accenture technology

Learning and Knowledge Management

Module 3: Architecture and Installation of Docker

Module Objectives

At the end of this module, you will be able to:

- Explain the Docker architecture and it’s components
- Describe Docker tools and how they are used
- Explain Docker installation—codes before and during installation and during testing
- Describe Docker hub

Topic List

- Docker Architecture and its Components
- Docker Tools
- Docker Installation
- Docker Hub

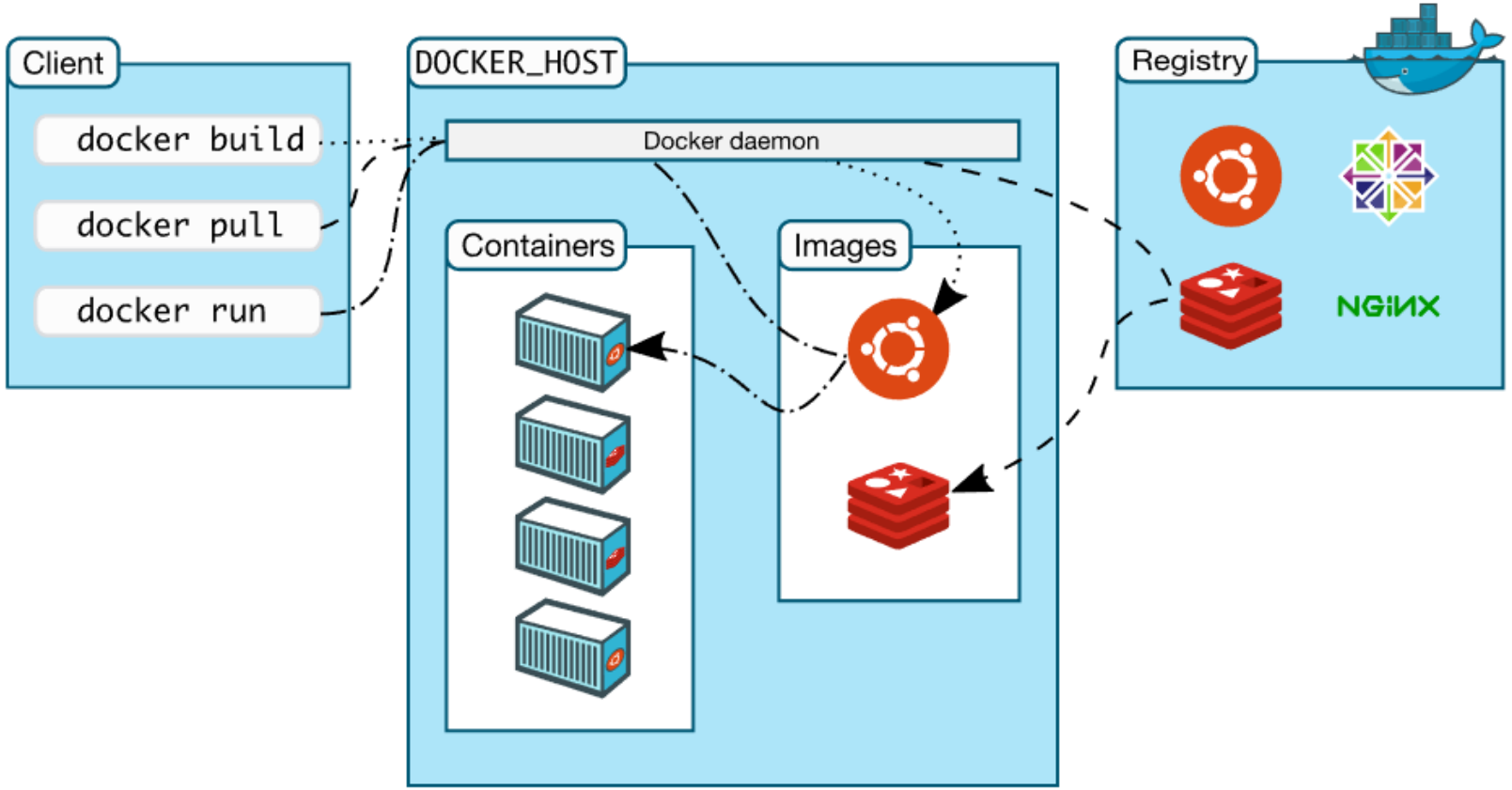
Topic List

- **Docker Architecture and its Components**
- Docker Tools
- Docker Installation
- Docker Hub

Docker Architecture and its Components (1)

Docker Architecture

- Docker is a client-server architecture.
- The Docker client talks to the Docker daemon.
- Docker daemon builds, runs, and distributes Docker containers.
- The Docker client and daemon can run on the same system or remotely.
- The Docker client and daemon communicate through a REST API, over UNIX sockets or a network interface.



