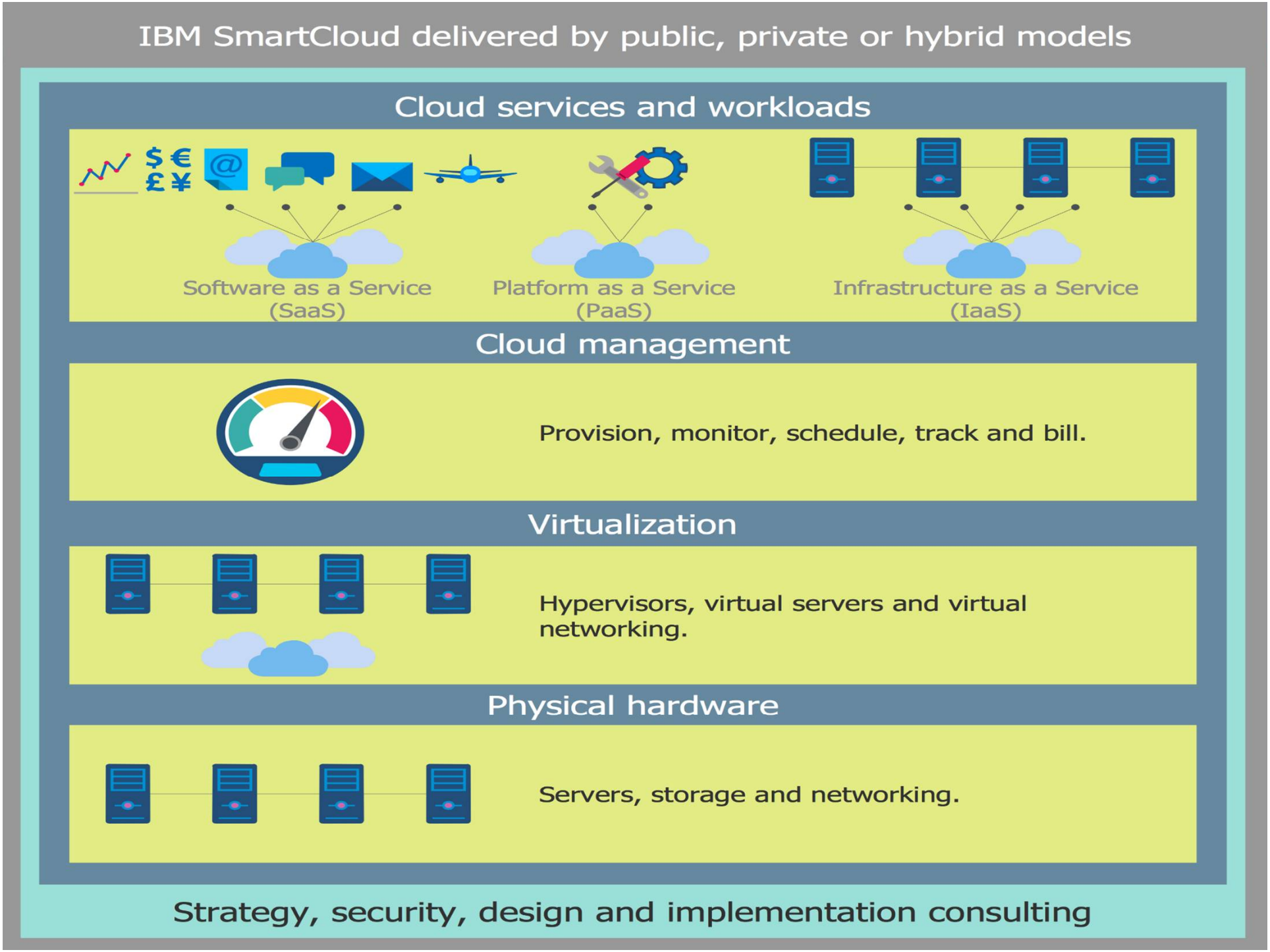
جهاد دانشگاهی
۱۳۵۹
واحد علامه طباطبایی

هشتمین نشست تخصصی همگرایی رایانش ابری، اینترنت اشیاء و داده های حجیم

گروه آموزشی و پژوهشی CIB

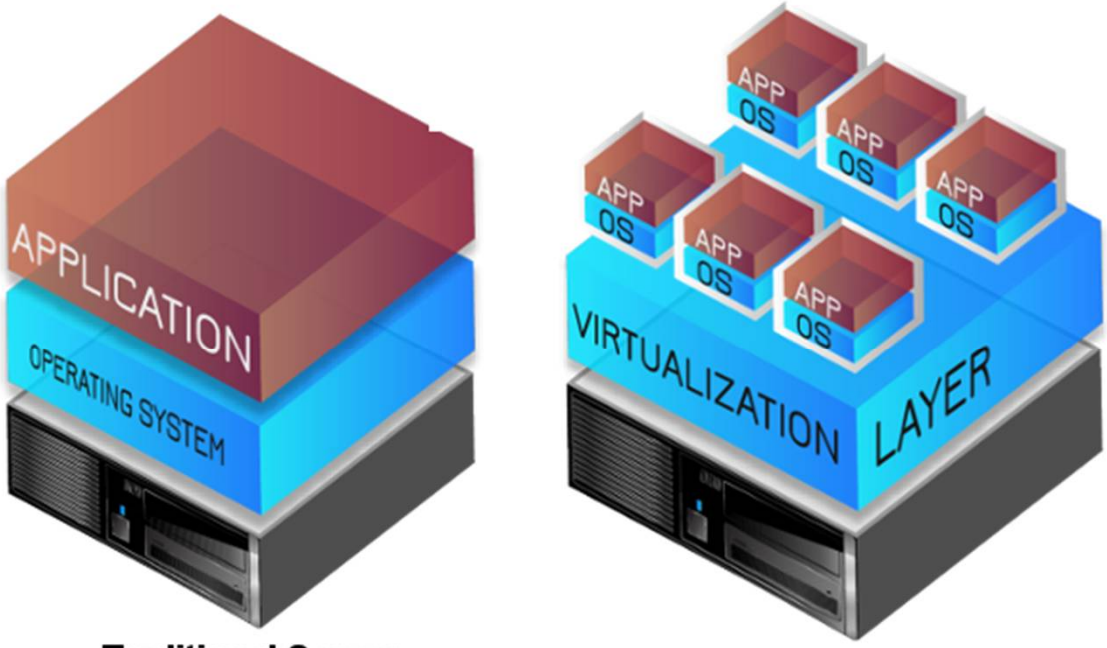
Virtualization
Docker

Ehsan Ghasemkhani
Fatemeh Malekan


IBM SmartCloud delivered by public, private or hybrid models
Cloud services and workloads
Software as a Service (SaaS)
Platform as a Service (PaaS)
Infrastructure as a Service (IaaS)
Cloud management
Provision, monitor, schedule, track and bill.
Virtualization
Hypervisors, virtual servers and virtual networking.
Physical hardware
Servers, storage and networking.
Strategy, security, design and implementation consulting

مجازی سازی چیست؟

- مجازی سازی به ساخت نمونه مجازی و غیر واقعی از چیزهایی مثل پلت فرم سخت افزاری، سیستم عامل، وسایل ذخیره‌سازی و یا منابع شبکه گفته می‌شود.



