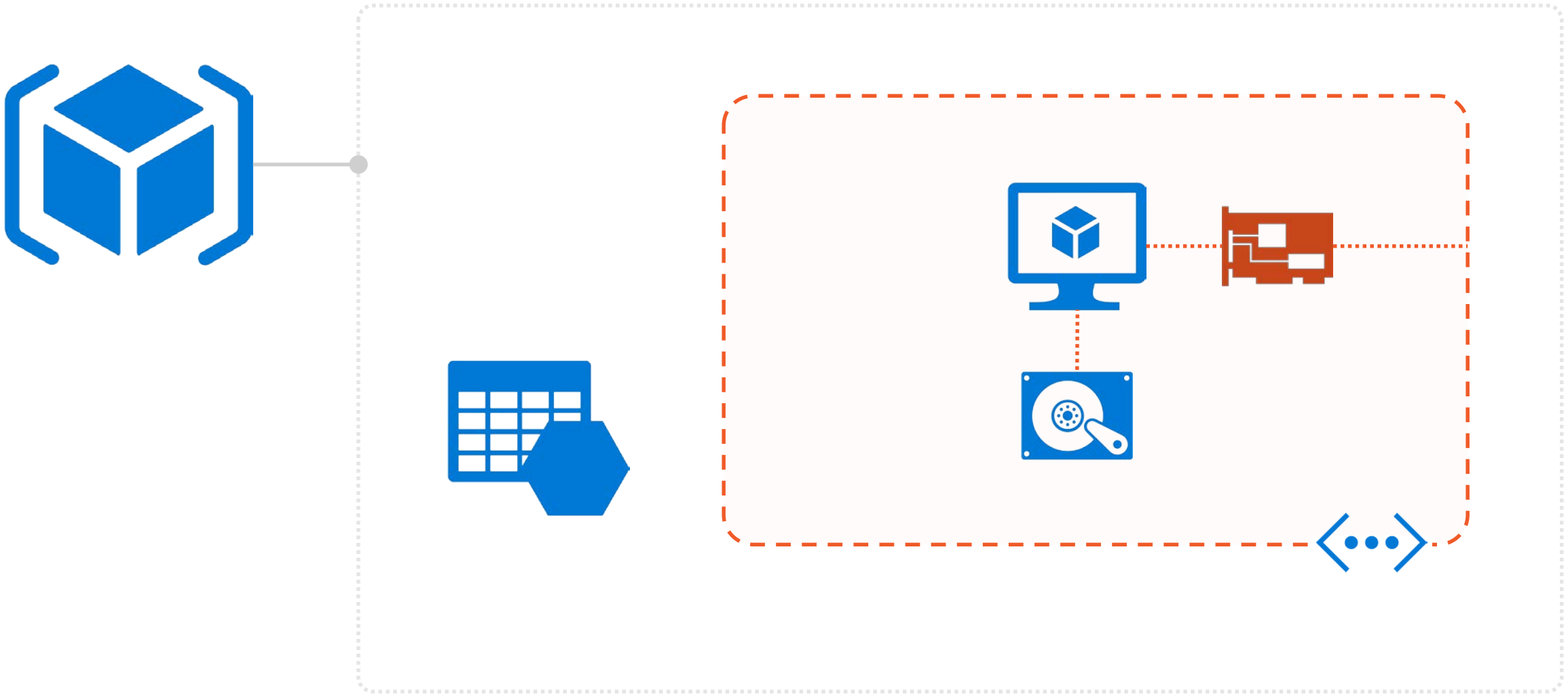
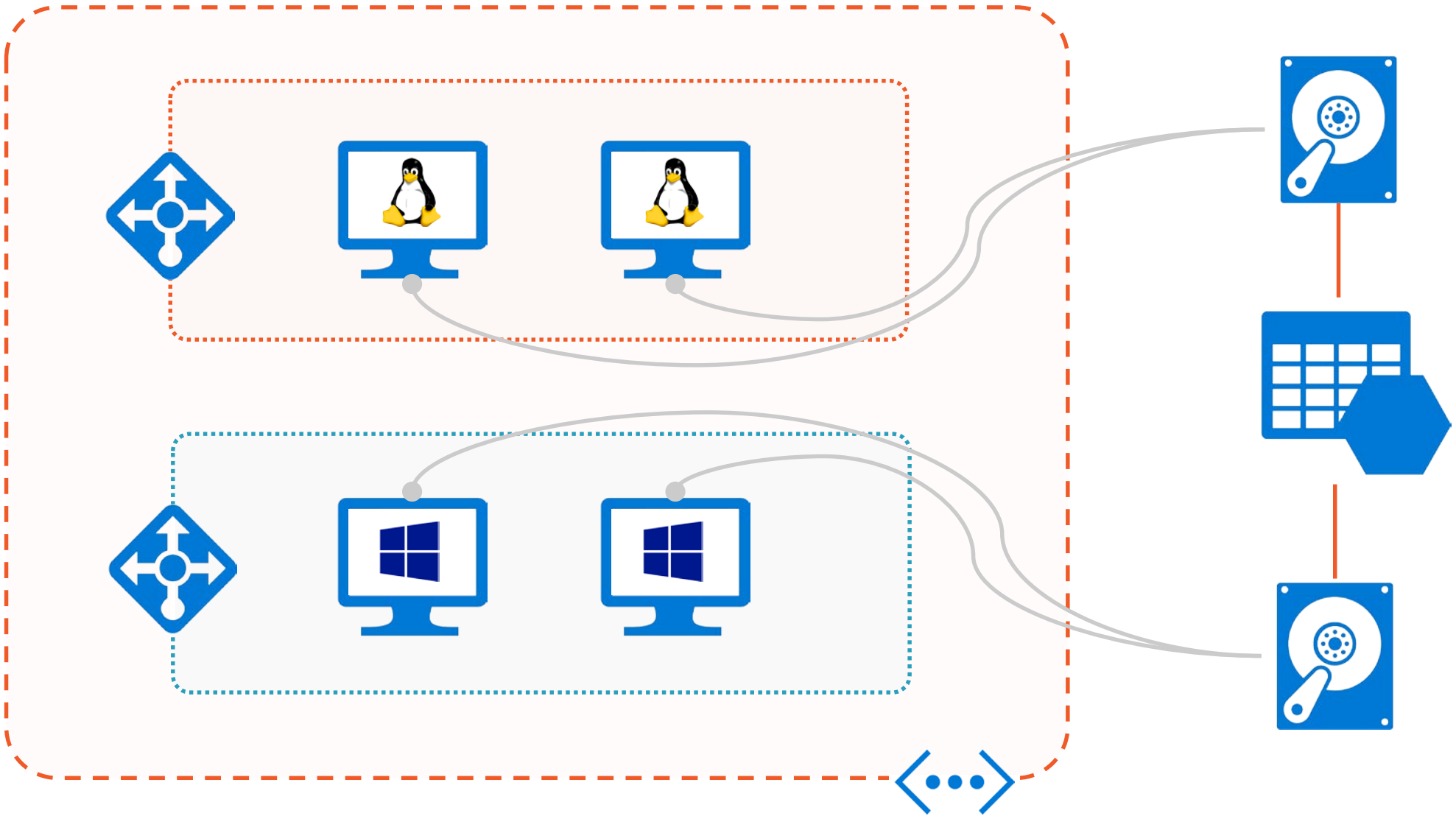
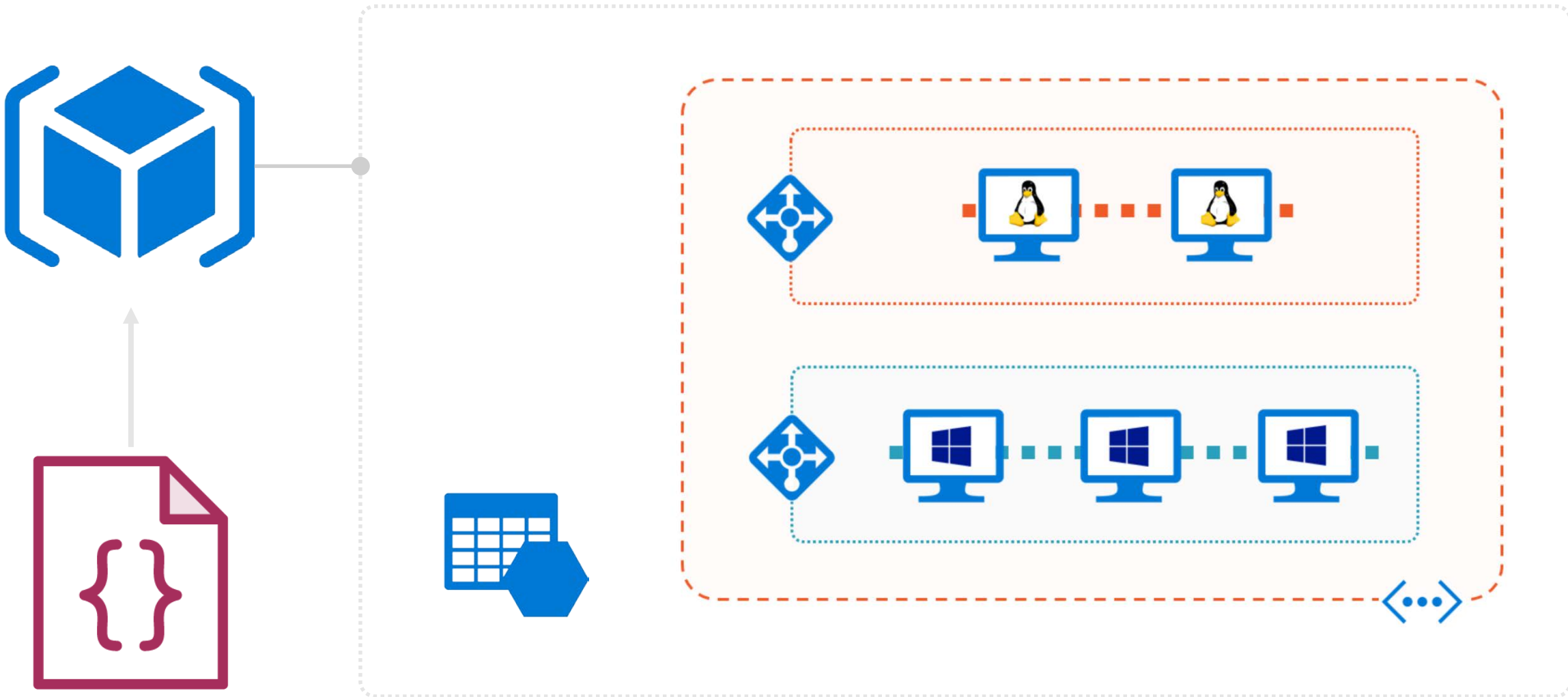
Managing Azure VMs

