CIKLUM
EMPOWERING COLLABORATION

Microsoft

LOHIKA

Docker-compose, vagga і інші «страшні» слова

bit.ly/msp-docker

DataArt

DEVELOPEX
DEVELOPMENT EXCELLENCE

ШАГ
комп'ютерна
АКАДЕМІЯ

About me

- Work as DevOps Engineer at PDFfiller
- IT KPI (co-founder)
- Linux & Open Source enthusiast
- In love with JavaScript & Python
- Write on Bash and PHP

ROAD SHOW

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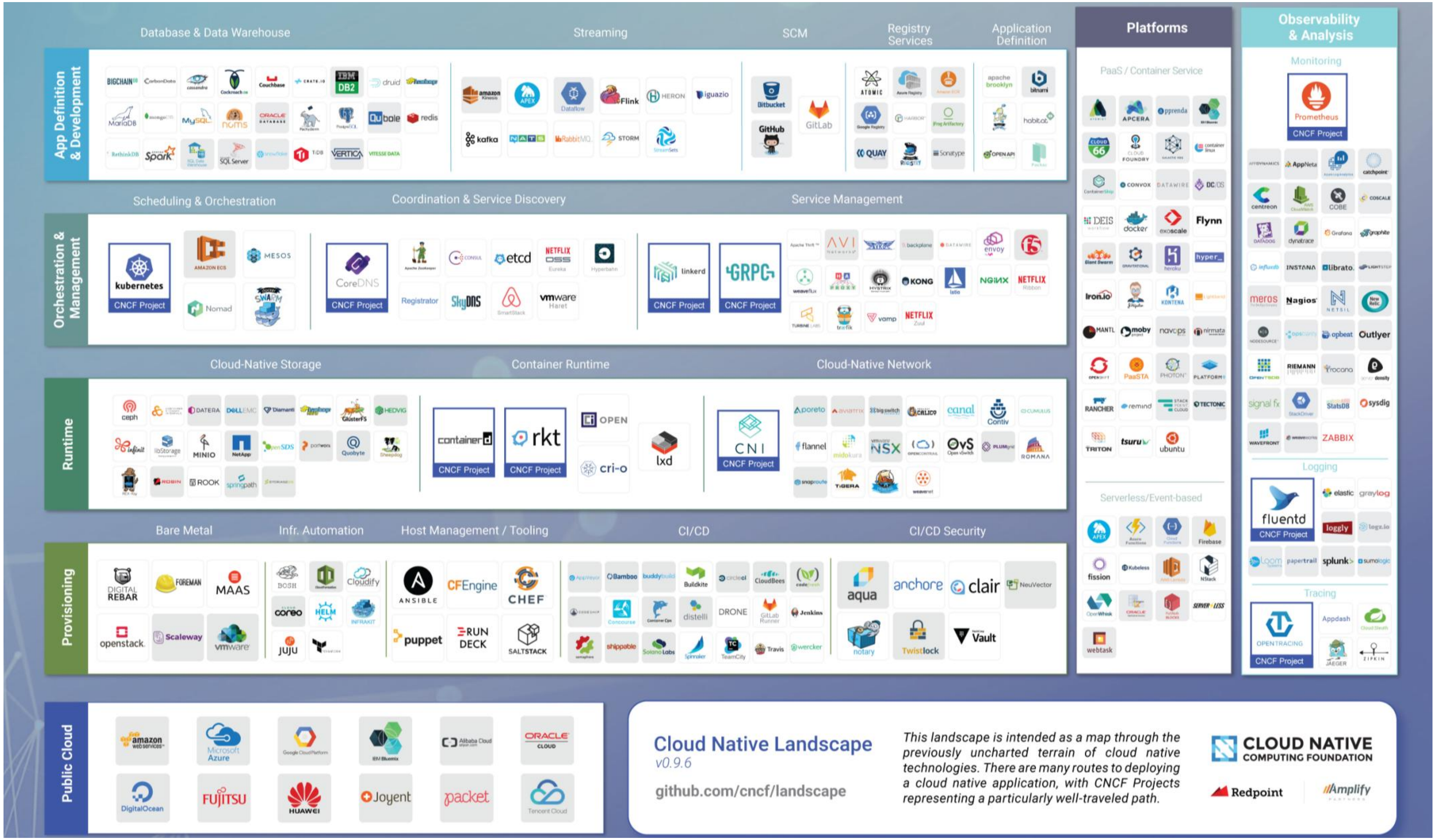
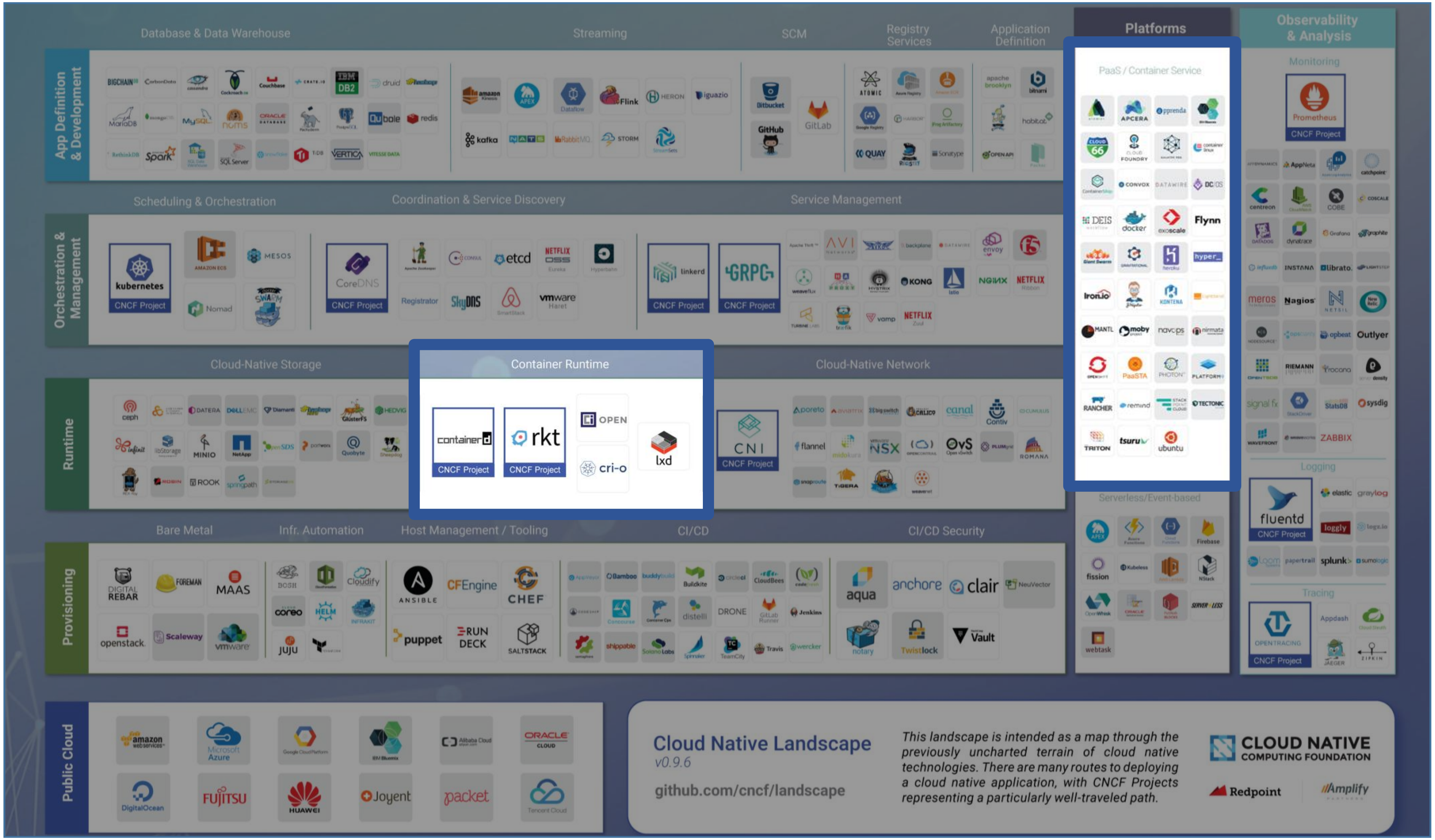
So many…