Traditional Server Architecture

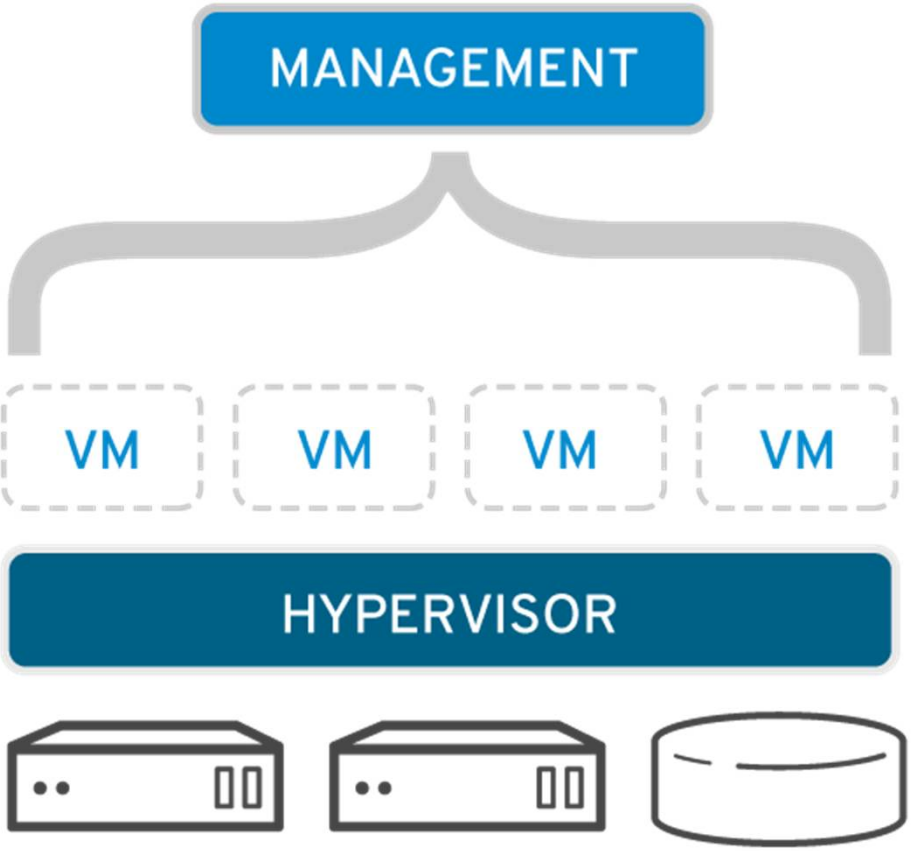
Virtualized Server Architecture

مزایا و دلایل حرکت به سمت مجازی سازی

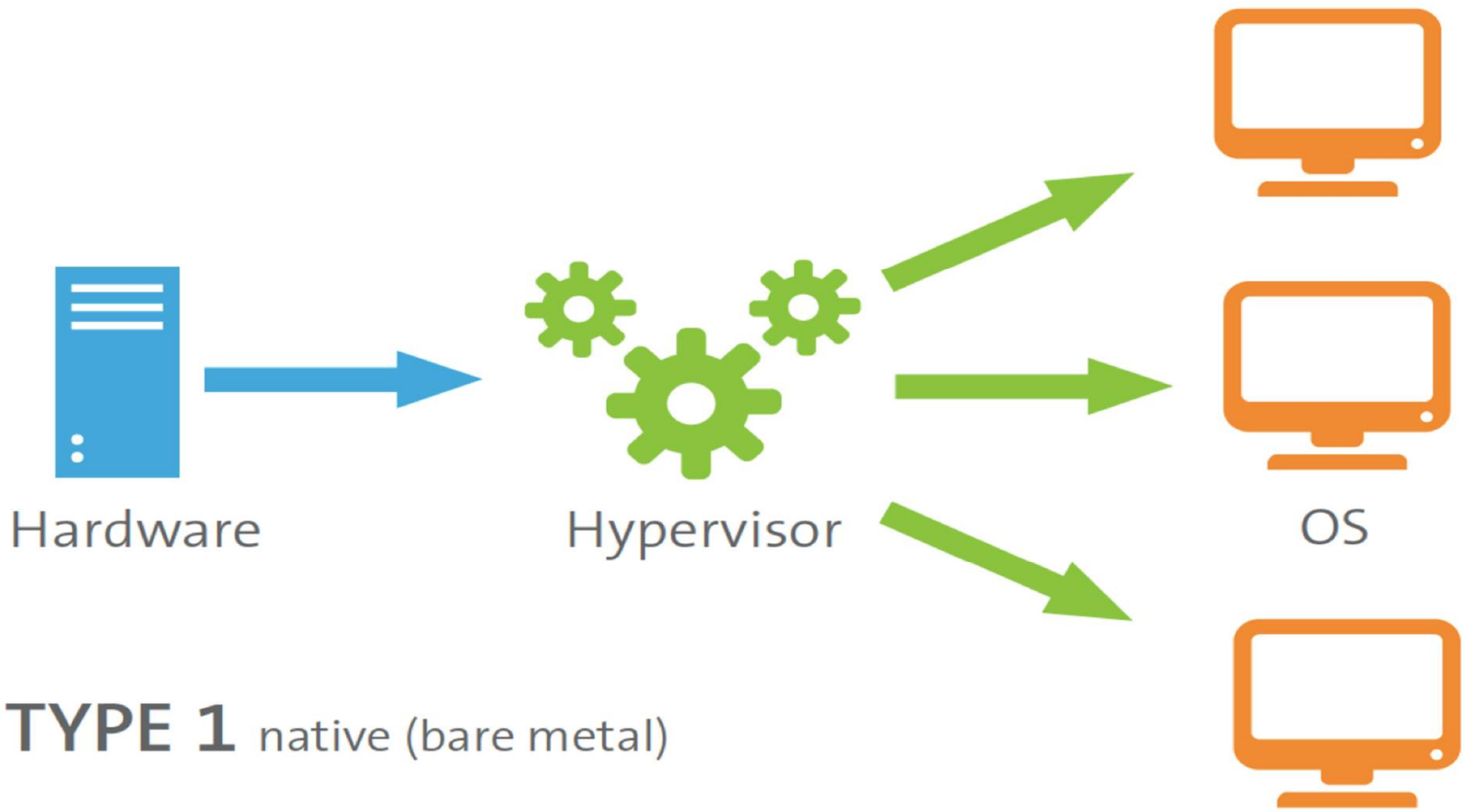
- ✓ تثبیت سرورها و صرفه جویی در انرژی
- ✓ مدیریت متمرکز و انجام کار بیشتر با تلاش کمتر
- ✓ کاهش هزینه های مالی
- ✓ نقل و انتقال سریع، پشتیبان‌گیری و بازیابی راحتتر
- ✓ سرویس‌دهی پایدار و تحمل‌پذیری خطا در زمان حادثه
- ✓ تعادل بار و یکسان سازی ظرفیت کاری
- ✓ محیط تست و آزمایشگاه مجازی
- ✓ رفع مشکلات ناسازگاری و بروز رسانی

