



Foundational Concepts

Virtual Machines

Disks and Storage

Inside the VM

Scaling and High Availability

Networking

Security

Monitoring

Troubleshooting and Support

Cost Management

Managed Disks

Virtual Machines

Overview

What you need to think about to be successful

How to deploy Windows and Linux VMs

- Azure Portal
- Programmatically (PowerShell and Azure CLI v2.0)

How to connect to your VMs

- RDP
- PowerShell
- SSH

Which Model is Best For Your Workload?

PaaS (App Service)

Higher agility

Higher ease of management

Lower degree of control

Lower support for legacy apps

IaaS (Virtual Machines)

Higher degree of control

Higher support for legacy apps

Lower ease of management

Lower agility

Things to Keep in Mind Regarding Azure VMs

Unless the VM is deallocated, it still incurs charge

Related assets are charged separately

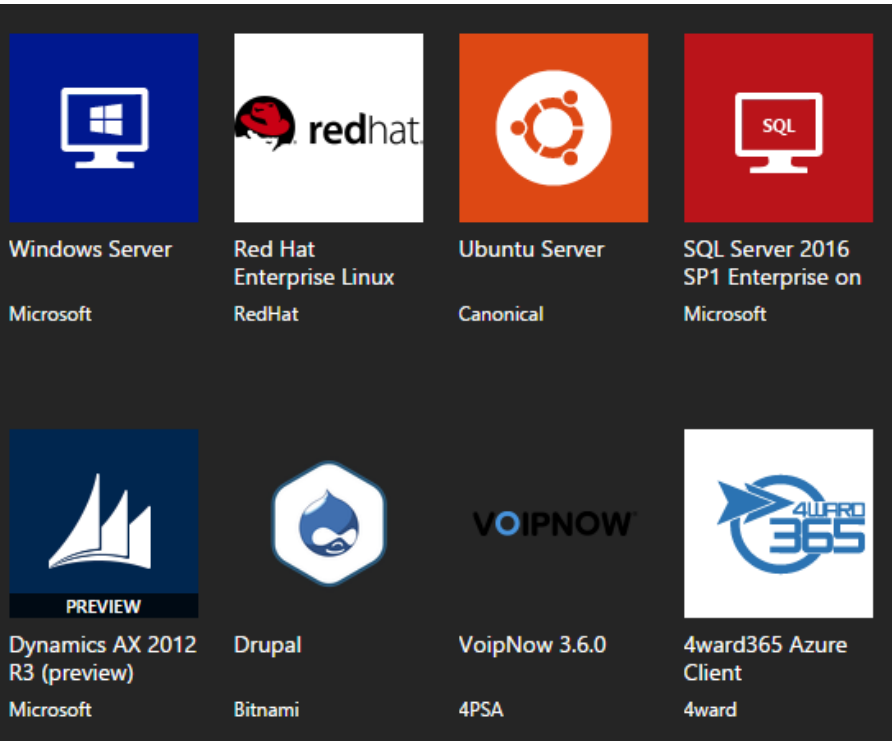
You can't connect to VMs in other virtual networks

Deleting the VM doesn't delete the VHD

You can't connect without an NSG rule

DNS names require creativity and should be standardized

VM Instance Types and Sizes








VM marketplace

- License may be included or BYOL

You can capture and upload your own custom VM images as well

You can scale your VM instance size up or down to suit your workloads

VM Instance Types and Sizes

DS2_V2 Standard ★	
2	Cores
7	GB
 4	Data disks
 6400	Max IOPS
 14 GB	Local SSD
	Load balancing
	Premium disk support
108.62	
USD/MONTH (ESTIMATED)	

VM marketplace

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You can capture and upload your own custom VM images as well

You can scale your VM instance size up or down to suit your workloads

VM Instance Disks

Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type *

Encryption type *

Enable Ultra Disk compatibility

Data disks

You can add and configure additional data disks. You can also attach the temporary disk.

LUN	Name
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[Create and attach a new disk](#)

[Attach an existing disk](#)

Review + create

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Premium SSD (locally-redundant storage)

Locally-redundant storage (data is replicated within a single datacenter)