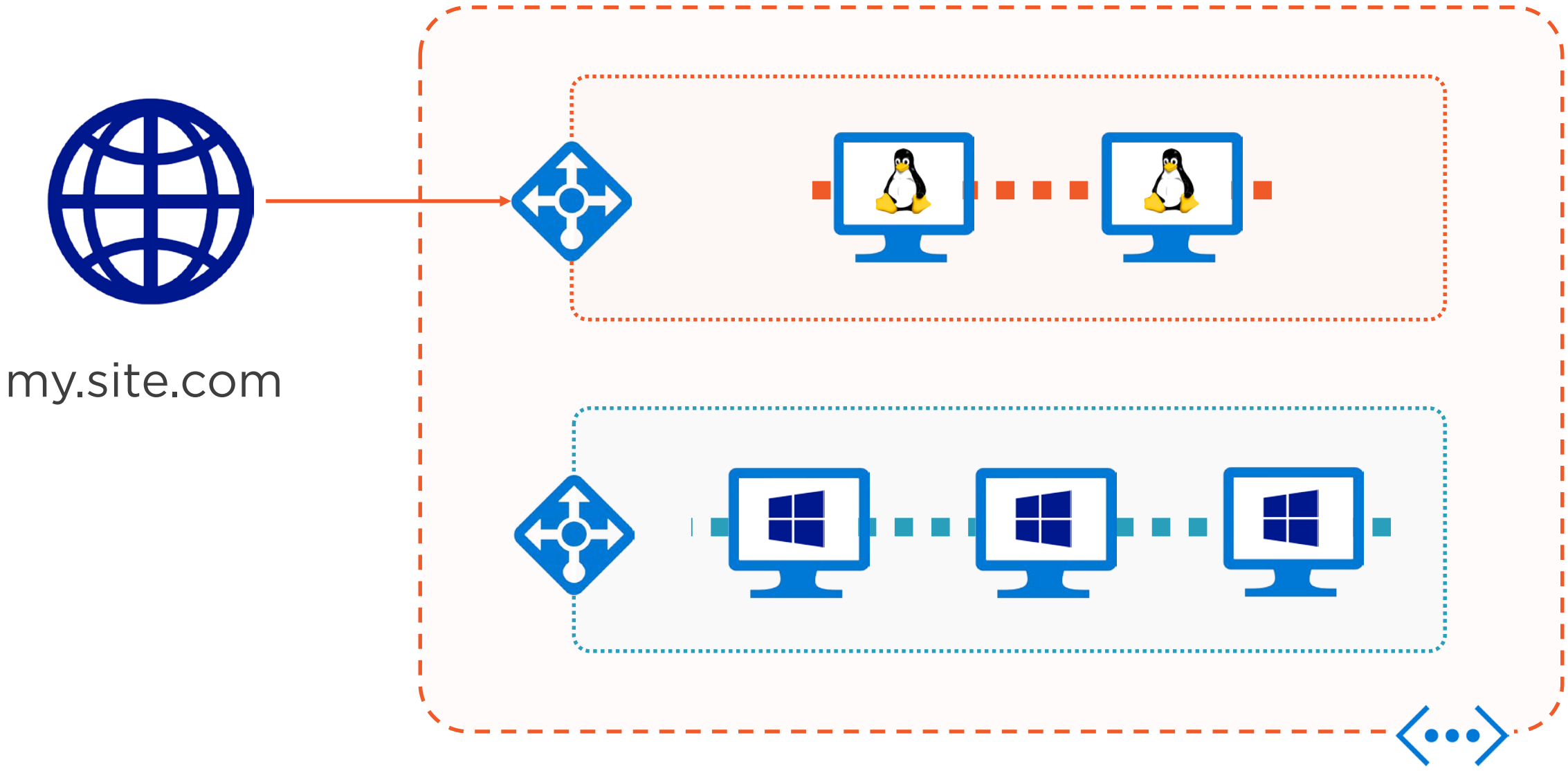
Elton Stoneman
SOFTWARE ARCHITECT

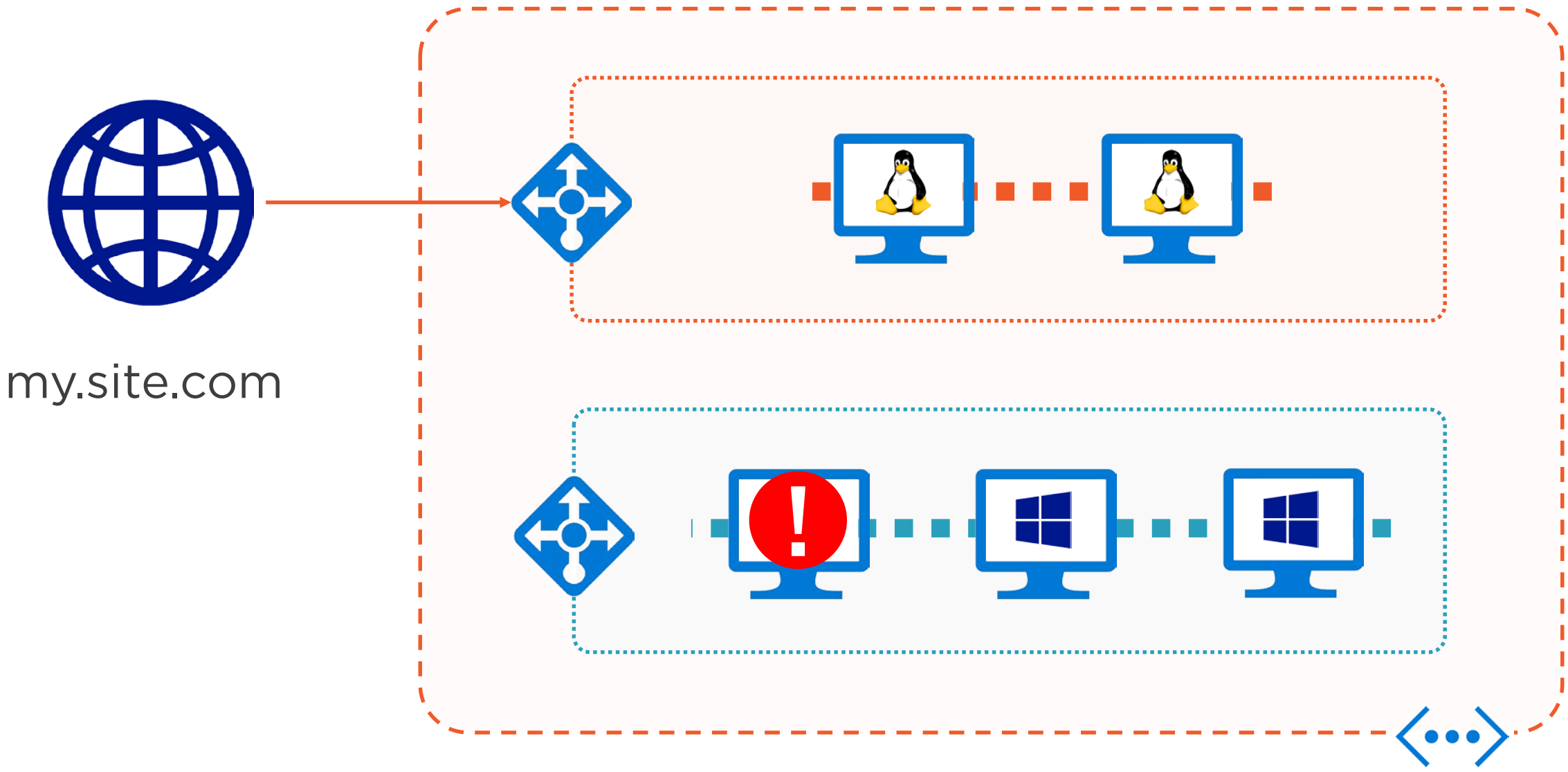
@EltonStoneman blog.sixeyed.com








my.site.com

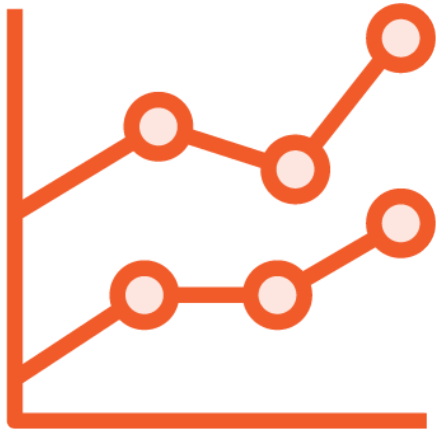

my.site.com

Securing Resources

Patching VMs

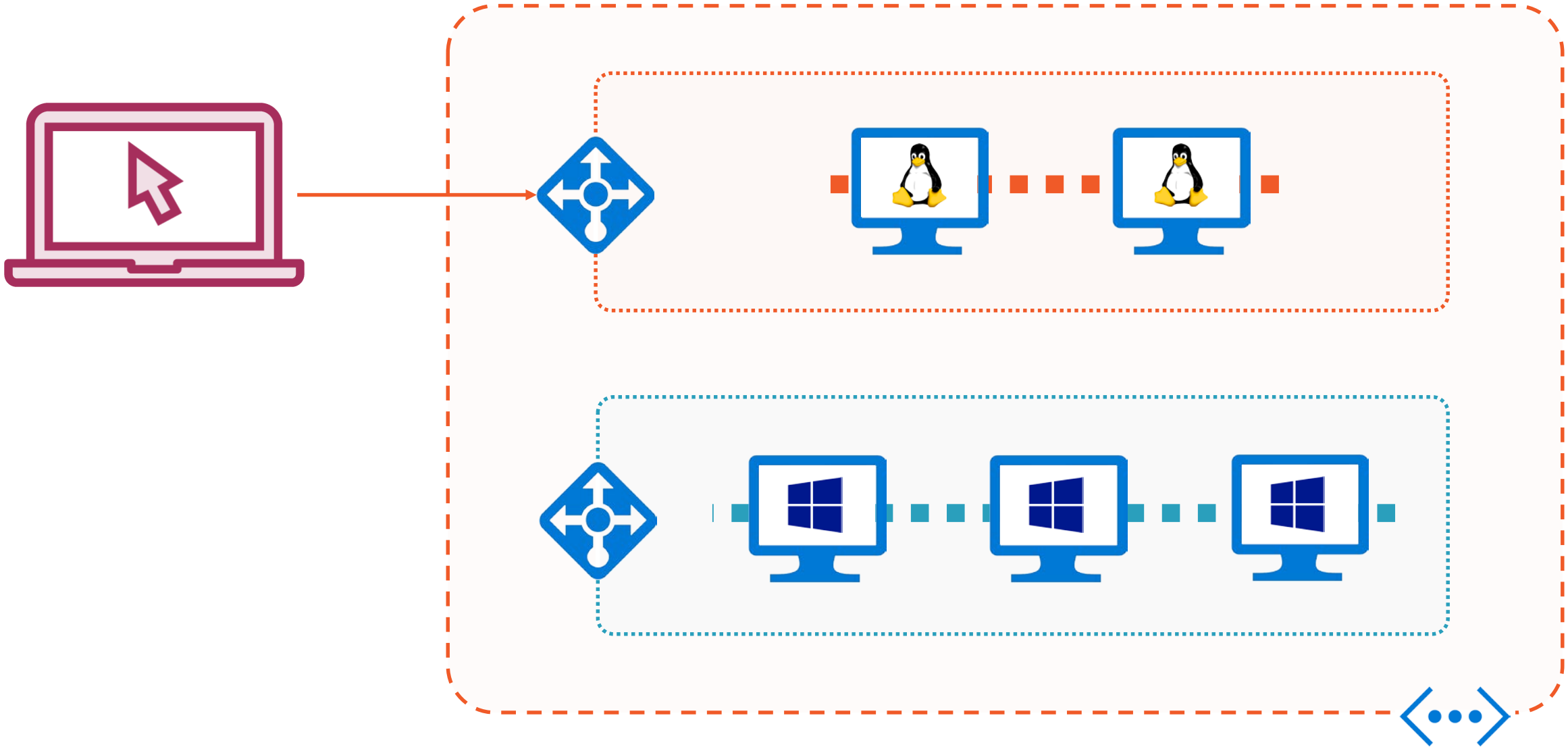
Resizing VMs

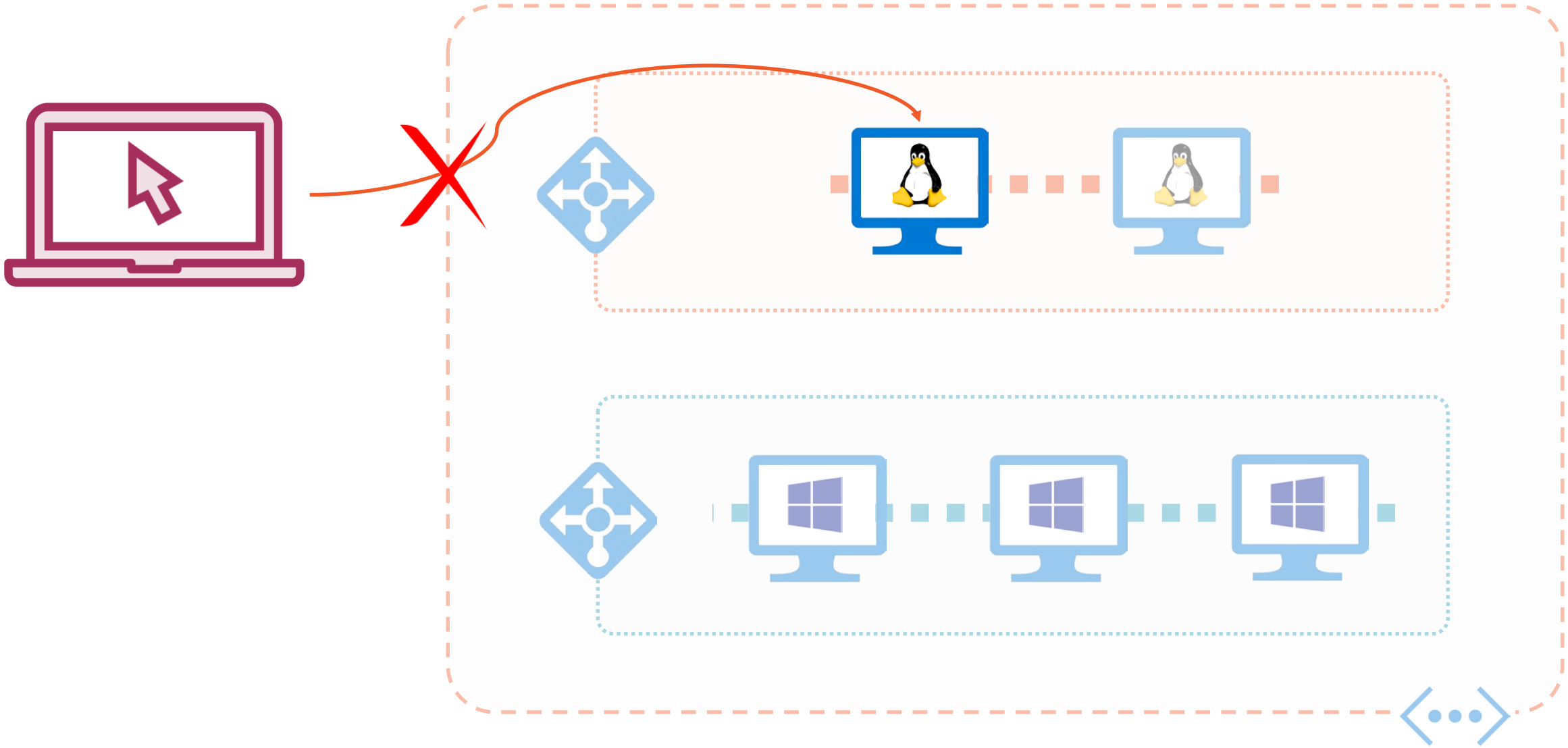
Adding Disks

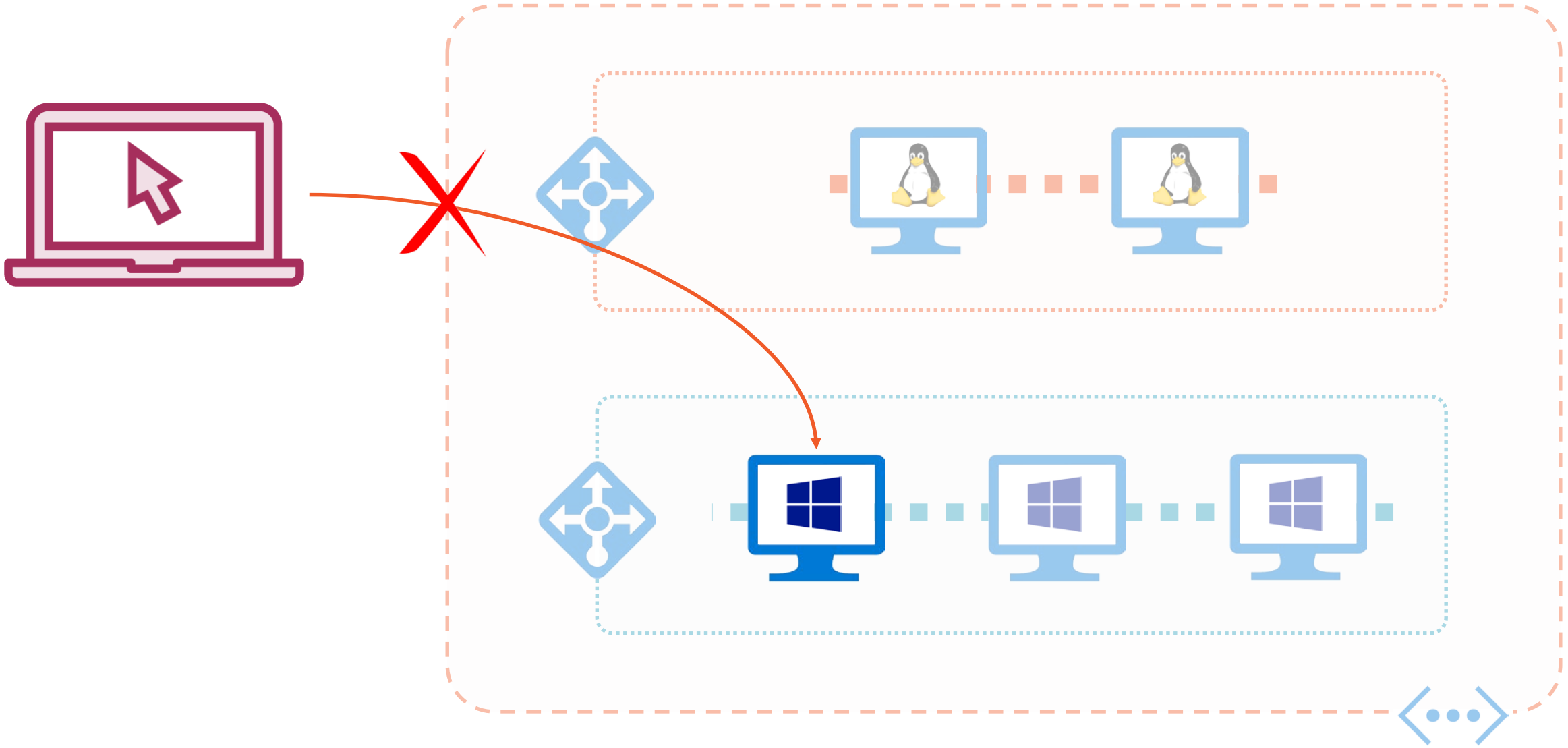


Log Collection

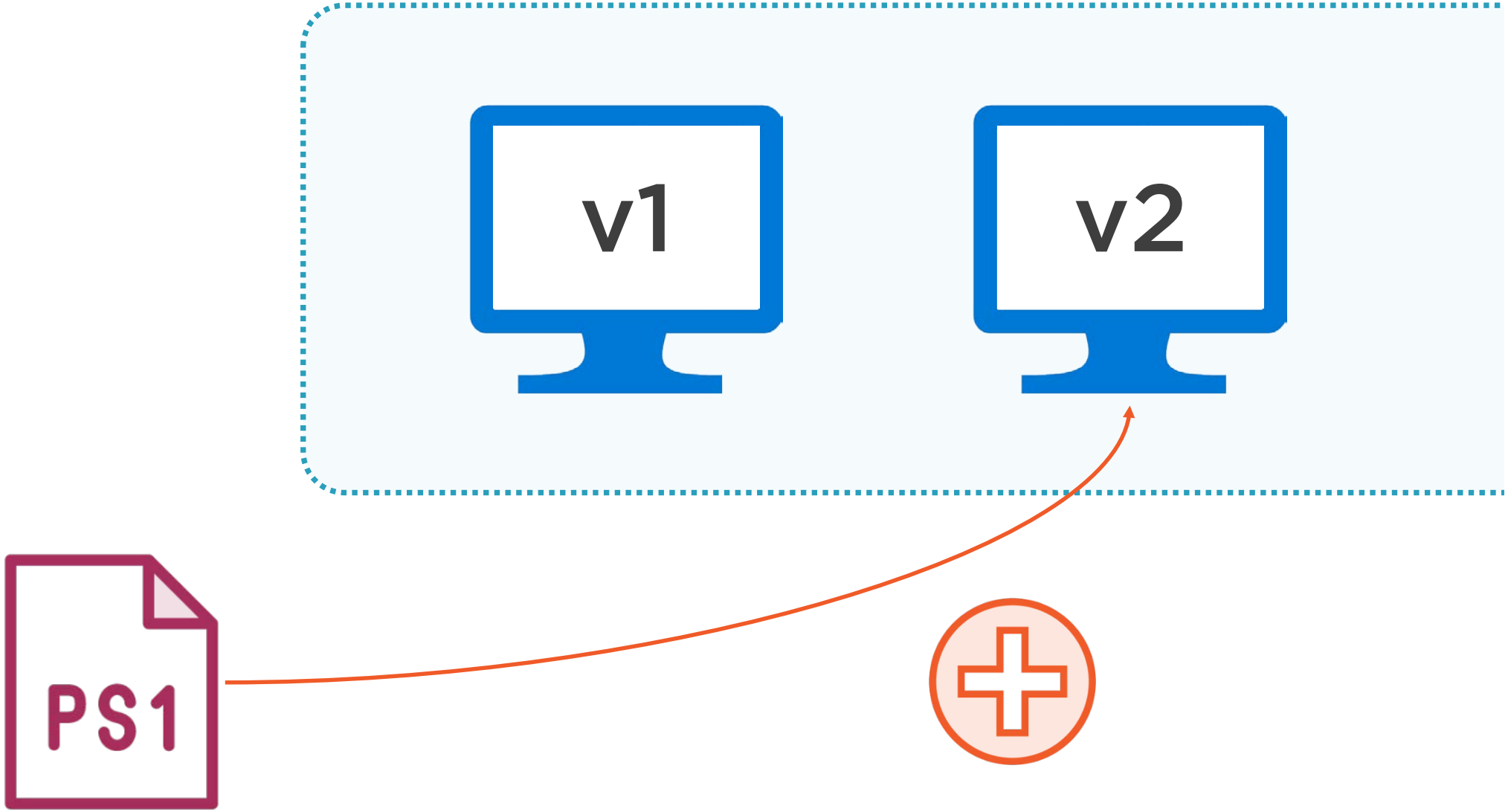
Viewing Logs

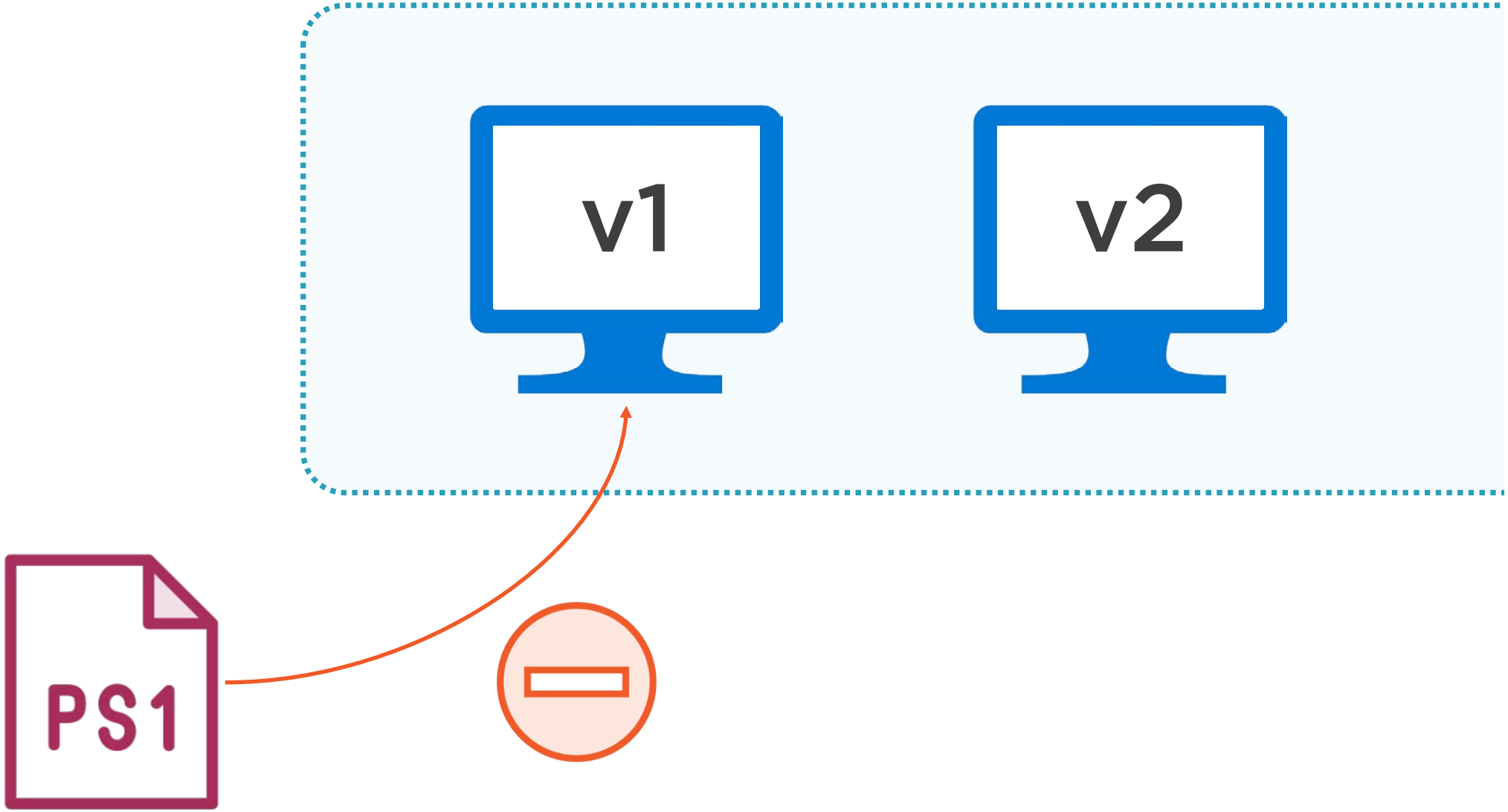




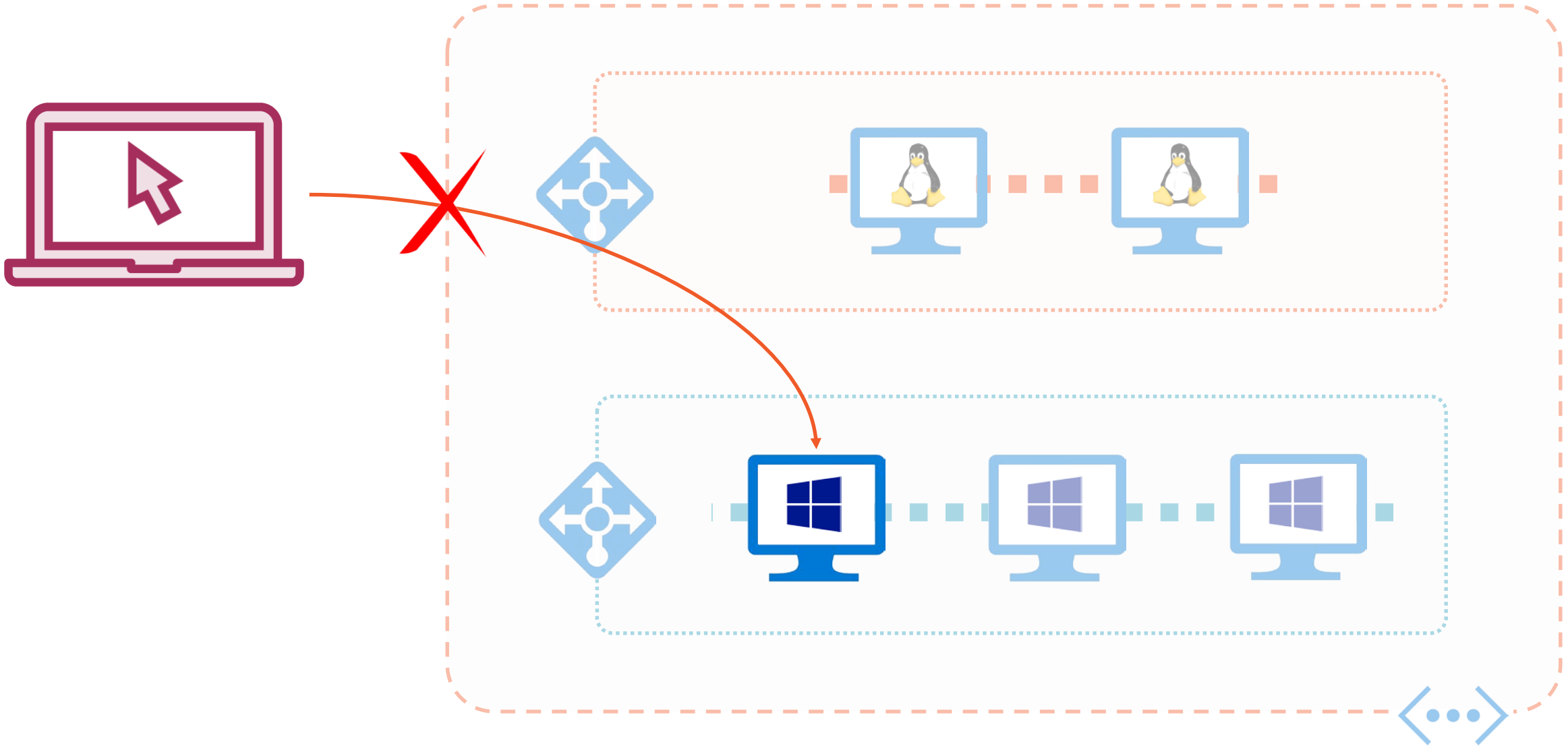


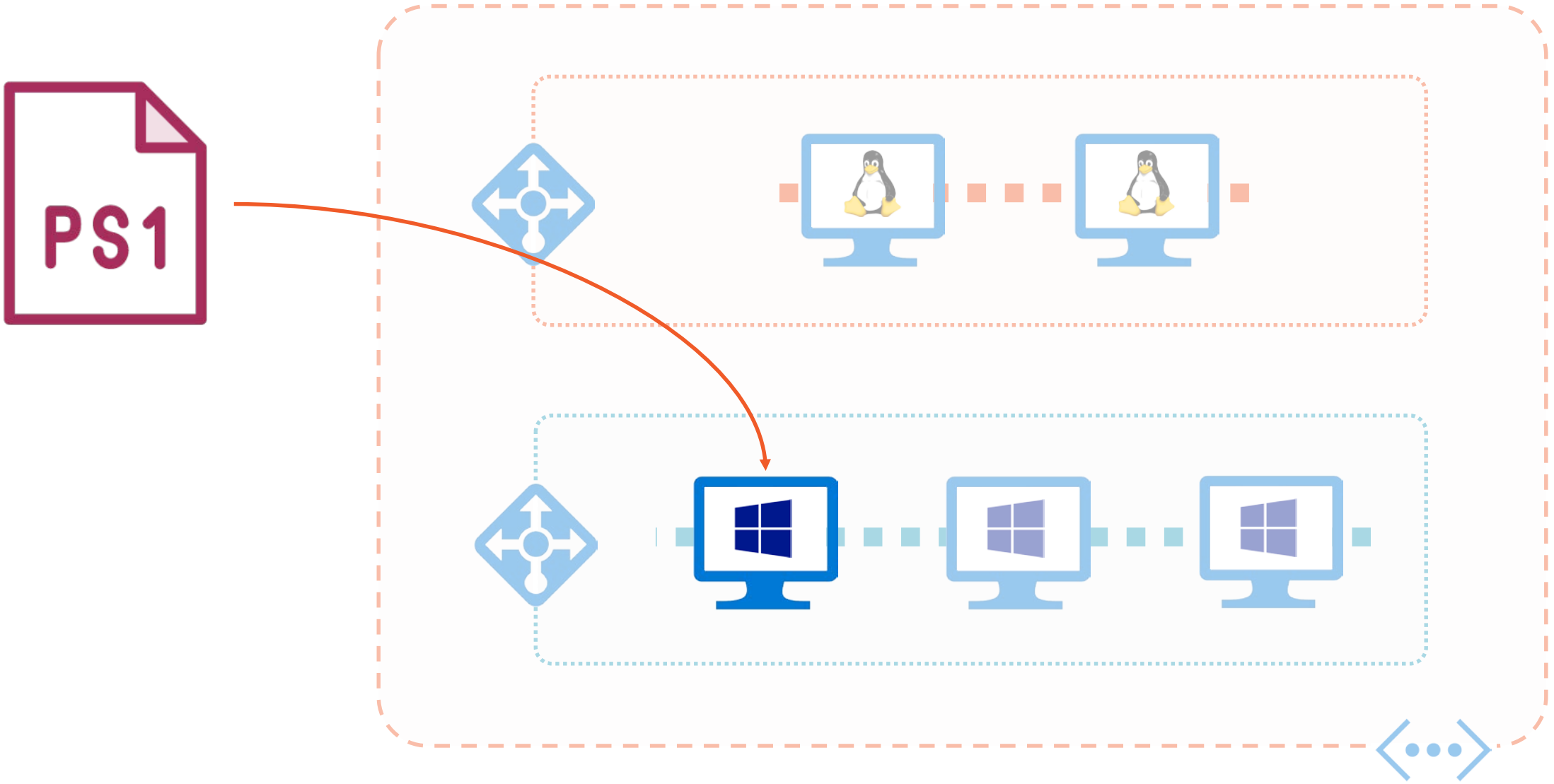