Hypervisor چیست؟

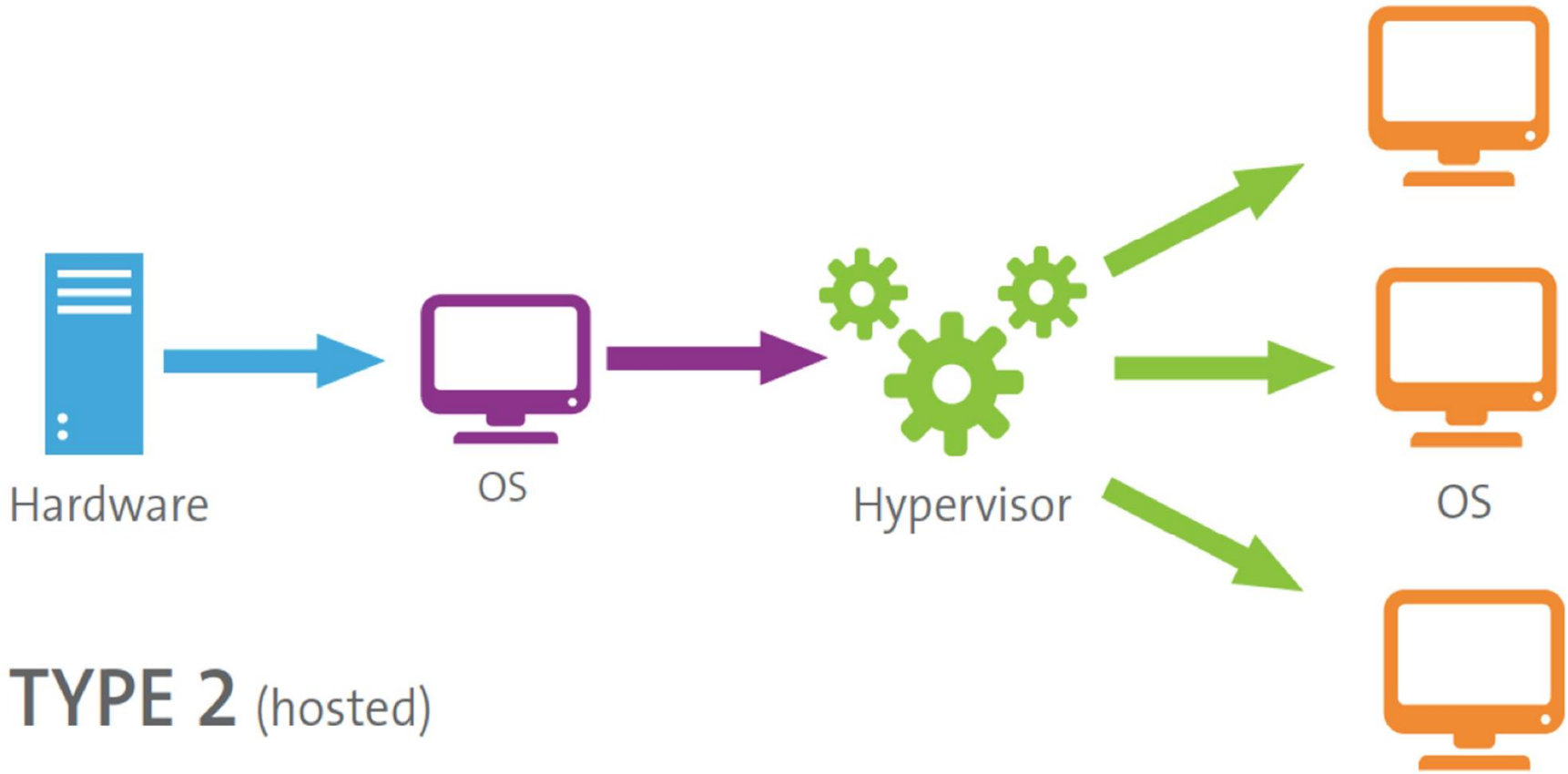
❖Hypervisor وظیفه دارد ماشین های مجازی را از دید یکدیگر پنهان نگه دارد. در این حالت هر ماشین مجازی تصور می کند تمام سخت افزار یا منابع لازم را در اختیار دارد.



