

# Managing Azure IaaS with PowerShell

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INTRODUCING IAAS AND AZURE POWERSHELL

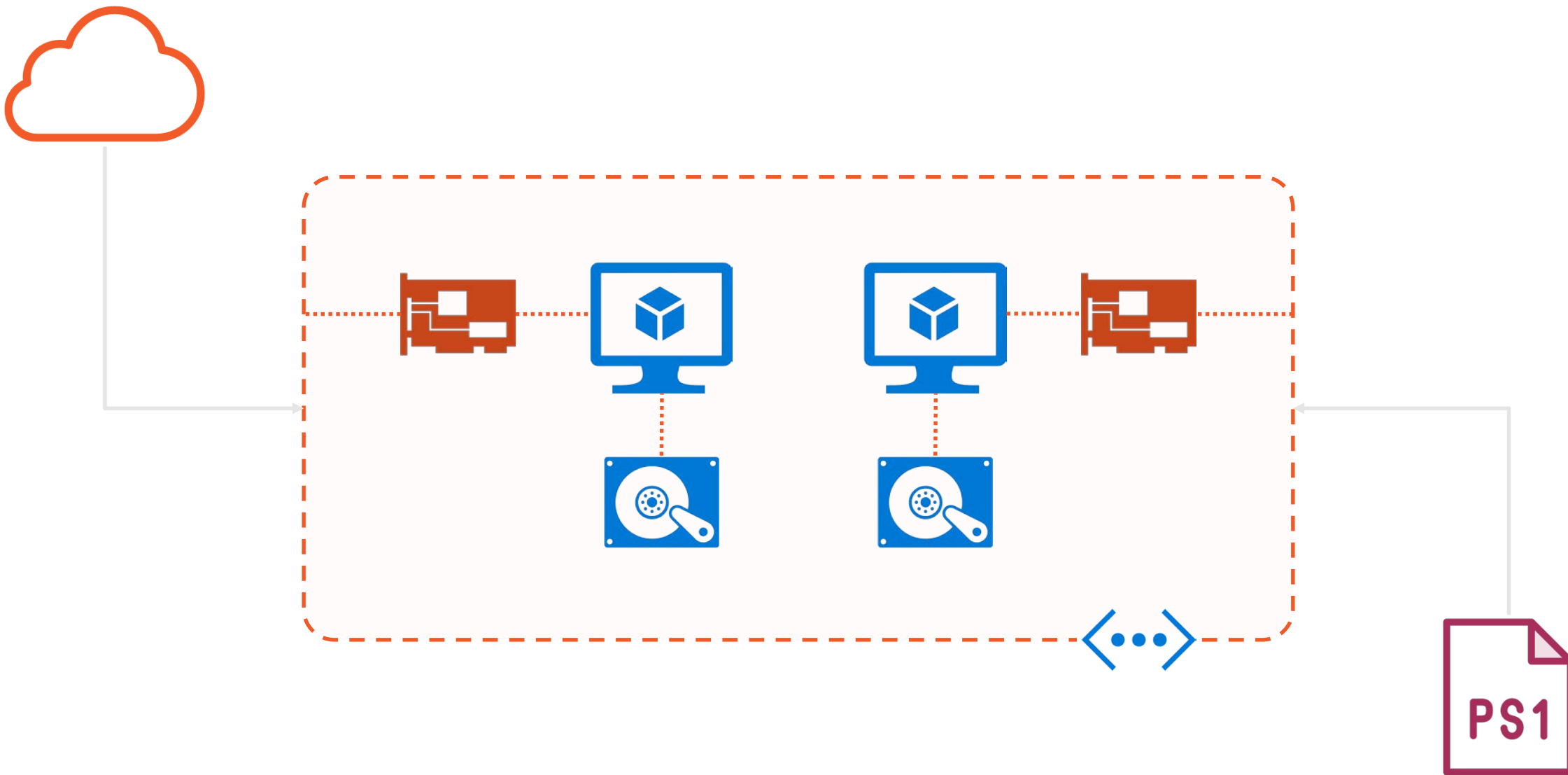


**Elton Stoneman**

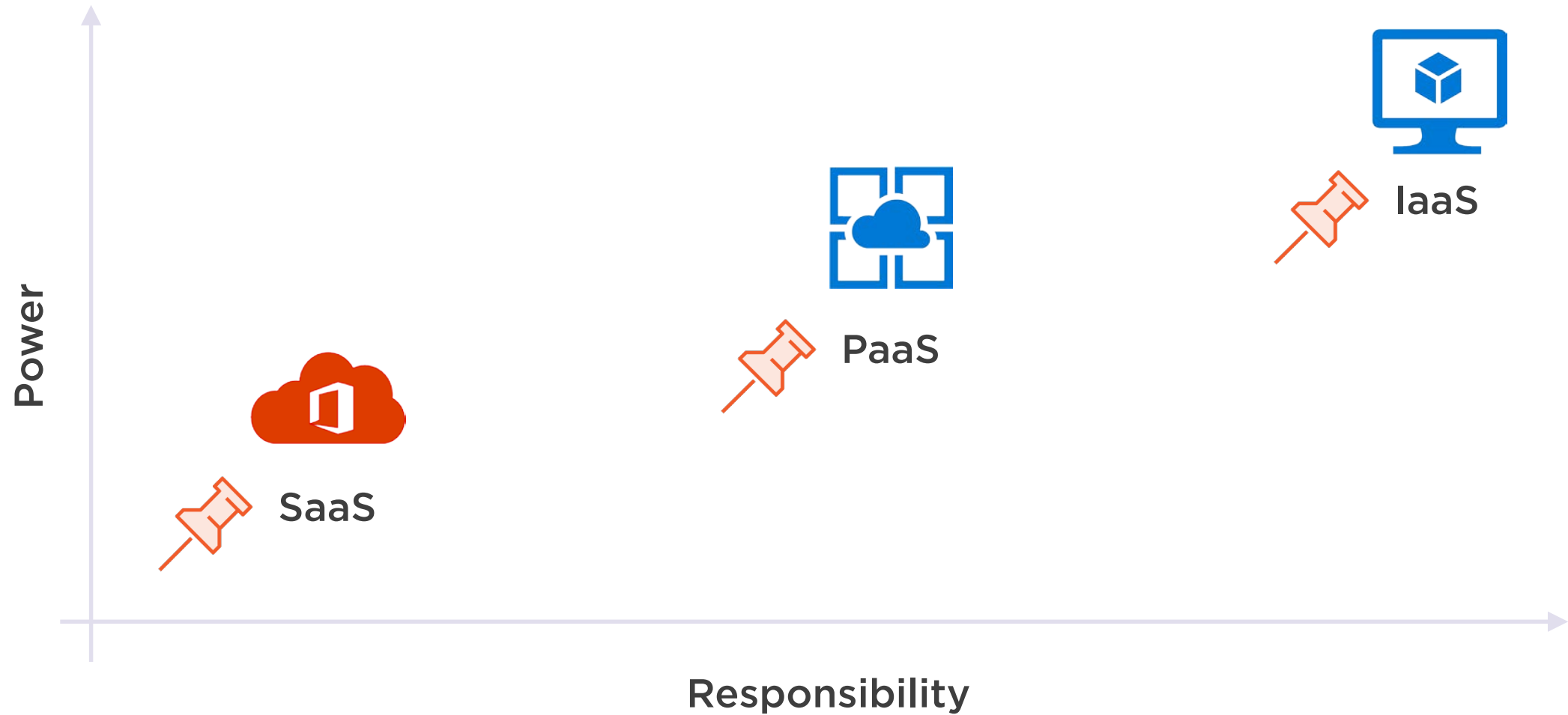
SOFTWARE ARCHITECT

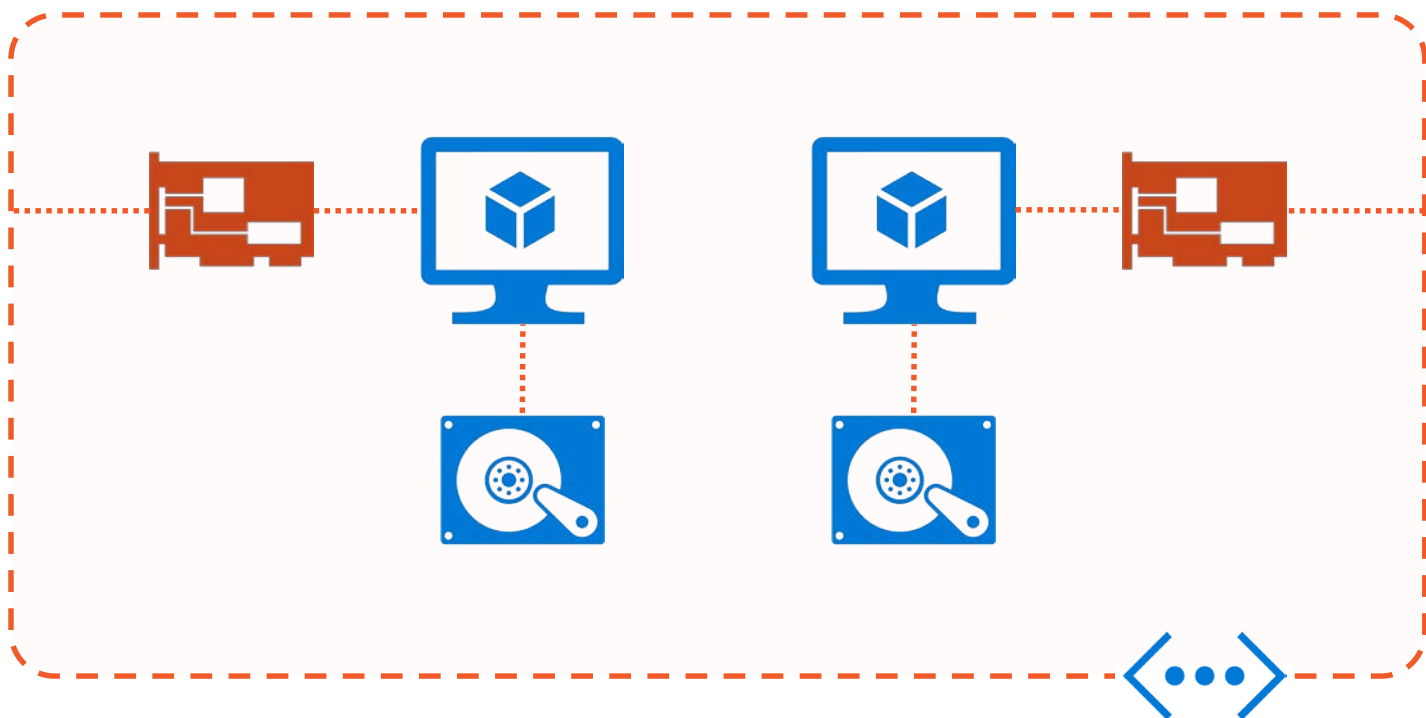
@EltonStoneman    [blog.sixeyed.com](http://blog.sixeyed.com)