This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

So many…



Cloud Native Landscape
v0.9.6
github.com/cncf/landscape

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

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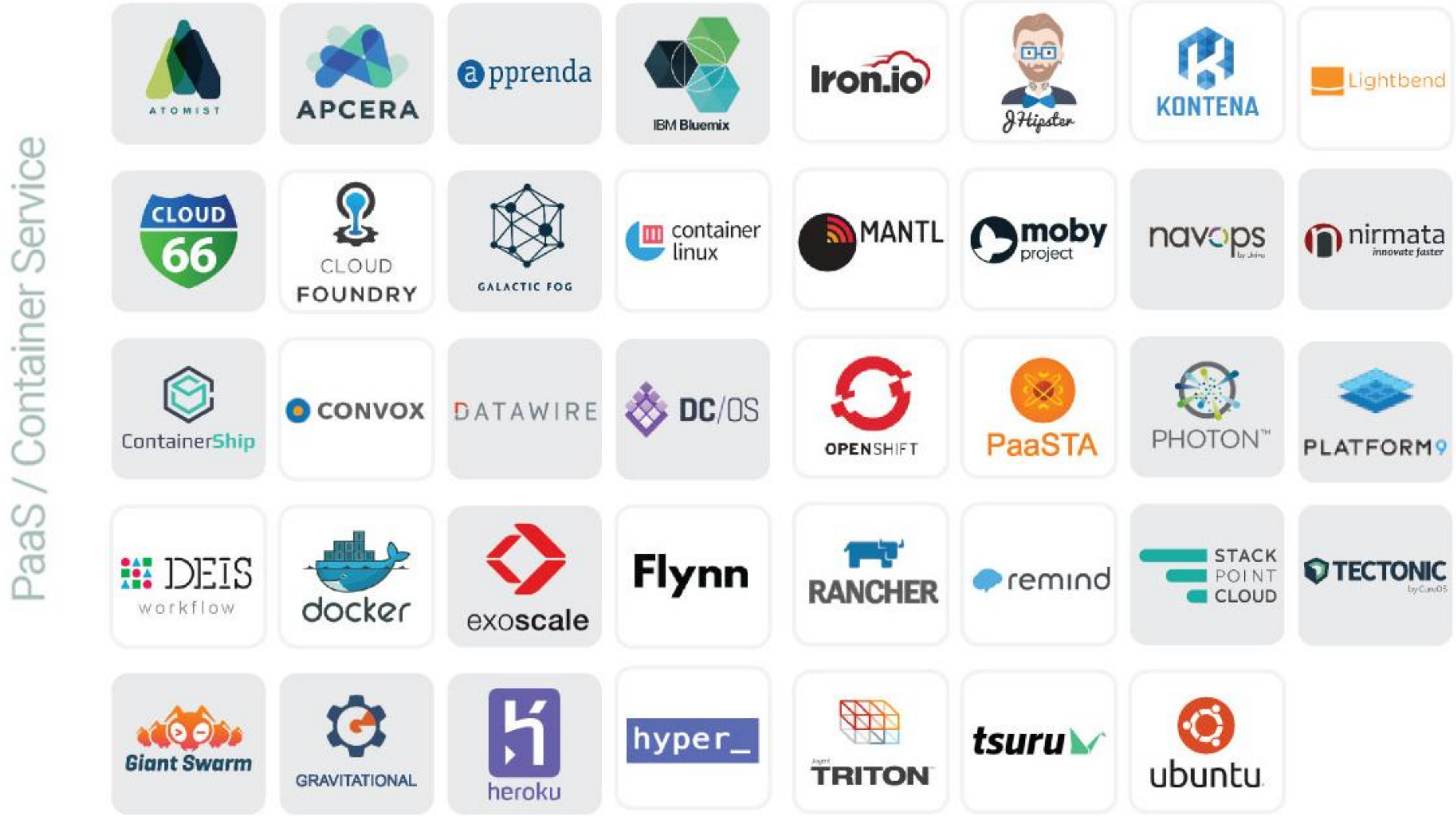
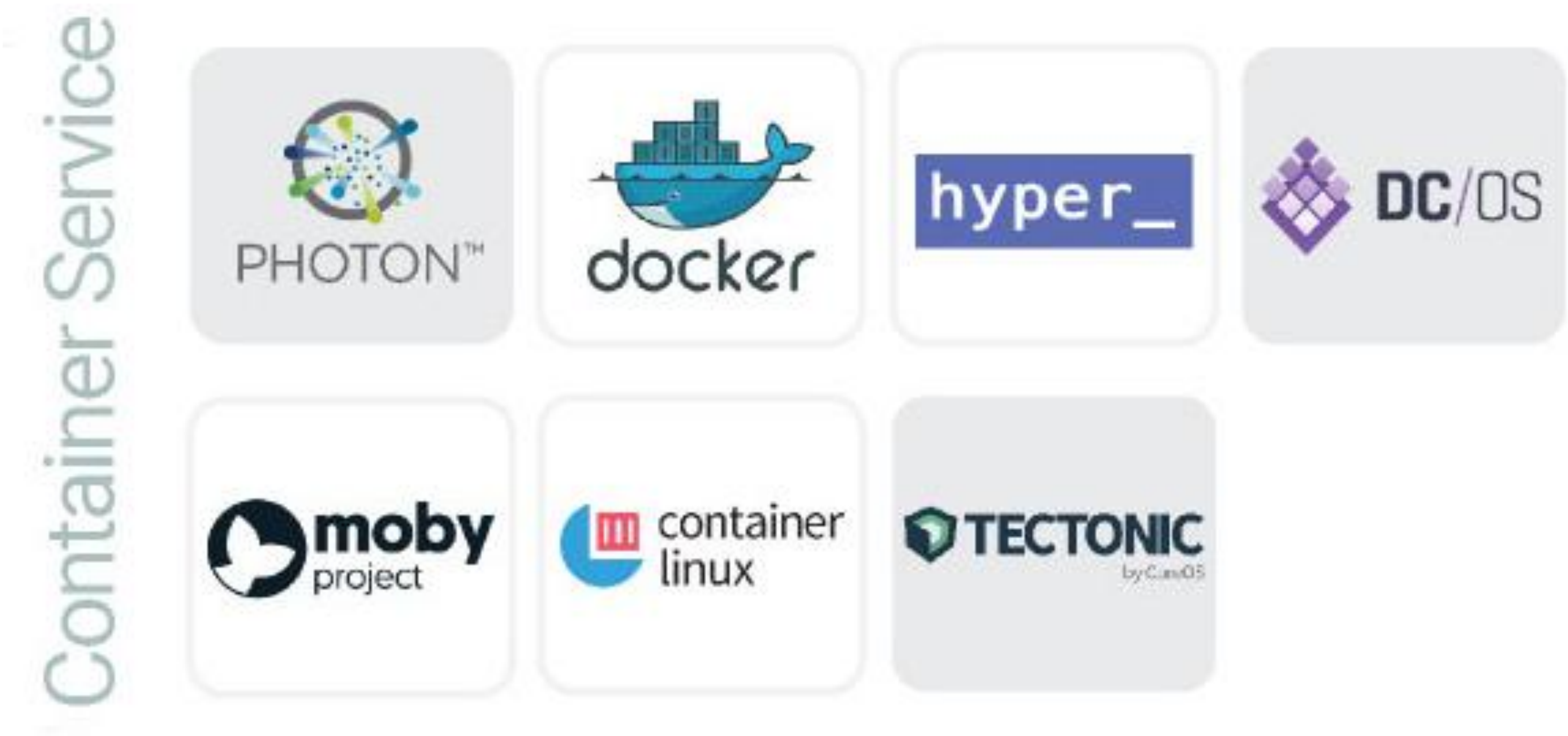
Container runtime