Docker Architecture and its Components (2)

Docker Engine

Docker Engine is a client-server application with the folowing major components:

A server which is a type of long-running program called a daemon process (Docker Daemon)

A REST API which specifies interfaces that programs can use to talk to the daemon and instruct it what to do

A command line interface (CLI) client

Docker Architecture and its Components (3)

Docker Daemon

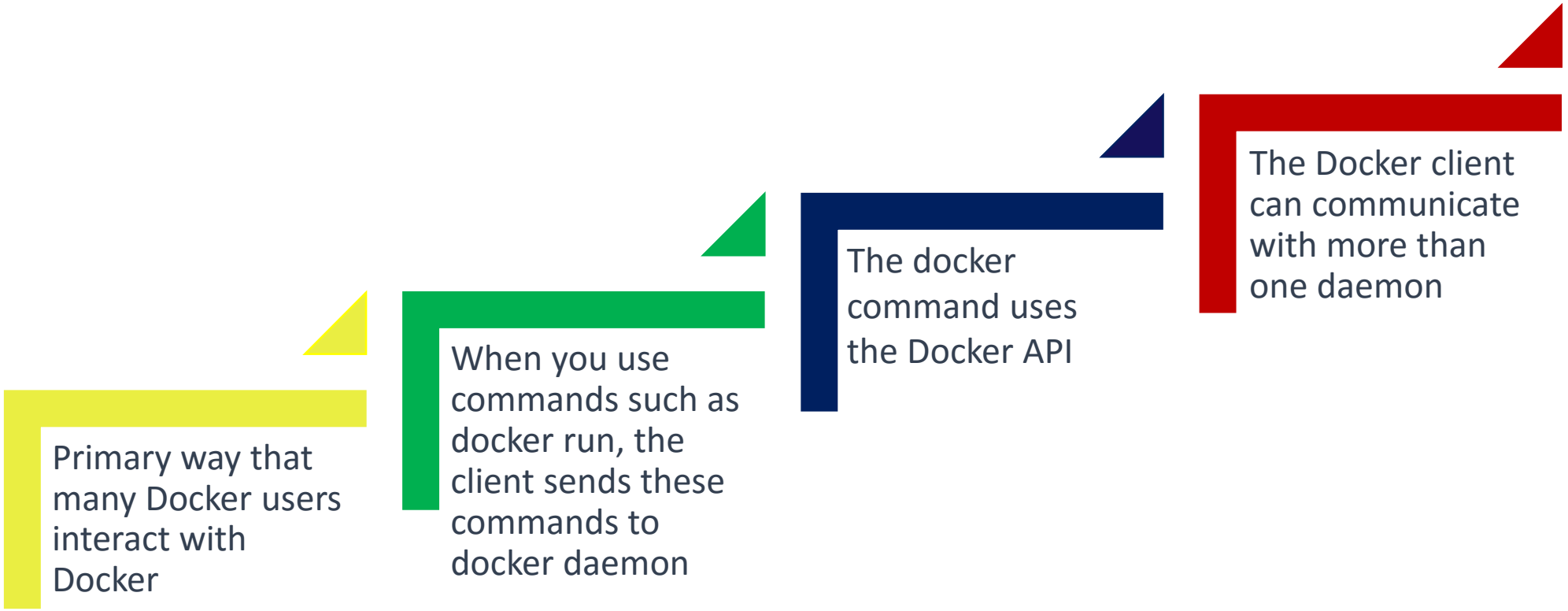
Takes Docker API requests

Manages Docker objects such as images, containers, networks, and volumes

Communicates with other daemons to manage Docker devices

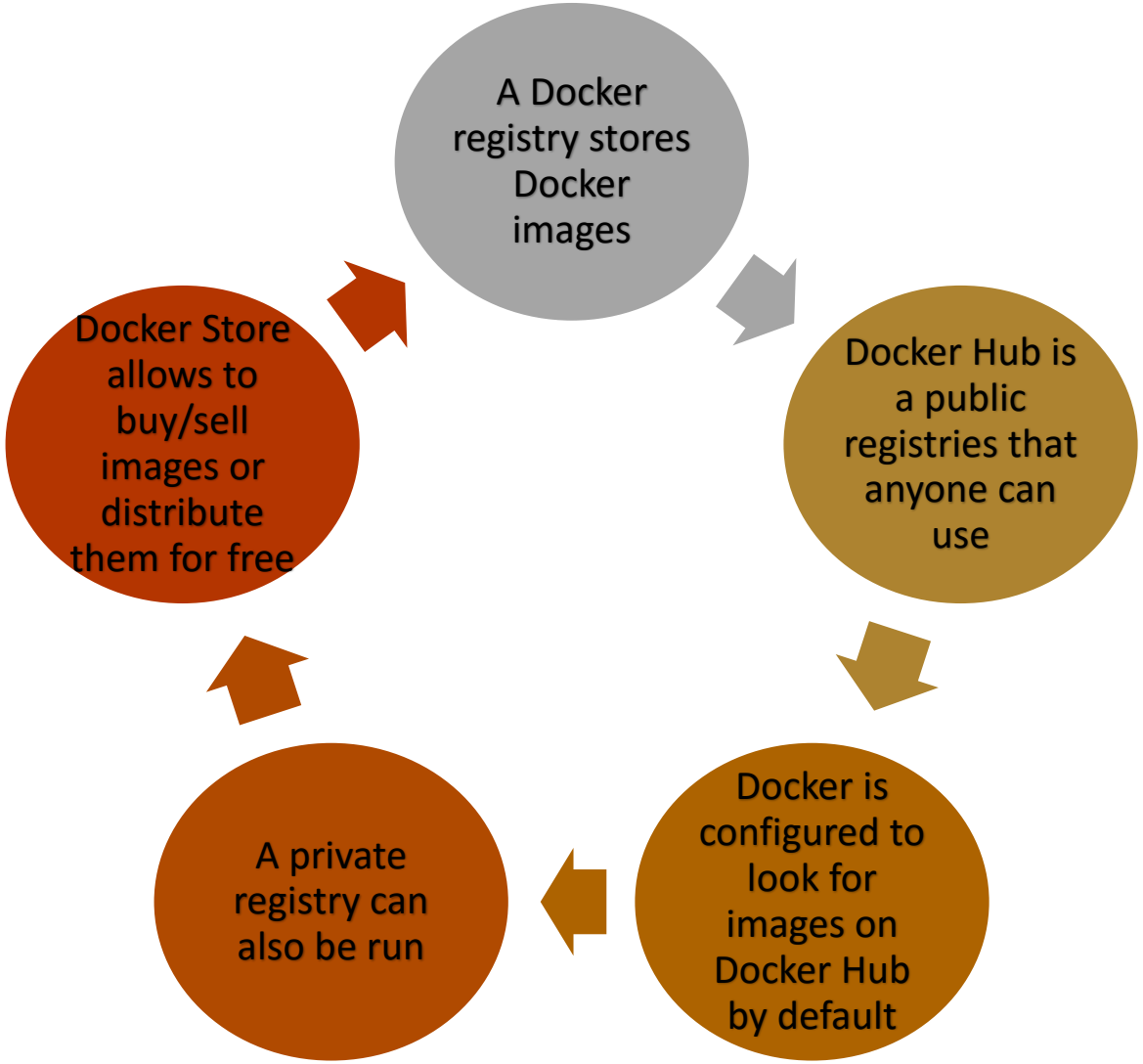
Docker Architecture and its Components (4)