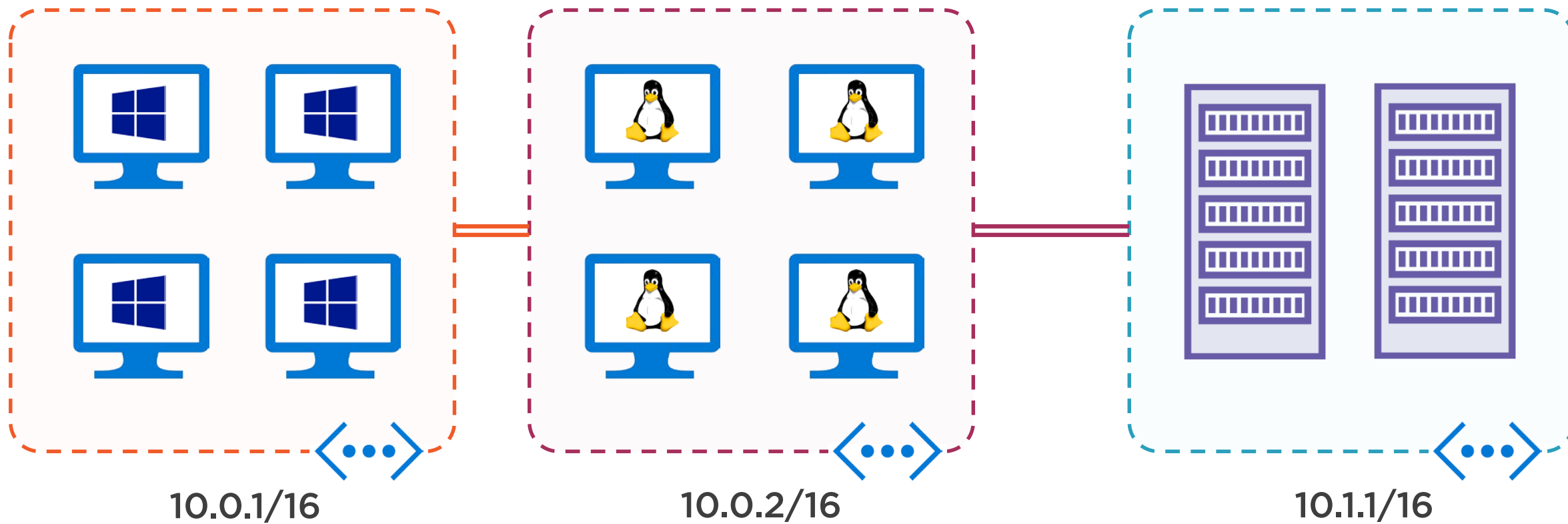


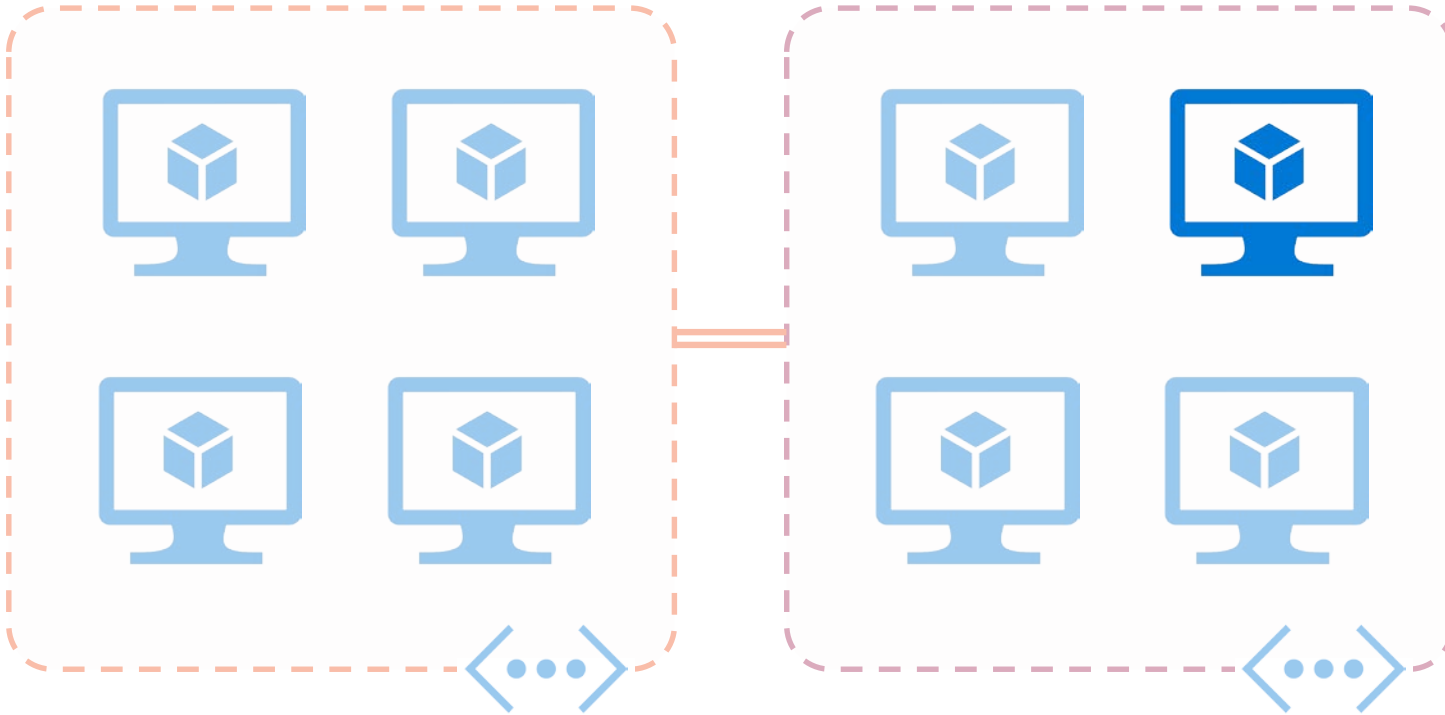


# Power & Responsibility in the Cloud









### VM SLA

99.95% uptime

\*With caveats

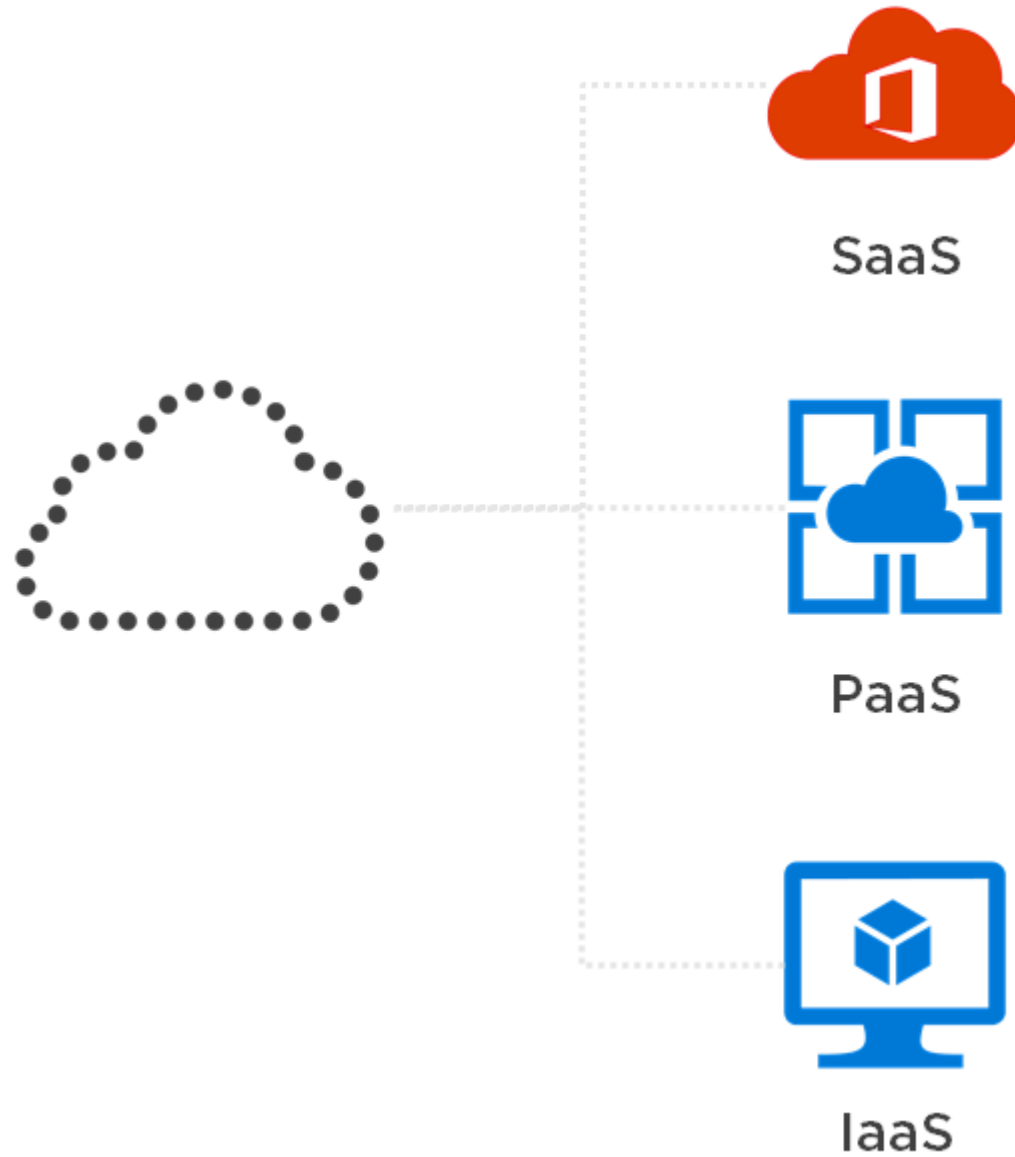