Premium SSD

Best for production and performance sensitive workloads

Standard SSD

Best for web servers, lightly used enterprise applications and dev/test

Standard HDD

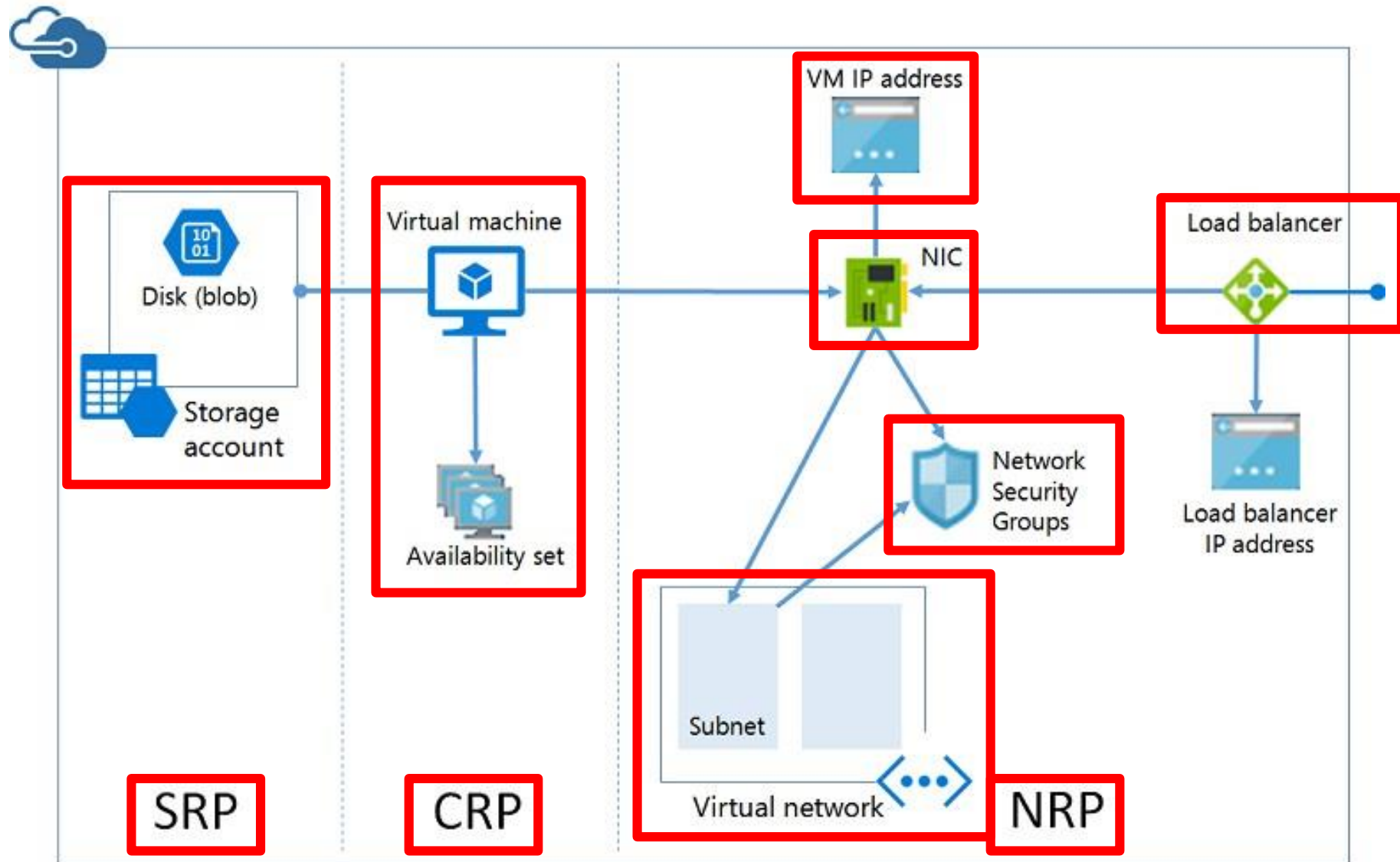
Best for backup, non-critical, and infrequent access

Ultra Disk

Best for IO-intensive workloads such as SAP HANA, top tier databases (for example, SQL, Oracle), and other transaction-heavy workloads

How to Deploy Azure Virtual Machines

Virtual Machine Resources



How to Connect to Your Azure VMs

Connect to Your Windows Server VMs

RDP

TCP 3389

Relies upon the NSG

PowerShell

TCP 5985/5986

Remember TrustedHosts

Connect to Your Linux VMs

Secure Shell (SSH)

Industry standard,
secure remote access
protocol

Authentication

Password or keys

RDP

Install a desktop
environment, RDP
server, and create an
NSG rule

Demo



1

Show VM sizes page on public site

Show VM pricing page (mention costs for other related resources)

Go to an existing VM in the portal and show how to scale up or down instance size

- Mention that you may not be able to scale down

Demo



2

Have the storage account, Vnet, and NSG already created

- Mention we'll circle back to that

Create Windows VM through portal

- Save the template

Create Linux VM with PowerShell

Create second Windows VM with Azure CLI v2.0

Demo



3

Verify NSG allows RDP

Add entry in Trusted Hosts on admin workstation

Use Git SSH environment for SSH

Remind that you can use key-based auth as well

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-portal>

Summary



Ask yourself if IaaS is the best deployment vehicle for your workload

Be mindful of where the cost centers lie

The Windows vs. Linux distinction isn't as important as you might have thought

Next module: [Disks and Storage](#)