Docker Client



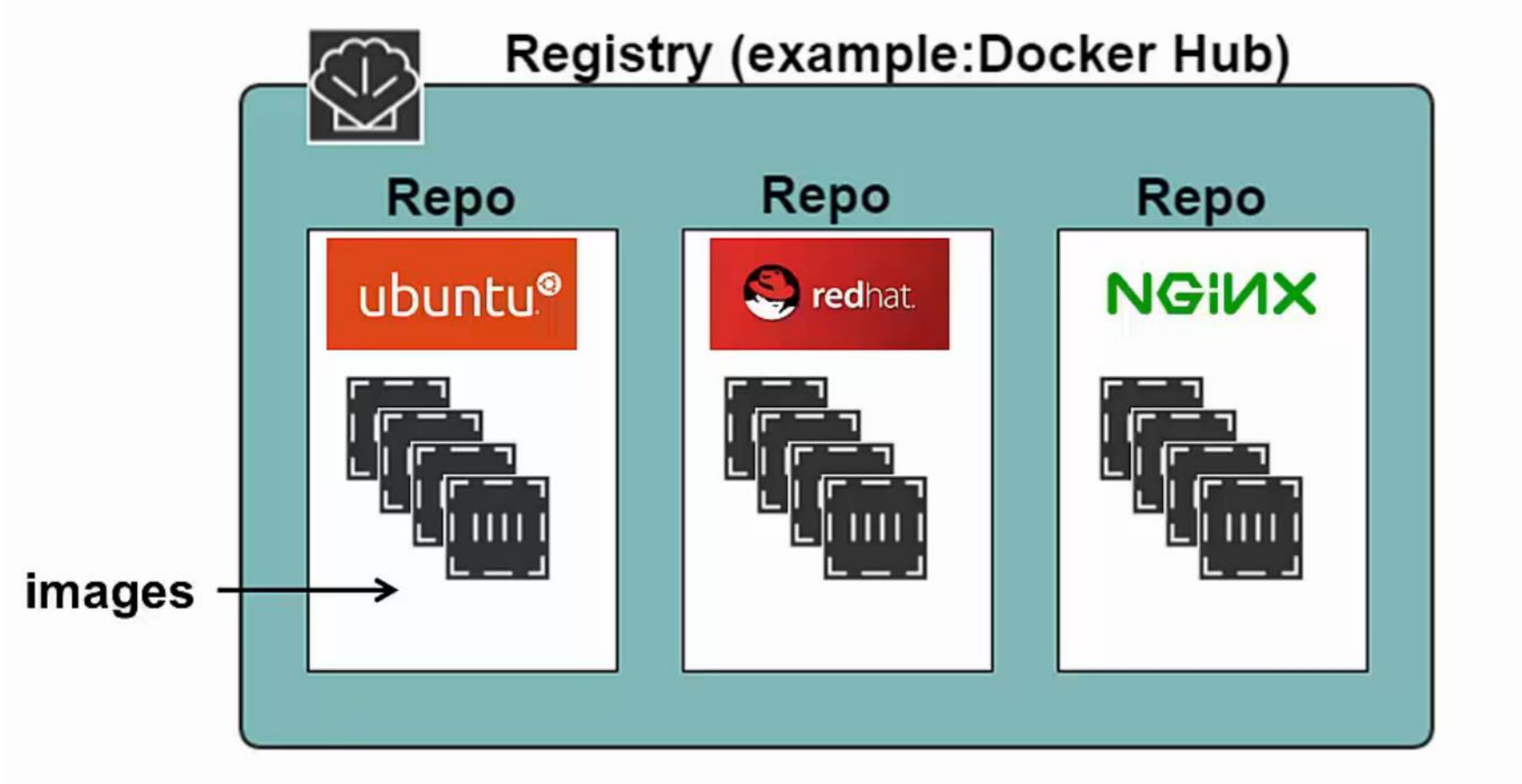
Docker Architecture and its Components (5)