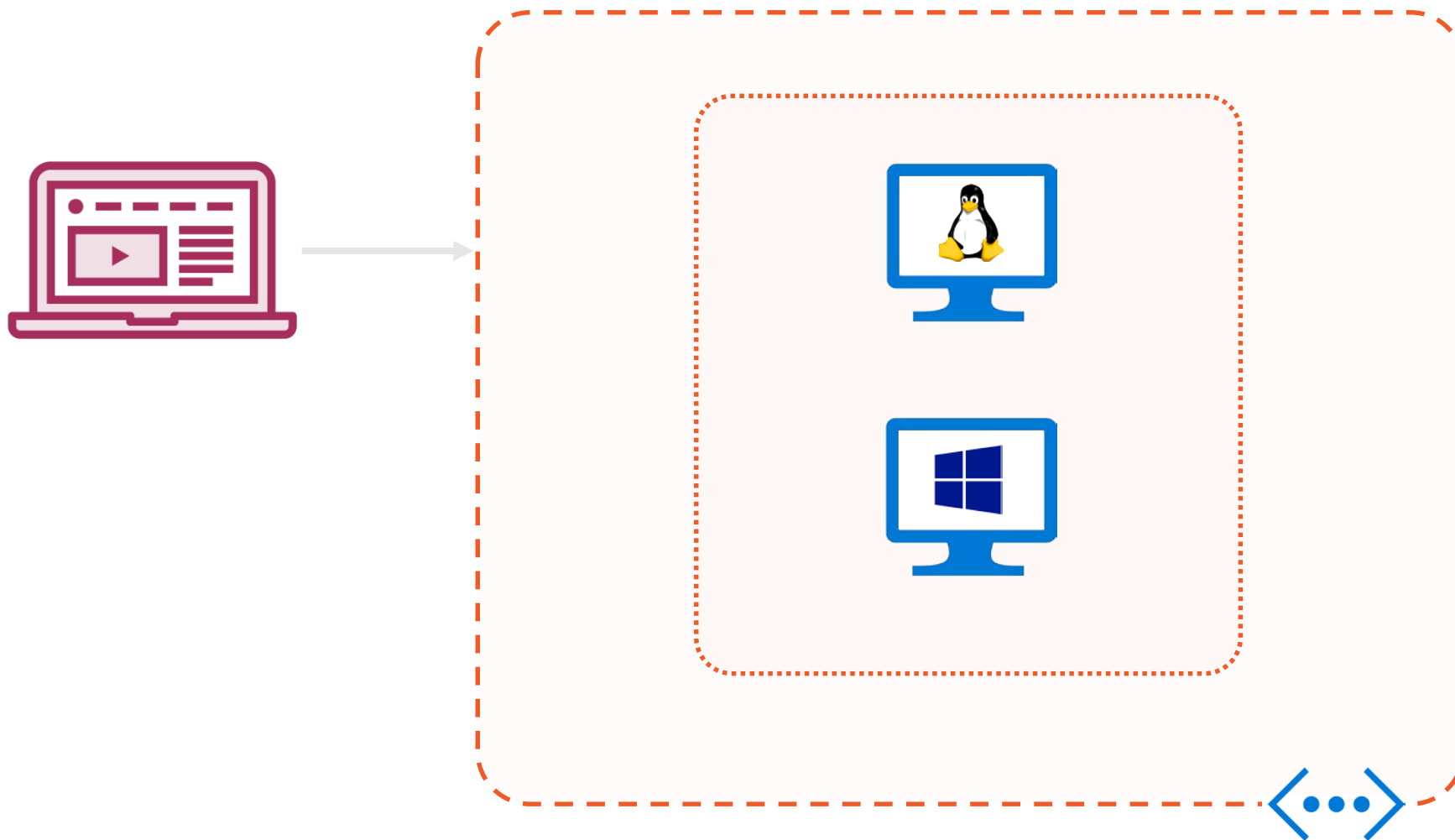


IaaS

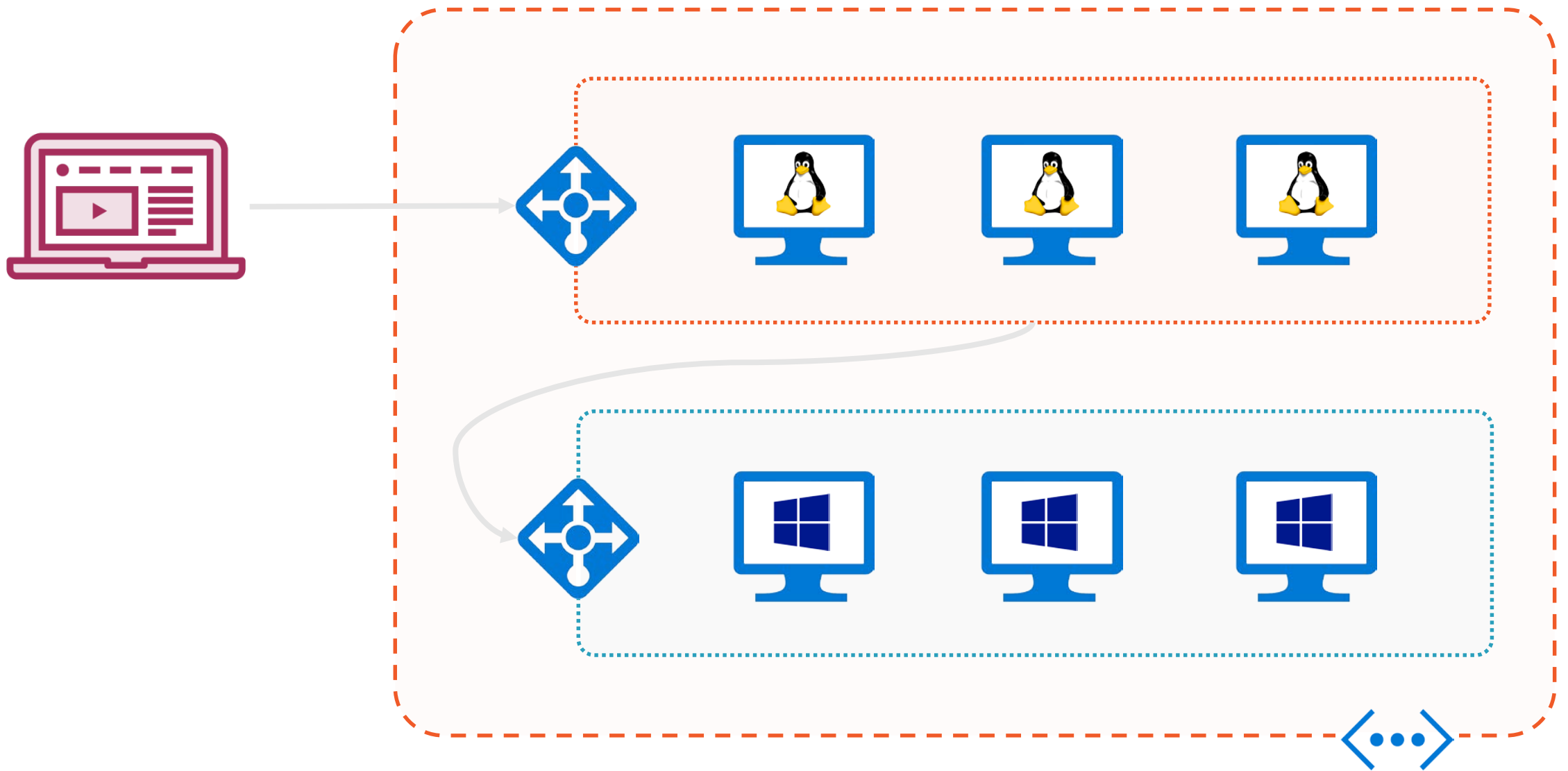
Azure

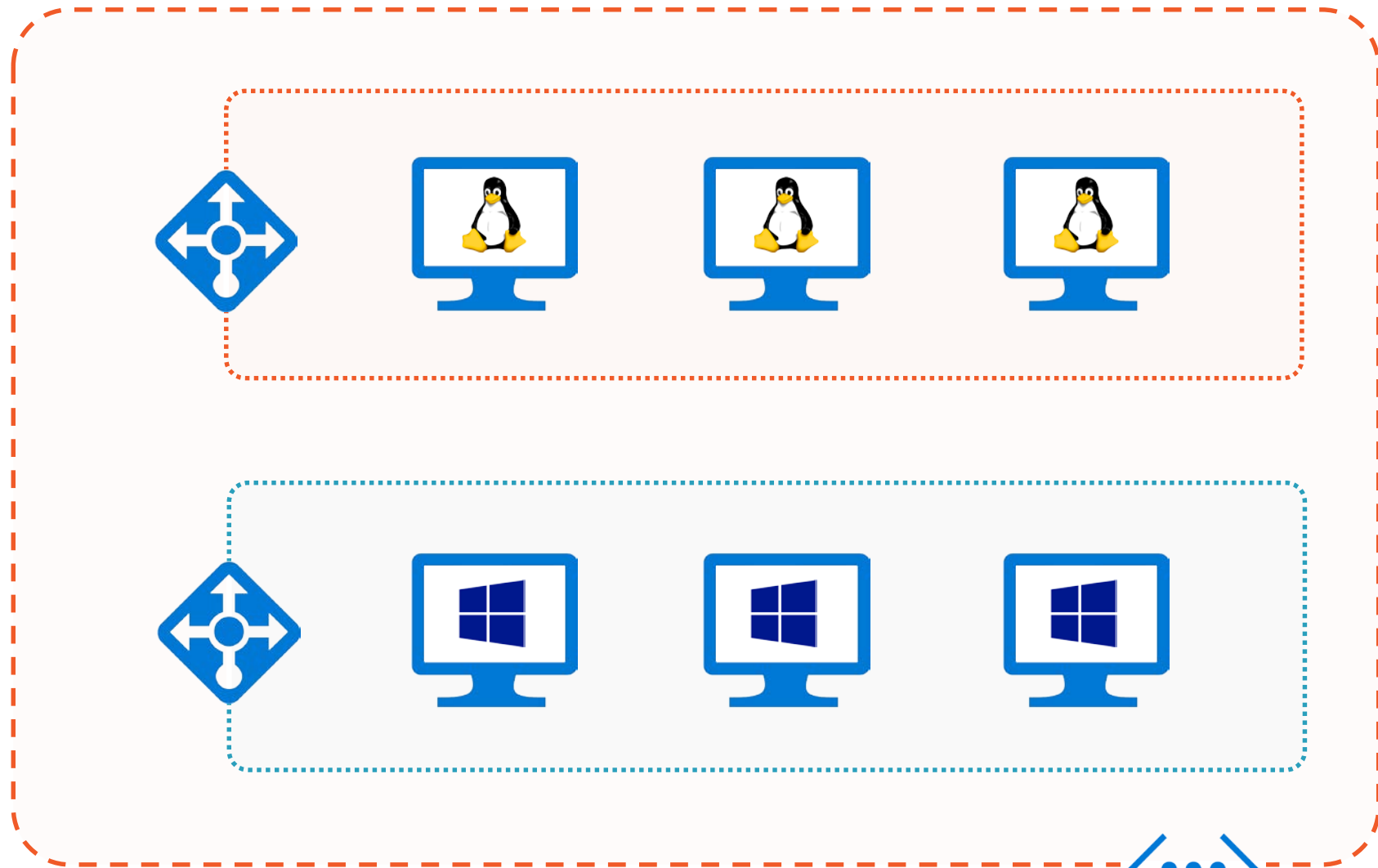
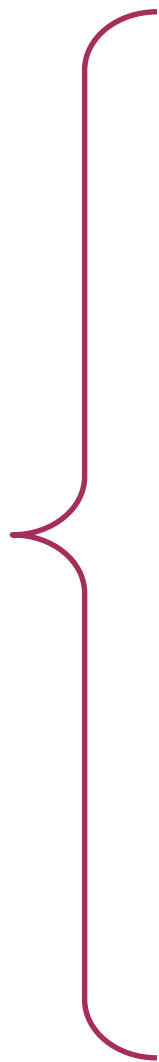
PowerShell











