



# Containerization and Virtualization

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*Containerization is the packaging of software along with the libraries and dependencies required to run the code. The lightweight executable (a container) runs on any infrastructure.*

[HTTPS://WWW.IBM.COM/CLOUD/LEARN/CONTAINERIZATION](https://www.ibm.com/cloud/learn/containerization)

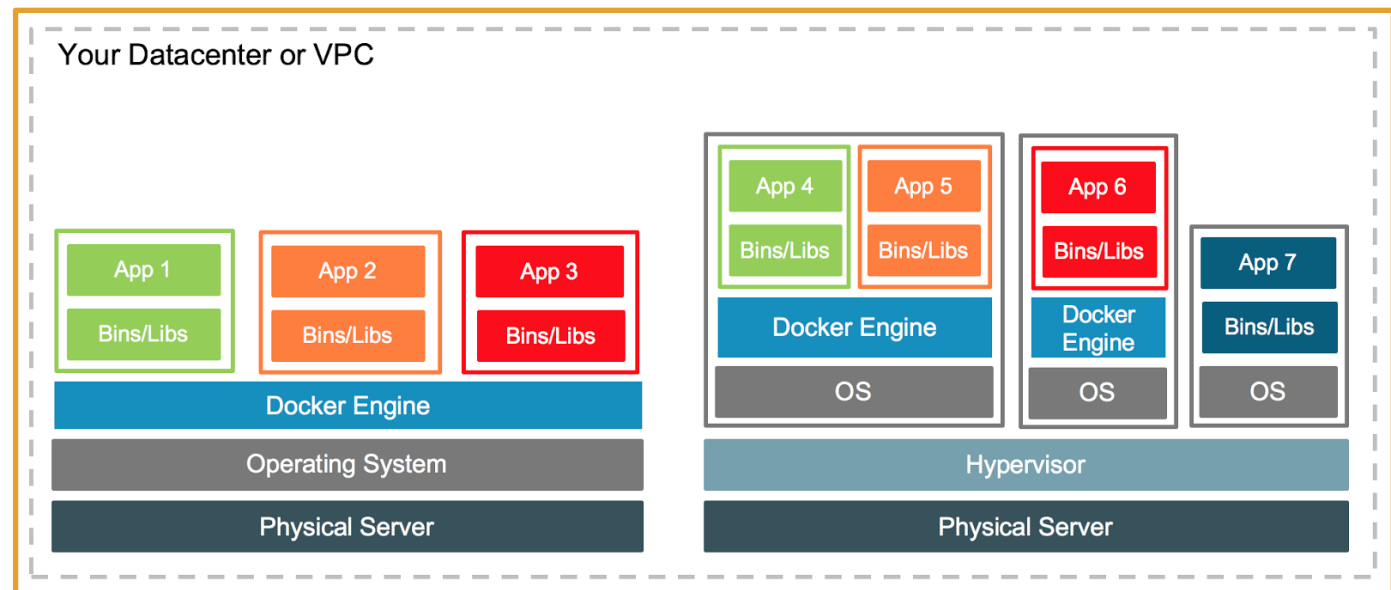
# Containerization is not Virtualization

[https://en.wikipedia.org/wiki/Virtualization#Hardware\\_virtualization](https://en.wikipedia.org/wiki/Virtualization#Hardware_virtualization)

<https://www.docker.com/blog/containers-and-vms-together/>

**Virtualization** refers to the creation of a Virtual Machine. A virtual machine is an application that simulates a computer within an existing operating system and hardware.

Software executed on a Virtual Machine is isolated from the underlying hardware resources.



# What is Containerization?

<https://hackernoon.com/what-is-containerization-83ae53a709a6>  
<https://www.ibm.com/cloud/learn/containerization>

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**Containerization** is the bundling of everything an application needs to run inside a single package.

When the needed configuration files, libraries, and dependencies an application requires are included in one package, it can be run in any environment.

**Containers** are more portable and resource-efficient than virtual machines (VMs). Containers are the de facto compute units of modern cloud-native applications.

The most popular **containerization** ecosystems are **Docker** and **Kubernetes**.



# Virtualization Software Examples

<https://en.wikipedia.org/wiki/Virtualization>

V · T · E		Virtualization software		[hide]
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 · Logical Partition (LPAR) · LynxSecure · PikeOS · Proxmox VE · SIMMON · VMware ESXi (VMware vSphere · vCloud) · VMware Infrastructure · Xen (Oracle VM Server for x86 · XenServer) · XtratuM · z/VM		
	Hosted	Specialized	Basilisk II · bhyve · Bochs · Cooperative Linux · DOSBox · DOSEMU · PCem · PikeOS · SheepShaver · SIMH · Windows on Windows (Virtual DOS machine) · Win4Lin	
		Independent	Microsoft Virtual Server · Parallels Workstation · Parallels Desktop for Mac · Parallels Server for Mac · PearPC · QEMU · VirtualBox · Virtual Iron · VMware Fusion · VMware Server · VMware Workstation (Player) · Windows Virtual PC	
		Tools	Ganeti · oVirt · System Center Virtual Machine Manager · Virtual Machine Manager	
OS-level virtualization	OS containers	FreeBSD jail · iCore Virtual Accounts · Linux-VServer · LXC · OpenVZ · Solaris Containers · Virtuozzo · Workload Partitions		
	Application containers	Docker · Imctfy · rkt		
	Virtual kernel architectures	User-mode Linux · vkernel		
	Related kernel features	BrandZ · cgroups · chroot · namespaces · seccomp		
	Orchestration	Amazon ECS · Kubernetes · OpenShift		
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 · Symantec Workspace Virtualization · Turbo · VMware ThinApp · ZeroVM			
Network virtualization	Distributed Overlay Virtual Ethernet (DOVE) · Ethernet VPN (EVPN) · NVGRE · Open vSwitch · Virtual security switch · Virtual Extensible LAN (VXLAN)			
See also: List of emulators				