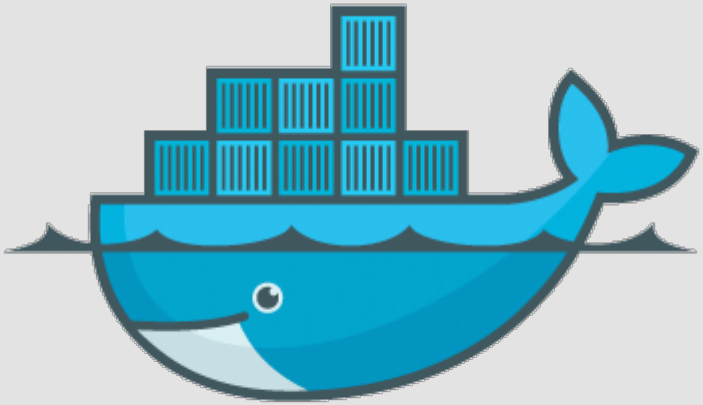
Introduction to Docker



BUILD, SHIP, RUN

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Outline

What is Docker?

Why Docker?

Docker Concepts

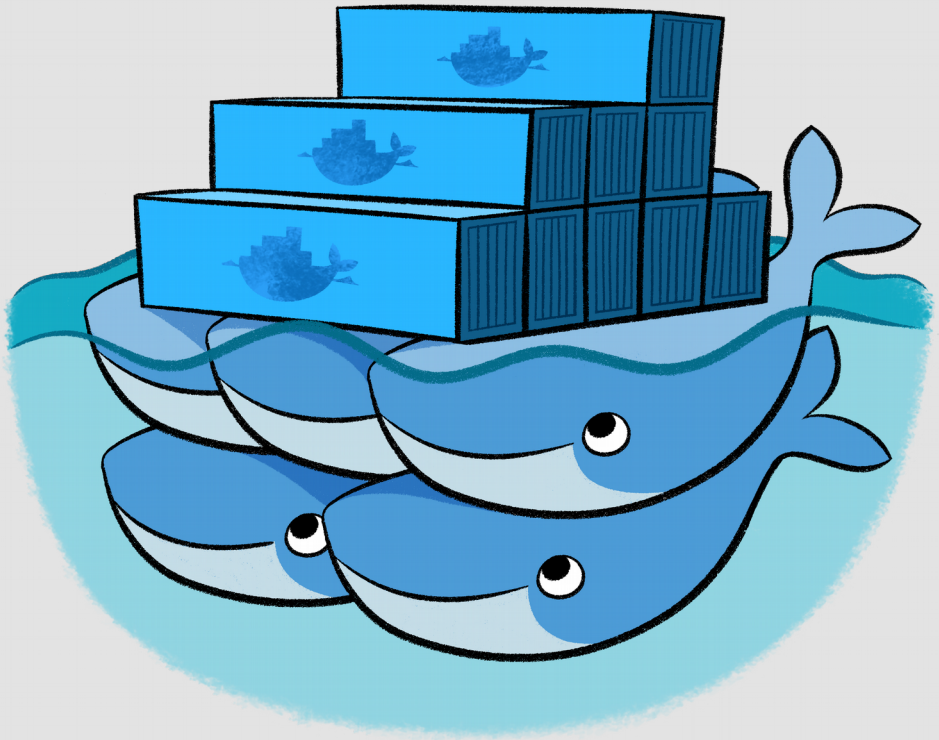
Demo

Questions / Comments

What is Docker?

“Docker is an open source project to pack, ship and run any application as a lightweight container.”

https://github.com/docker/docker



Why Docker?

Consistent

Build once, run anywhere

Scalable

Docker containers share the host's OS which makes them much more scalable than VMs

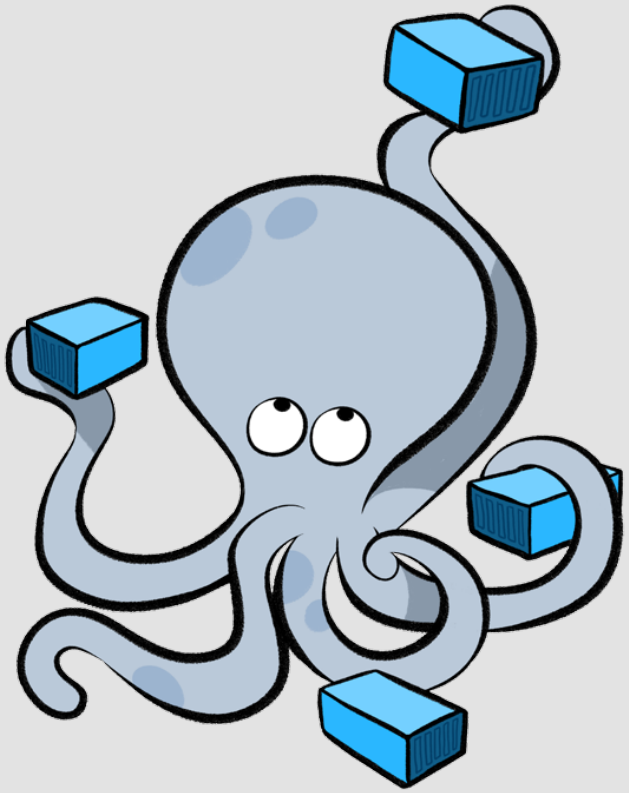
Simple

Simplifies the build, test, deploy process

Docker Concepts - Container

Docker Container

- Self contained runtime environment
- Contains software and dependencies
- Uses host machine's Linux Kernel
- Runnable instance of a Docker image