# Course Goals



YOU MIGHT KNOW

**A little PowerShell**

**Basics of Azure**



YOU DON'T NEED

**NGINX**

**ASP.NET 5**



YOU'LL LEARN

**Azure PowerShell**

**ARM & IaaS**



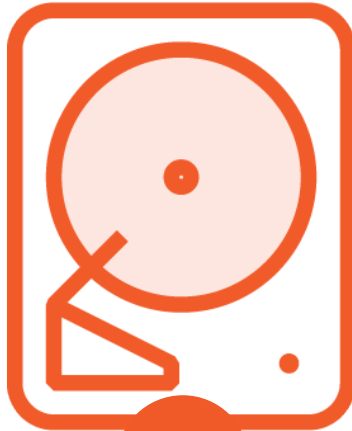
# Course Outline



1

Setup PowerShell

Create VMs



2

Custom Images

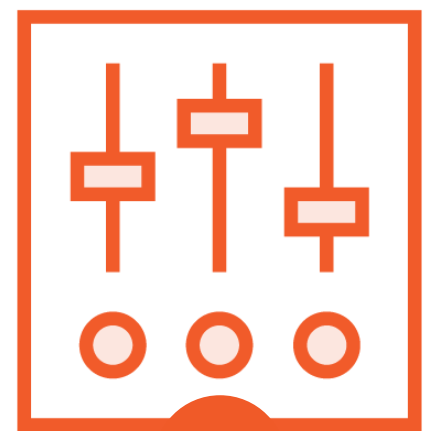
Load Balancers



3

ARM Templates

PowerShell DSC



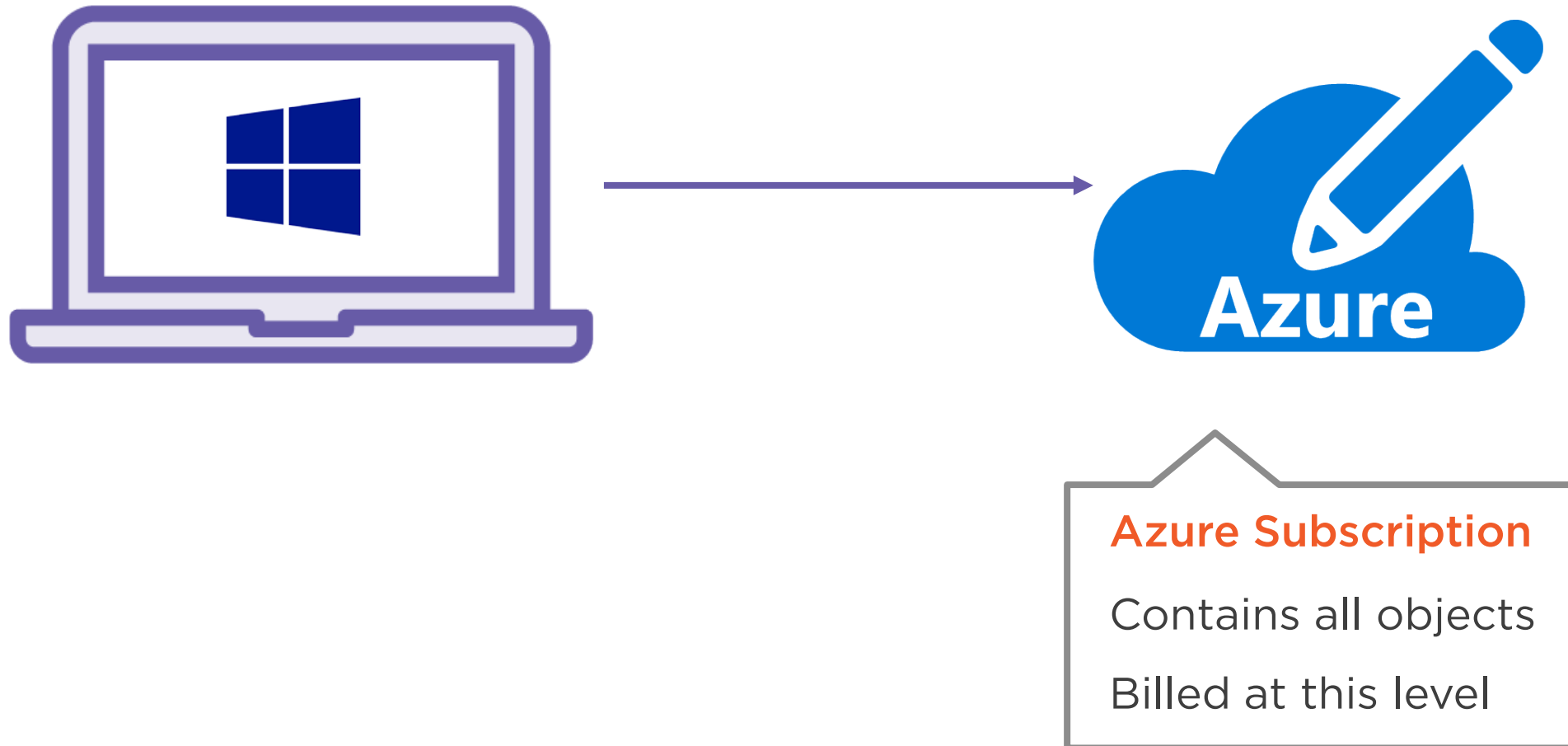
4

Administering VMs

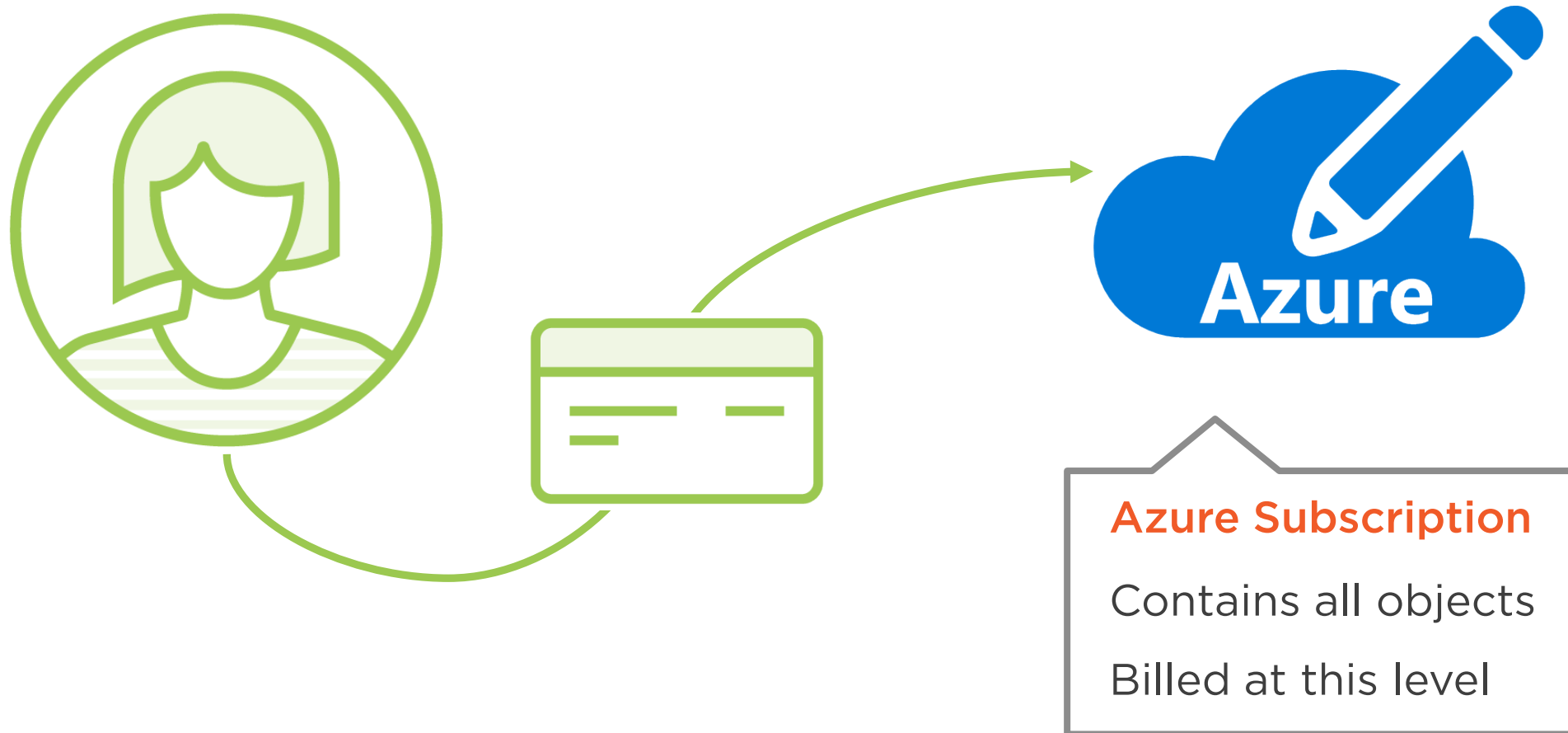
Scaling Up & Down



# Pre-Requisites



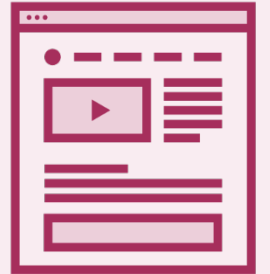
# Pre-Requisites



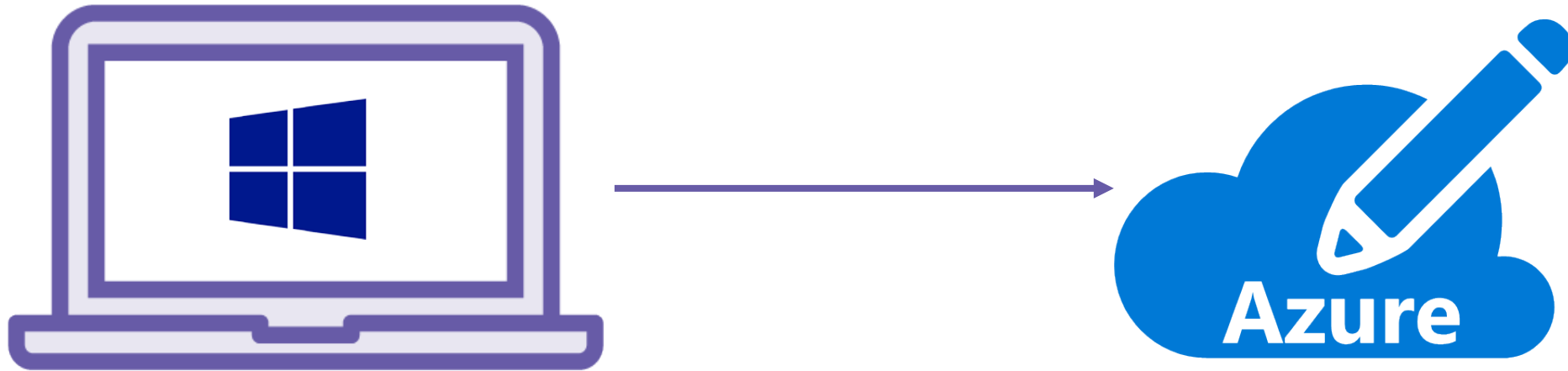
Integration

Test

Production



# Pre-Requisites



## PowerShell client

Windows OS

PS version 3+

## PowerShellGet

Public Package Gallery

