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APRIL 5, 2023

# DevOps Classroomnotes 05/Apr/2023

Application Deployments

Terms

- Capex: Captial Expenditure
- Opex: Operational Expenditure
- Physical Server
- Hypervisor
- Virtual Machine
- Return on Investment (ROI)

Evolution

- Generation 1: Directly run on Physical Servers
  - Directly run on physical servers
 - If your application is not utilizing hardware completely, ROI is very long
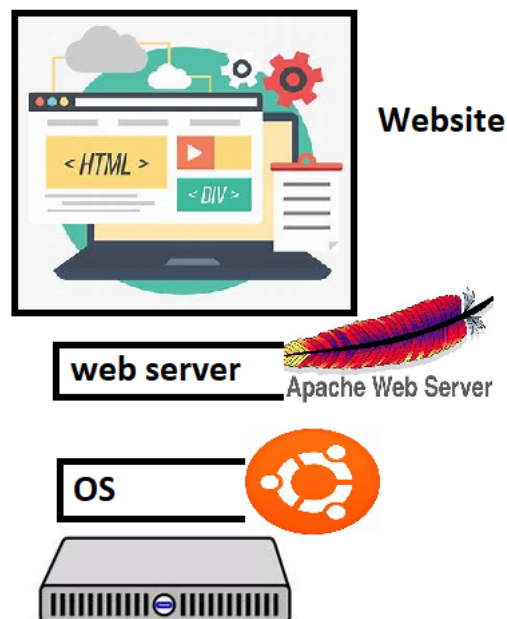
- Generation 2: Hypervisors create virtual machines and applications installed in virtual machines

  - Hypervisors perform hardware virtualizationa and provide
    - virtual cpu
    - virtual ram
    - virtual disk
    - virtual network

  - In the isolated area created by hypervisor, we can install os and necessary softwares
  - Application can be installed and used from here
  - Better ROI

- Generation 3: Containers: These are isolated areas which look like vms but the container is an isolated area which has virtualized os.

  - Applications running in Containers will not feel the difference

- We can run more applications on a single box
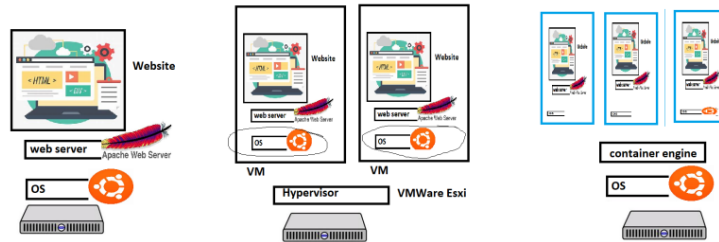
What is docker?

- Docker (dock worker) is used to create containers which is standard way of packaging any application
- Application can be any of the below but have a standard way of packaging i.e docker image.
  - developed in any technology
  - developed on any server

- Packaging in docker image format helps us to run our application
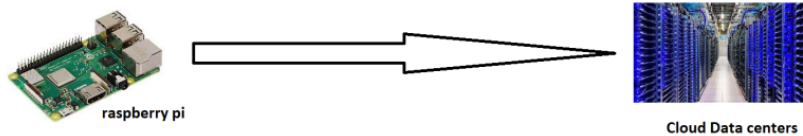
## Expectations from you in terms of Docker

- Containerize any application run by your organization.
- Manage Data, Security and Networks for containerized applications.
- To acheive the above expectations, we need to use
  - docker and understand how it runs and creates containers
  - play with docker aroud networks, data and security
  - apply them to our application.

Run apache server (VM)

- Create a vm (ubuntu) and ssh into it

```
sudo apt update
sudo apt install apache2 -y
```

- Now navigate to http://<publicip>
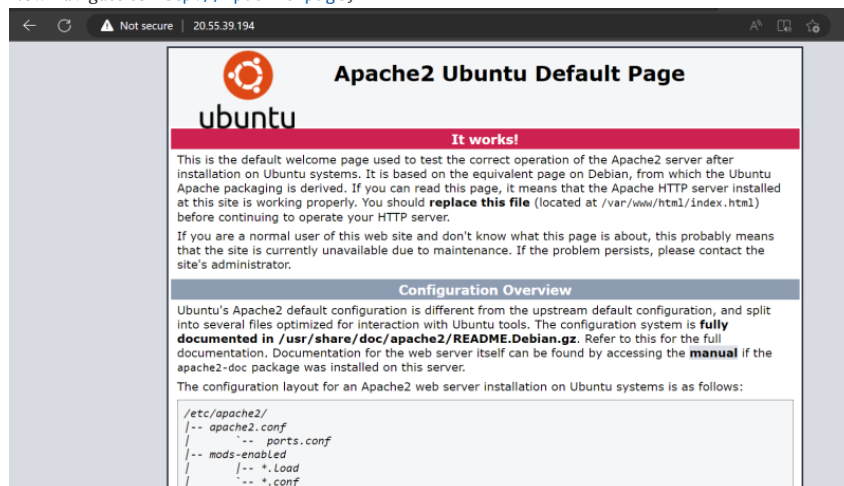
- Now lets try to also install nginx

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