v1

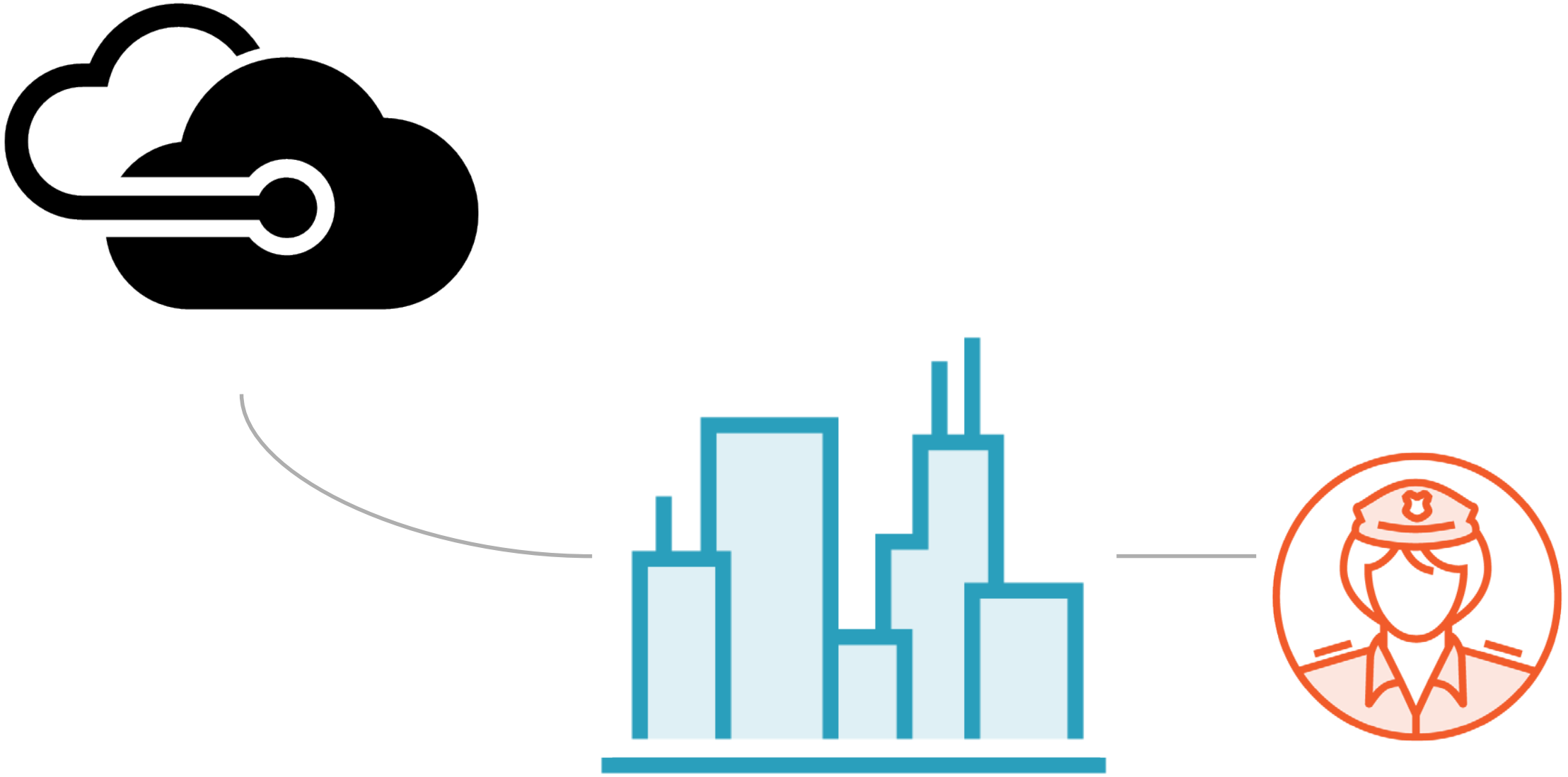

v1
v2
PS1

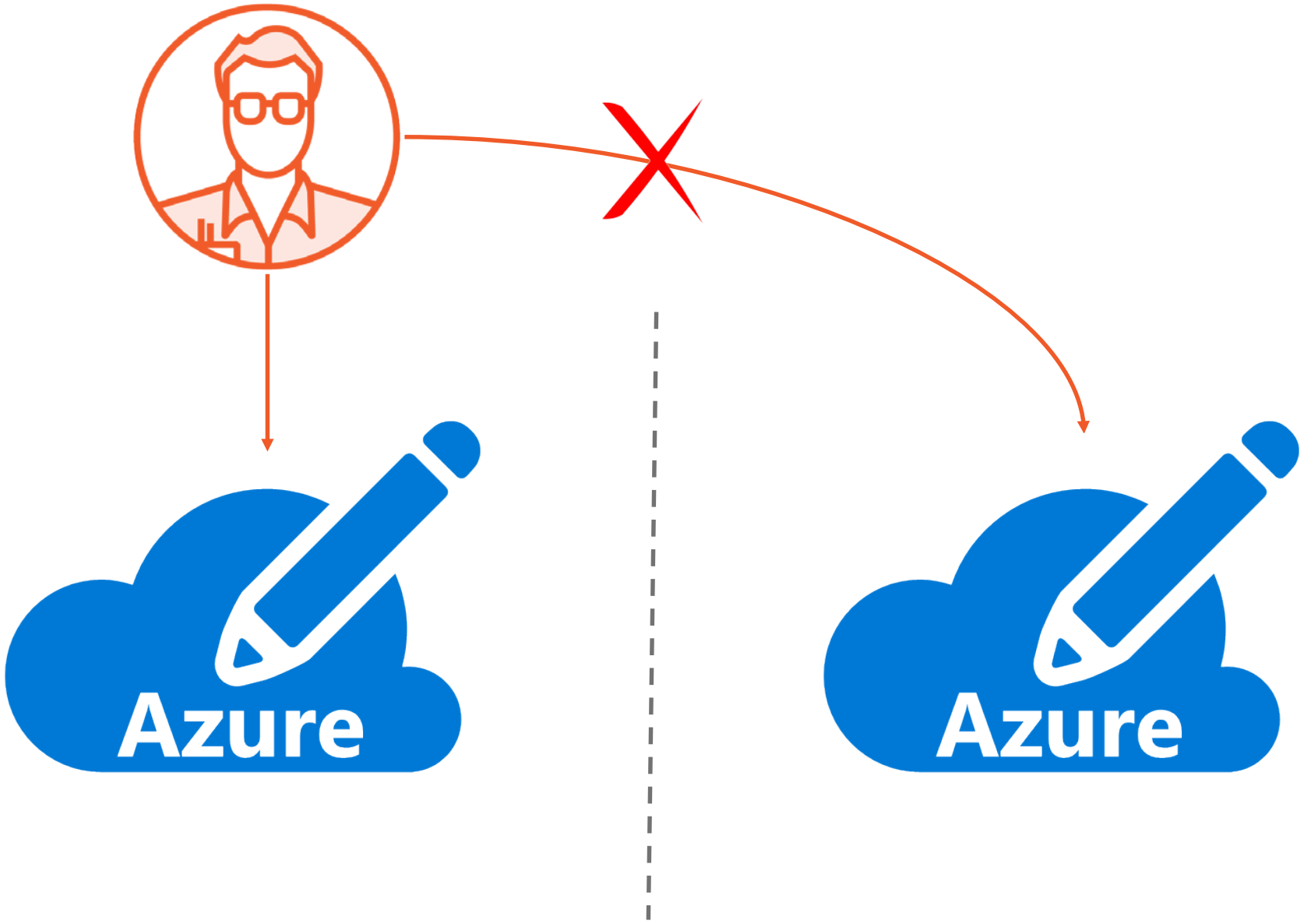

v1
v2
PS1

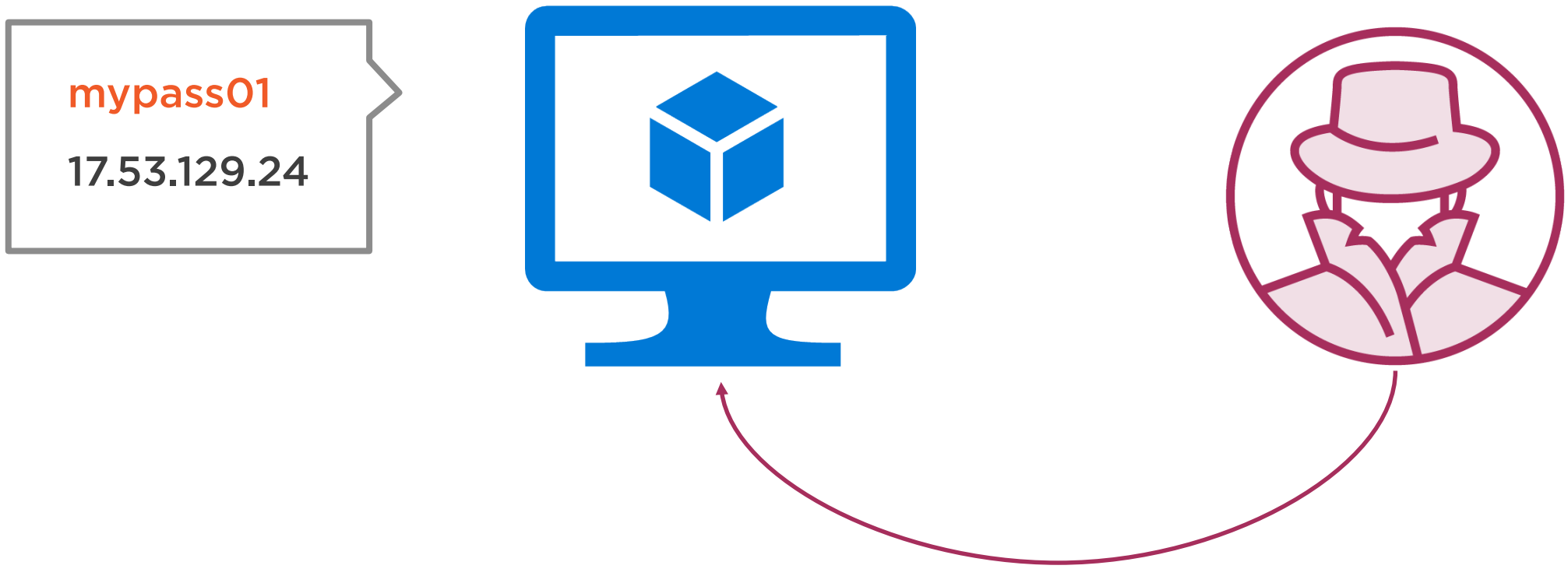

v2




PS1




Azure
Azure


mypass01
17.53.129.24

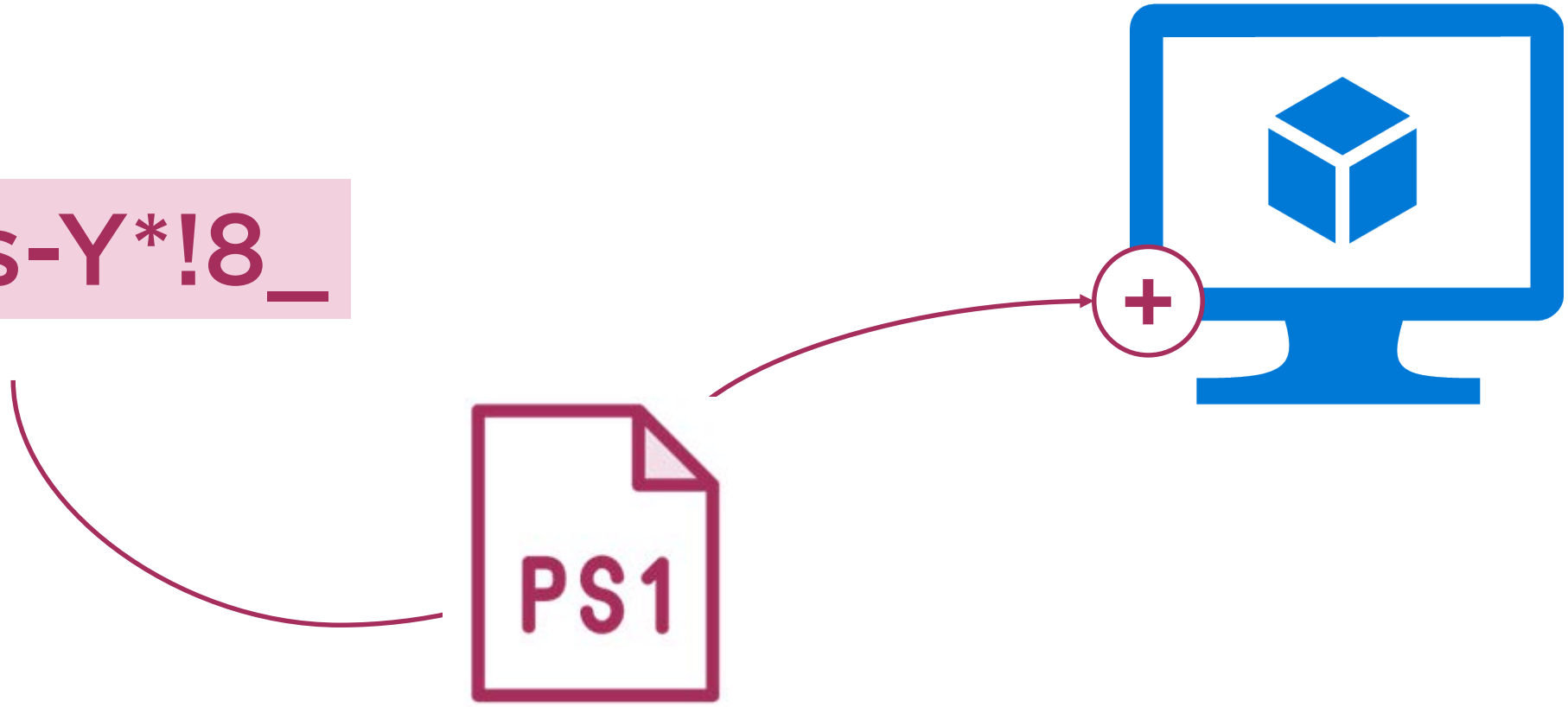
Get-Credentials()

```
$username = "elton"

$password = ConvertTo-SecureString "Plur*ls!ght" -
AsPlainText -Force

$c = New-Object -TypeName
System.Management.Automation. PSCredential -
ArgumentList $username, $password
```

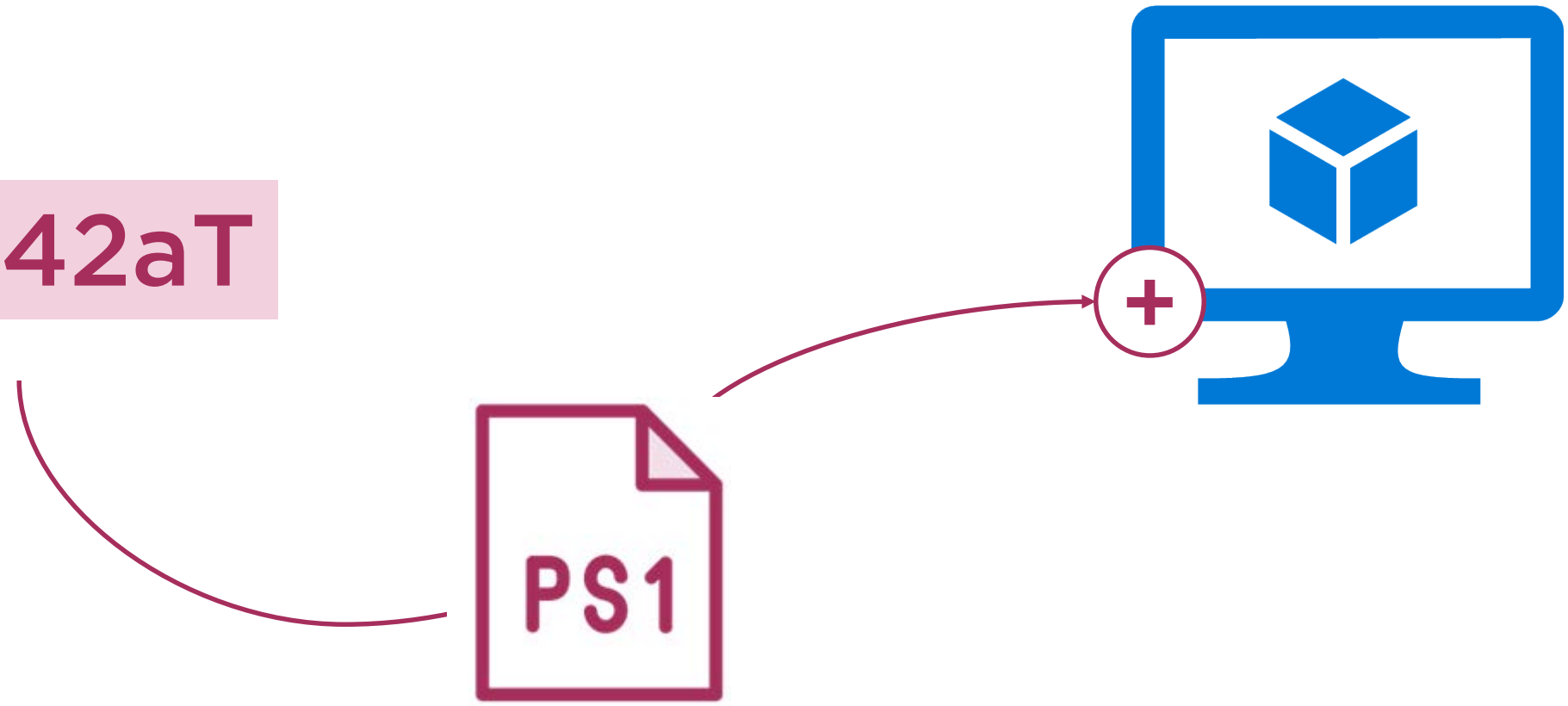
- Prompt for username and password
- Harcoded, plain-text password.