Docker Registries



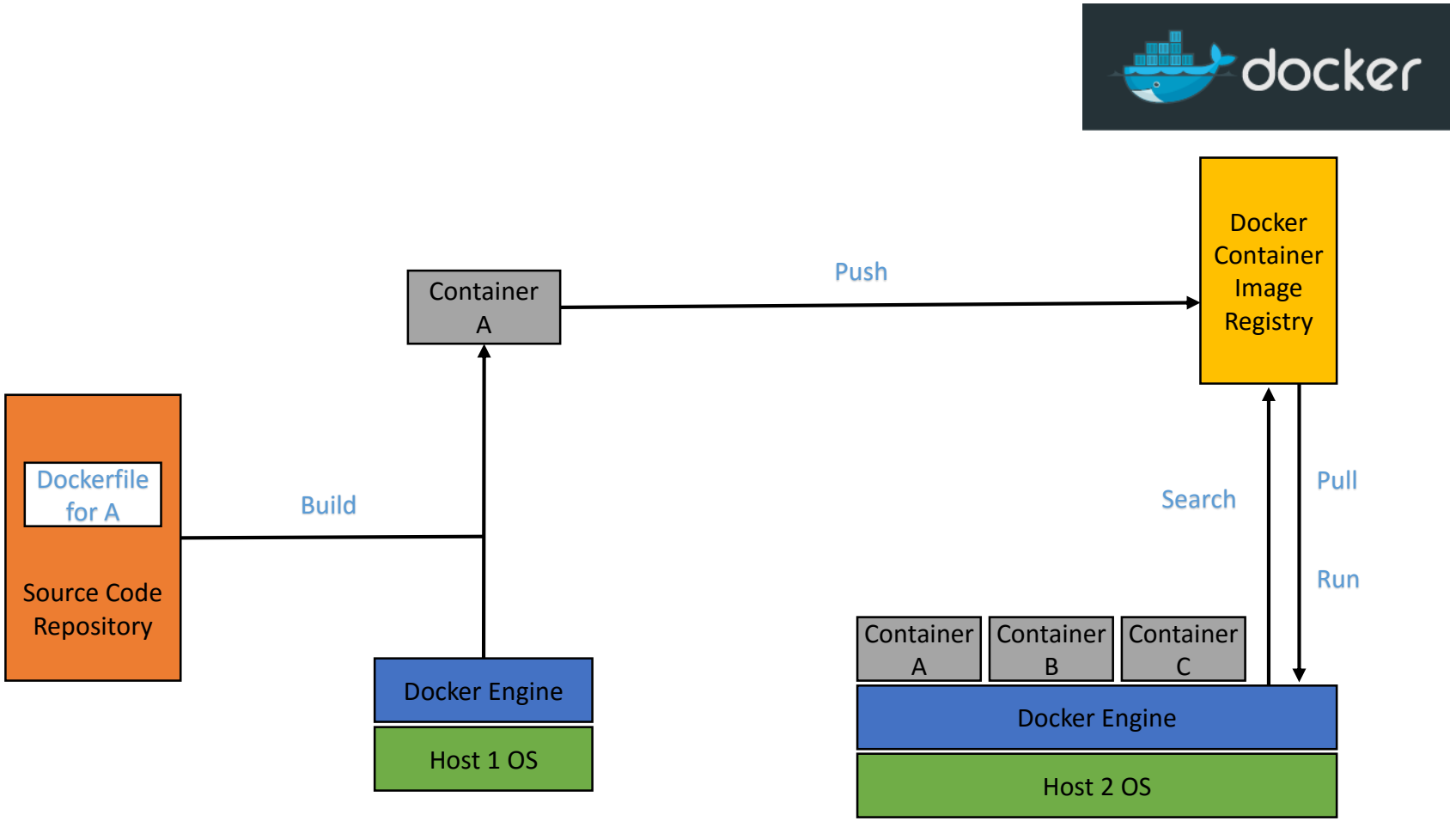
Docker Architecture and its Components (6)

Docker Repository



Docker Architecture and its Components (7)