<http://is.gd/S7OCgi>





# Demo



## Setup PowerShell for Azure

- Install PowerShell Azure Module
- Install AzureRM
- Import AzureRM



# Azure Management Models

## Service Management ('Classic')

No overall container

Coarse-grained components

No component classification

Commands run individually: slow

## Azure Resource Manager

Everything inside a Resource Group

Fine-grained components

Components can be tagged

Commands batched: fast



# Azure Management Models

## Service Management ('Classic')



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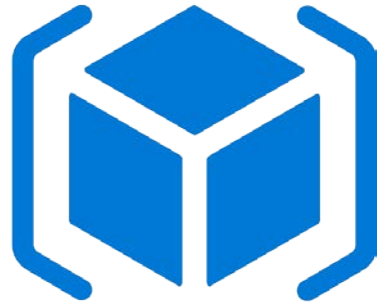
Commands batched: fast



## Resource Group

“web-app-1”

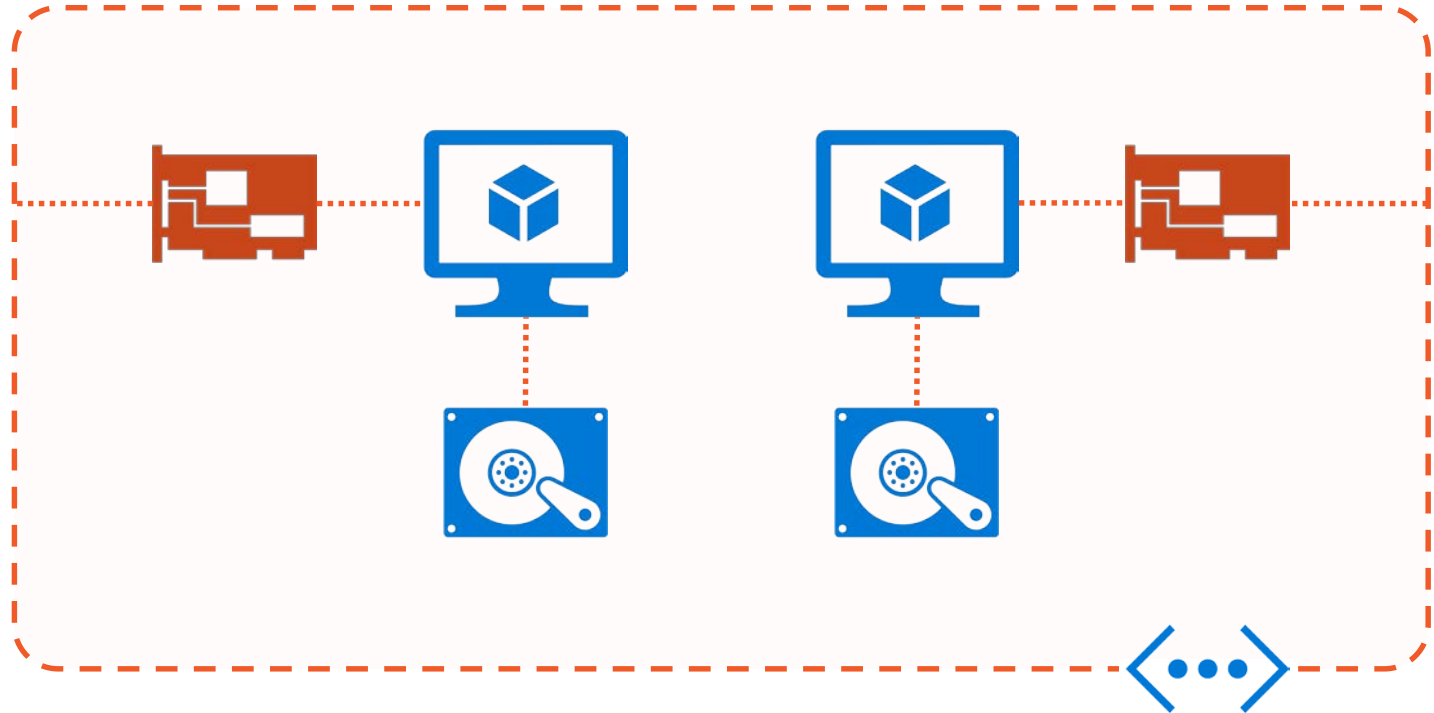
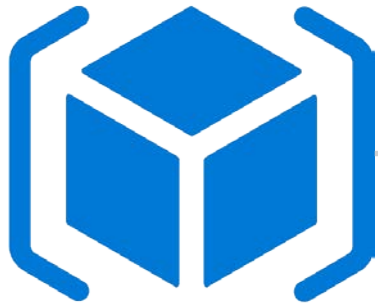
North Europe