PS1

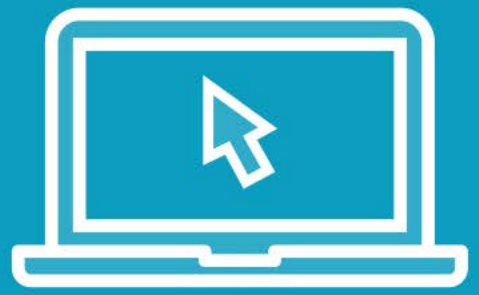
43b5s-Y*!8_



Ae-!!*42aT

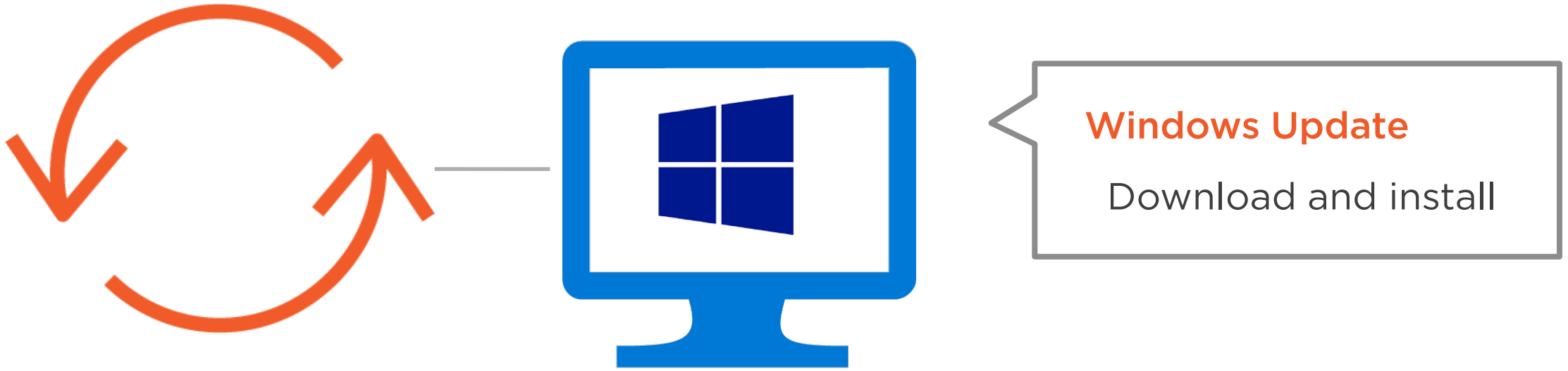


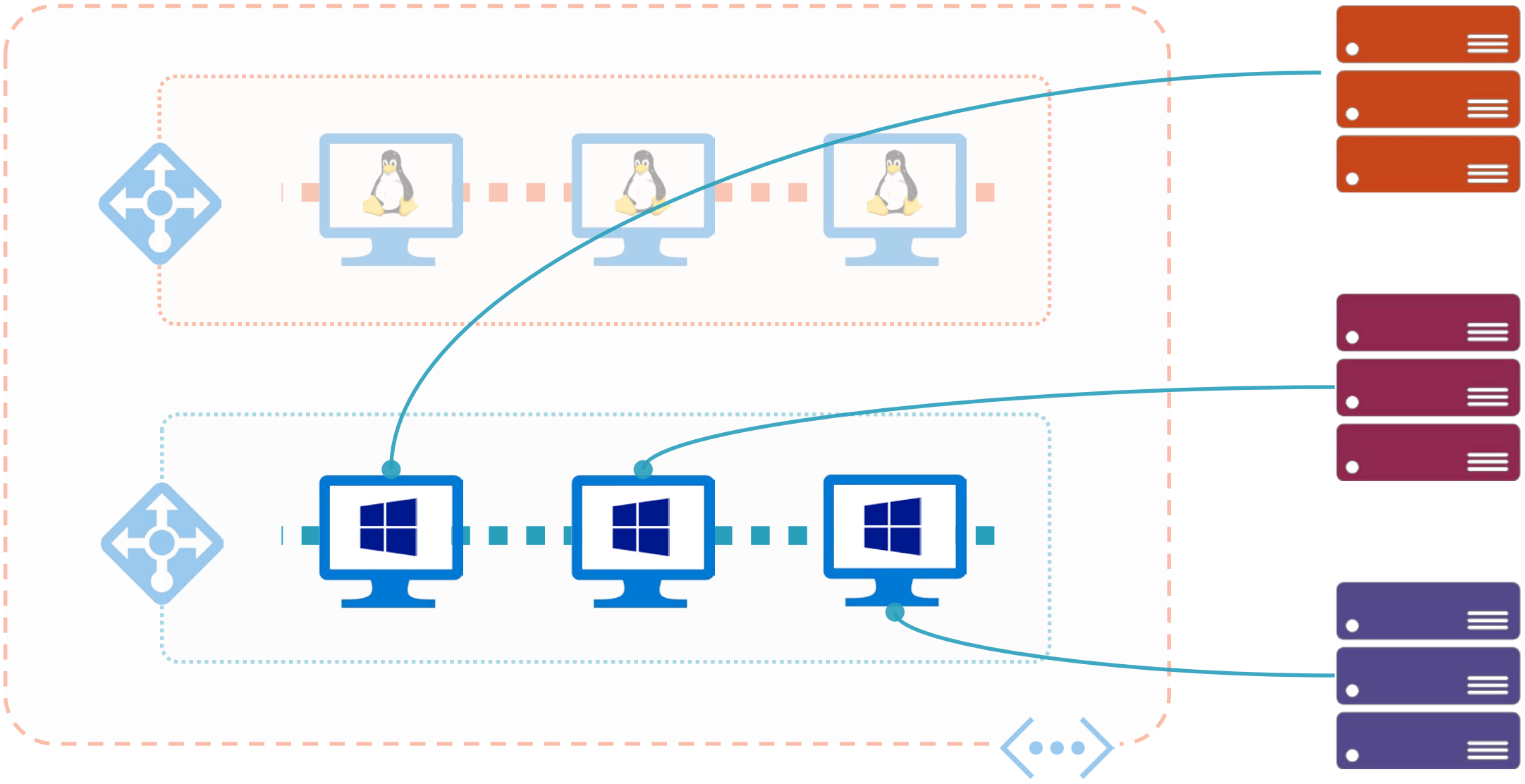
Demo

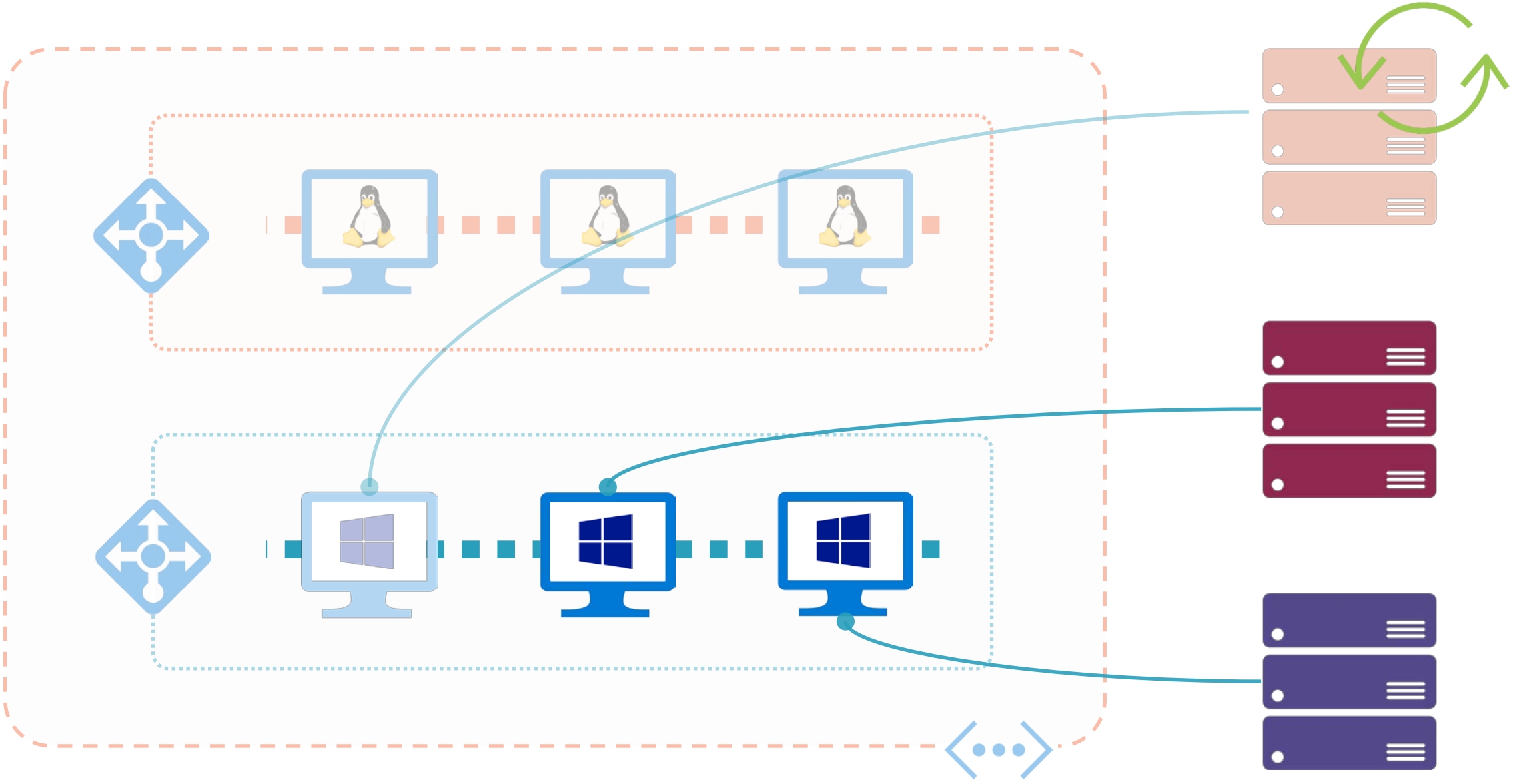


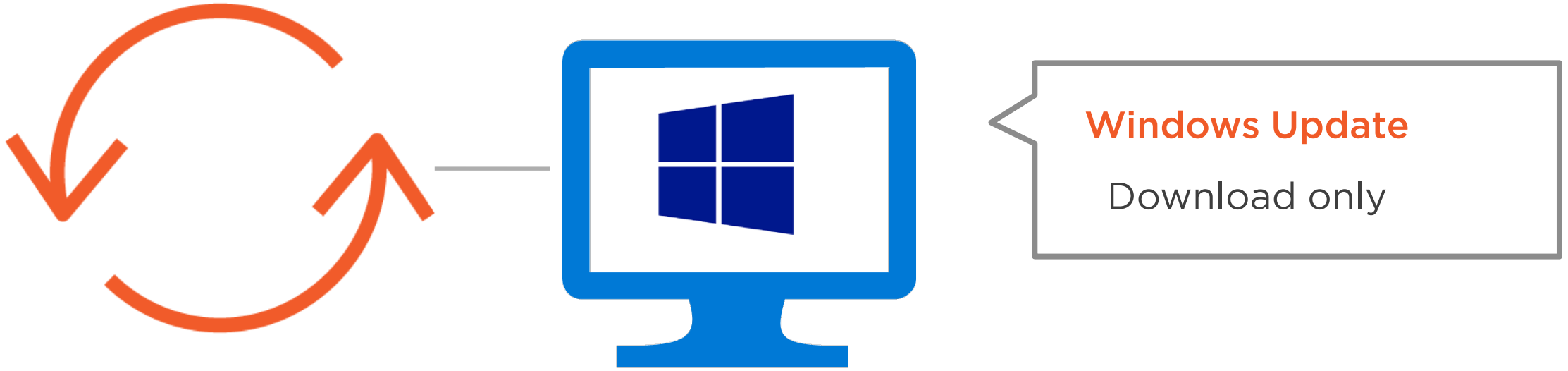
Remote Credential Reset

- Generate random password
- Add VM extension
- Add public IP address


Windows Update
Download and install



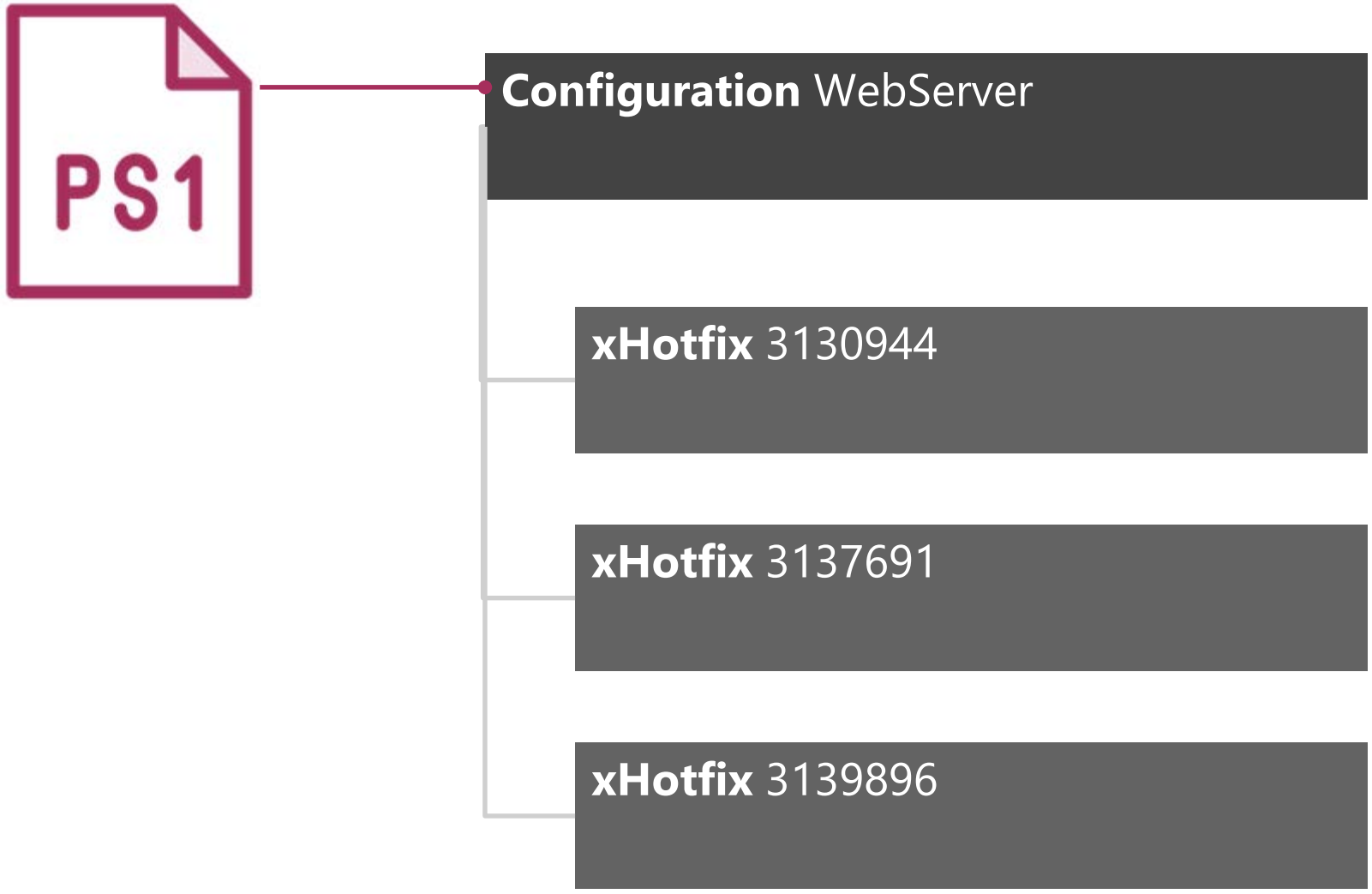


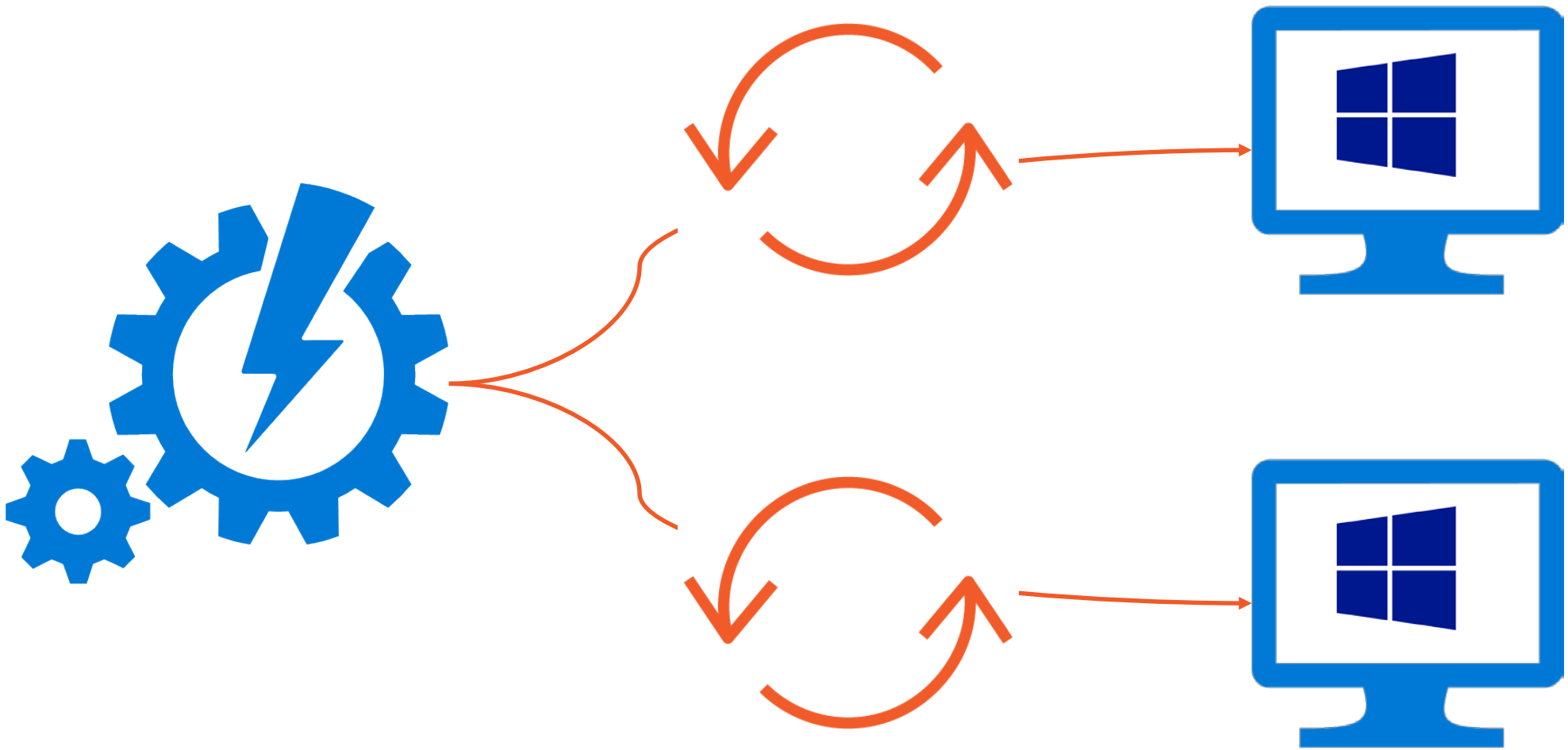

Windows Update
Download only

Configuration WebServer

xHotfix 3130944

Download URI


PS1
Configuration WebServer
xHotfix 3130944
xHotfix 3137691
xHotfix 3139896



Microsoft Azure Automation

Mike McKeown

@nwoekcm michaelmckeown.com

Set-AzureRmVMExtension

OSPatchingForLinux

```
{
  "disabled": false,
  "stop": false,
  "rebootAfterPatch": "RebootIfNeed",
  "category": "Important",
  "dayOfWeek": "Everyday",
  "startTime": "01:00"
}
```

