable=true"
      - "traefik.http.routers.pingd-code.rule=Host(`pingd.boiler.docker`)"
      - "traefik.http.routers.pingd-code.entrypoints=web"
      - "traefik.http.routers.pingd-code.service=pingd-code"
      - "traefik.http.services.pingd-code.loadbalancer.server.port=8443"

      - "traefik.http.routers.pingd-app.rule=Host(`pingd.boiler.docker`)"
      - "traefik.http.routers.pingd-app.entrypoints=react-app"
      - "traefik.http.routers.pingd-app.service=pingd-app"
      - "traefik.http.services.pingd-app.loadbalancer.server.port=3000"
    restart: unless-stopped

networks:
  traefik_proxy:
    external: true

volumes:
  config:
```


Available in Your Browser!



Edit `src/App.tsx` and save to reload.

[Learn React](#)



References and Questions!

- ❖ <https://devopscube.com/what-is-docker/>
- ❖ <https://docs.docker.com/get-started/overview/>
- ❖ <https://docs.microsoft.com/en-us/dotnet/architecture/microservices/container-docker-introduction/docker-defined>
- ❖ [https://en.wikipedia.org/wiki/Docker_\(software\)](https://en.wikipedia.org/wiki/Docker_(software))