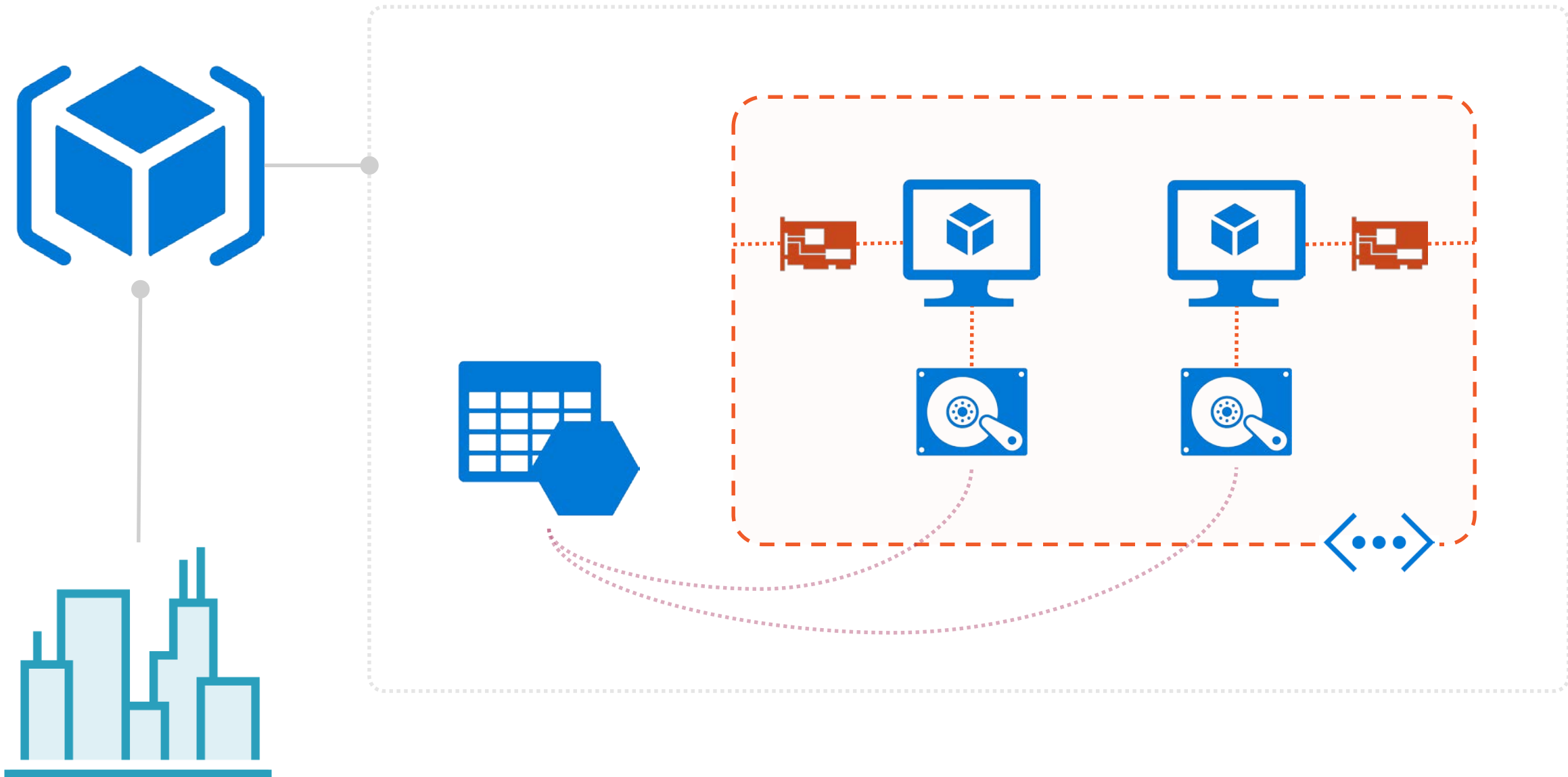


## Resource Group

“psod-iaas”

North Europe





# Demo



## Create Azure VM Pre-Requisites

- Resource Group
- Storage Account
- Virtual Network
- Network Interface



# Demo



## Create Windows Server VM

- VM Size
- Network Setup
- Base Image





Install-Module AzureRM

Install-AzureRM

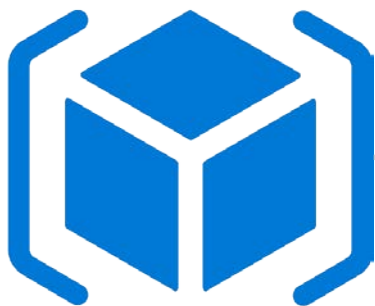
Import-Module AzureRM

◀ Install container module from  
PowerShell Gallery

◀ Install all the Azure modules

◀ Import all the Azure modules  
for the session





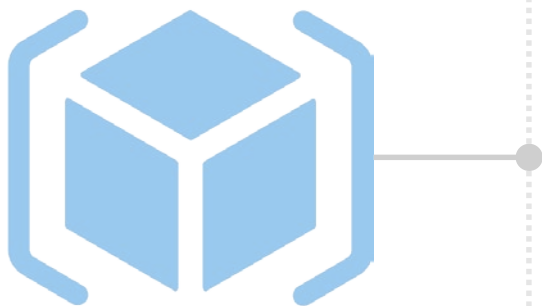
New-AzureRmResourceGroup





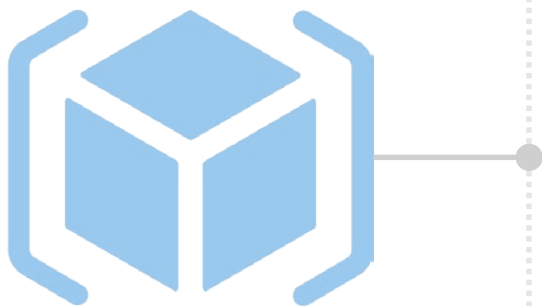
New-AzureRmStorageAccount





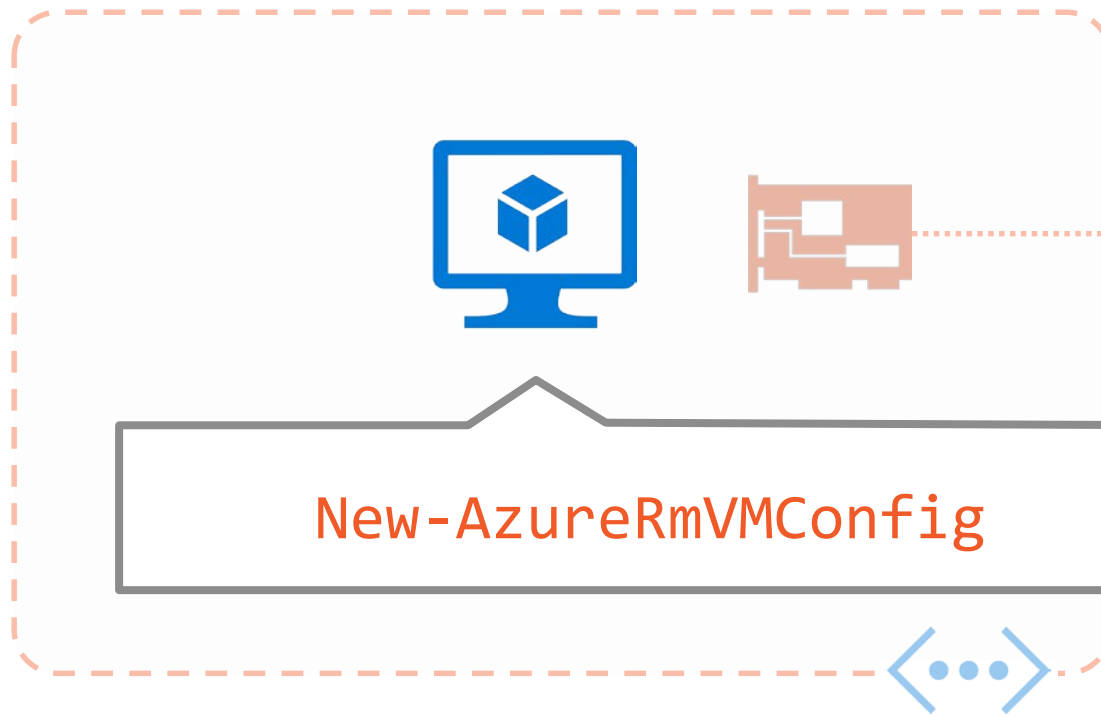
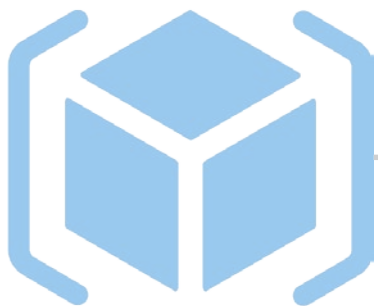
New-AzureRmVirtualNetworkSubnetConfig  
New-AzureRmVirtualNetwork