Container services & PaaS

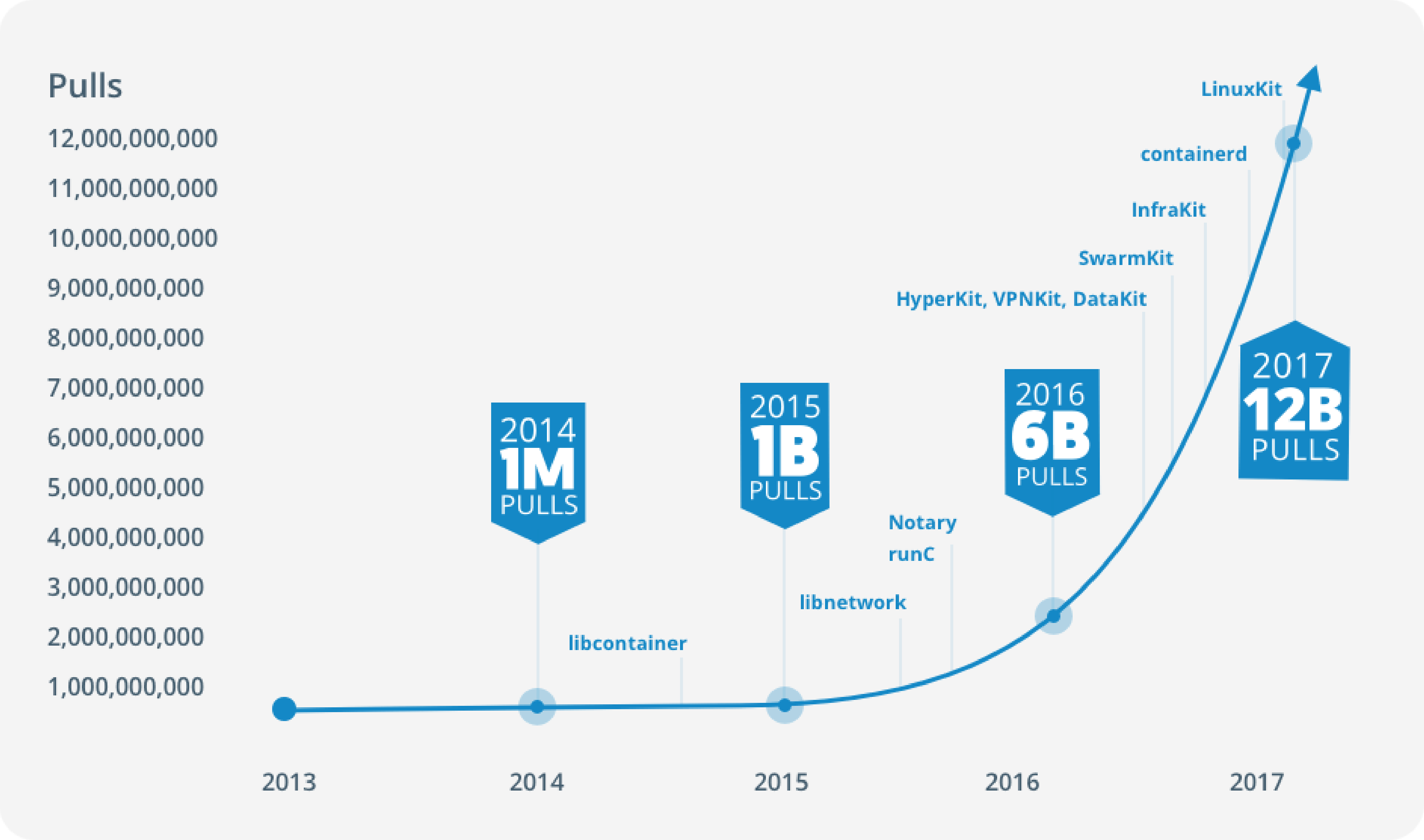


Just container services, which can run local



Docker

Docker Era



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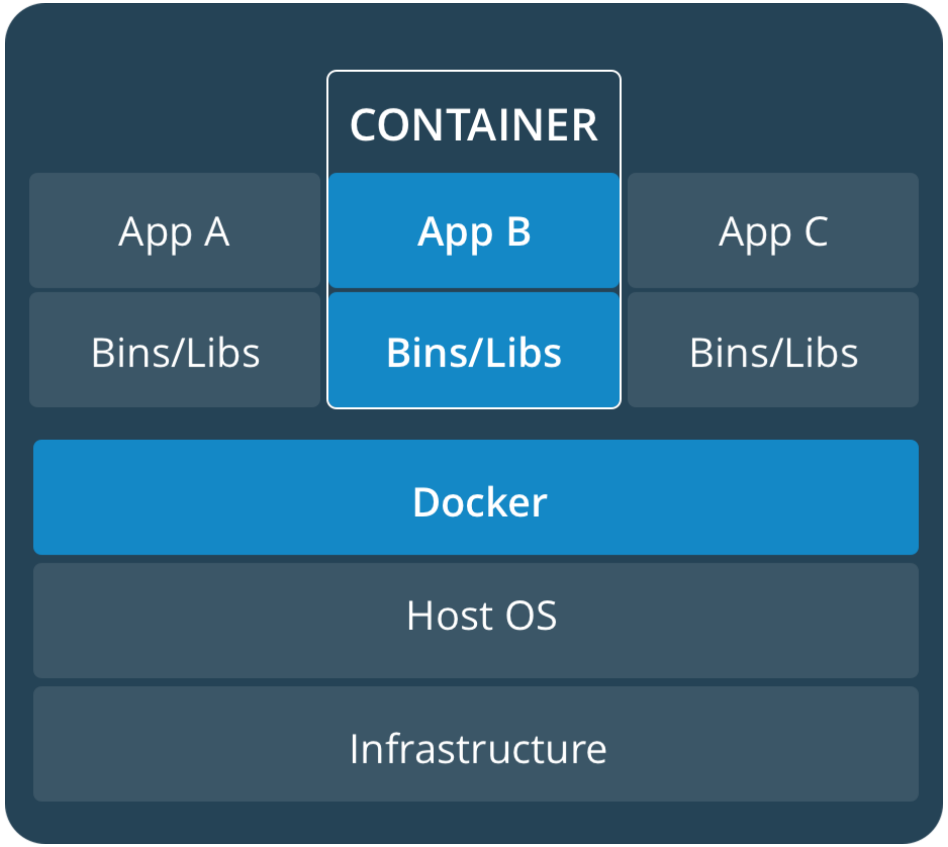
Container vs VM