Native Hypervisor

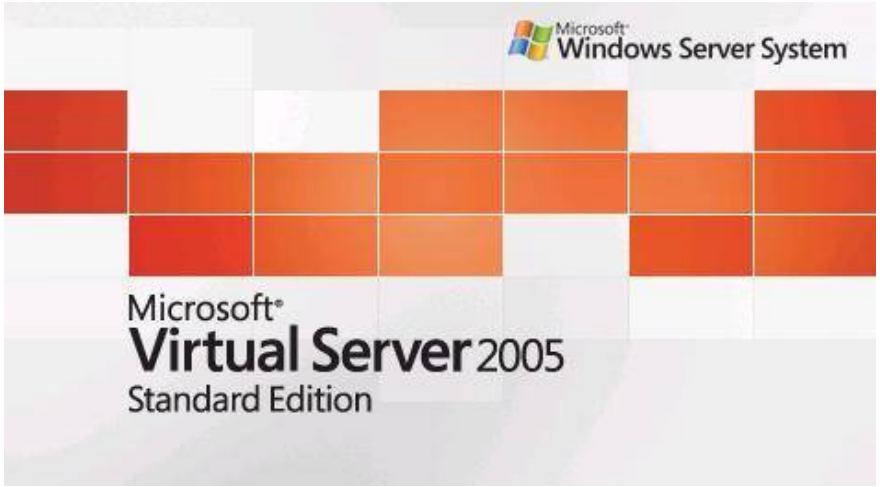


Hosted Hypervisor



مهمترین Hypervisorهای سطح یک

مهمترین Hypervisorهای سطح دو



رایج‌ترین انواع مجازی‌سازی

Desktop Virtualization

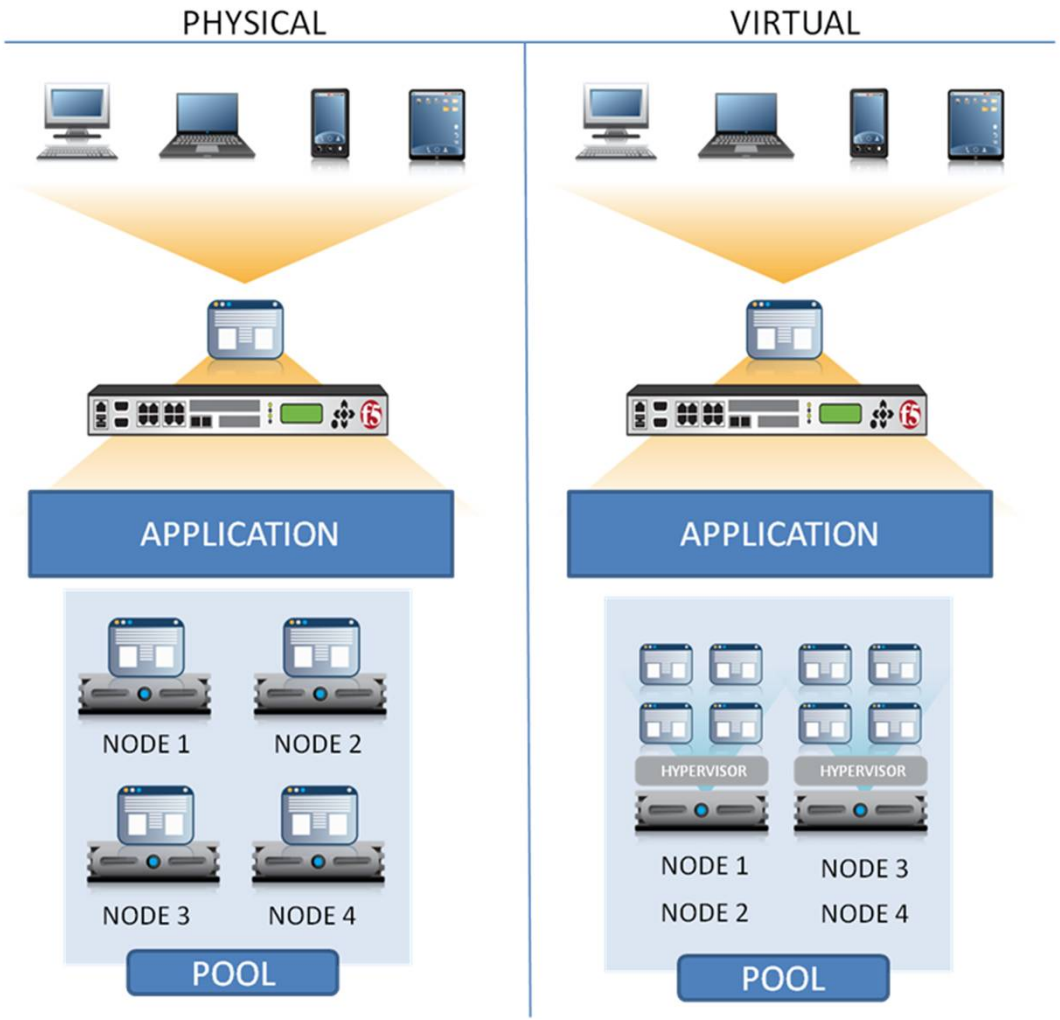
Server Virtualization

Storage Virtualization

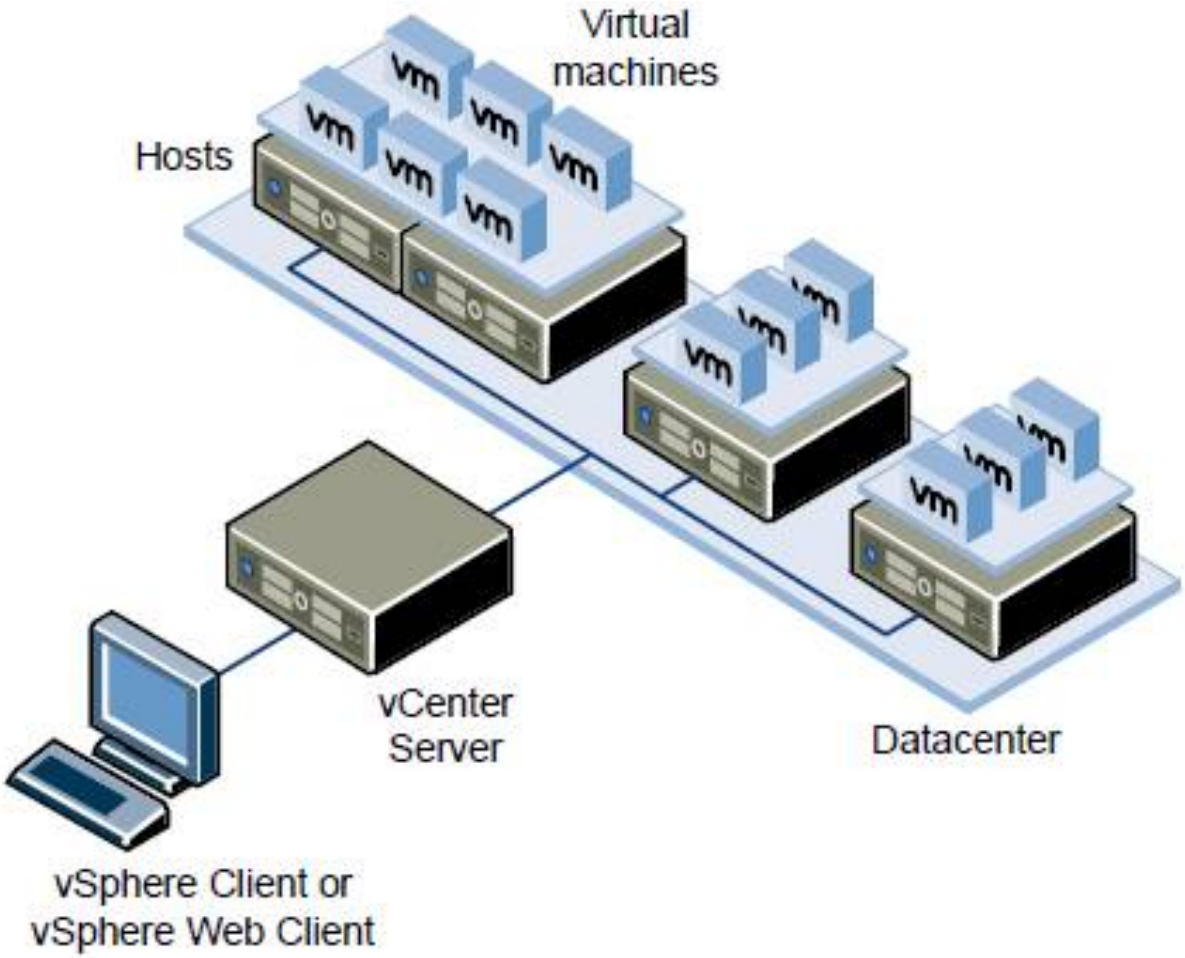
Network Virtualization

Application Virtualization

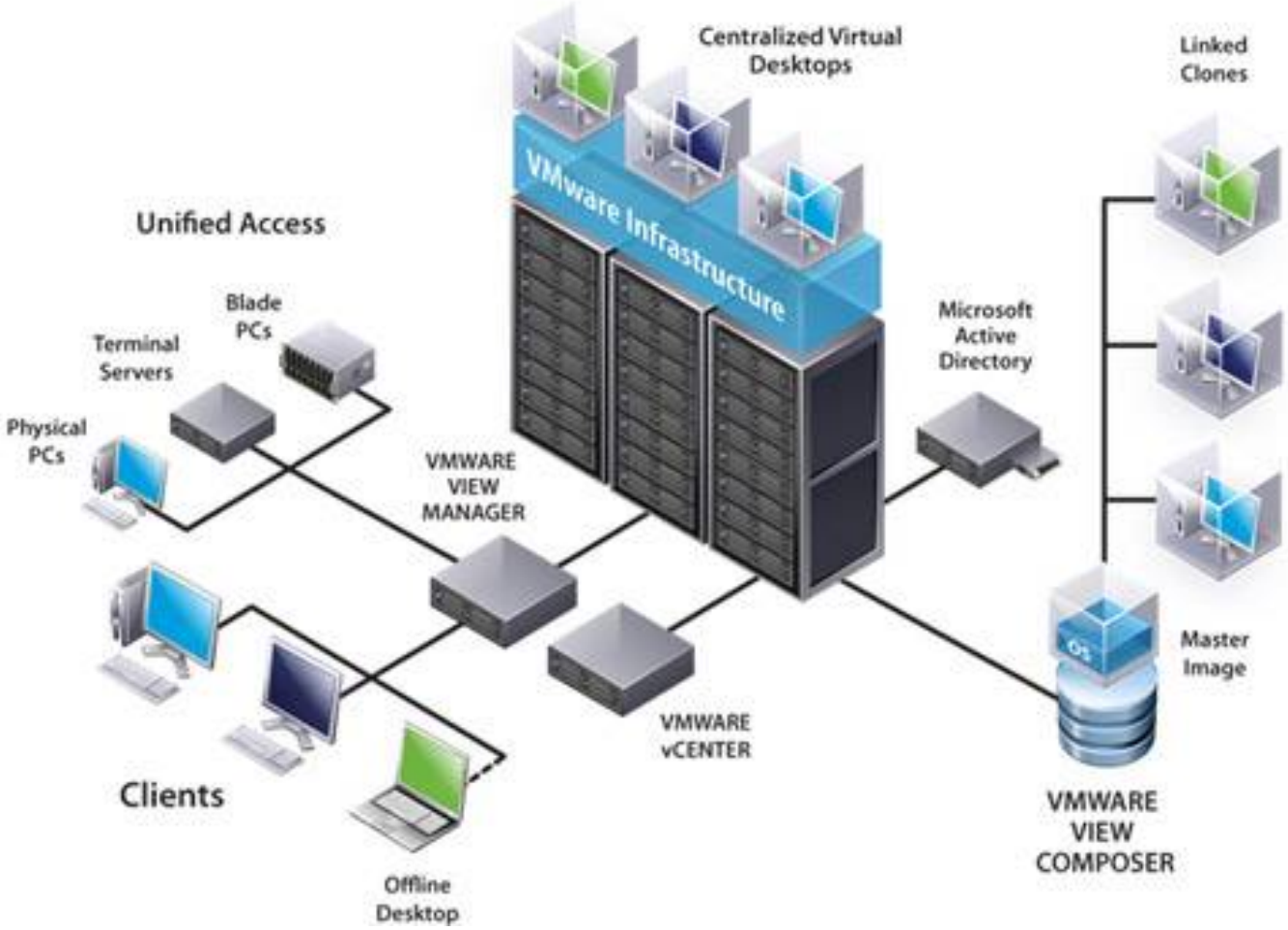
Server Virtualization



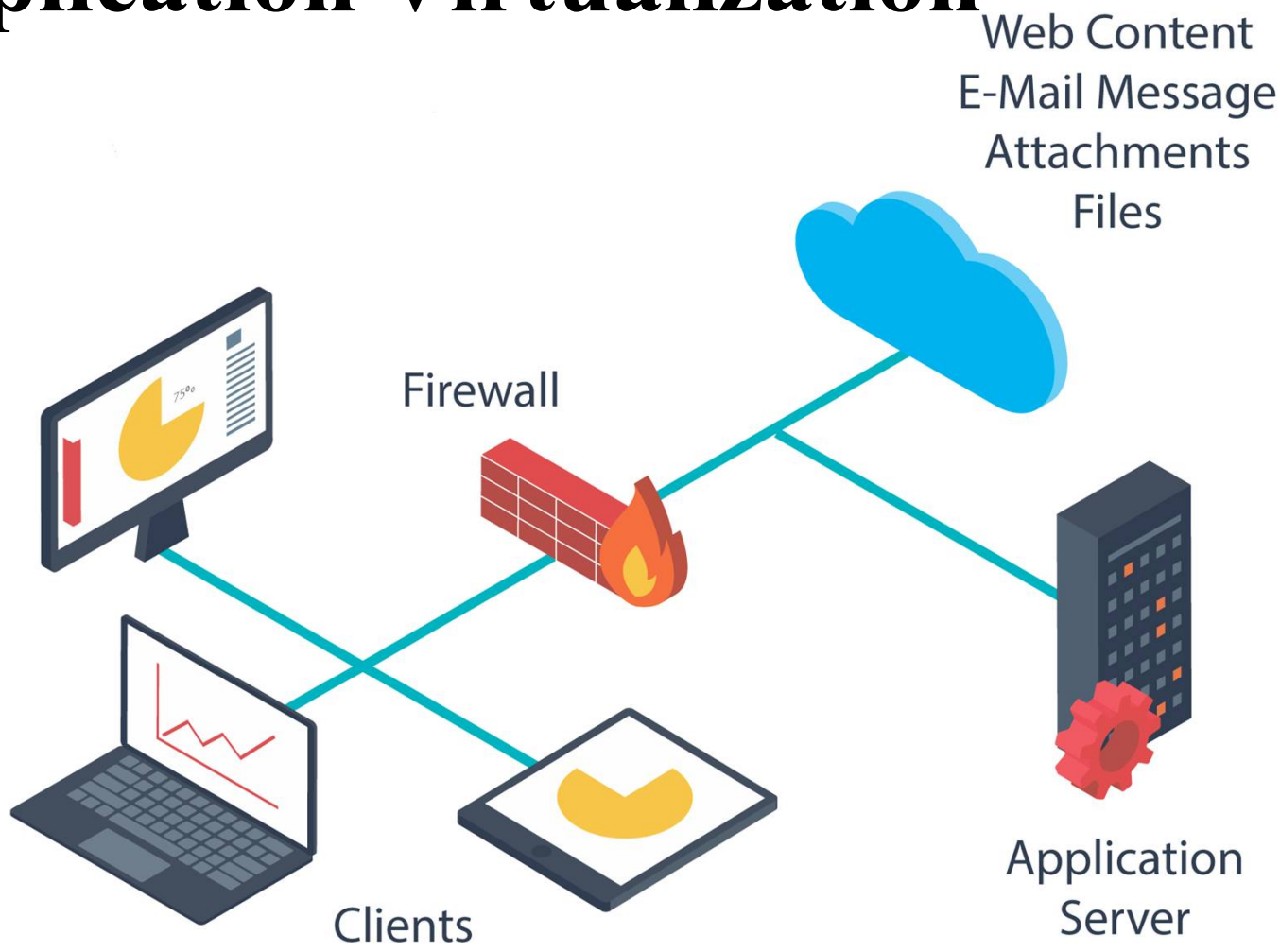
VMware vSphere



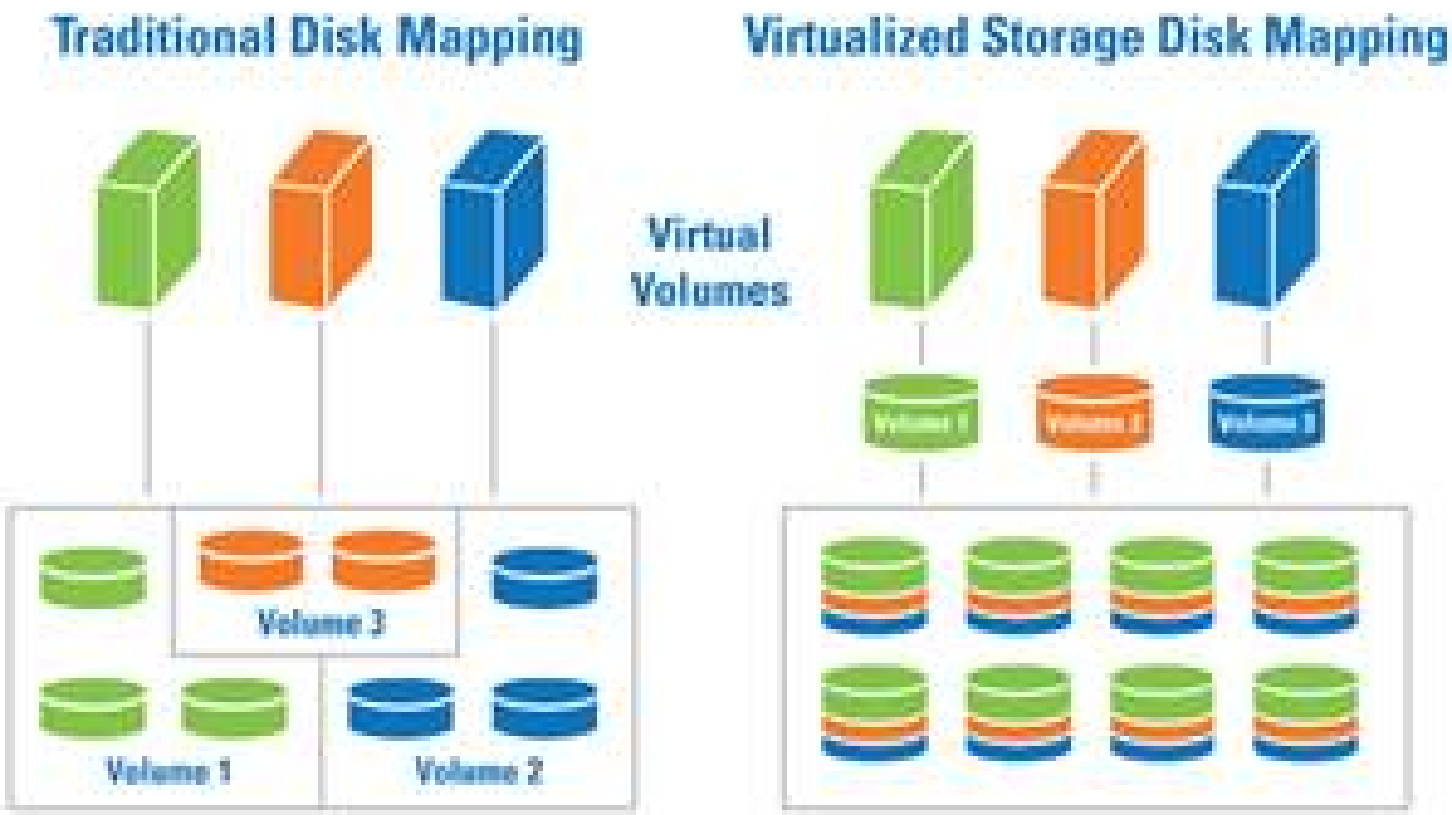
Desktop Virtualization



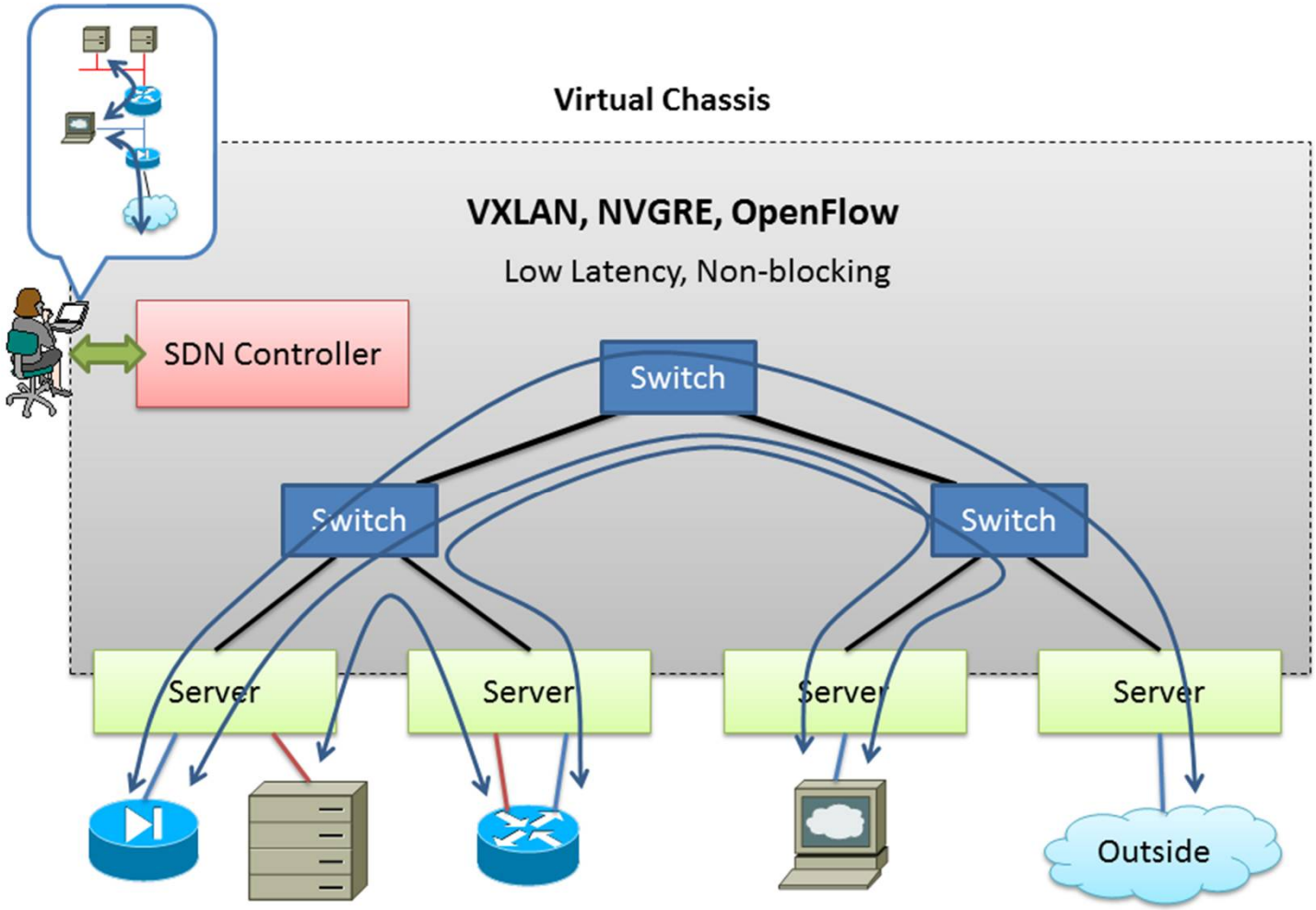
Application Virtualization



Storage Virtualization



Network Virtualization



معرفی قابلیت Cloud Hosted Router (CHR)

❖شرکت میکروتیک به تولید سیستم عامل روترها می پردازد.

Cloud Hosted Router

Cloud Hosted Router (CHR) is a RouterOS version intended for running as a virtual machine. It supports the x86 64-bit architecture and can be used on most of the popular hypervisors such as