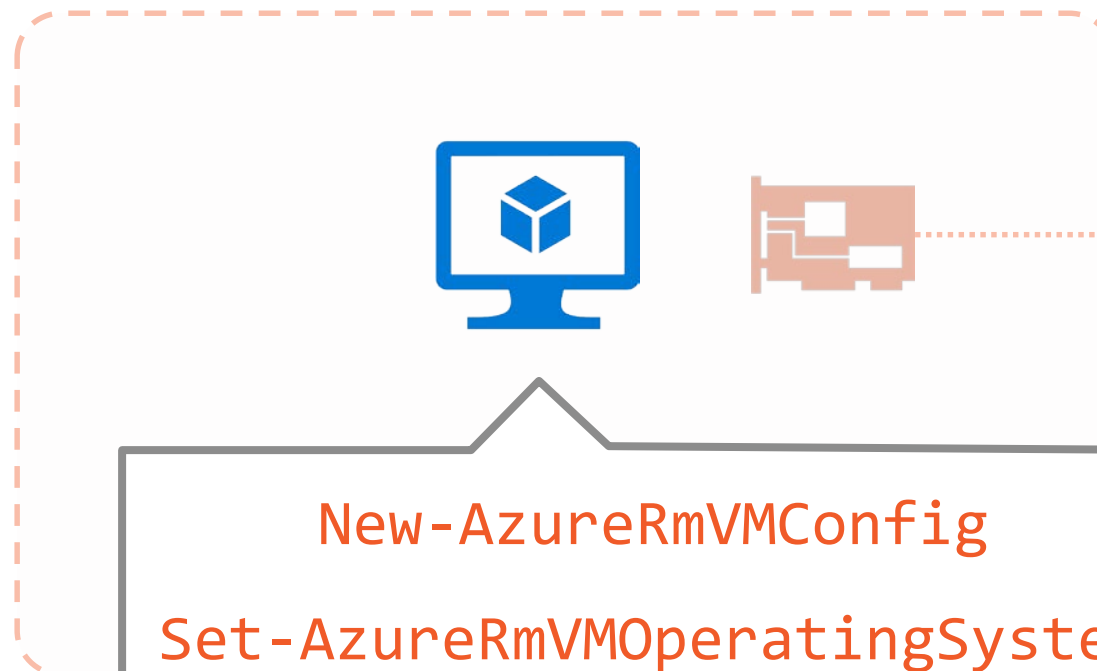


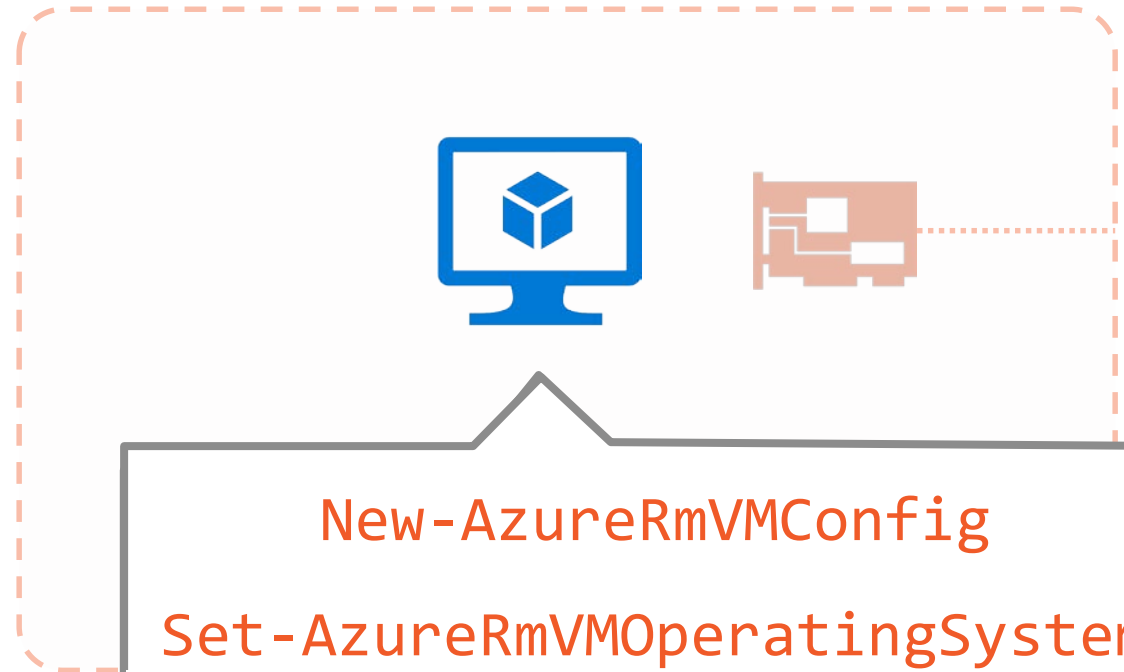
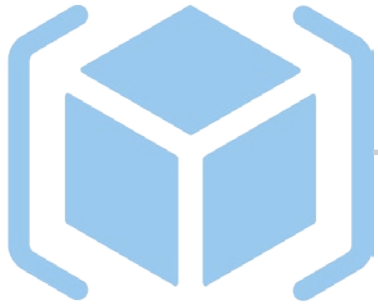


New-AzureRmPublicIpAddress  
New-AzureRmNetworkInterface









```
New-AzureRmVMConfig  
Set-AzureRmVMOperatingSystem  
Set-AzureRmVMSourceImage
```

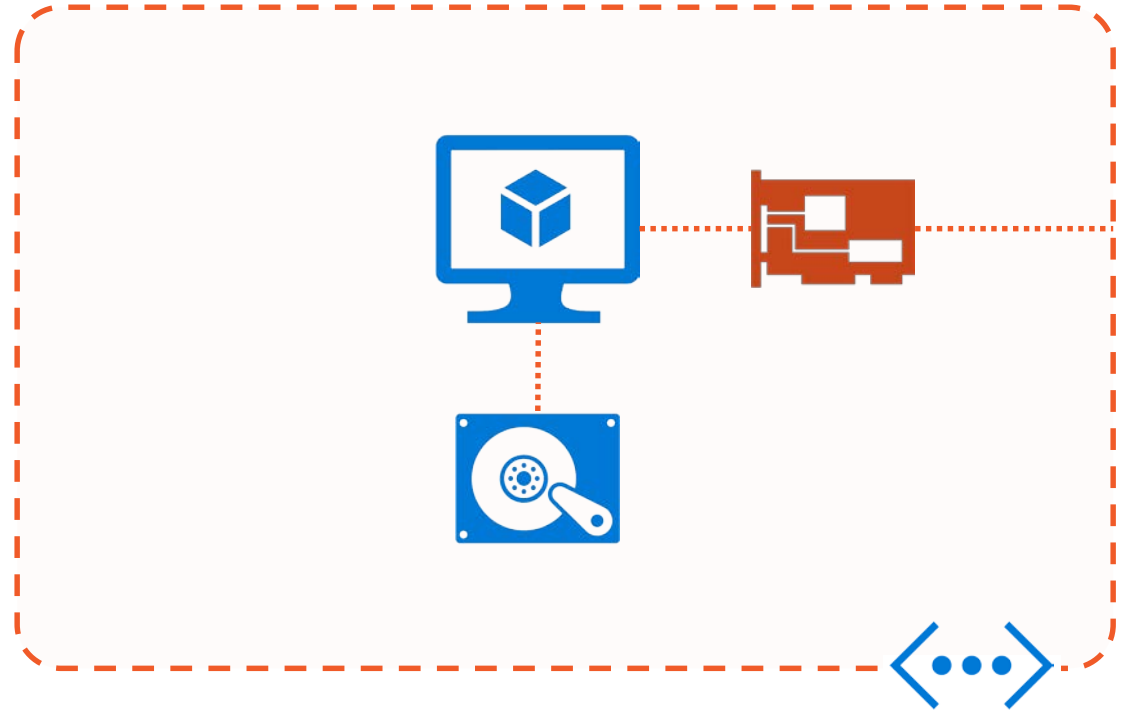
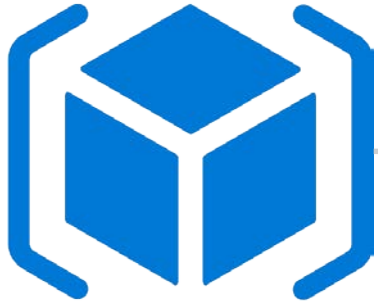