CONTAINER

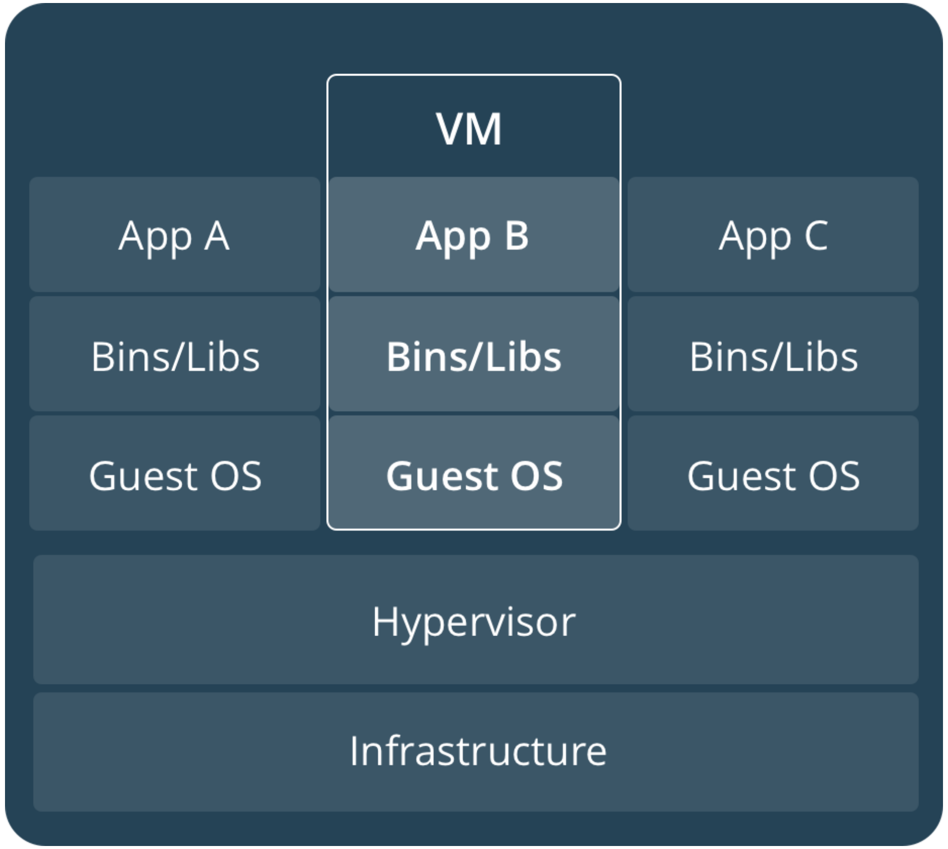
App A | App B | App C

Bins/Libs | Bins/Libs | Bins/Libs

Docker

Host OS

Infrastructure



VM

App A | App B | App C

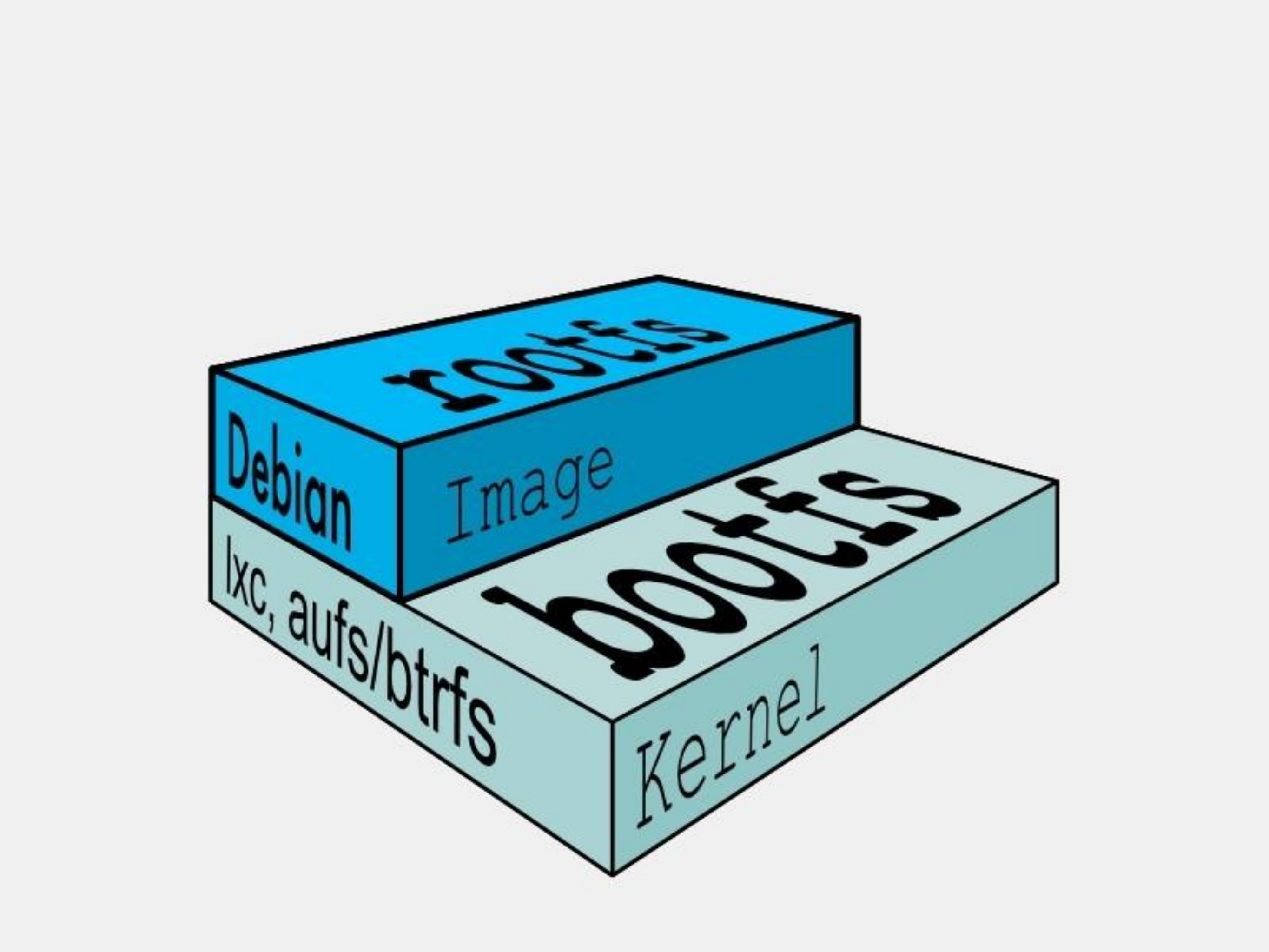
Bins/Libs | Bins/Libs | Bins/Libs

Guest OS | Guest OS | Guest OS

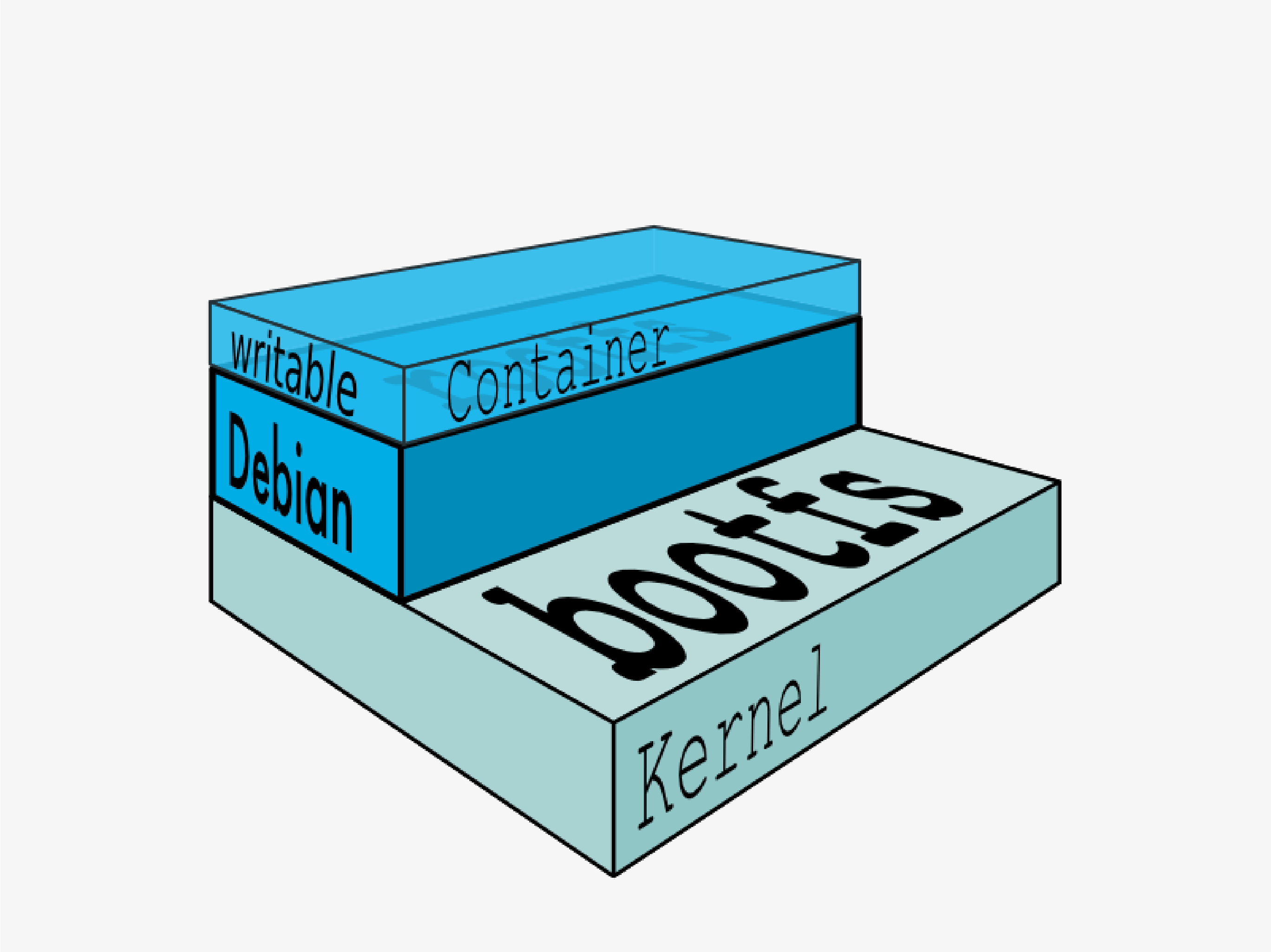