Functional Architecture



Topic List

Docker Architecture and its Components

Docker Tools

Docker Installation

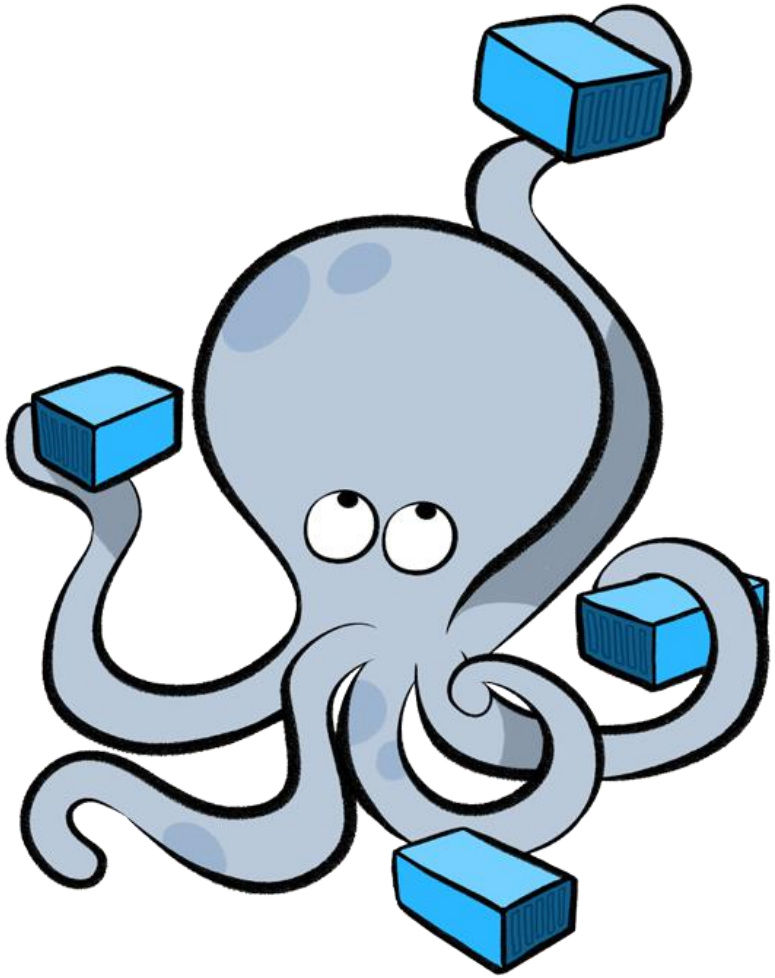
Docker Hub

Docker Tools

Docker Compose

Compose is a tool:

- For defining and running multi-container Docker applications
- Which can be used as a Compose file to configure your application's services
- In which using a single command, all services can be created and started from configuration



Topic List

Docker Architecture and its Components

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Docker Installation

Docker Hub

Docker Installation

Method 1: Download the docker installation file from the web and run it

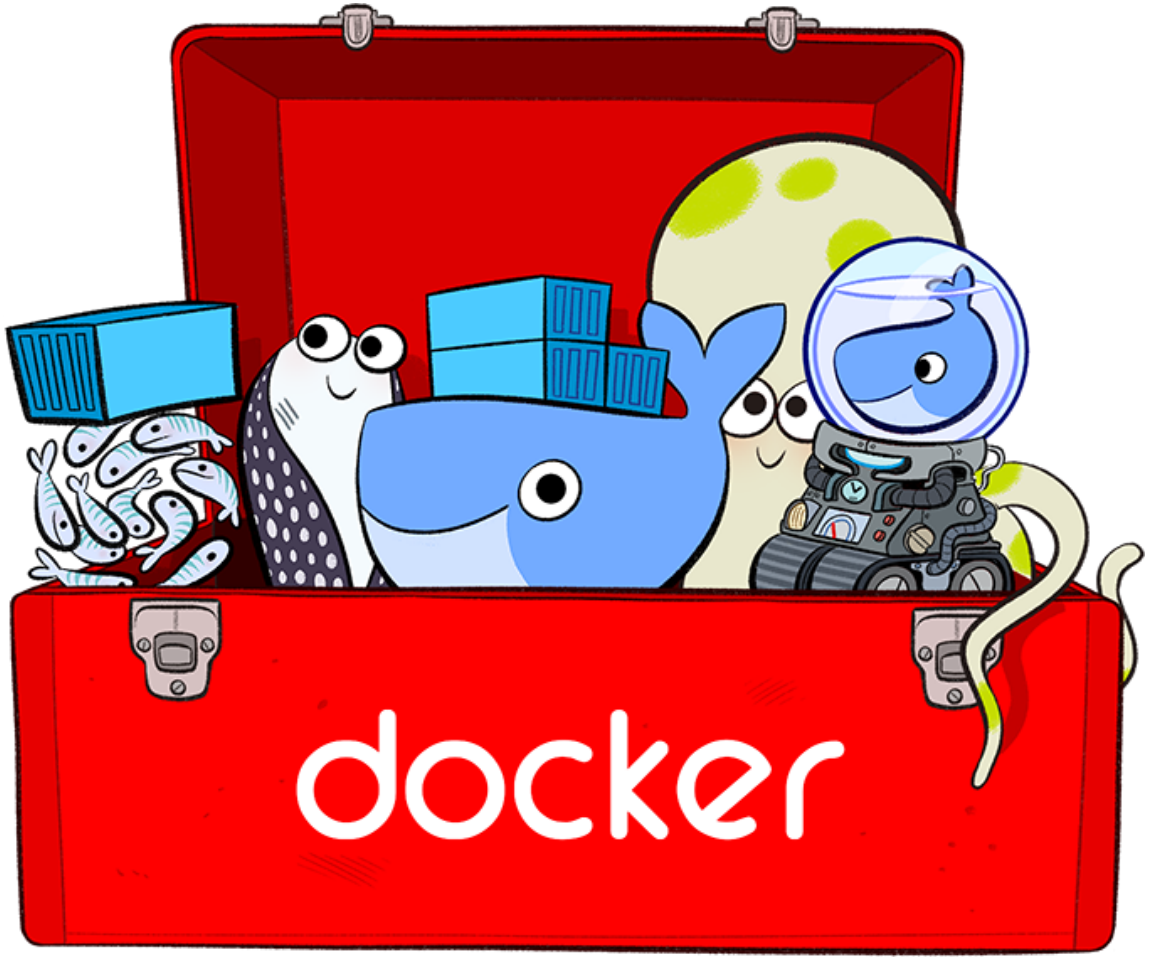
Method 2: Using docker installation command