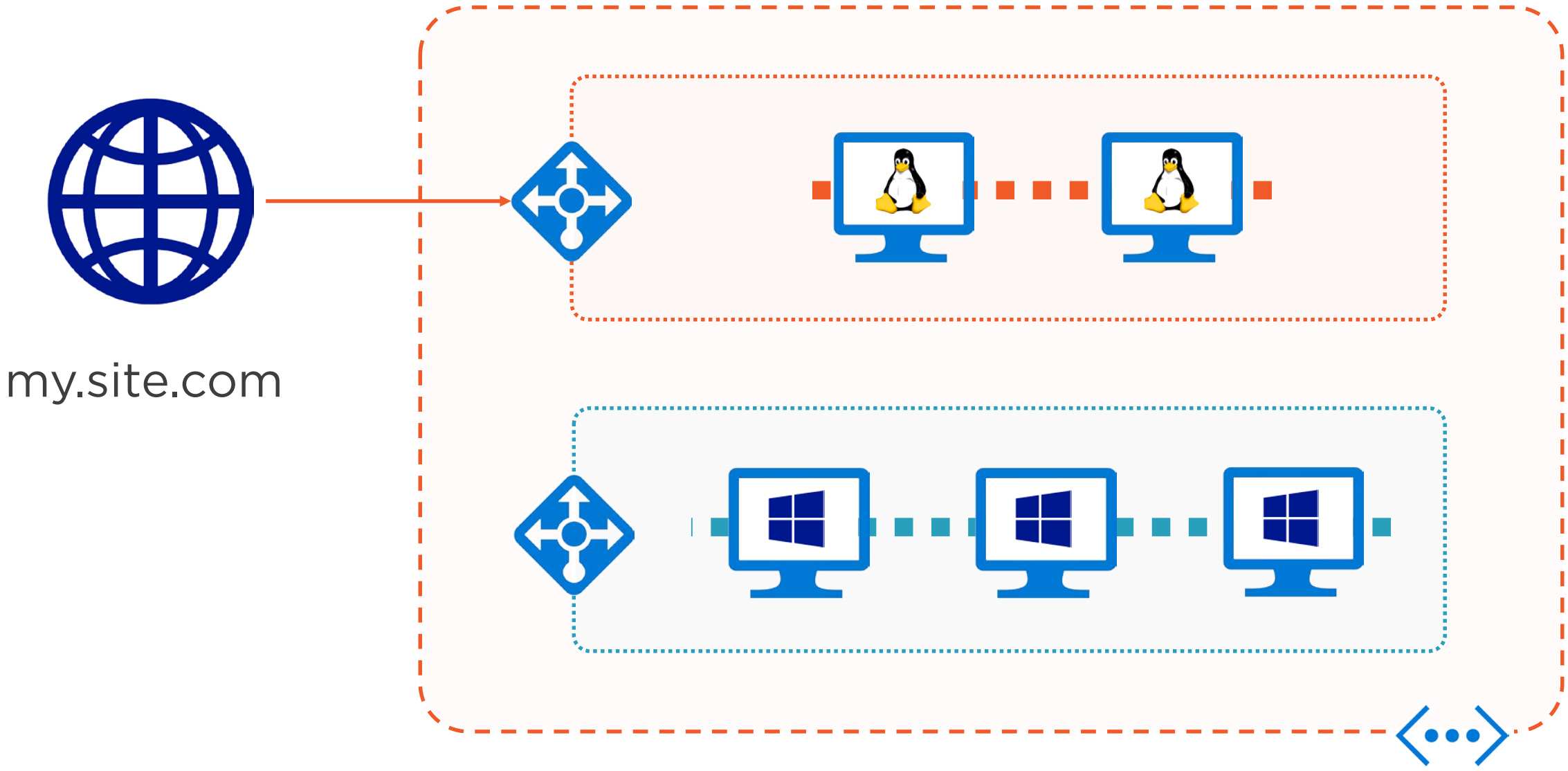
- Public config
- Reboot if required
- Daily schedule

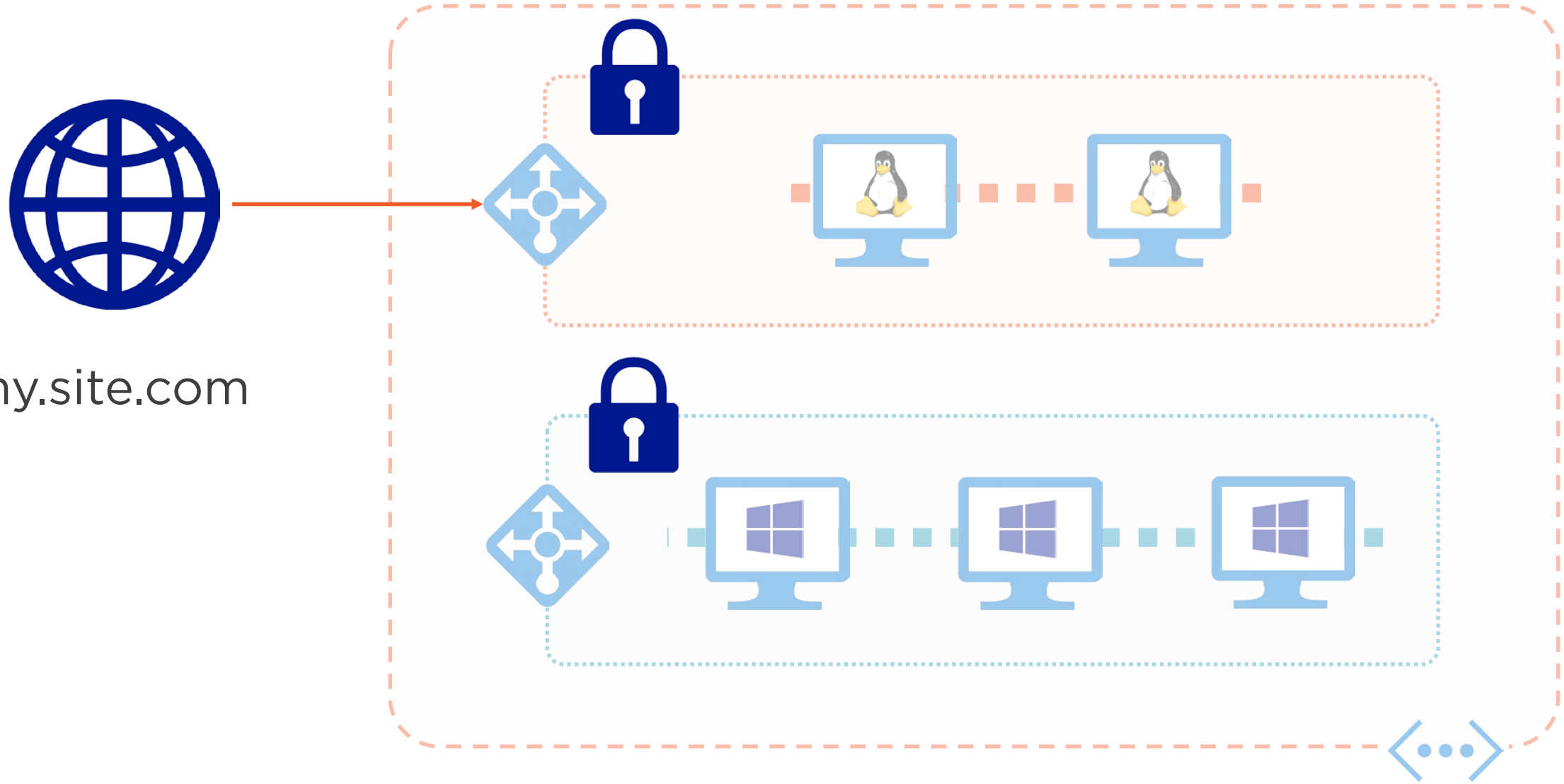
```
{
  "disabled": false,
  "stop": false,
  "rebootAfterPatch": "RebootIfNeed",
  "category": "Important",
  "one-off" : true
}
```

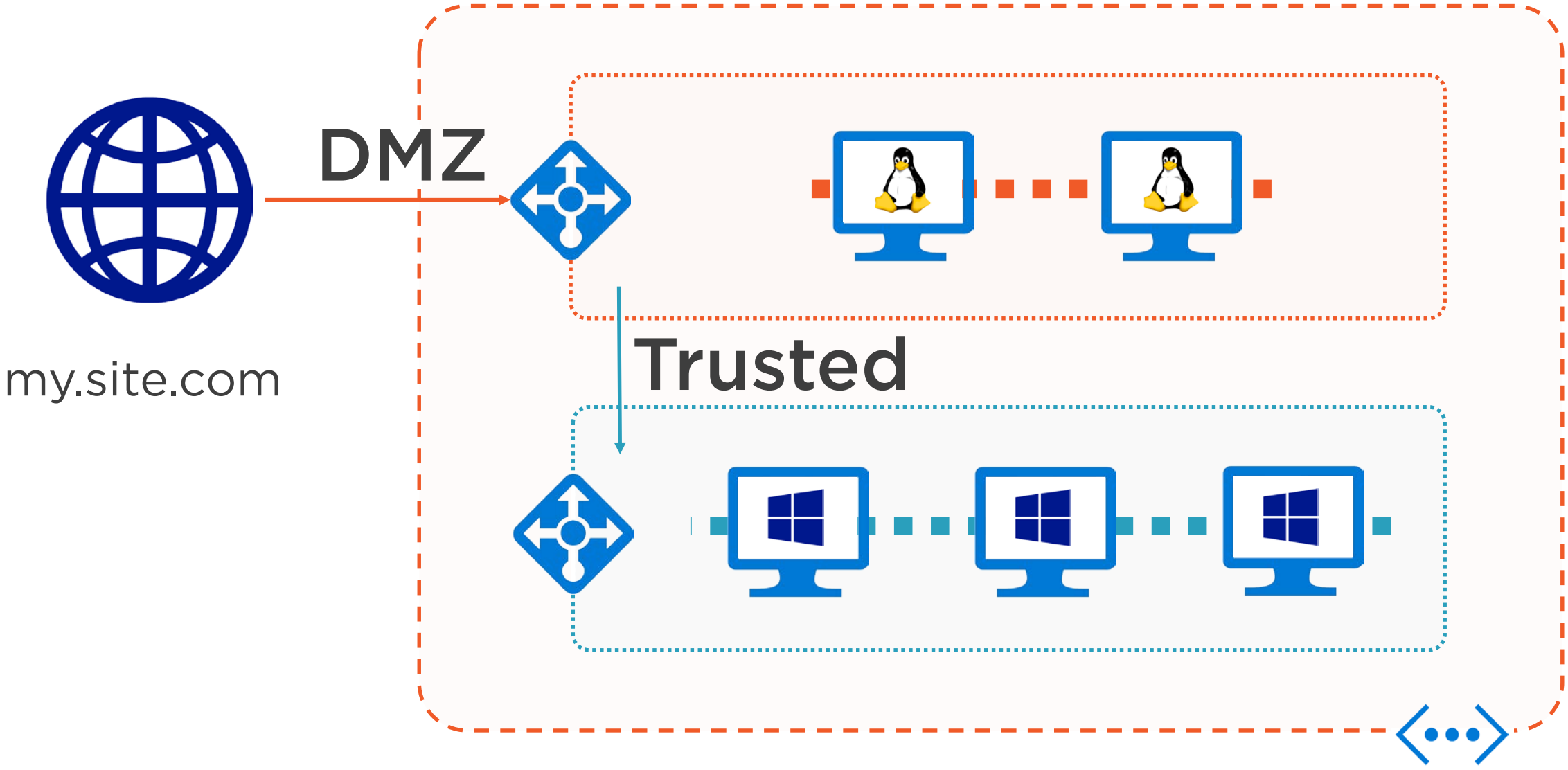
- Public config
- Reboot if required
- One-off update

Ubuntu

apt-get upgrade && apt-get update


my.site.com


my.site.com


DMZ
my.site.com
Trusted

Network Security Group

Rule Allow Incoming Port 80

Priority = 100

Rule Deny Incoming Port *

Rule Deny Outgoing Port *

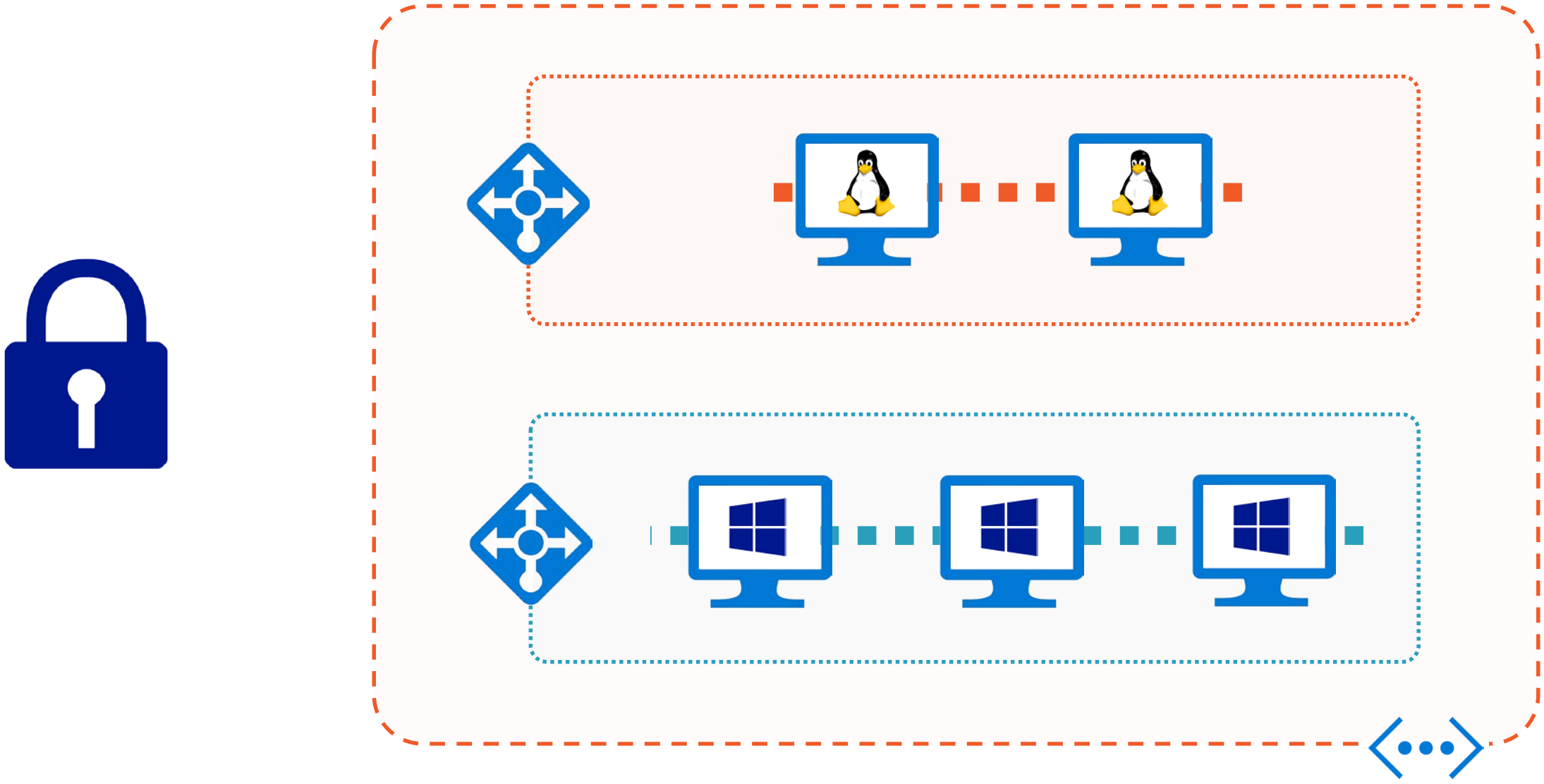
Network Security Group

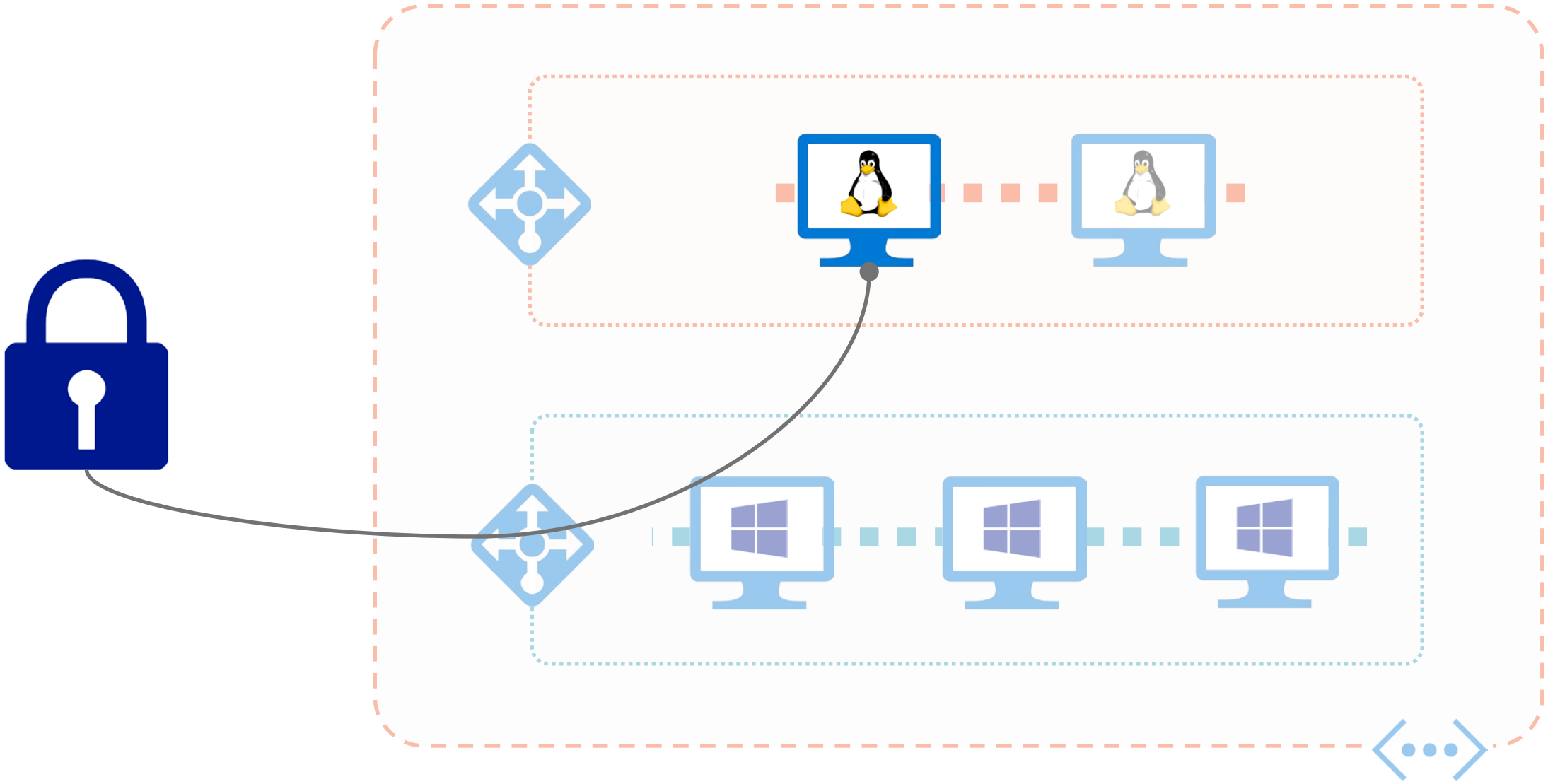
Rule Allow Incoming Port 80

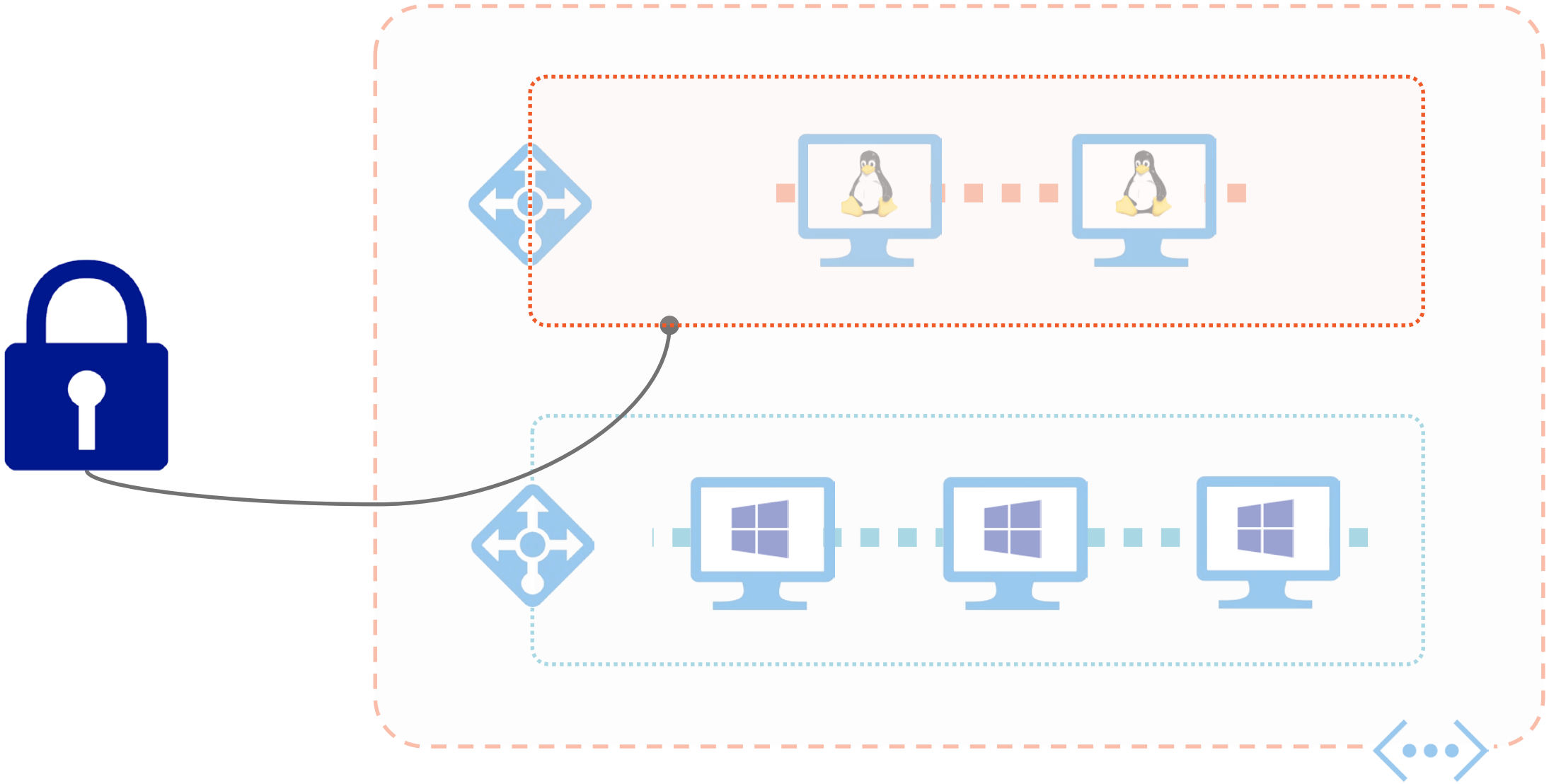
Rule Deny Incoming Port *

Rule Deny Outgoing Port *

Priority = 3000







Network Security Group

[Default Rules]