Docker Container vs Virtual Machine

Not a VM

A Docker container is not a Virtual Machine

No operating system

Container runs on host's OS

Much smaller than VMs

No hypervisor

No need for software that creates and runs VMs

Docker Concepts - Image

Docker Image

- Read-only template for creating a Docker container
- Immutable - Images do not change
- Snapshot of a container
  - Created via the **docker commit** command
- Images can also be created from a Dockerfile

Docker Concepts - Dockerfile

Dockerfile

- Describes a docker image
  - List of instructions to assemble an image
- Simple, well-defined syntax
  - Starts with a base image
  - Additional commands to customize the image
- Used to create a Docker Image via the **docker build** command

Docker Concepts - Registry

Docker Registry

Public or private servers that host docker images

You can upload, download, or search for images on a registry

Docker Hub

Public Docker registry which serves a collection of existing images and allows you to contribute your own

https://hub.docker.com/

Docker Concepts - Docker Engine

Server

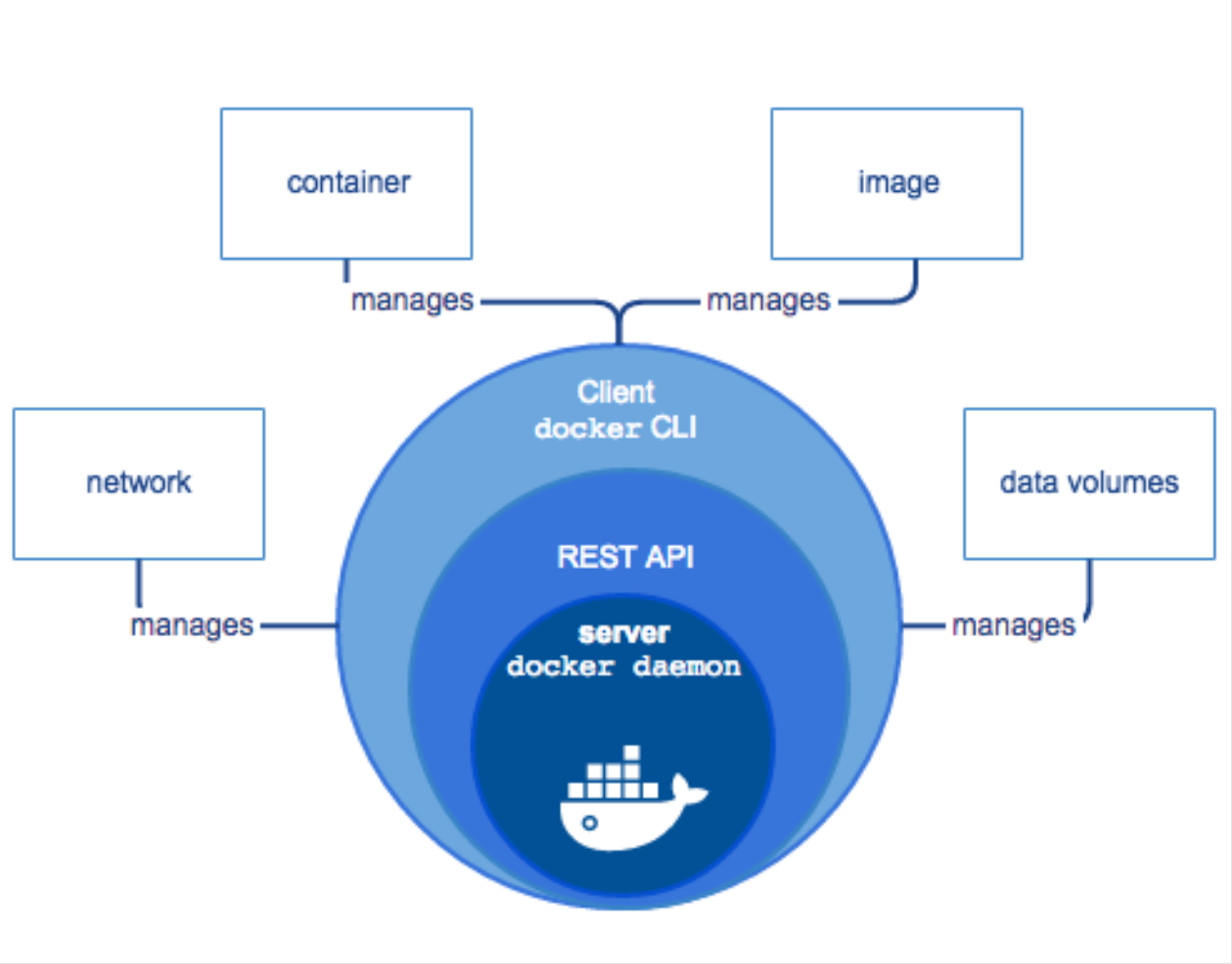
Daemon process that creates and manages Docker objects