Hypervisor

Infrastructure

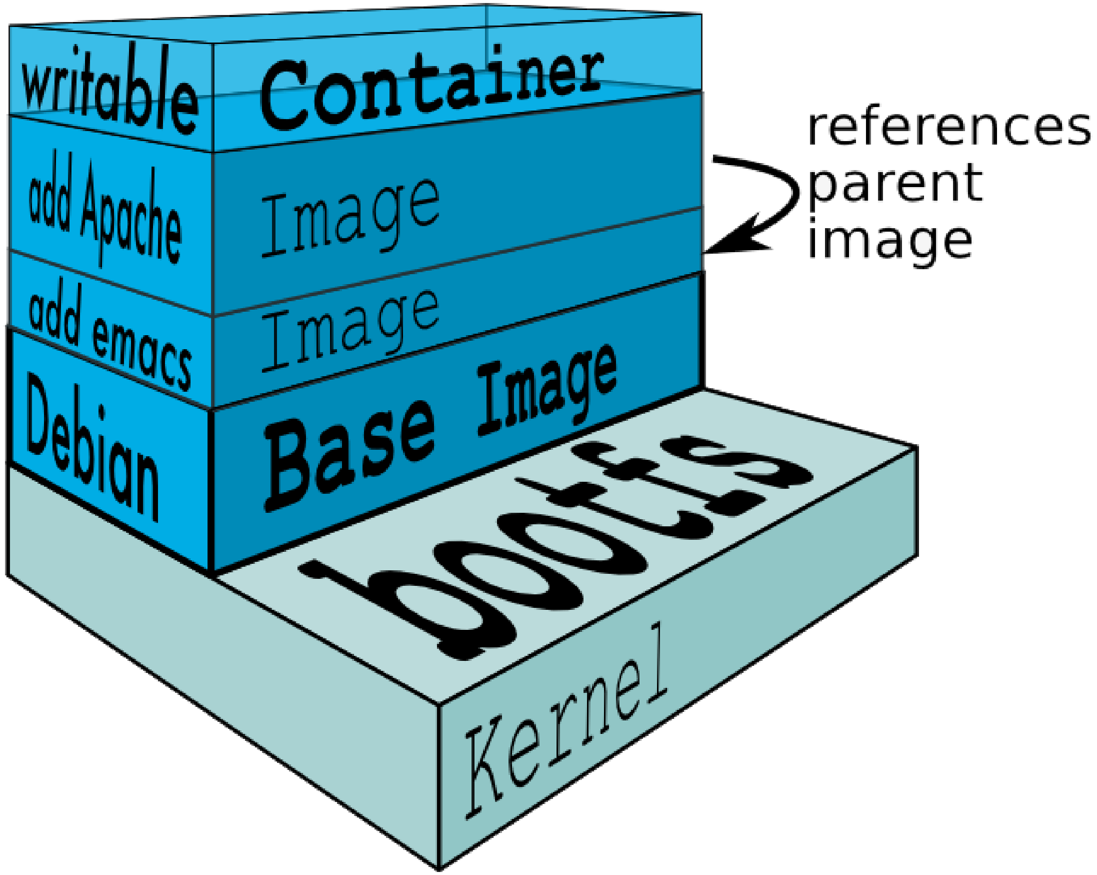
How it works



How it works



How it works



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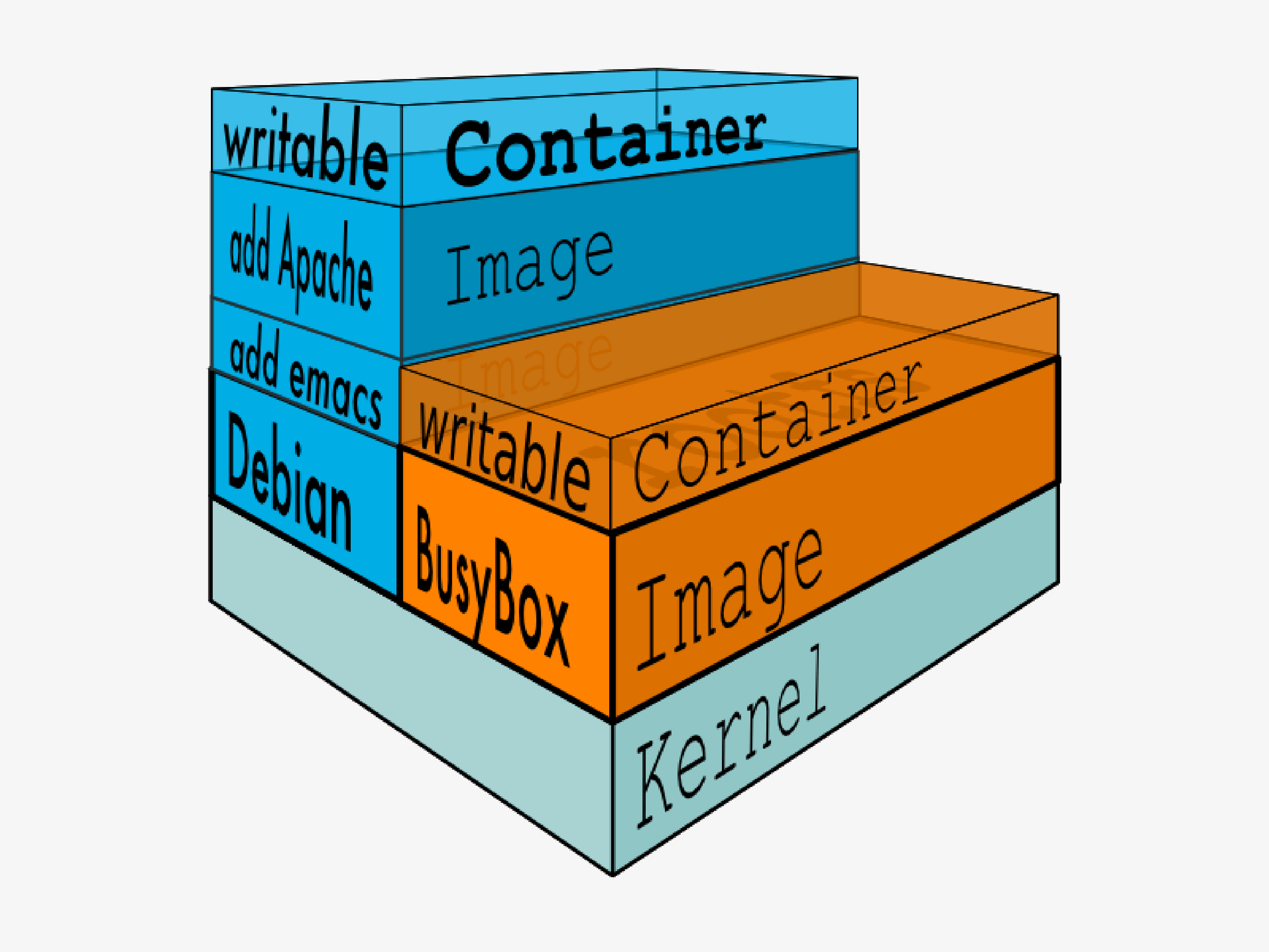
How it works


writable
Container
add Apache
Image
add emacs
Debian
writable
Container
Image
BusyBox
Image
Kernel