Priority = 4000+

Public subnet

Allow HTTP in

Network Security Group

Rule Allow Incoming on 80
from Internet

[Default Rules]

Private subnet

Allow 8080 in

Network Security Group

Rule Allow Incoming on 8080
from Public Subnet

[Default Rules]

Private subnet

Deny all out

Network Security Group

Rule Allow Incoming on 8080
from Public Subnet

Rule Deny Outgoing Port *

[Default Rules]

Public subnet

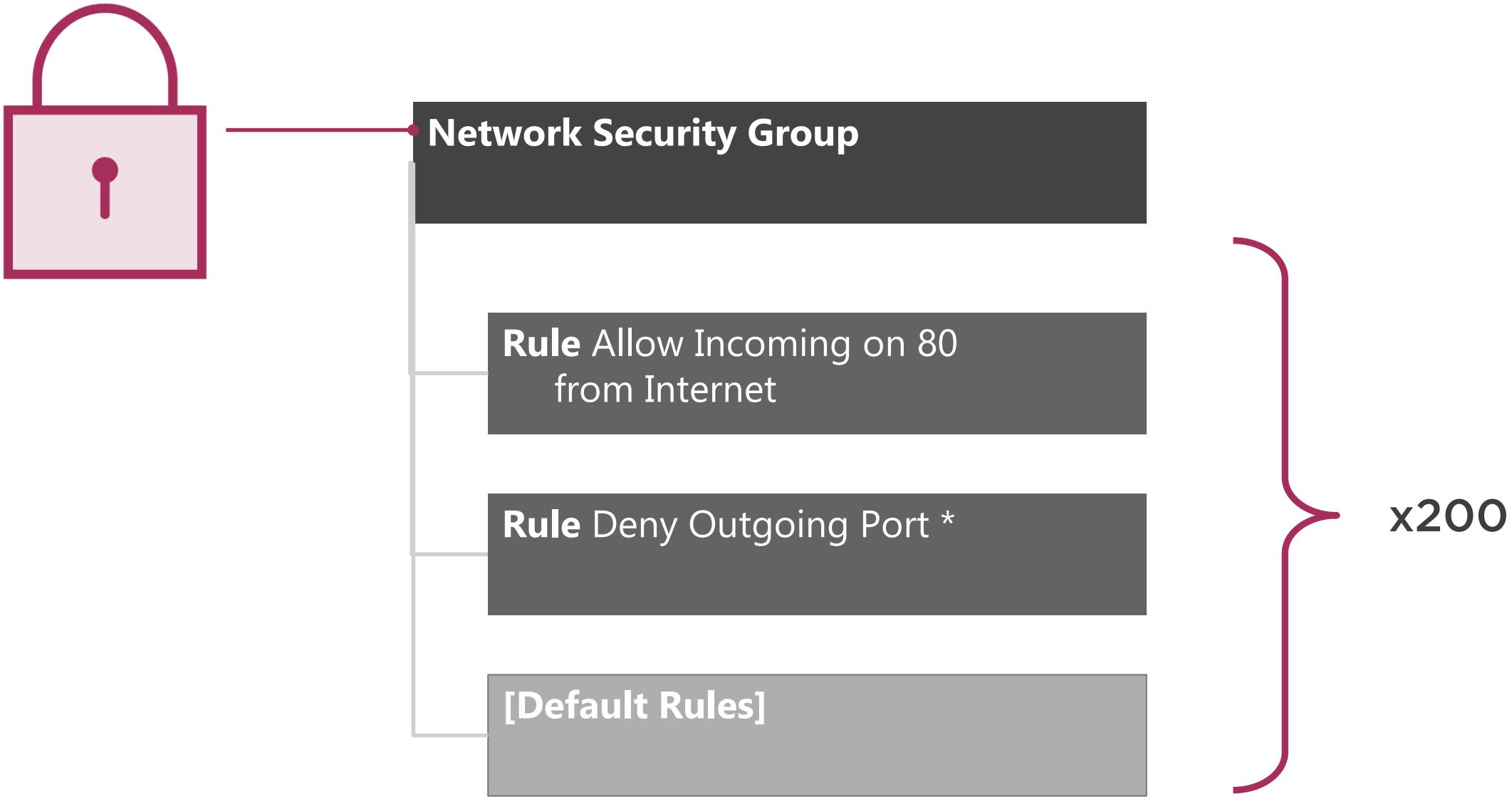
Deny all out

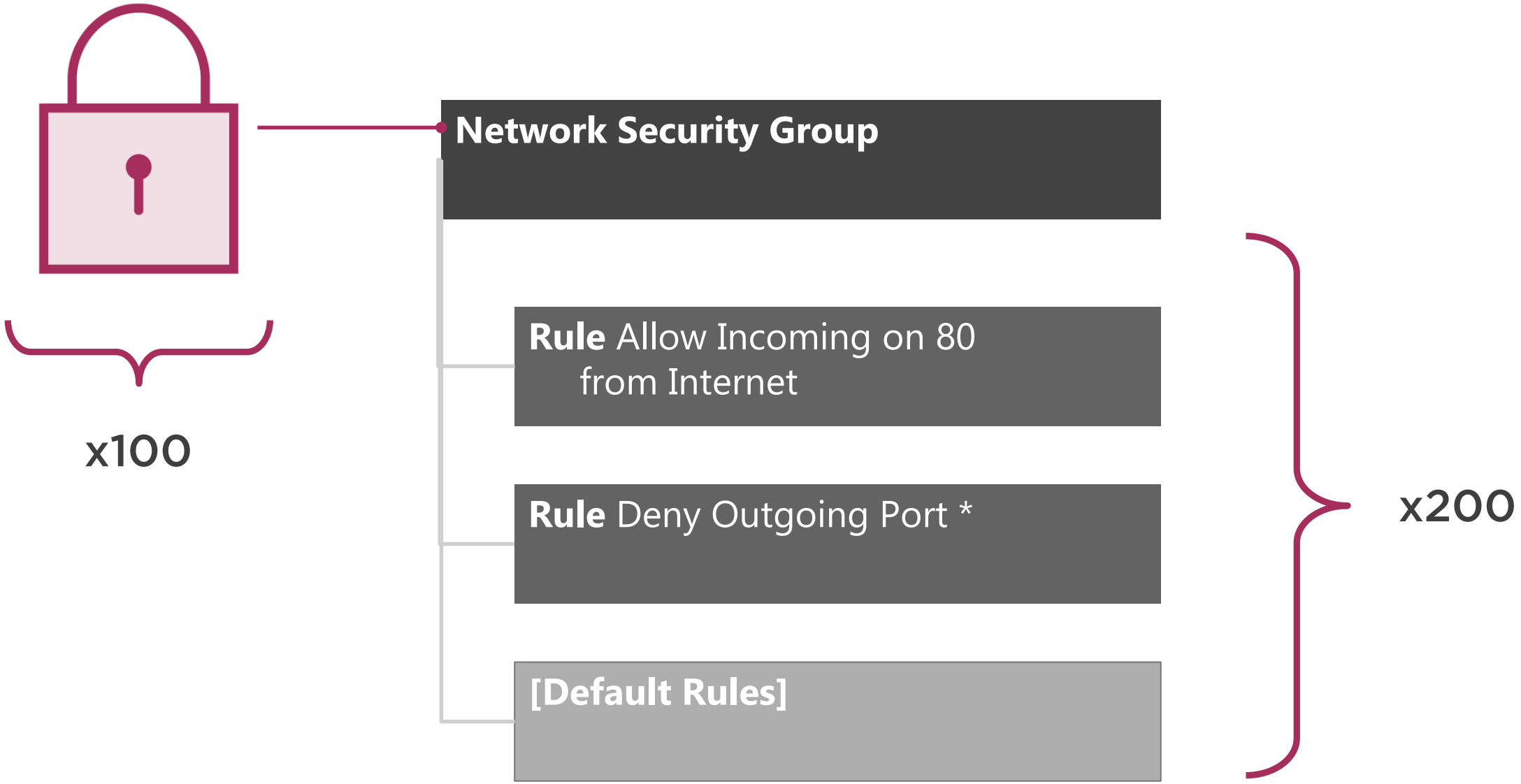
Network Security Group

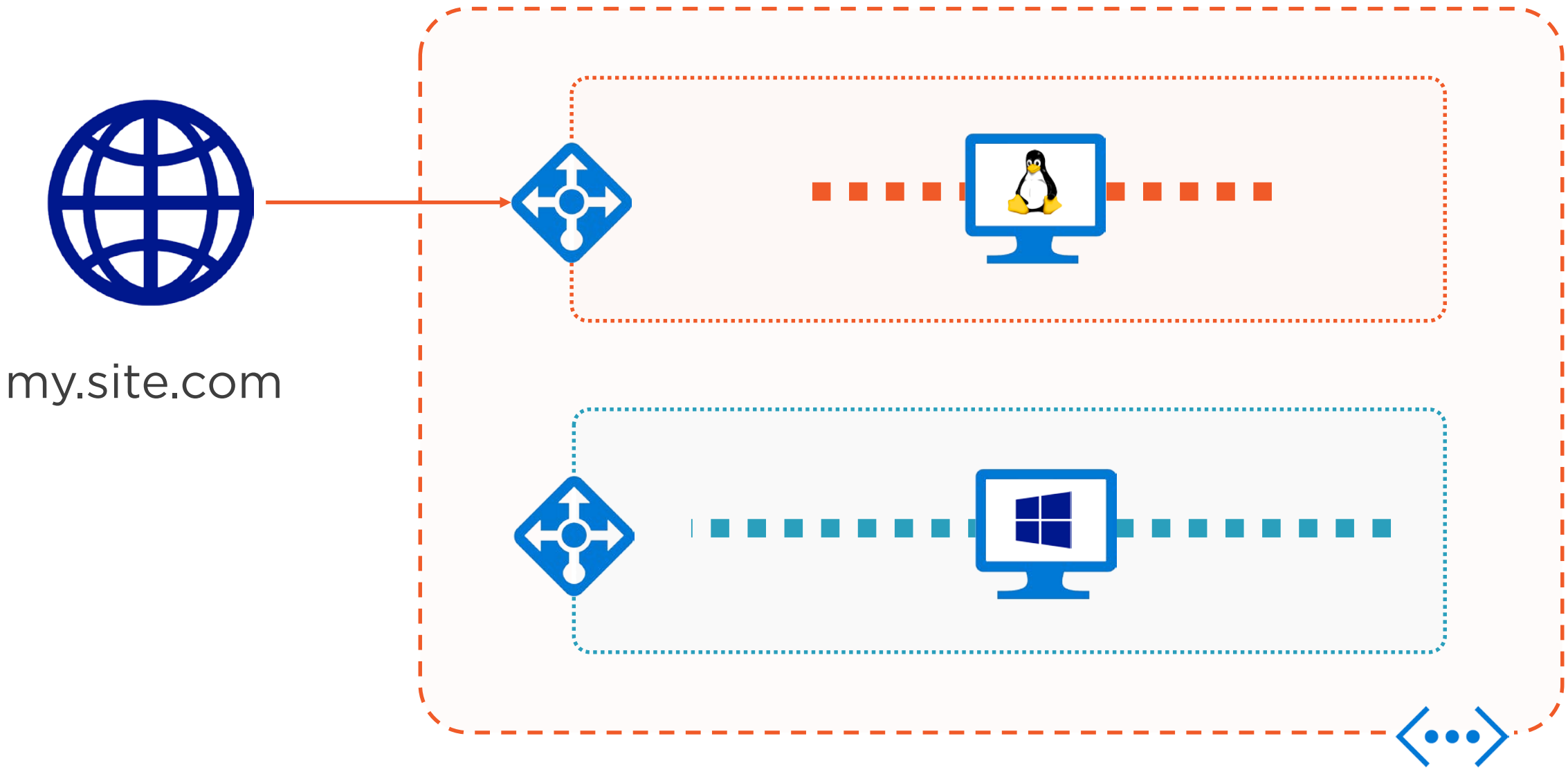
Rule Allow Incoming on 80
from Internet

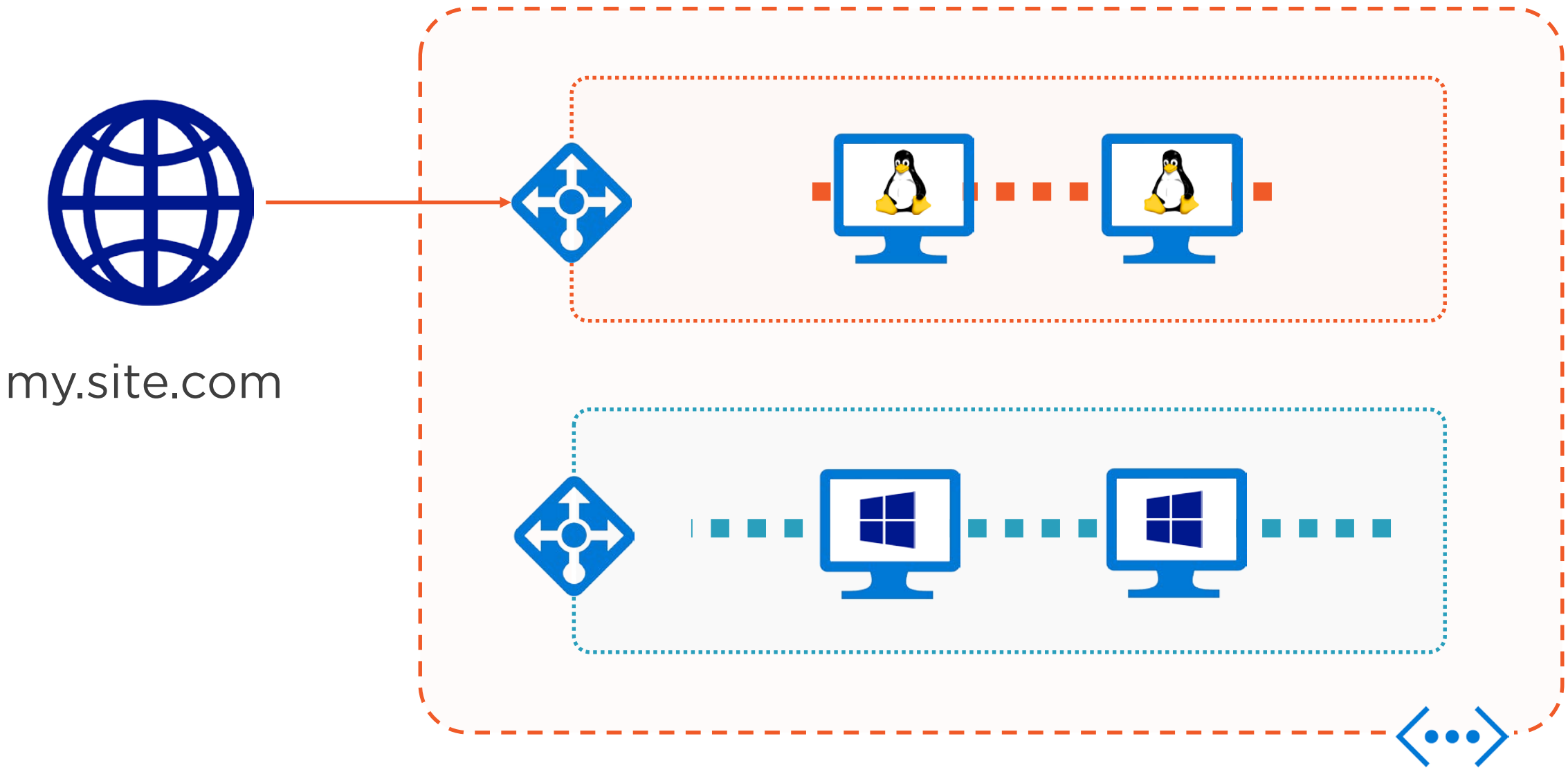
Rule Deny Outgoing Port *

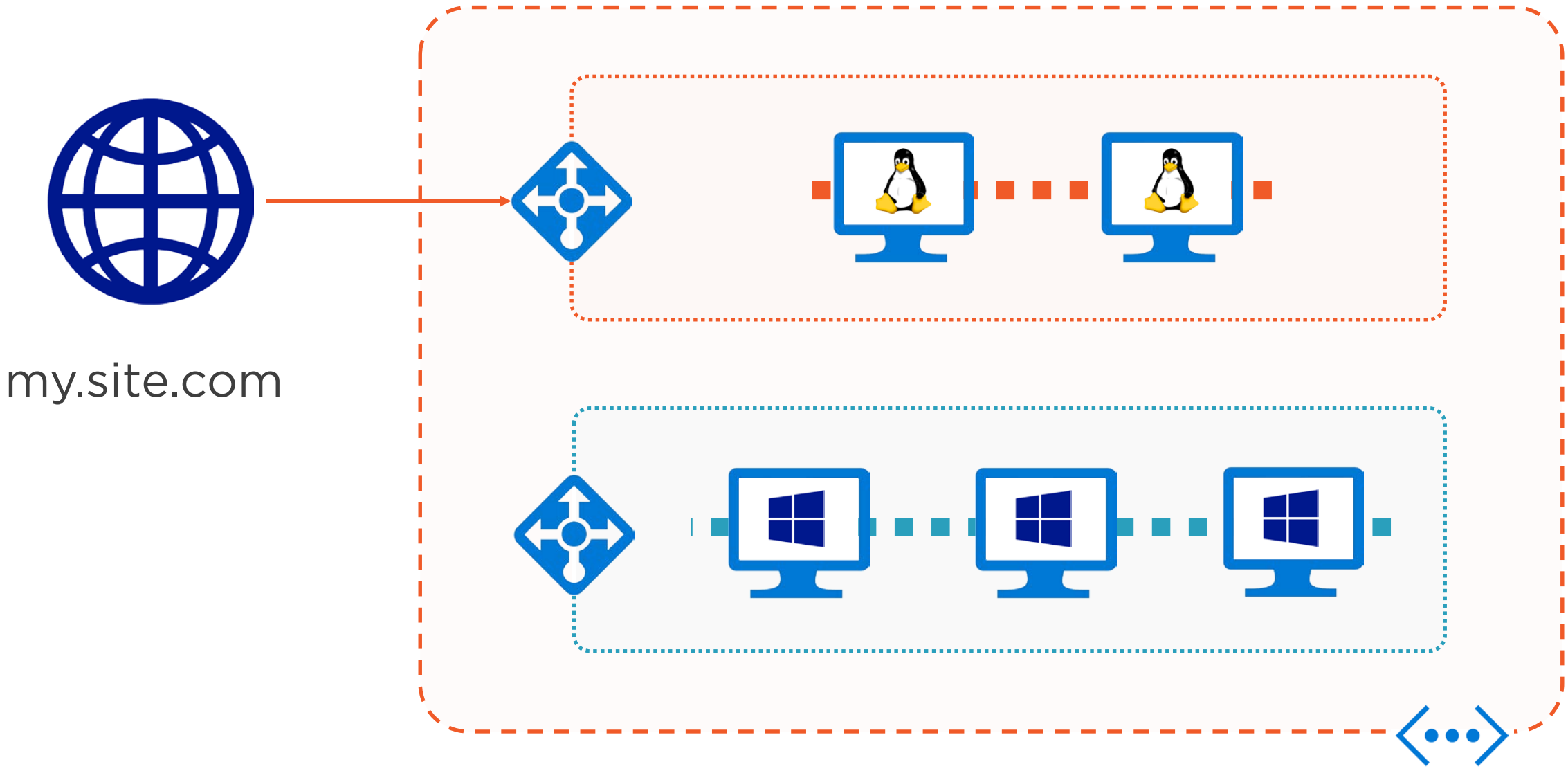
[Default Rules]