REST API

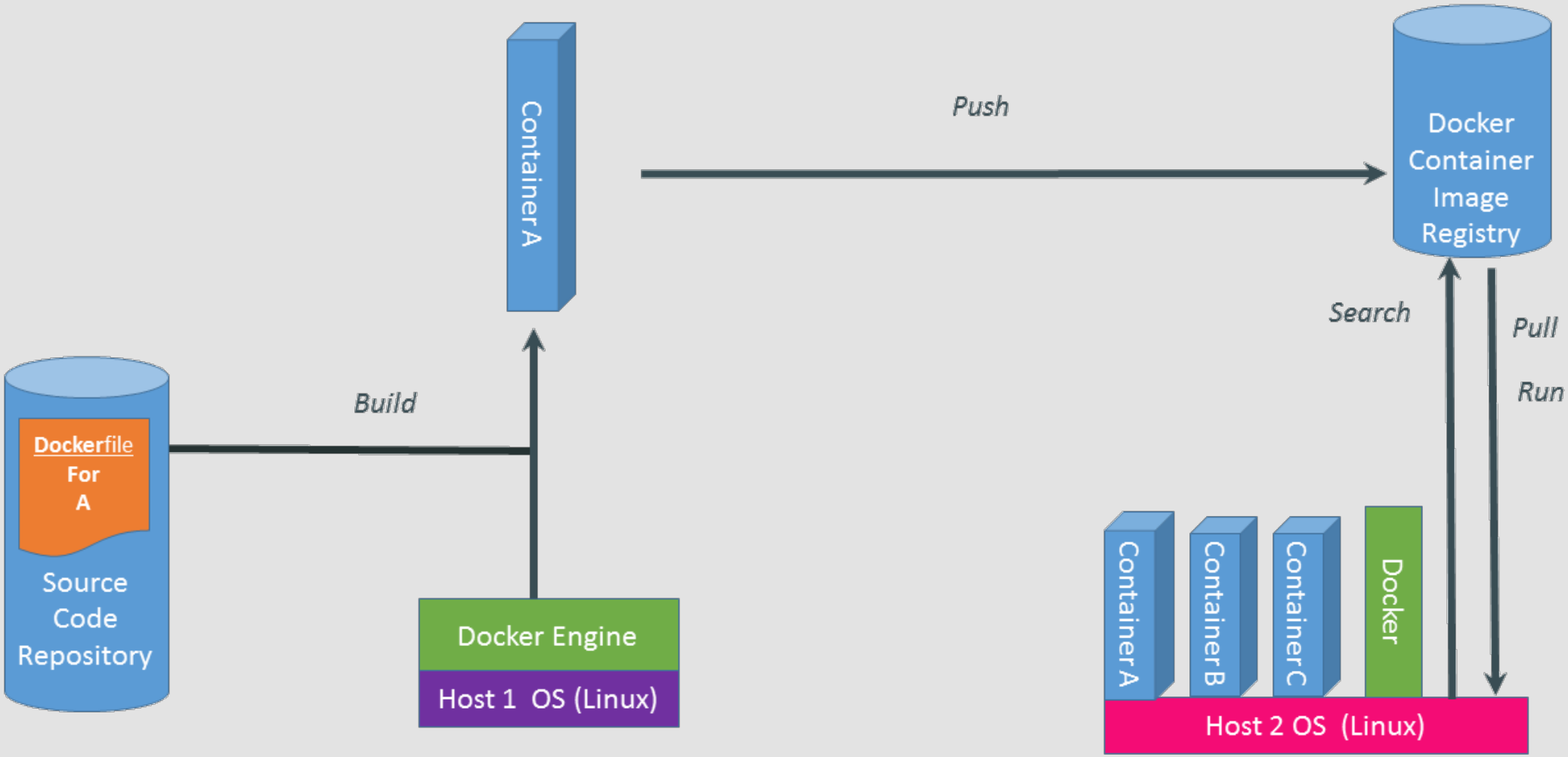
Interfaces with daemon process

CLI Client

Interface for executing Docker commands



Docker Concepts - Overview



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Demo

```
{~/gitrepos/github/docker-presentation} (master) *
[mike@mintbook] $ docker run docker/whalesay cowsay "Docker demo time!"
 ____________________
< Docker demo time! >
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                    ##        .
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           ## ## ## ##      ===
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       \______ o          __/
        \    \        __/
          \____\______/
```

$ docker stop presentation

Questions or Comments?

References

https://www.docker.com/

https://github.com/docker/docker

https://hub.docker.com/

https://github.com/dgageot/dockercon16

https://www.youtube.com/watch?v=SK0sqfVn7ls

https://github.com/mjsmith1028/docker-presentation