Add-AzureRmVMNetworkInterface  
Set-AzureRmVMOSDisk





New-AzureRmVM



# Demo



## Use Windows Server VM

- RDP from desktop
- Check network
- Check CPU & RAM



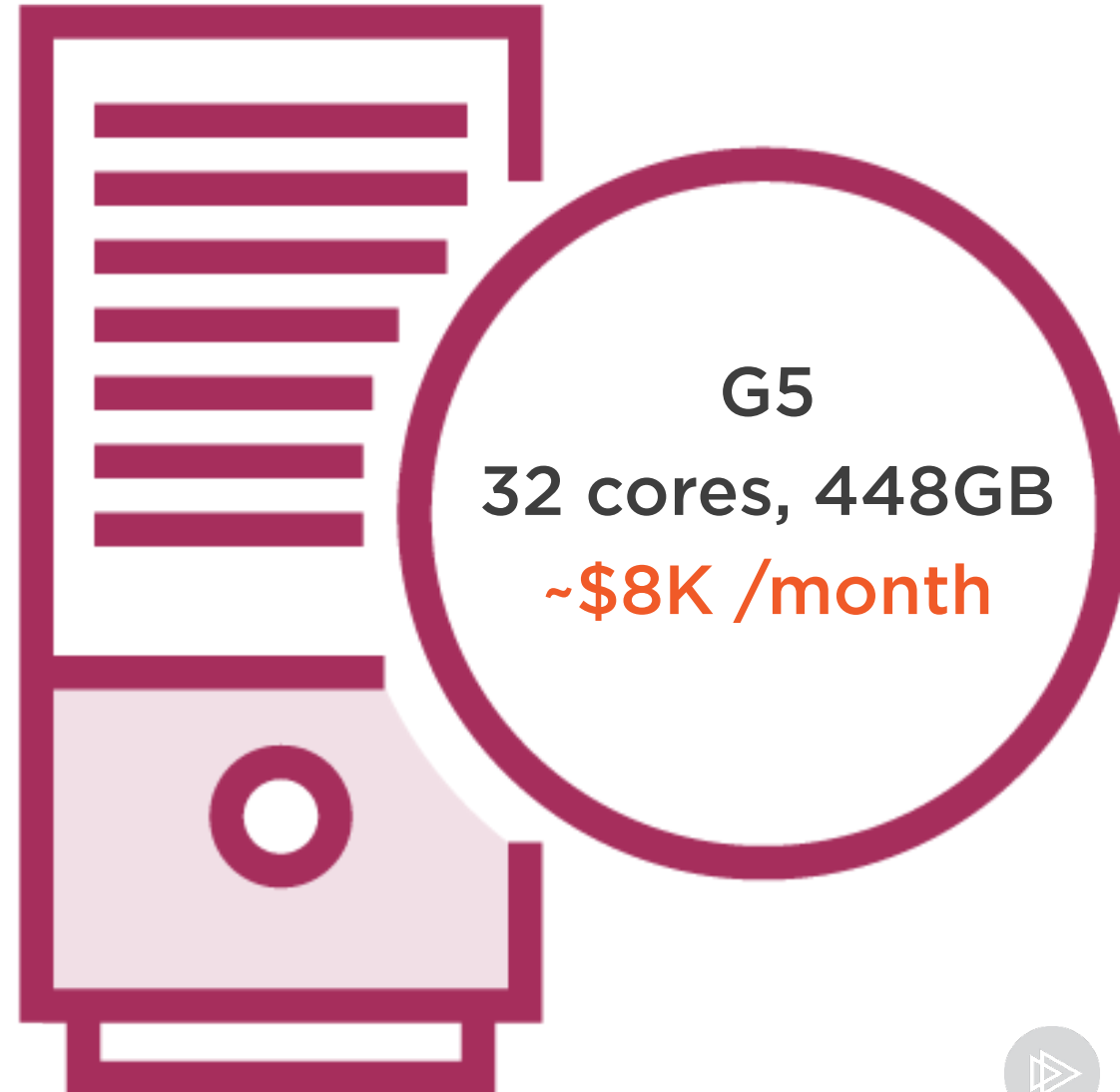
# Azure IaaS Charges



Virtual Machine



Basic A1  
1 core, 1.75GB  
~\$55 /month



# Azure IaaS Charges



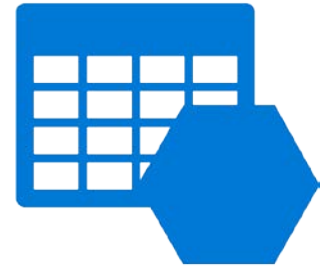
Virtual Network

\$0



Network Interface

\$0



Storage Account

\$0



# Azure IaaS Charges



**VHD**

**~\$1 /50GB /month**



**Public IP**

**~\$3 /month**



# Azure IaaS Charges



Virtual Machine



**Basic A1 Windows**

1 core, 1.75GB

~\$55 /month

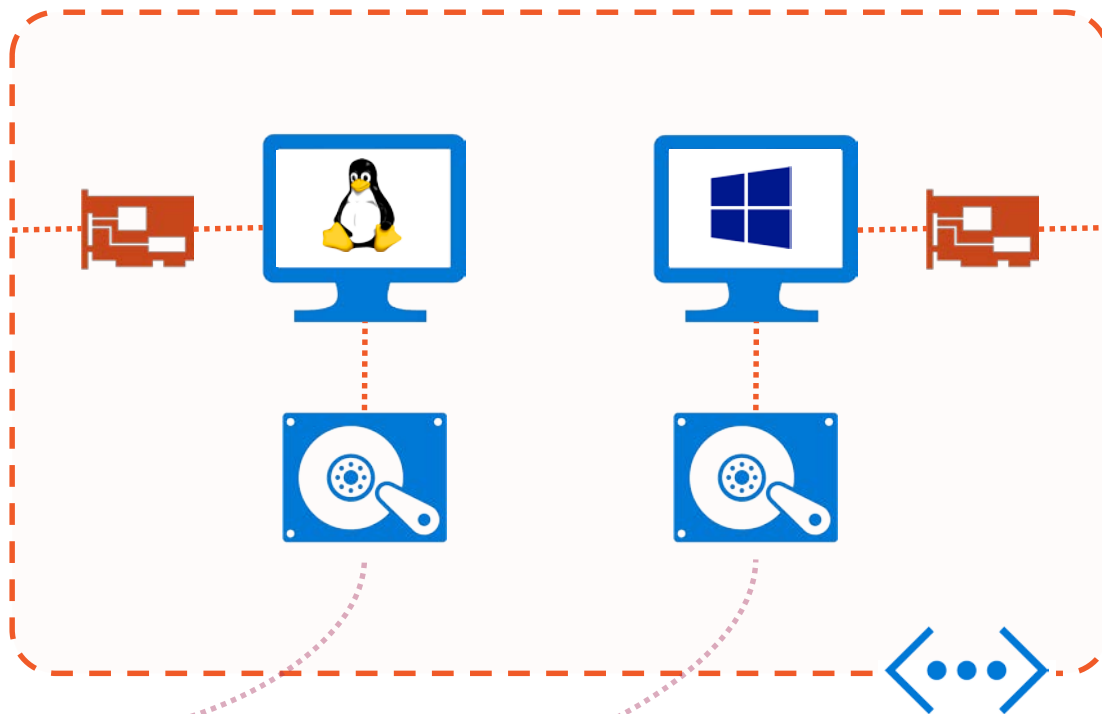


**Basic A1 Linux**

1 core, 1.75GB

~\$35 /month







# Demo



## Create Ubuntu Server VM

- Public IP
- Network Interface
- Disk & Base Image



# Demo



## Use Ubuntu Server VM

- SSH from desktop
- Check network
- Check connectivity



# Summary



## Setup Azure PowerShell

- Install & import modules

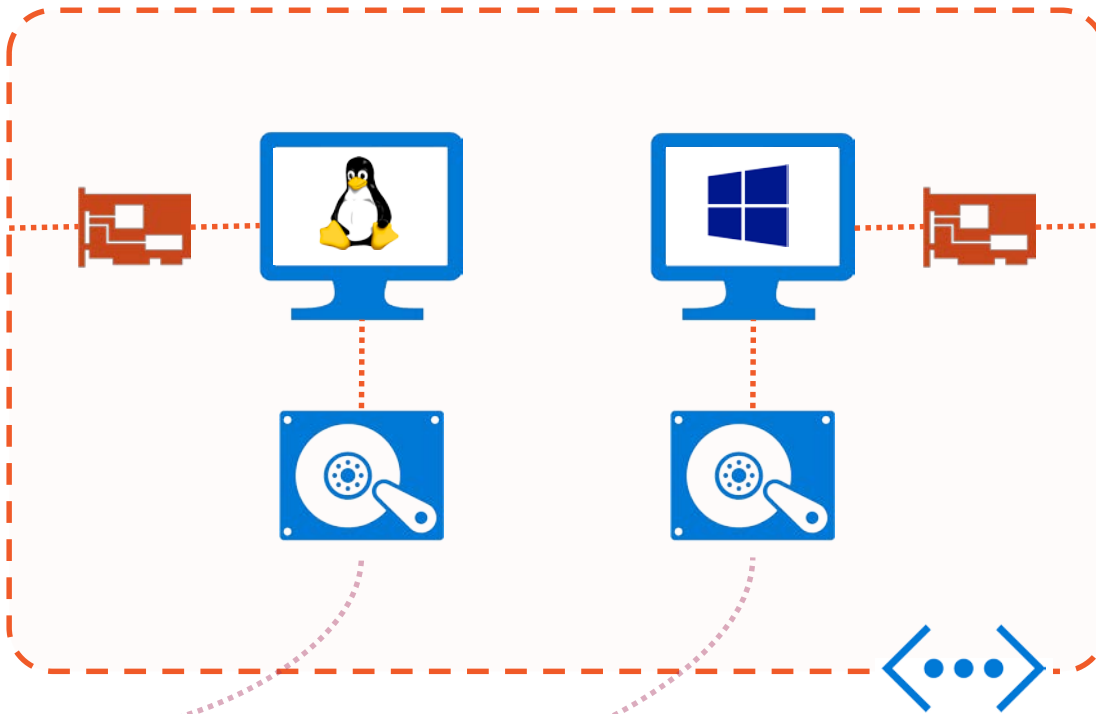
## Create VM Pre-Requisites

- Resource Group & Storage Account
- Virtual Network & Interface

## Configure VM

- Size
- OS & base image
- Network





New-AzureRm**ResourceGroup**

New-AzureRm**StorageAccount**

New-AzureRm**VirtualNetworkSubnetConfig**

New-AzureRm**VirtualNetwork**

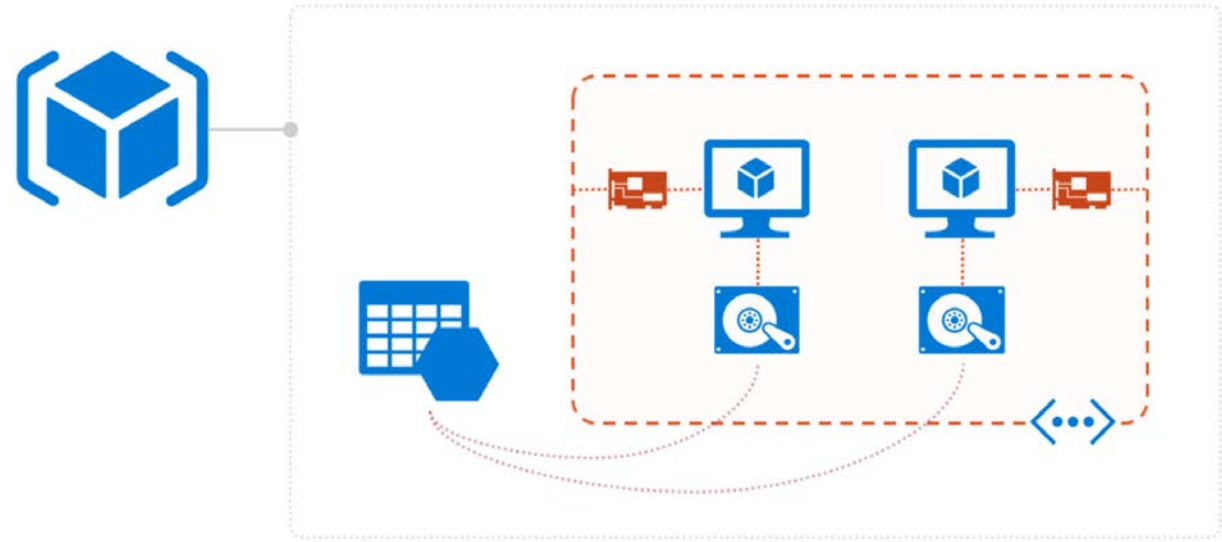
New-AzureRm**PublicIpAddress**

New-AzureRm**NetworkInterface**

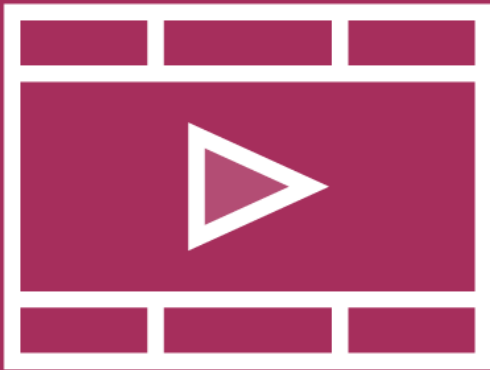
New-AzureRm**VMConfig**

...

New-AzureRm**VM**



# Coming Next



## Custom VMs

- Configuring packages
- Extracting base image

## Complex VNets

- Multiple subnets
- Load balancers

