



PA4 Tutorial

CS 4740 Cloud Computing

Department of Computer Science, University of Virginia, USA

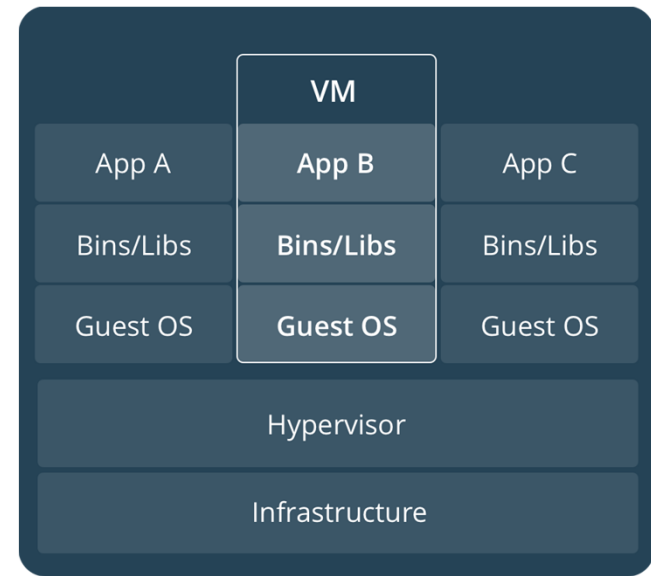
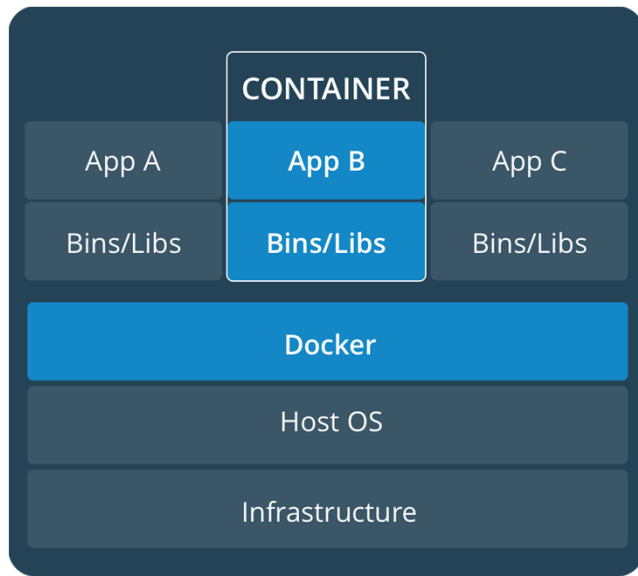
Goal of this PA

- Gain hand-on experience with the Docker
- Understand the terminology of Docker
- Know how to create image and create container based on image
- Know how to use container service on Amazon AWS
- Know how to build multi-container environment

Comparison of platform virtualization software

Hardware virtualization (hypervisors)	Native	Adeos · CP/CMS · Hyper-V · KVM (Red Hat Enterprise Virtualization) · LDoms / Oracle VM Server for SPARC · LynxSecure · PikeOS · Proxmox VE · SIMMON · vCloud) · VMware Infrastructure · Xen (Oracle VM Server for x86 · XenClient) · XtratuM · z/VM		
	Hosted	Specialized	Basilisk II · bhyve · Bochs · Cooperative Linux · DOSBox · DOSEMU · PCem · PikeOS · SheepShaver · SIMH · Windows on Windows (VirtualBox)	
		Independent	Microsoft Virtual Server · Parallels Workstation · Parallels Desktop for Mac · Parallels Server for Mac · PearPC · QEMU · VirtualBox · Virtual Machine Monitor · VMware Server · VMware Workstation · <u>Windows Virtual PC</u>	
	Tools	Ganeti · oVirt · Virtual Machine Manager		
OS-level virtualization	cgroups-based (lmcftfy · Linux-VServer · LXC · Docker · OpenVZ) · FreeBSD jail · iCore Virtual Accounts · Kubernetes · Linux namespaces · Solaris Containers · Workload			
Desktop virtualization	Citrix XenApp · Citrix XenDesktop · Remote Desktop Services · VMware Horizon View · Ulteo Open Virtual Desktop			
Application virtualization	Ceedo · Citrix XenApp · Dalvik · InstallFree · Microsoft App-V · Remote Desktop Services · Spoon · Symantec Workspace Virtualization · VMware ThinApp · ZeroVM			
Network virtualization	Distributed Overlay Virtual Ethernet (DOVE) · NVGRE · Open vSwitch · Virtual security switch · Virtual Extensible LAN (VXLAN)			

See also: List of emulators



Steps 1.1 – 2.1 How to create a container

Steps 2.1-2.5 Create Images for Containers

- Images - The blueprints of applications which form the basis of containers.
- Containers - Created from Docker images and run the actual application.

Step 3.1 Multi-container environment

