


**Unit 1**

# Review



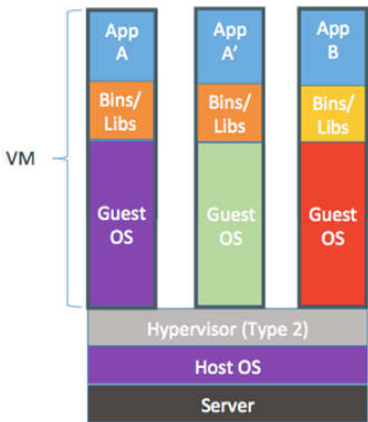
Business  
Training

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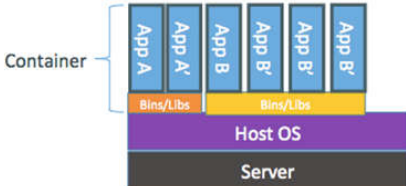
Introduction to Docker

## Containers vs. VMs

VM



Container



Containers are isolated, but share OS kernel and, where appropriate, bins/libraries

...result is significantly faster deployment, much less overhead, easier migration, faster restart

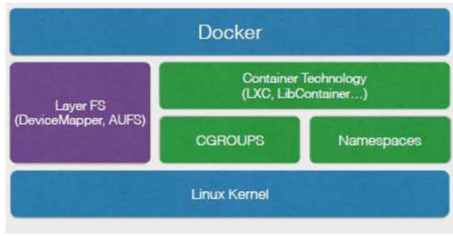
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Introduction to Docker

## Docker Architecture.....

- It is an open source implementation of the LXC (Linux Containers) used for packaging an application and its needed dependencies into a container that can be deployed and replaced easily.



The diagram illustrates the Docker architecture stack. At the top is a blue box labeled 'Docker'. Below it are two green boxes: 'Container Technology (LXC, LibContainer...)' on the right and 'Layer FS (DeviceMapper, AUFS)' on the left. Below these are two more green boxes: 'CGROUPS' on the left and 'Namespaces' on the right. At the bottom is a wide blue box labeled 'Linux Kernel'.

- The containerization in Docker is achieved via:
  - Resource isolation (**cggroups**),
  - Kernel **namespaces** (isolating the application's view of the OS, process trees, etc) and,
  - A union-capable file system (such as aufs – mounting multiple directories into one that appears to contain their combined contents).

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Introduction to Docker

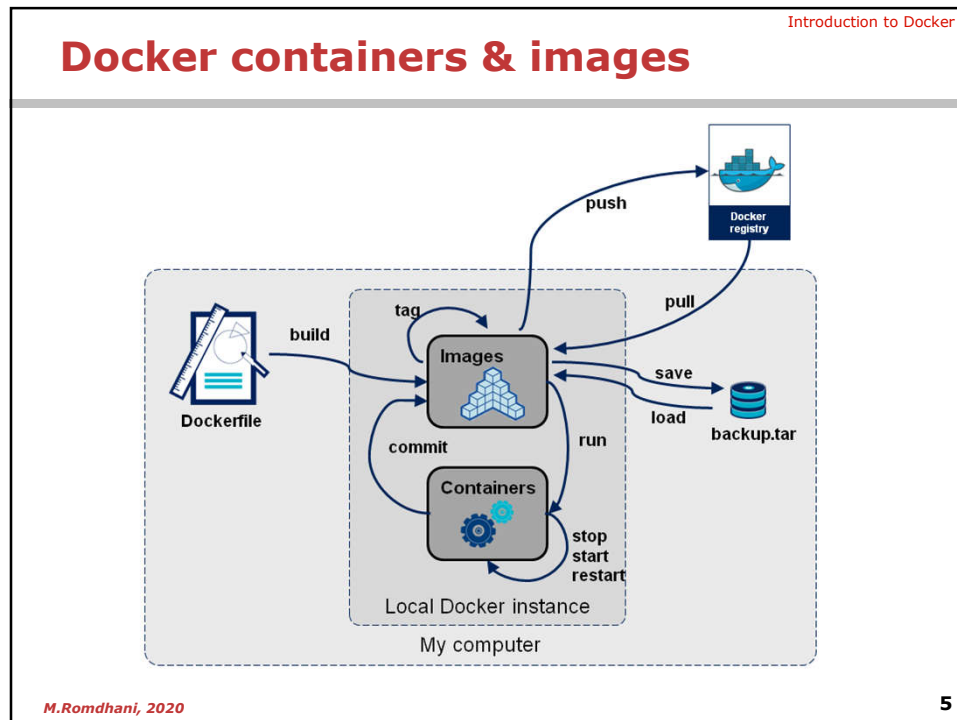
## Key Docker advantages

- **Isolation**
  - Thank to Kernel features (Namespaces, Cgroups)
- **Consistency/Cohesion**
  - Each app is packaged along with its dependencies
- **Speed/Scalability**
  - Faster than VMs
- **Portability**

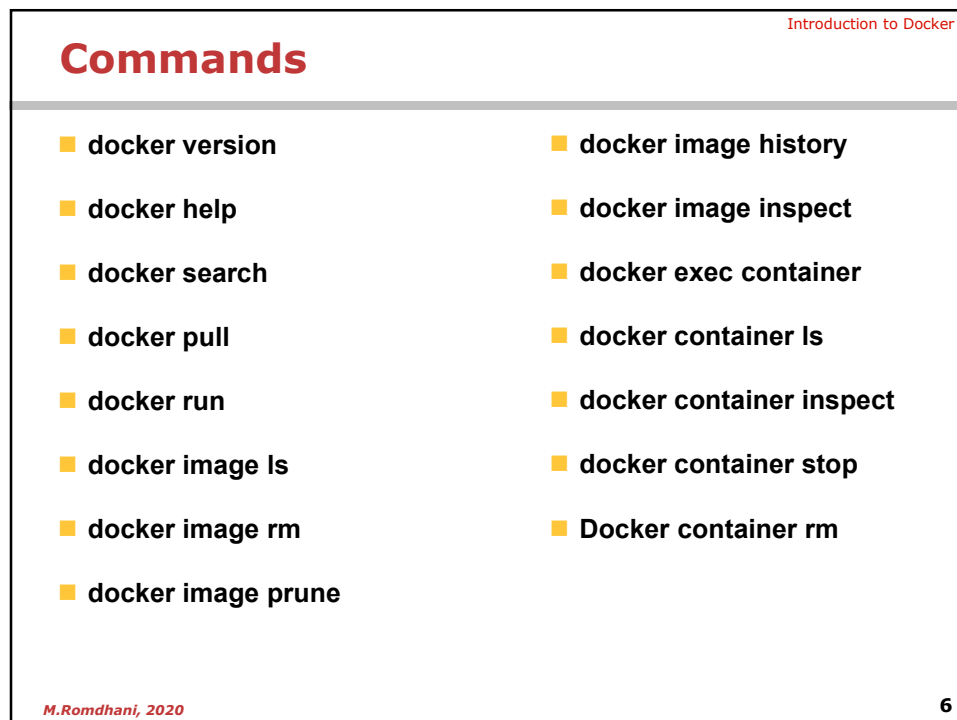
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