Method 3: Installation using Docker toolbox.
sudo apt-get install –y docker.io

Docker Installation

Docker Toolbox

Docker Toolbox is an installer for quick setup and launch of a Docker environment on older Mac and Windows systems that do not meet the requirements of new Docker for Mac and Docker for Windows apps.



Exercise 1

Let's practice what we have learned so far!

Perform the following steps to install Docker:

- download docker engine for ubuntu 14.04 (docker 1.13.1 for xenial)
  - ✓ https://apt.dockerproject.org/repo/pool/main/d/docker-engine/
  - ✓ file to download (docker-engine_1.13.1-0~ubuntu-xenial_amd64.deb)
- copy into a folder
- sudo dpkg -i docker-engine_1.13.1-0~ubuntu-xenial_amd64.deb

  OR,
- $apt-get install –y docker.io//for installing docker on Ubuntu machine

Exercise 2

Let’s practice what we have learned so far!

Perform the following steps to verify the installation:

- sudo docker version
- docker info (aufs-->advanced union file system)

Topic List

Docker Architecture and its Components

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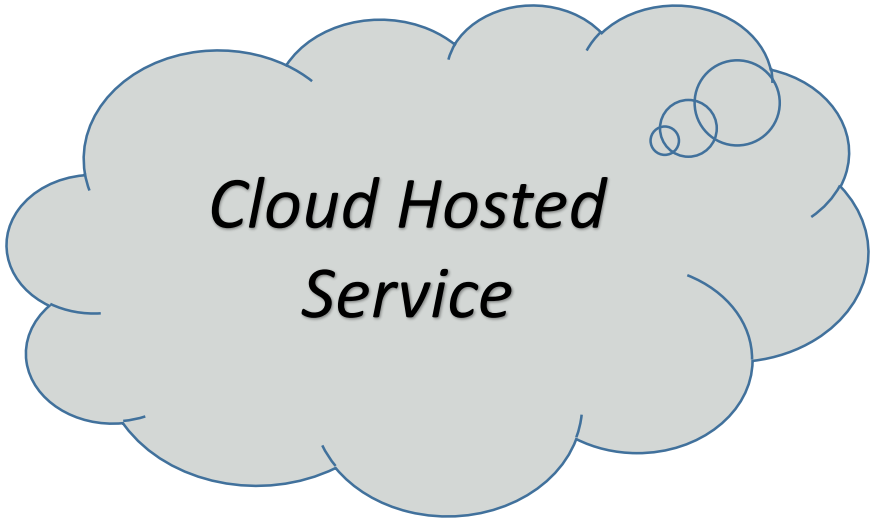
Docker Hub

Docker Hub

What is Docker Hub?

- Registry service on the cloud
- Helps to download Docker images that are built by other communities
- Allows upload of Docker built images



Exercise 3

Let’s practice what we have learned so far!

Perform the following steps to create docker hub account:

- Sign up at docker hub
  - ✓ https://hub.docker.com/
- Activate through email
  - ✓ Find your email confirmation and activity your account
  - ✓ Browse for some of the repositories
- Search for some images (example: java)

Module Summary

Now, you should be able to:

- Explain the Docker architecture and it’s components
- Describe Docker tools and how they are used
- Explain Docker installation—codes before and during installation and during testing
- Describe Docker hub

Thank You