VMWare, Hyper-V, VirtualBox, KVM and others. CHR has full RouterOS features enabled by default but has a different licensing model than other RouterOS versions.

System Requirements

Minimal requirements:

- RouterOS version 6.34 or later installed
- 64bit CPU with virtualization support
- 128 MB or more RAM for the CHR instance
- 128 MB disk space for the CHR virtual hard drive
  - Maximum supported system disk image size is 16GB

Note: Minimal requirement is 128MB of RAM to complete the self-installation process.

CHR has been tested on the following platforms:

- VirtualBox 5 on Linux and OS X
- VMWare Fusion 7 and 8 on OS X
- VMWare ESXi 6.5
- Qemu 2.4.0.1 on Linux and OS X
- Hyper-V on Windows Server 2008r2, 2012 and Windows 10 *(Only Generation 1 Hyper-V virtual machine is supported at the moment)*
- Xen Project 4.6.5
- Xen Server 7.1

How to Install CHR

We provide 4 different virtual disk images to choose from. Note that they are only disk images, and you can't simply run them.

- RAW disk image (.img file)
- VMWare disk image (.vmdk file)
- Hyper-V disk image (.vhdx file)
- VirtualBox disk image (.vdi file)

Steps to install CHR

1. Download virtual disk image for your hypervisor
2. Create a guest virtual machine
3. Use previously downloaded image file as a virtual disk drive
4. Start the guest CHR virtual machine
5. Log in to your new CHR. Default user is 'admin', without password

License	Speed limit	Price
Free	1Mbit	FREE
P1	1Gbit	$45
P10	10Gbit	$95
P-Unlimited	Unlimited	$250

MikroTik

Home About Buy Jobs Hardware Software Support Training Account

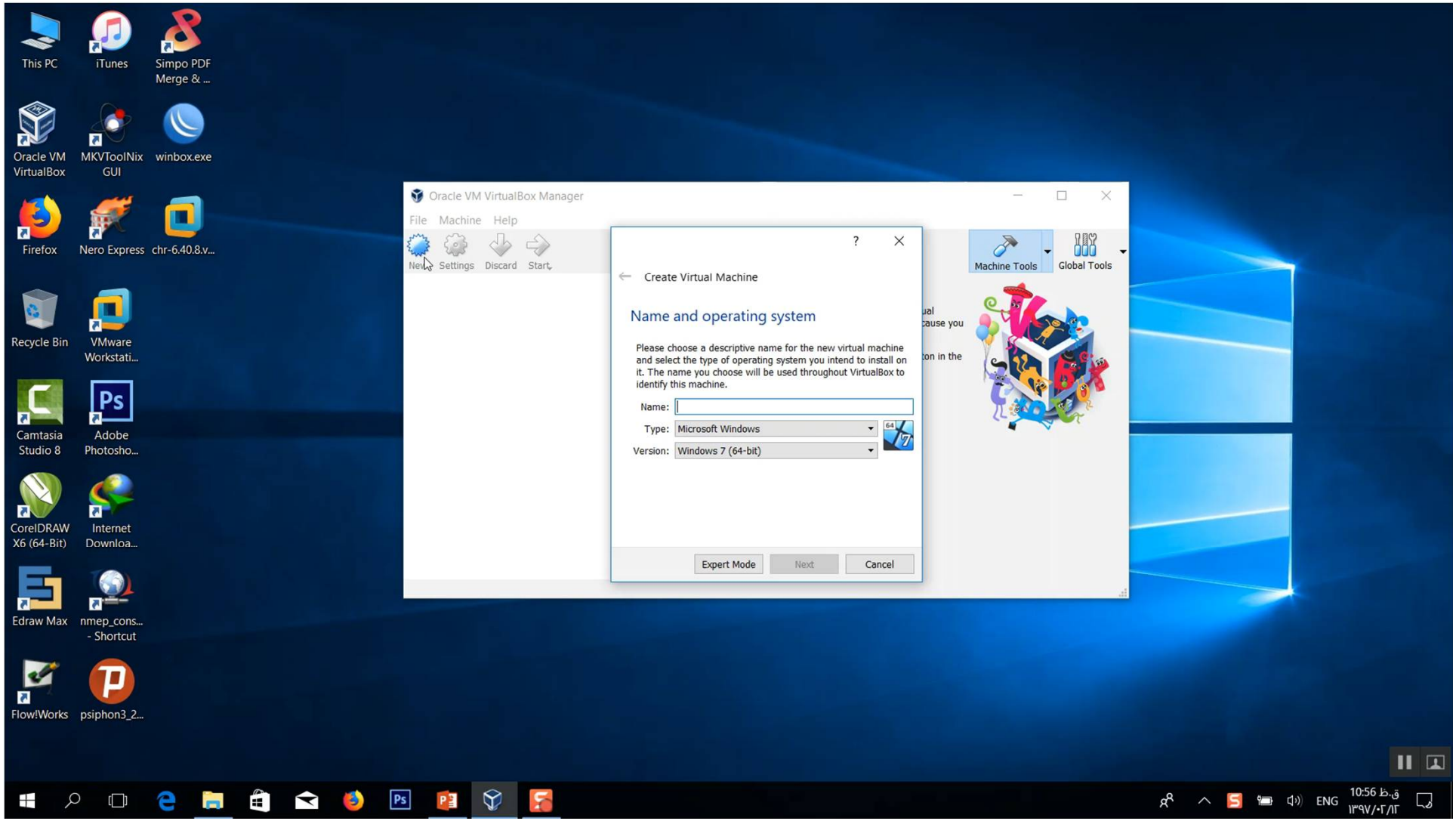
Software

Downloads Changelogs Download archive RouterOS The Dude

Cloud Hosted Router

	6.40.8 (Bugfix only)	6.42.1 (Current)	5.26 (Legacy)	6.43rc5 (Release candidate)
Images	vmdk, vhdx, vdi, ova, img			
VHDX image			-	
VMDK image			-	
VDI image			-	
OVA template			-	
Raw disk image			-	
Extra packages			-	
The Dude server			-	
The Dude client			-	
Changelog			-	
Checksum			-	