Dockerfile

Dockerfile

```dockerfile
FROM eboraas/apache:latest

LABEL maintainer="MaxymVlasov <m@il.com>"

# Add rewrite module to Apache
# Need for port forwarding for NodeJS
RUN a2enmod rewrite && service apache2 restart

# Change default Apache configuration
COPY 000-default.conf /etc/apache2/sites-available/000-default.conf
COPY ports.conf /etc/apache2/ports.conf

# Open port
EXPOSE 8080

# Run Apache server in background
CMD ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]
```

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Dockerfile

```dockerfile
ARG VERSION=latest
FROM busybox:${VERSION}


ARG VERSION

RUN echo ${VERSION} > version
```

Dockerfile

```
ARG VERSION=latest
FROM busybox:${VERSION}

ENV VERSION previous
ARG VERSION

RUN echo ${VERSION} > version
```

Dockerfile

```
ARG VERSION=latest
FROM busybox:${VERSION}

ARG VERSION
ENV VERSION=${VERSION:-0}

RUN echo ${VERSION} > version
```

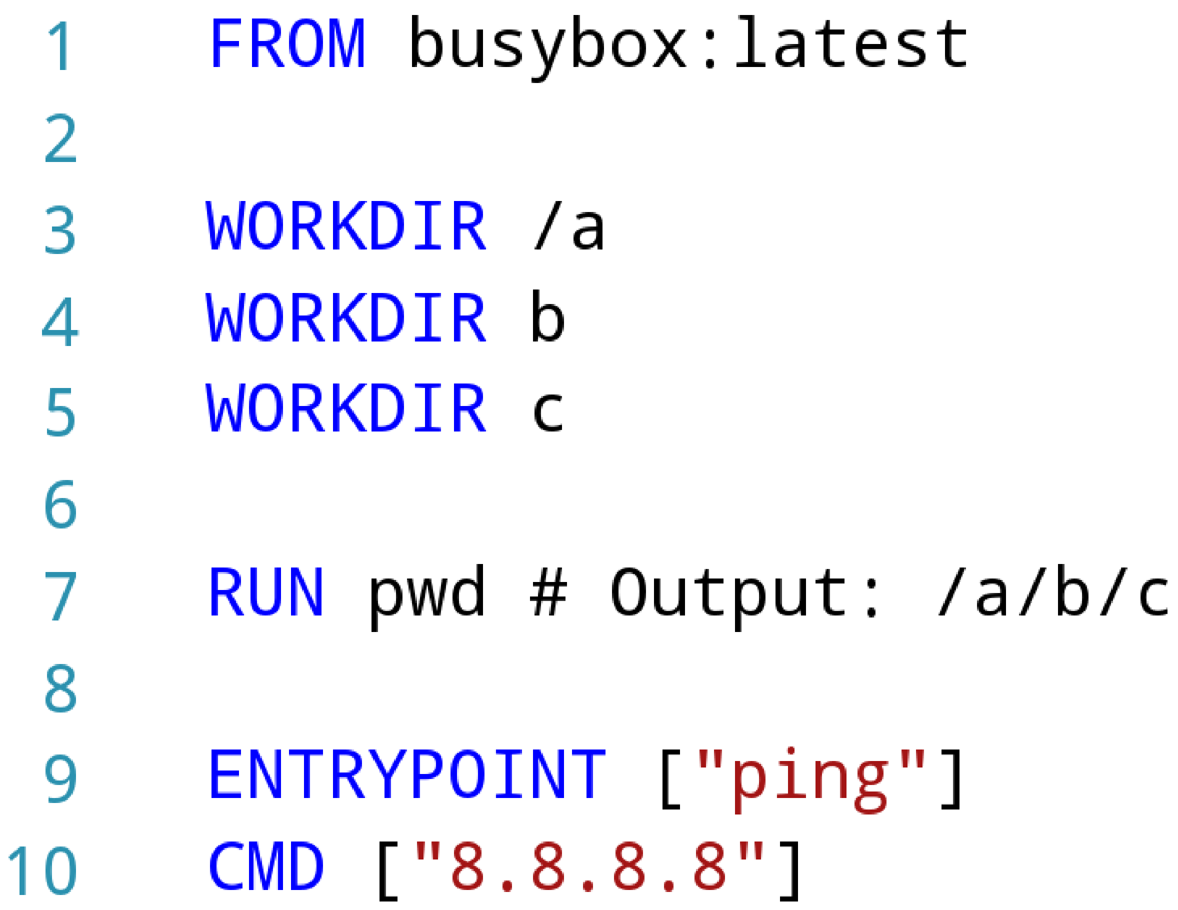
Dockerfile

```
ARG VERSION=latest
FROM busybox:${VERSION}

ARG VERSION
ENV VERSION=${VERSION:-0}

RUN echo ${VERSION} > version

ADD http://bit.ly/raw or binary file /app/file
COPY . /app
```

Dockerfile

```
FROM busybox:latest

WORKDIR /a
WORKDIR b
WORKDIR c

RUN pwd # Output: /a/b/c
```

Dockerfile



```
FROM busybox:latest

WORKDIR /a
WORKDIR b
WORKDIR c

RUN pwd # Output: /a/b/c

ENTRYPOINT ["ping"]
CMD ["8.8.8.8"]
```

Dockerfile

```
FROM busybox:latest

LABEL maintainer="Maksym Vlasov <m@il.com>"
```

Dockerfile

```
FROM busybox:latest

LABEL maintainer="Maksym Vlasov <m@il.com>"

EXPOSE 9000 9001
```

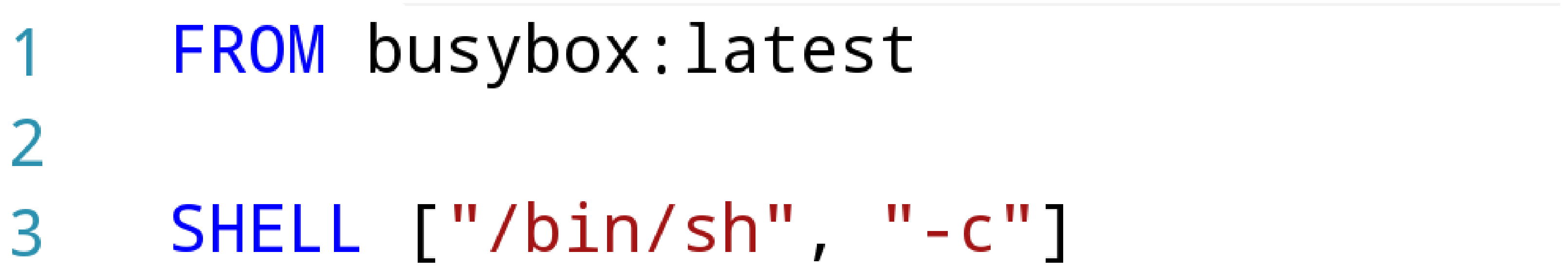
Dockerfile

```
FROM busybox:latest

LABEL maintainer="Maksym Vlasov <m@il.com>"

EXPOSE 9000 9001

VOLUME ["/data"]
```