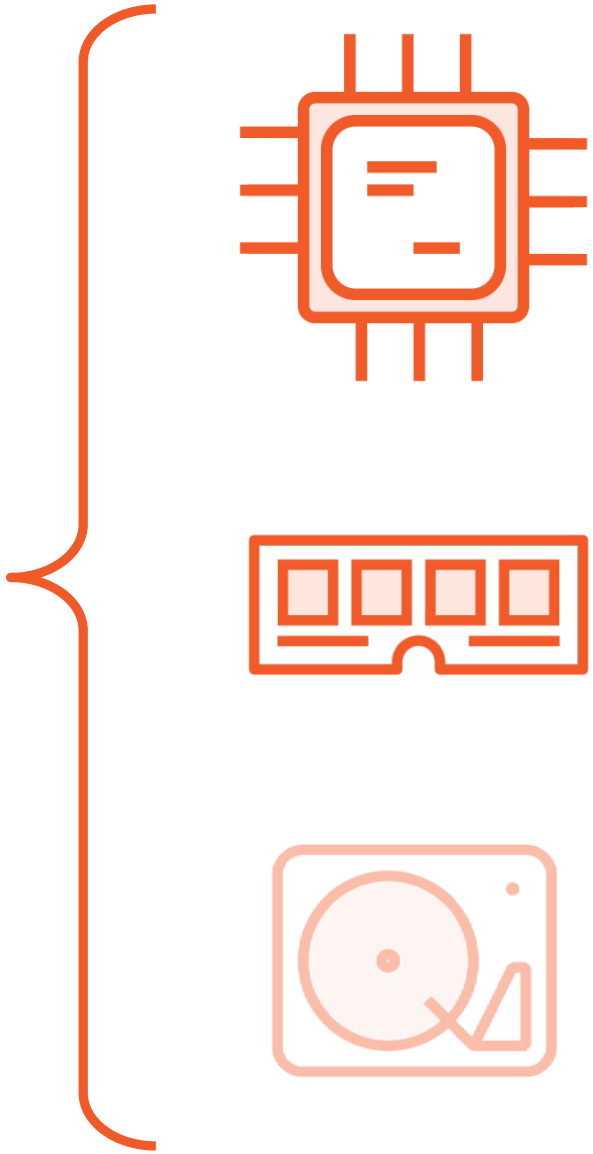

Network Security Group
Rule Allow Incoming on 80
from Internet
Rule Deny Outgoing Port *
[Default Rules]
x200


Network Security Group
Rule Allow Incoming on 80 from Internet
Rule Deny Outgoing Port *
[Default Rules]
x100
x200


my.site.com

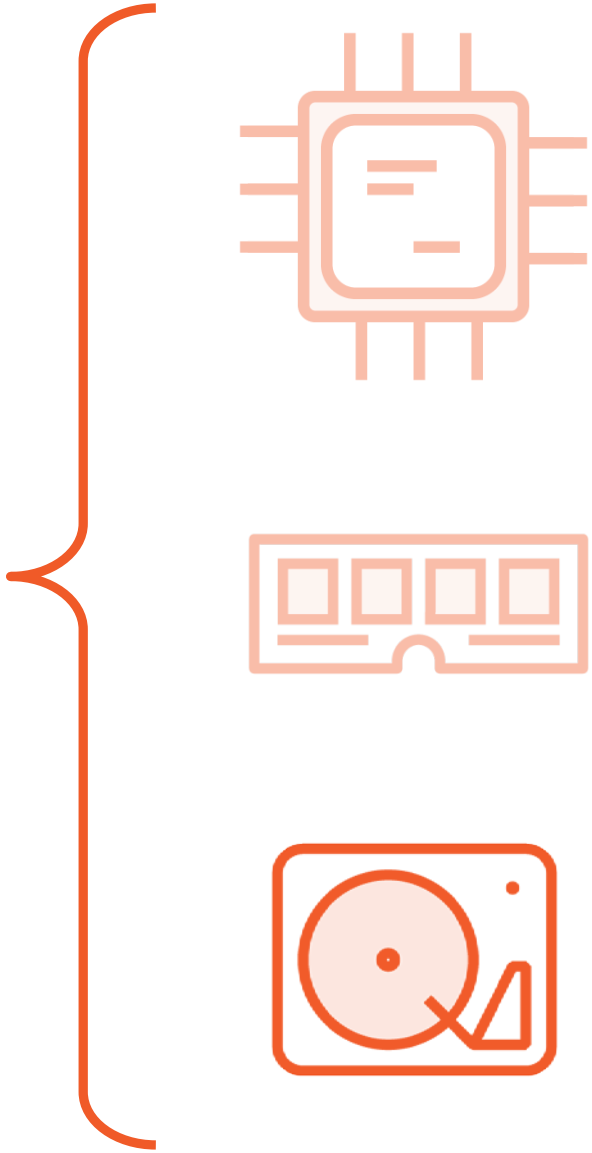

my.site.com


my.site.com



VM Size

- CPU type
- Number of CPU cores
- Memory size

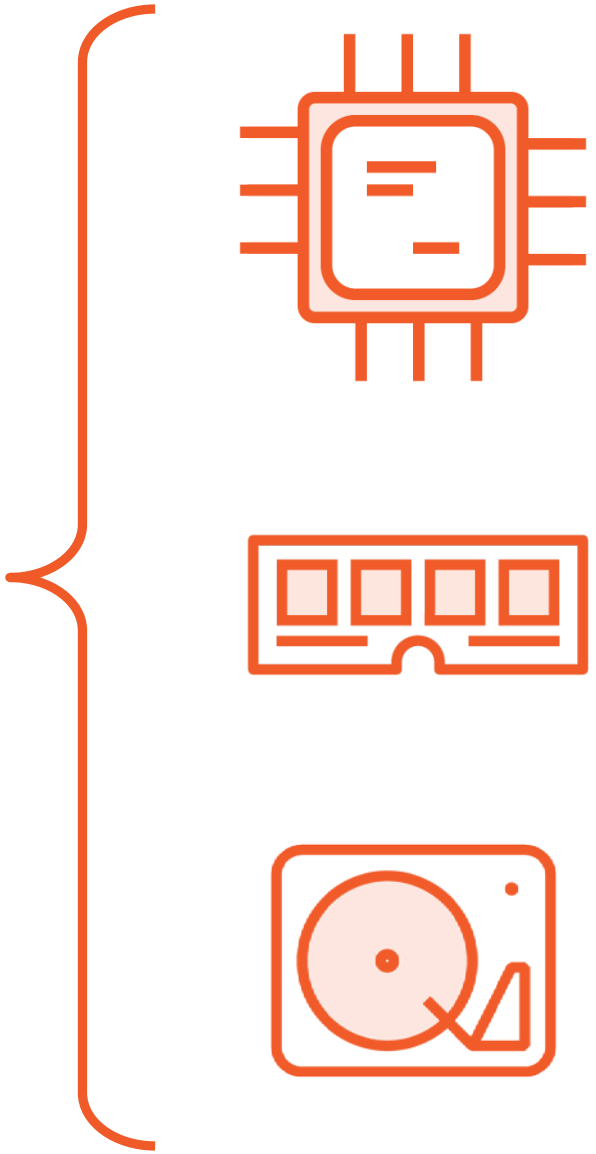


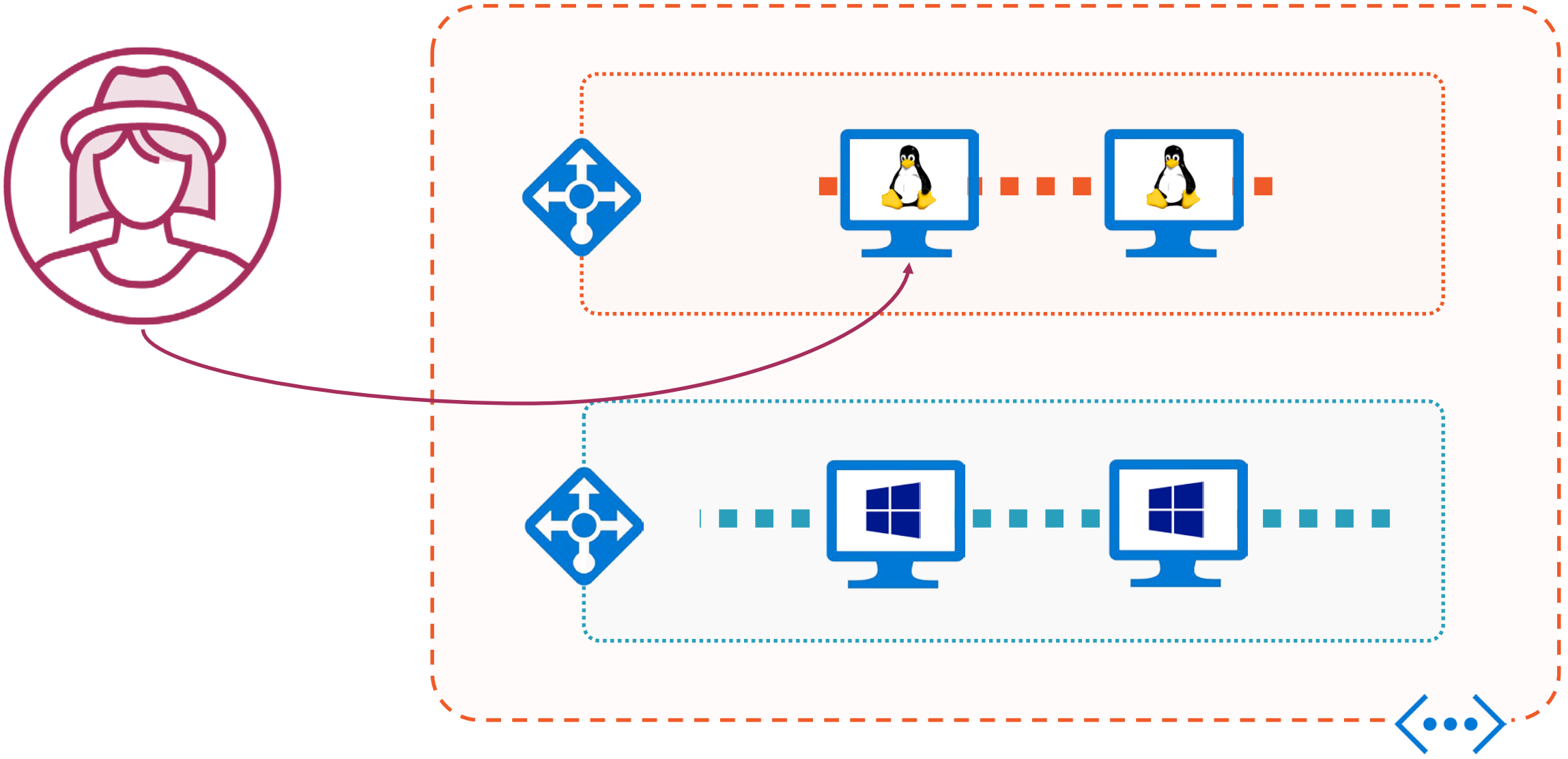
Storage

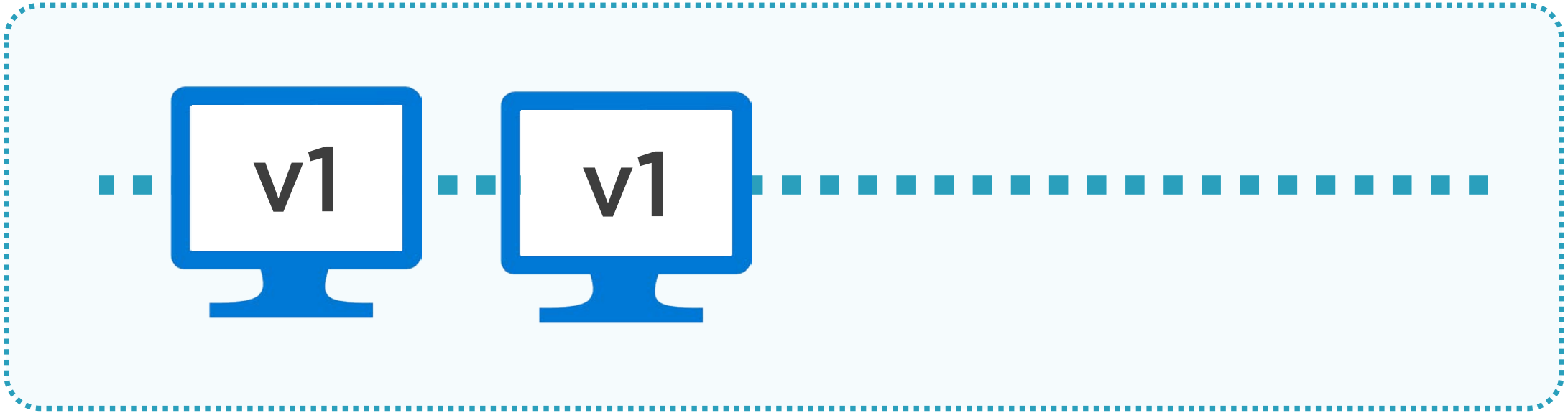
- Disk size
- Number of disks
- Disk performance

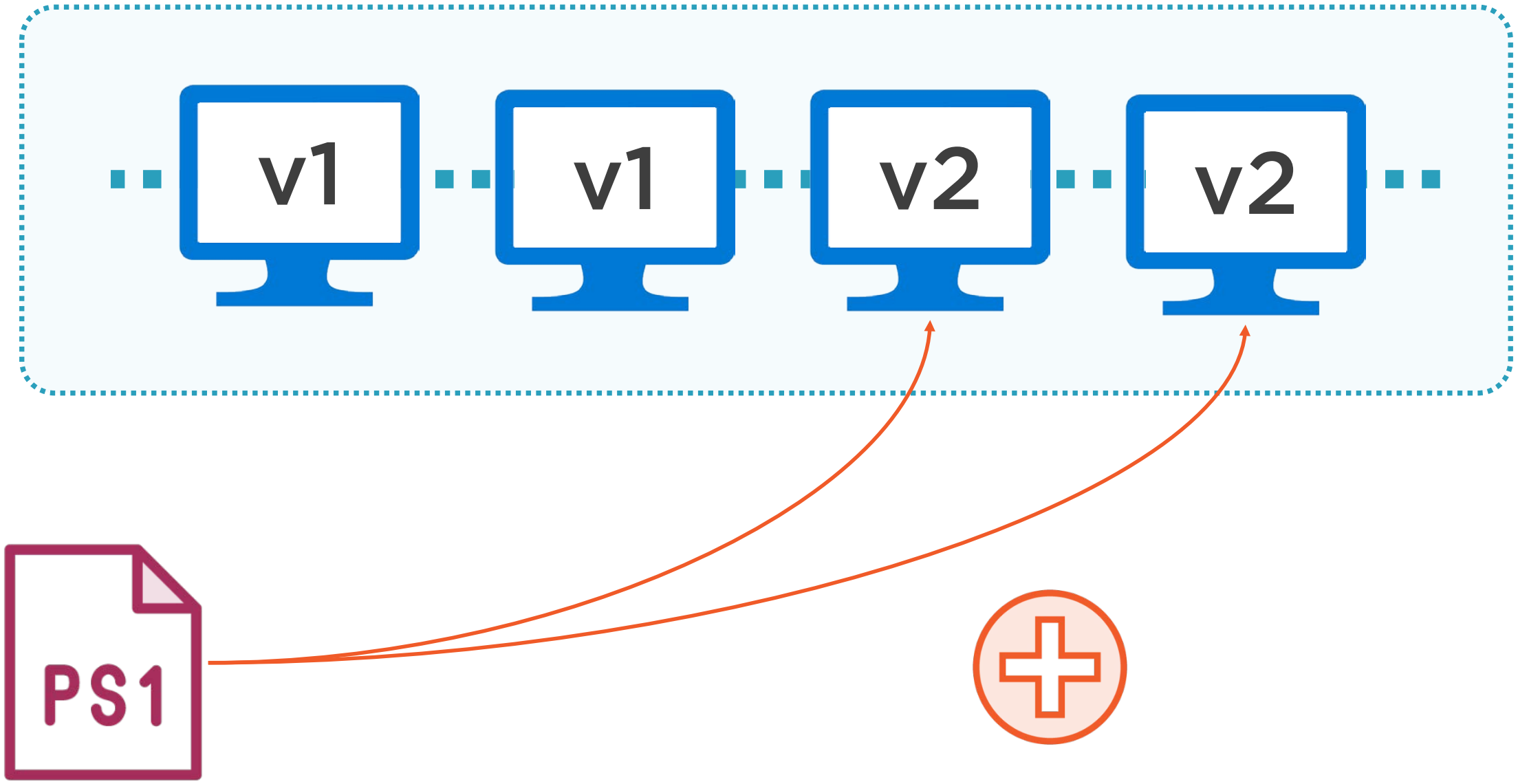
Scaling Up

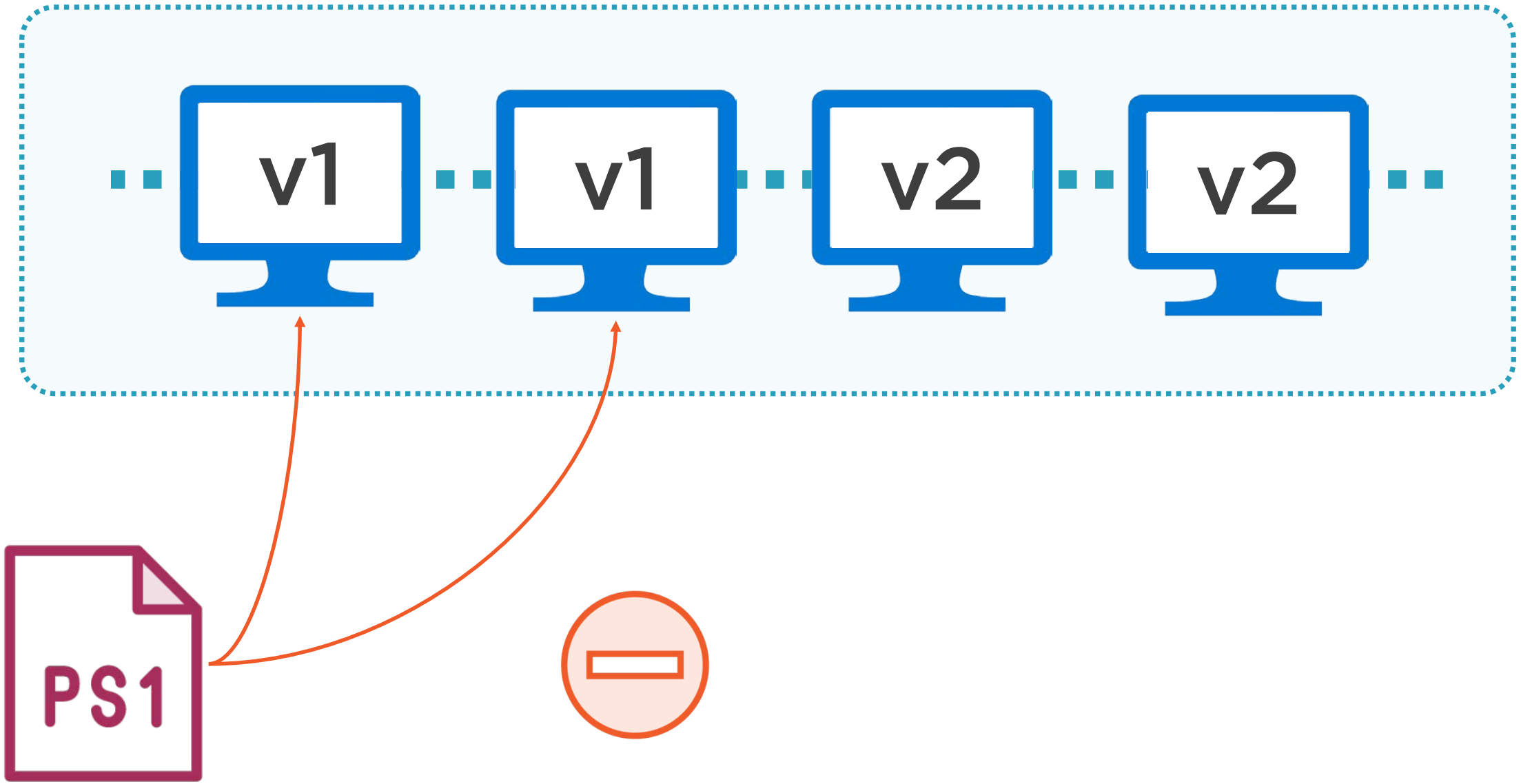
- Resize VM
- Resize OS disk
- Add data disks






v1
v1


v1
v1
v2
v2
PS1


v1
v1
v2
v2
PS1


v2
v2

Basic_A1

Standard_A1

Basic_A1

Standard_A1

Size

A1 -> A8

D1 -> D8

GS1 -> GS8

...