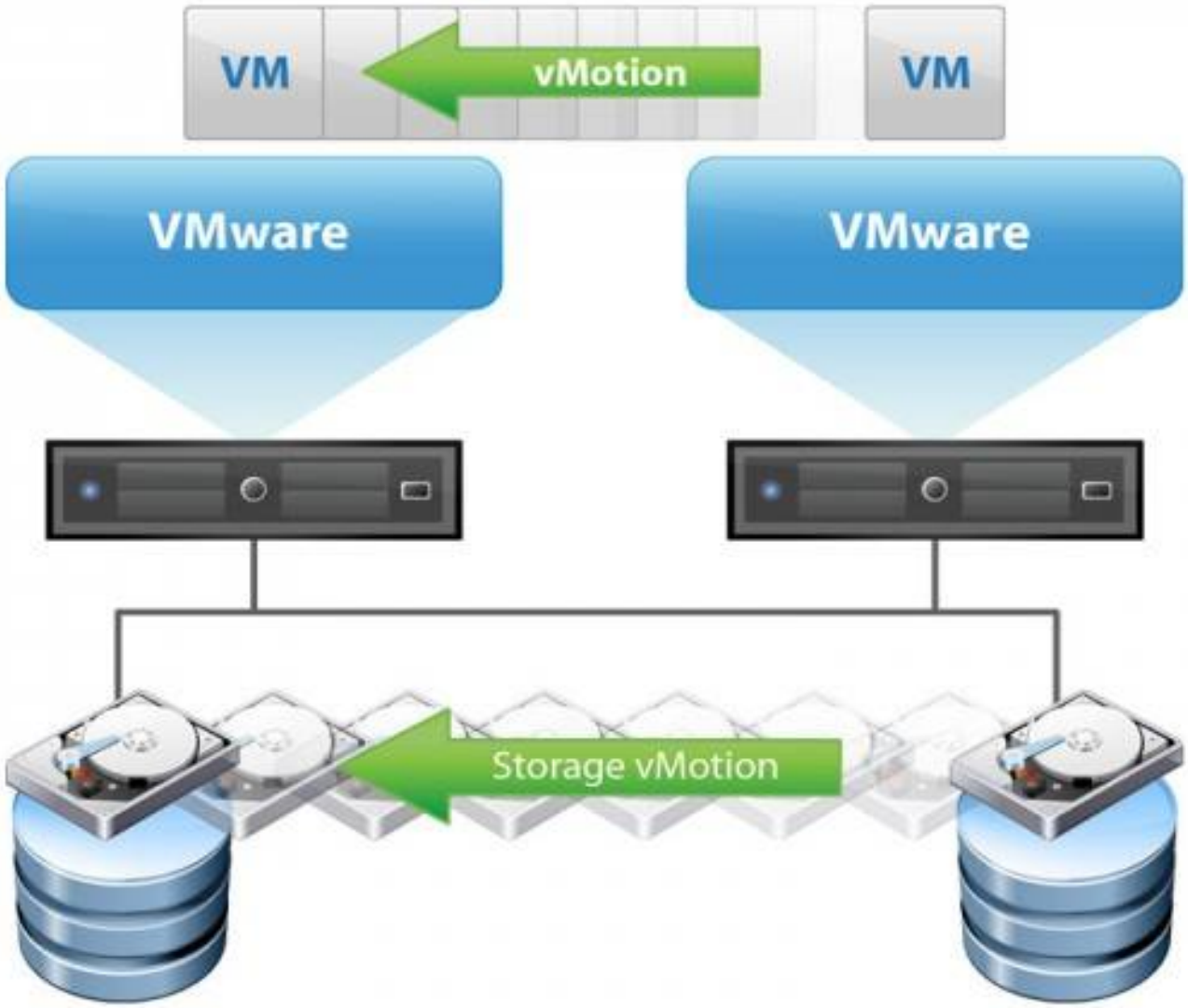
Cloud Hosted Router (CHR) قابلیت



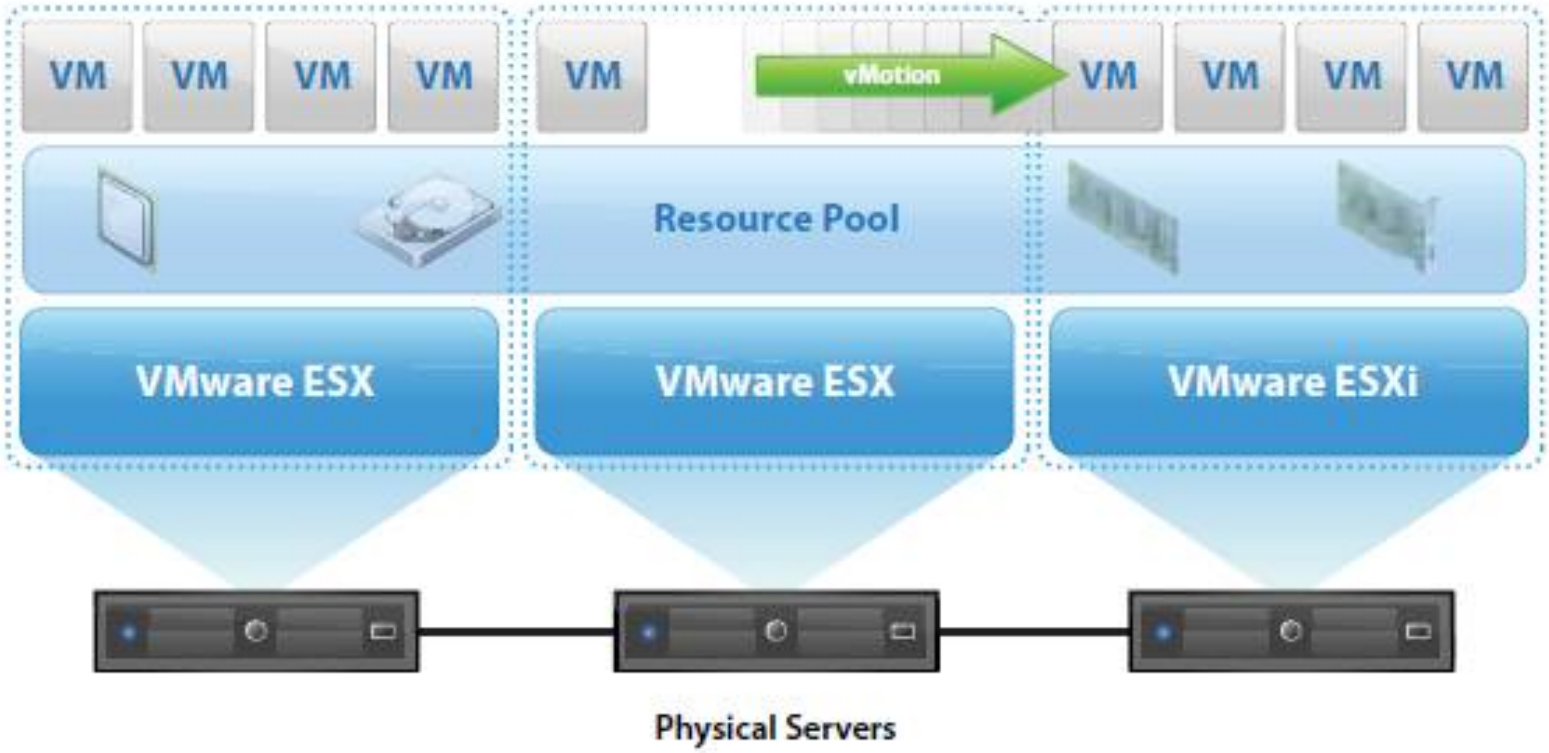
سرویس‌های توزیع شده

- سرویس vMotion و vMotion Storage
- سرویس DRS
- سرویس HA
- سرویس FT

سرویس vMotion و vMotion Storage

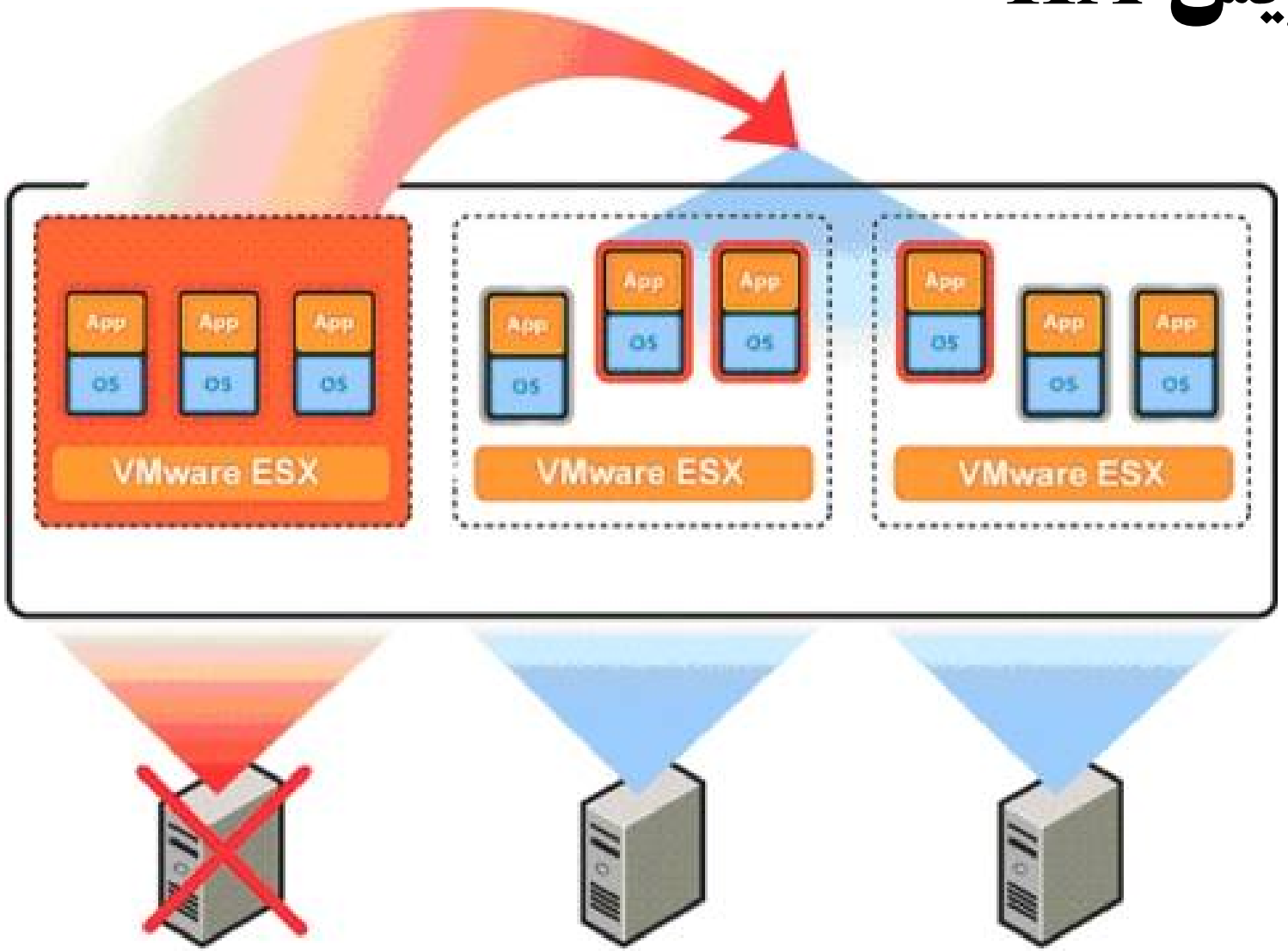


سرویس DRS

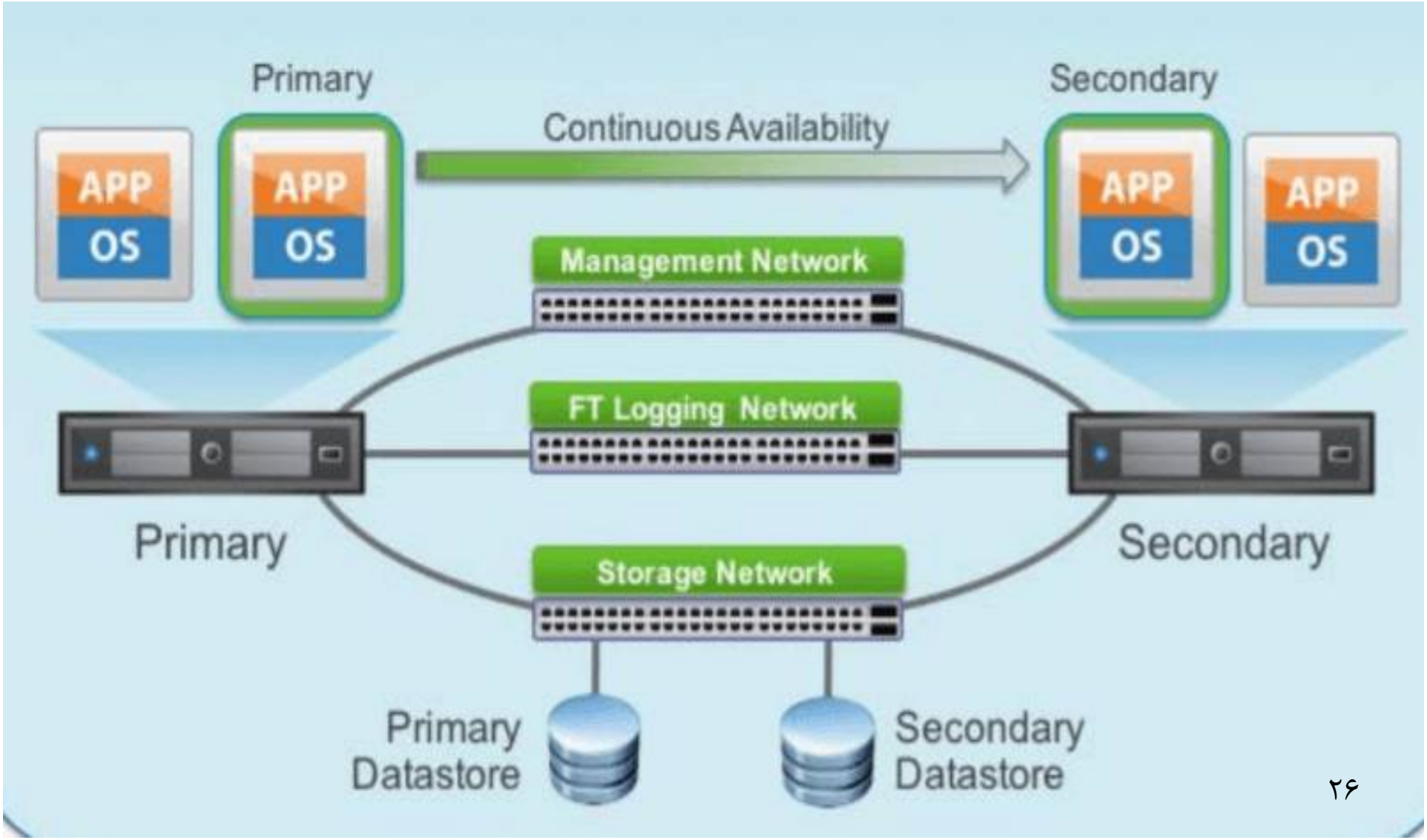


VMware DRS automatically and intelligently balances resources among virtual machines.

سرویس HA



سرویس FT


Primary
Secondary
Continuous Availability
APP
OS
APP
OS
APP
OS
APP
OS
Management Network
FT Logging Network
Storage Network
Primary
Secondary
Primary Datastore
Secondary Datastore

Thanks for listening!
Any questions?