Dockerfile

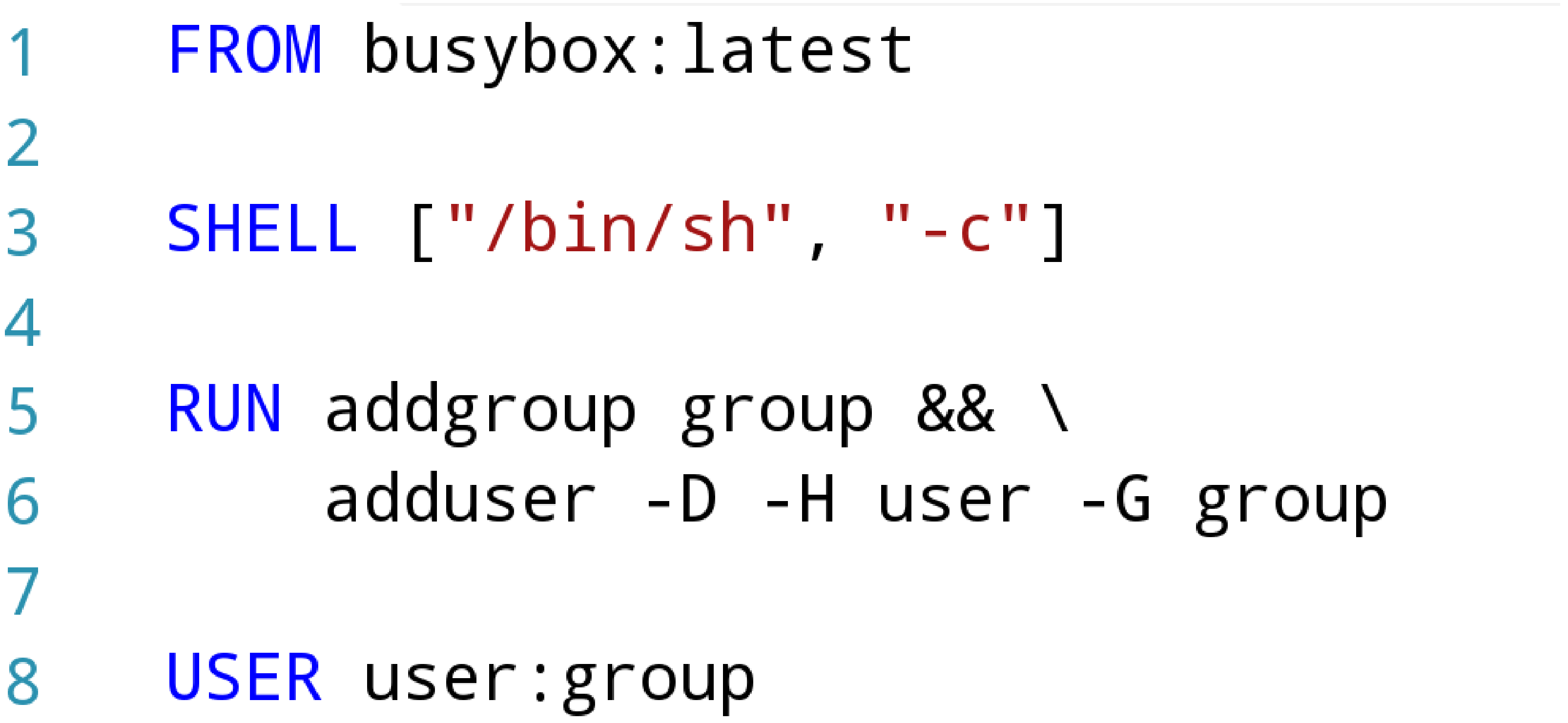
```
FROM busybox:latest

LABEL maintainer="Maksym Vlasov <m@il.com>"

EXPOSE 9000 9001

VOLUME ["/data"]

HEALTHCHECK --interval=30s \
            --timeout=30s \
            --start-period=0s \
            --retries=3 \
  CMD wget http://localhost/ || exit 1
```

Dockerfile



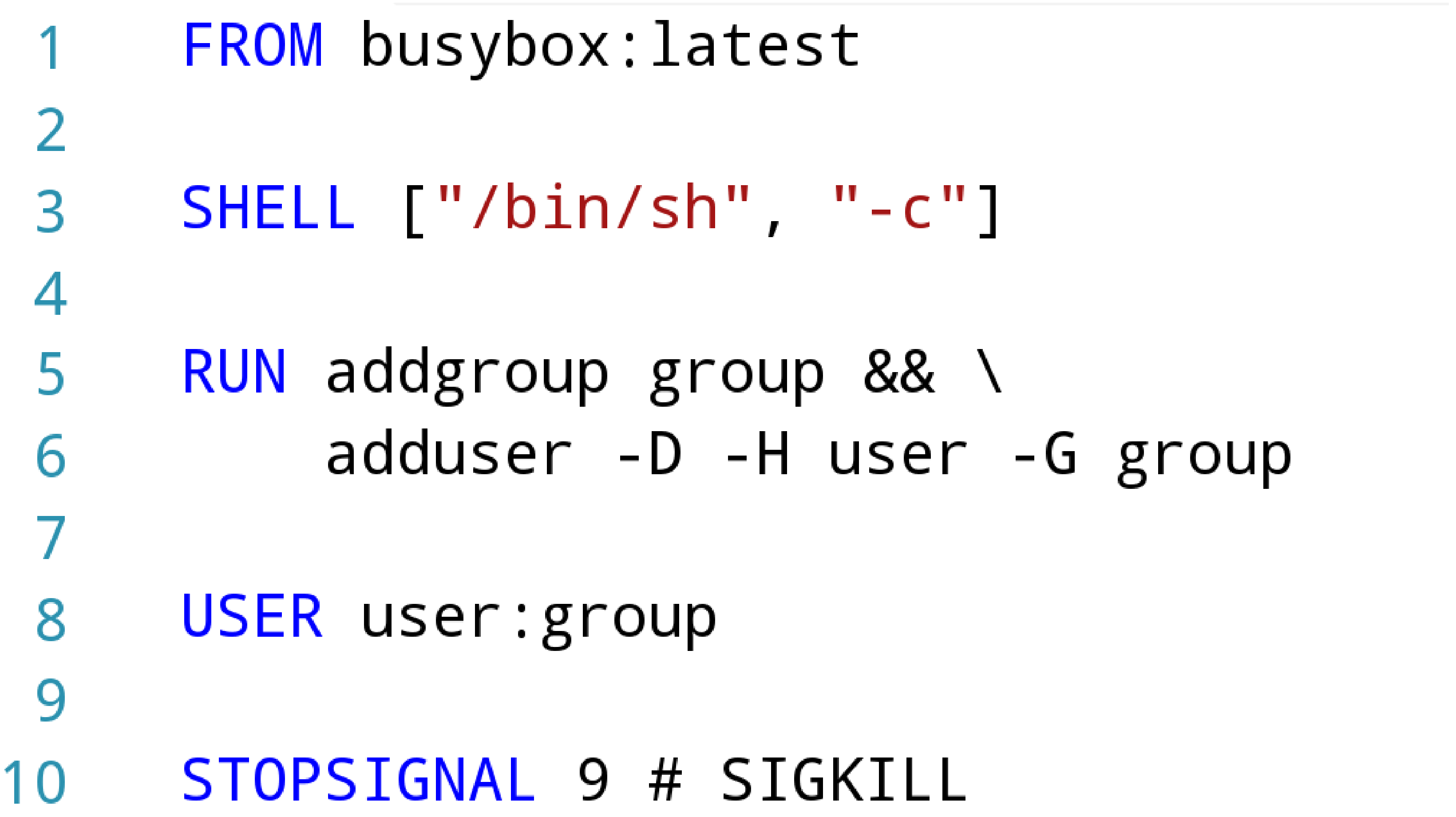
```dockerfile
FROM busybox:latest

SHELL ["/bin/sh", "-c"]
```

Dockerfile



```
FROM busybox:latest

SHELL ["/bin/sh", "-c"]

RUN addgroup group && \
    adduser -D -H user -G group

USER user:group
```

Dockerfile



```dockerfile
FROM busybox:latest

SHELL ["/bin/sh", "-c"]

RUN addgroup group && \
    adduser -D -H user -G group

USER user:group

STOPSIGNAL 9 # SIGKILL
```

Dockerfile

```
FROM busybox:latest

SHELL ["/bin/sh", "-c"]

RUN addgroup group && \
    adduser -D -H user -G group

USER user:group

STOPSIGNAL 9 # SIGKILL

ONBUILD ADD . /app/src
ONBUILD RUN echo "based on busybox"
```

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ROAD SHOW

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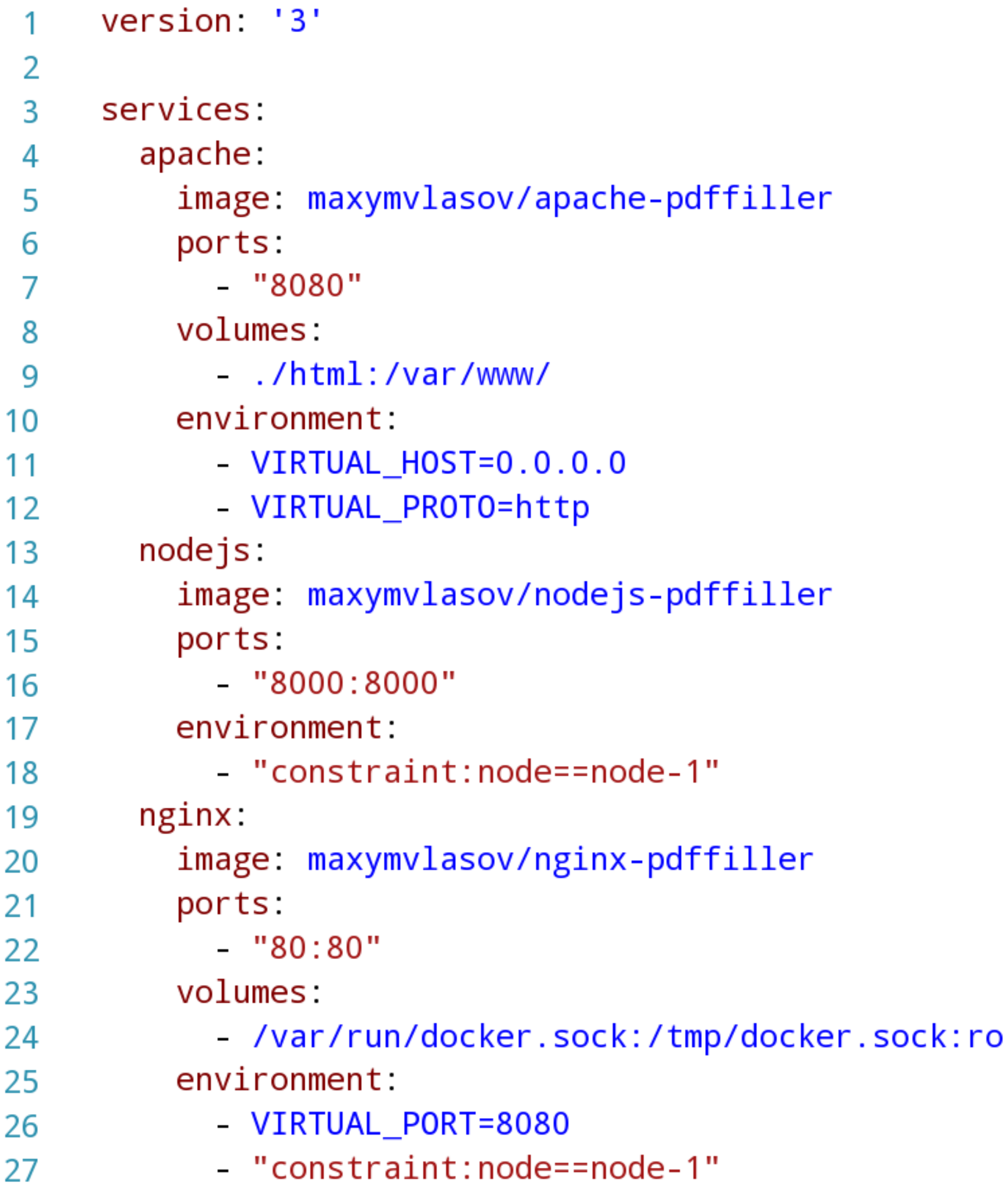
Docker-compose

Docker-compose.yaml

Docker-compose.yaml



```yaml
version: '3'

services:
  apache:
    image: maxymvlasov/apache-pdffiller
    ports:
      - "8080"
    volumes:
      - ./html:/var/www/
    environment:
      - VIRTUAL_HOST=0.0.0.0
      - VIRTUAL_PROTO=http
  nodejs:
    image: maxymvlasov/nodejs-pdffiller
    ports:
      - "8000:8000"
    environment:
      - "constraint:node==node-1"
  nginx:
    image: maxymvlasov/nginx-pdffiller
    ports:
      - "80:80"
    volumes:
      - /var/run/docker.sock:/tmp/docker.sock:ro
    environment:
      - VIRTUAL_PORT=8080
      - "constraint:node==node-1"
```

Docker-compose.yaml

```yaml
version: '3'

services:
  consul:
    build: ./.dev_docker_compose/consul
    network_mode: host
    restart: always
    volumes:
    - consuldb:/consul/data

volumes:
  consuldb:
    external: true
```

Vagga

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vagga.yaml

```yaml
containers:
```

vagga.yaml

```
containers:
  ubuntu-consul:
```

vagga.yaml

```yaml
containers:
  ubuntu-consul:
    setup:
    - !Ubuntu xenial
    - !Install [unzip, wget, ca-certificates]
```

vagga.yaml

```yaml
containers:
  ubuntu-consul:
    setup:
    - !Ubuntu xenial
    - !Install [unzip, wget, ca-certificates]
    - !Sh |
        cd /tmp
        wget https://releases.hashicorp.com/consul/0.8.3/consul_0.8.3_
        unzip consul_0.8.3_linux_amd64.zip
        cp consul /usr/bin/consul
```

vagga.yaml

```yaml
containers:
  ubuntu-consul:
    setup:
    - !Ubuntu xenial
    - !Install [unzip, wget, ca-certificates]
    - !Sh |
        cd /tmp
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        unzip consul_0.8.3_linux_amd64.zip
        cp consul /usr/bin/consul
commands:
  consul-server: !Command
```

vagga.yaml

```
containers:
  ubuntu-consul:
    setup:
    - !Ubuntu xenial
    - !Install [unzip, wget, ca-certificates]
    - !Sh |
        cd /tmp
        wget https://releases.hashicorp.com/consul/0.8.3/consul_0.8.3_
        unzip consul_0.8.3_linux_amd64.zip
        cp consul /usr/bin/consul
commands:
  consul-server: !Command
    description: Start consul in server mode
    container: ubuntu-consul
```

vagga.yaml

```yaml
containers:
  ubuntu-consul:
    setup:
    - !Ubuntu xenial
    - !Install [unzip, wget, ca-certificates]
    - !Sh |
        cd /tmp
        wget https://releases.hashicorp.com/consul/0.8.3/consul_0.8.3_
        unzip consul_0.8.3_linux_amd64.zip
        cp consul /usr/bin/consul
commands:
  consul-server: !Command
    description: Start consul in server mode
    container: ubuntu-consul
    run: |
        /usr/bin/consul agent -server -bootstrap-expect=1 \
                              -data-dir=/tmp/consul -log-level=debug \
                              -advertise=127.0.0.1
```

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Questions?

fb.com/maxymvlasov
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bit.ly/msp-docker

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