Basic_A1

Standard_A1

Service Level

- Basic
- Standard
- Premium

Basic_A1

Standard_A1

Series ("SKU")

- Hardware type
- Functionality
- Performance

Basic

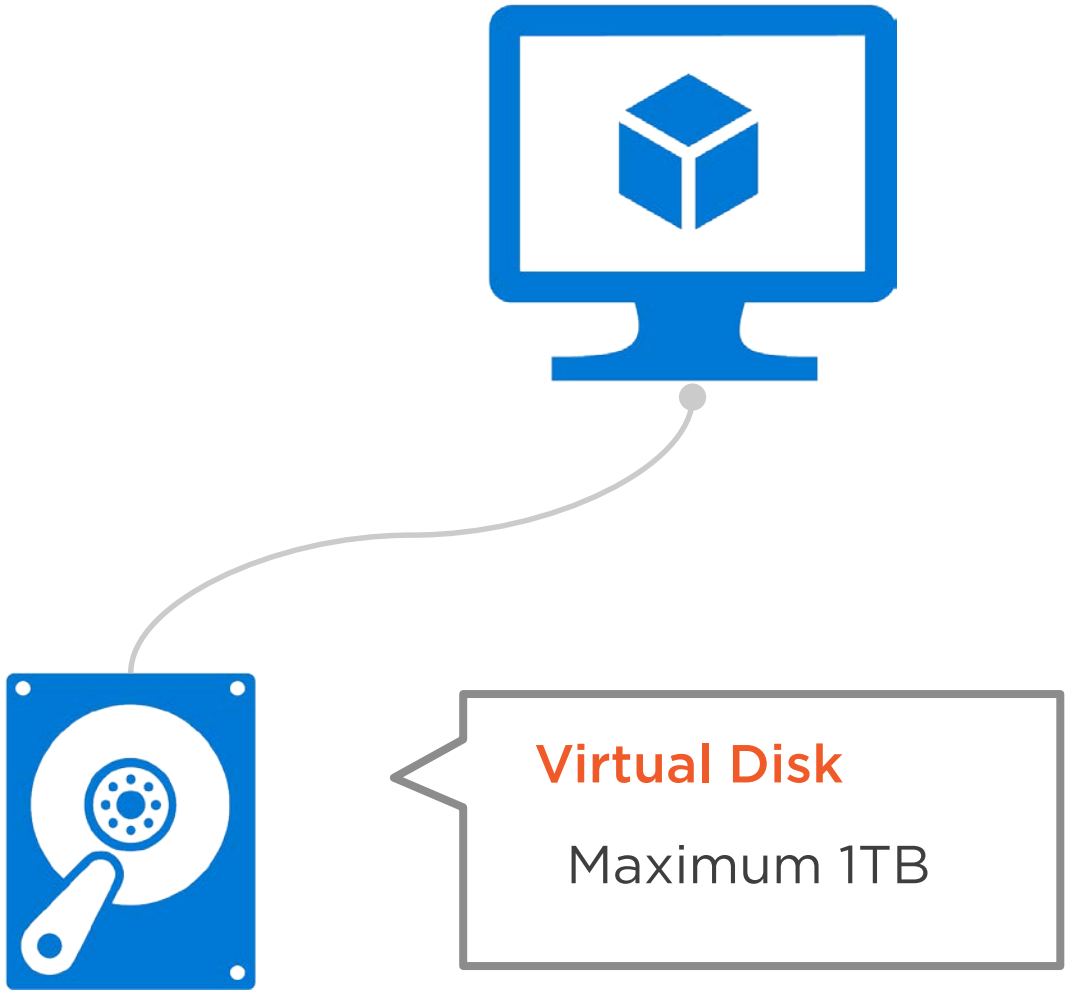
Limited Functionality

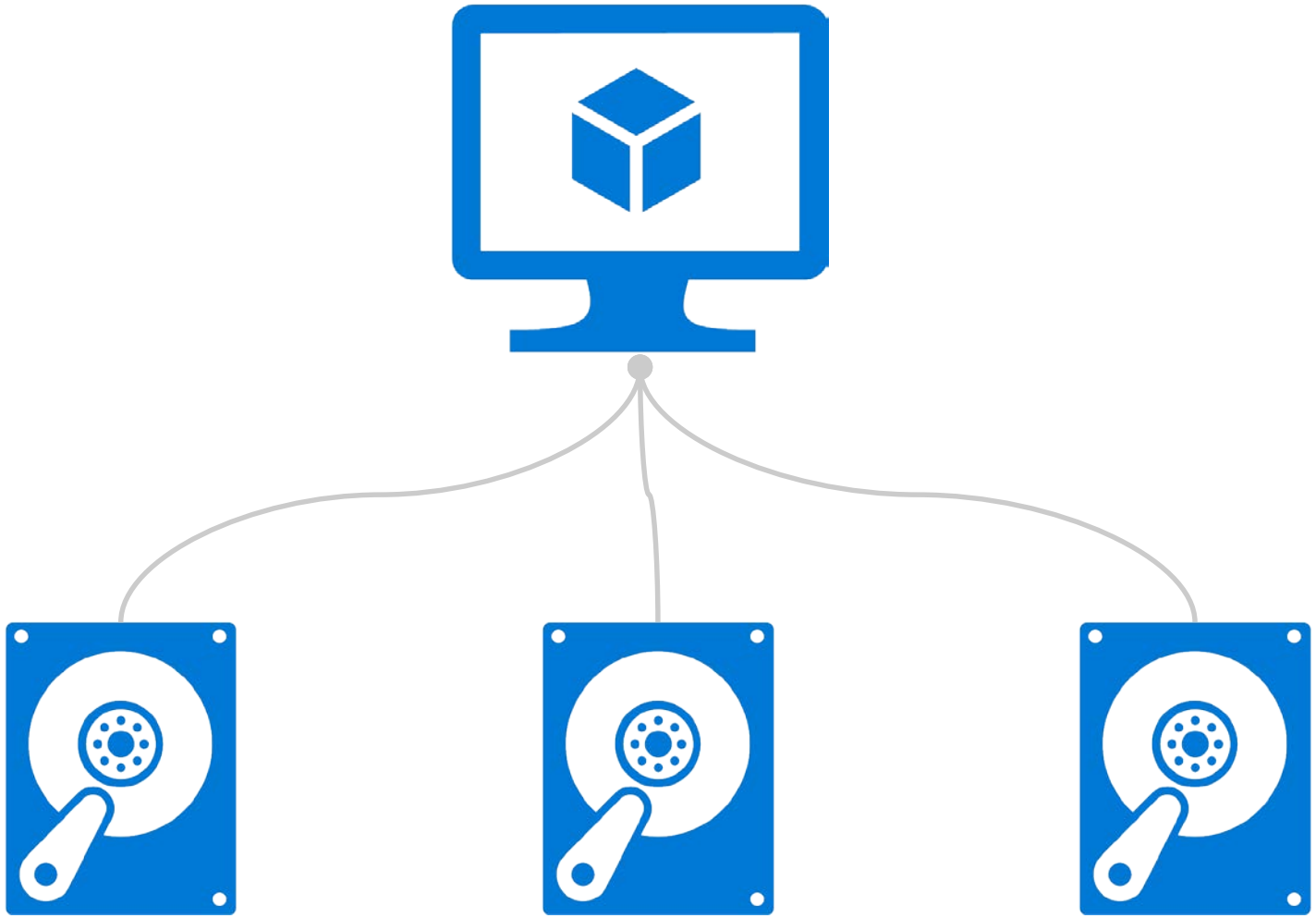
Disk to 300 IOPS

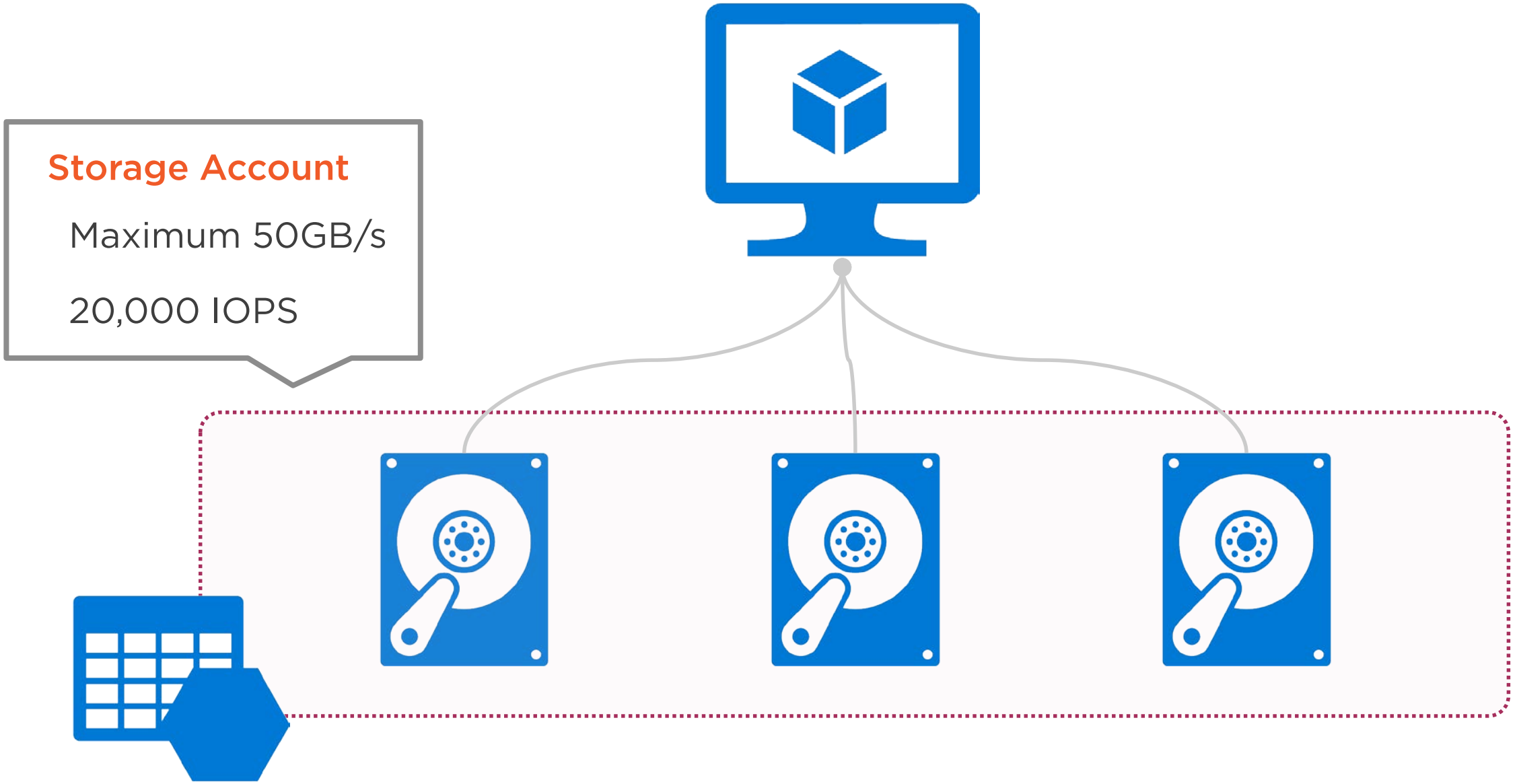
Standard

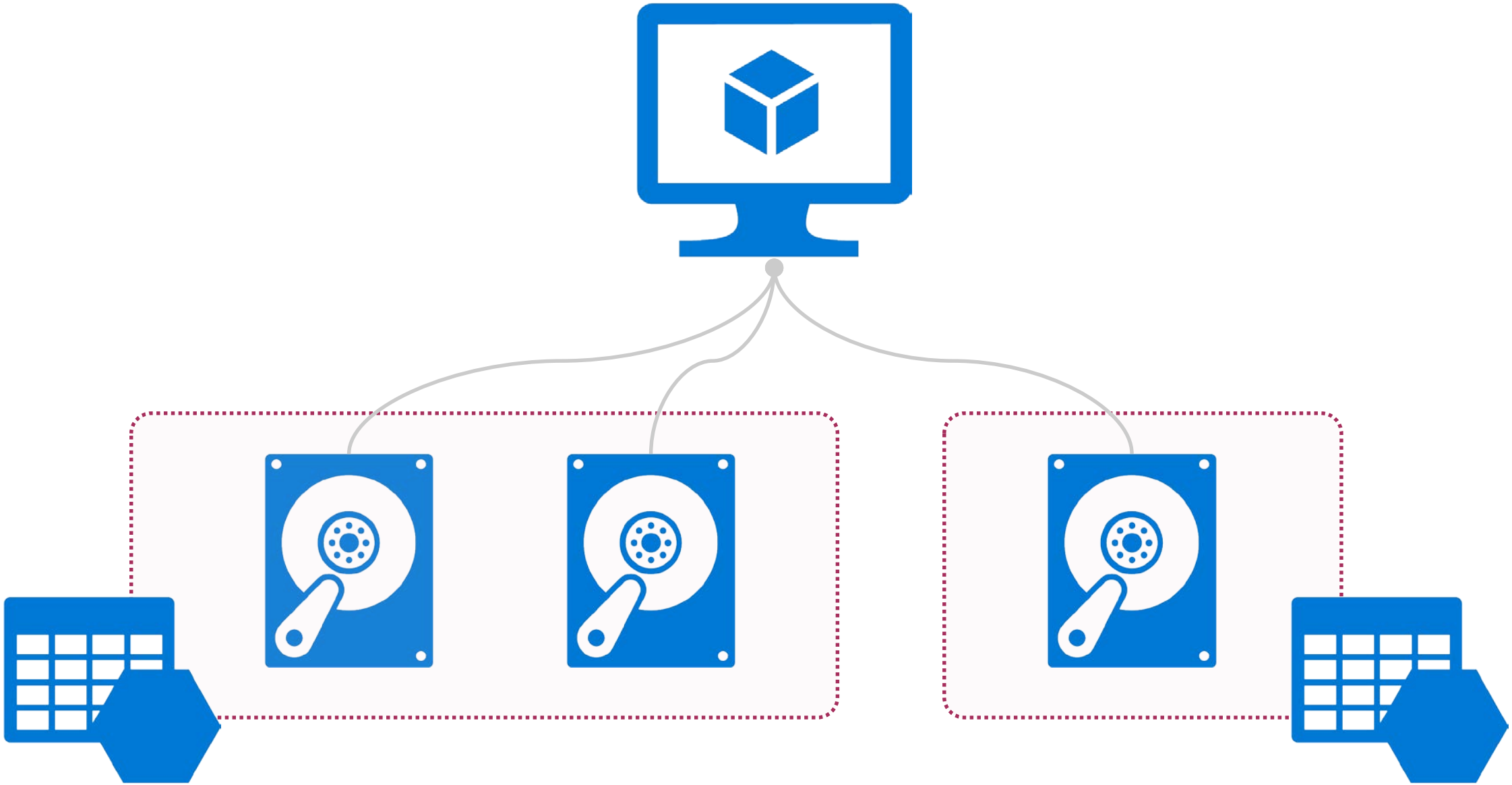
Full Functionality

Disk to 500 IOPS


Virtual Disk
Maximum 1TB




Storage Account
Maximum 50GB/s
20,000 IOPS



Basic

Limited Functionality

Disk to 300 IOPS

Standard

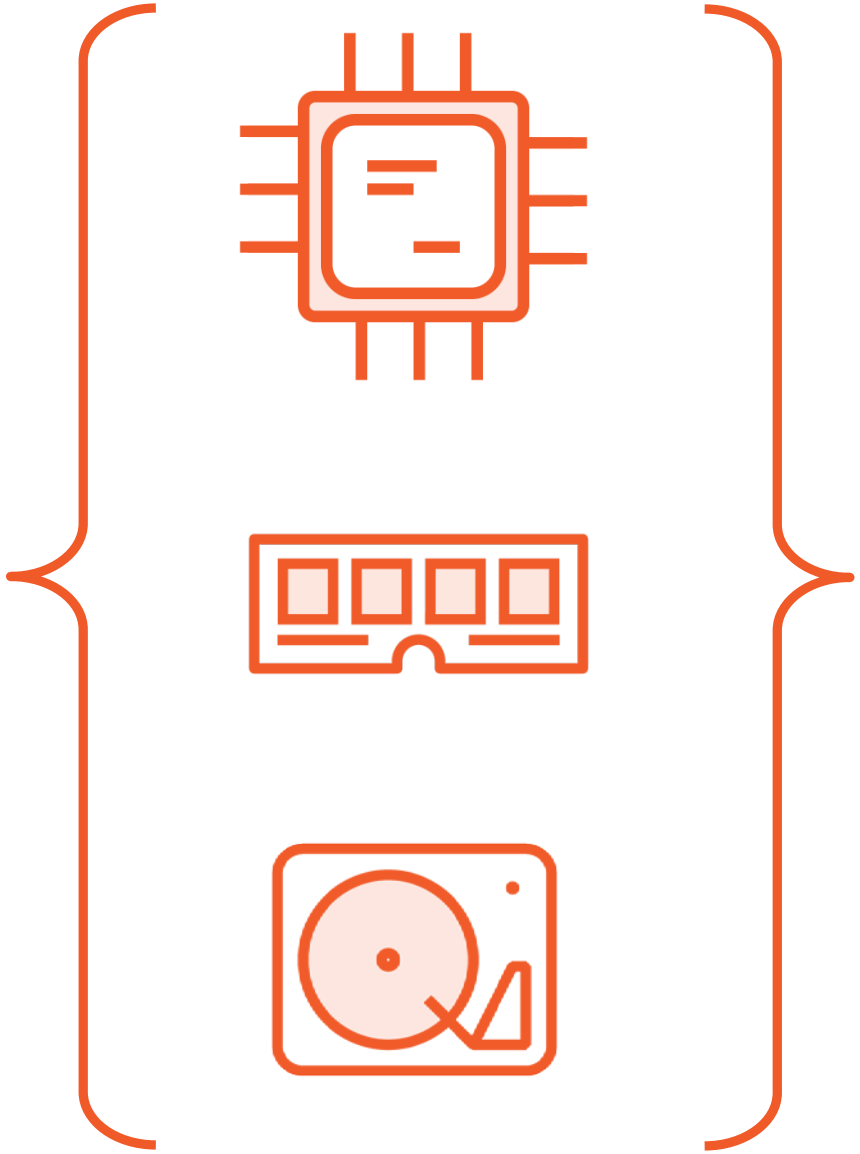
Full Functionality

Disk to 500 IOPS

Premium

Full Functionality

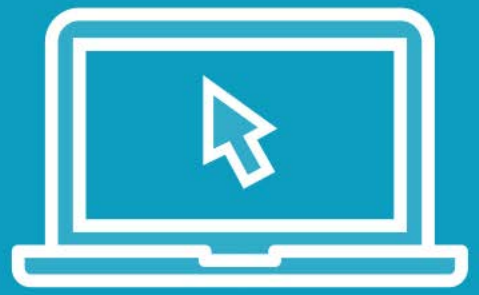
Disk to 5,000 IOPS



Fixed Allocations

- IOPS
- Virtual Cores
- Virtual RAM

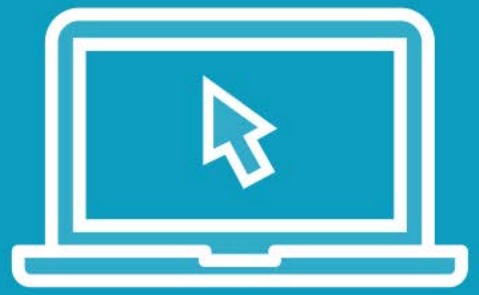
Demo



Changing VM Performance

- Scaling up within SKU
- Changing SKUs
- Scaling impact

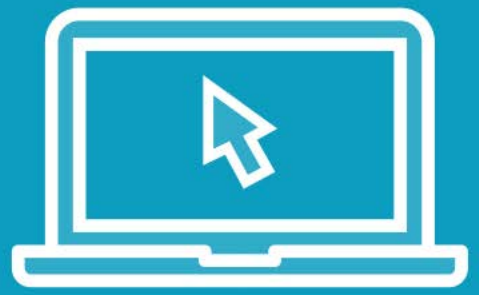
Demo



Changing VM Storage

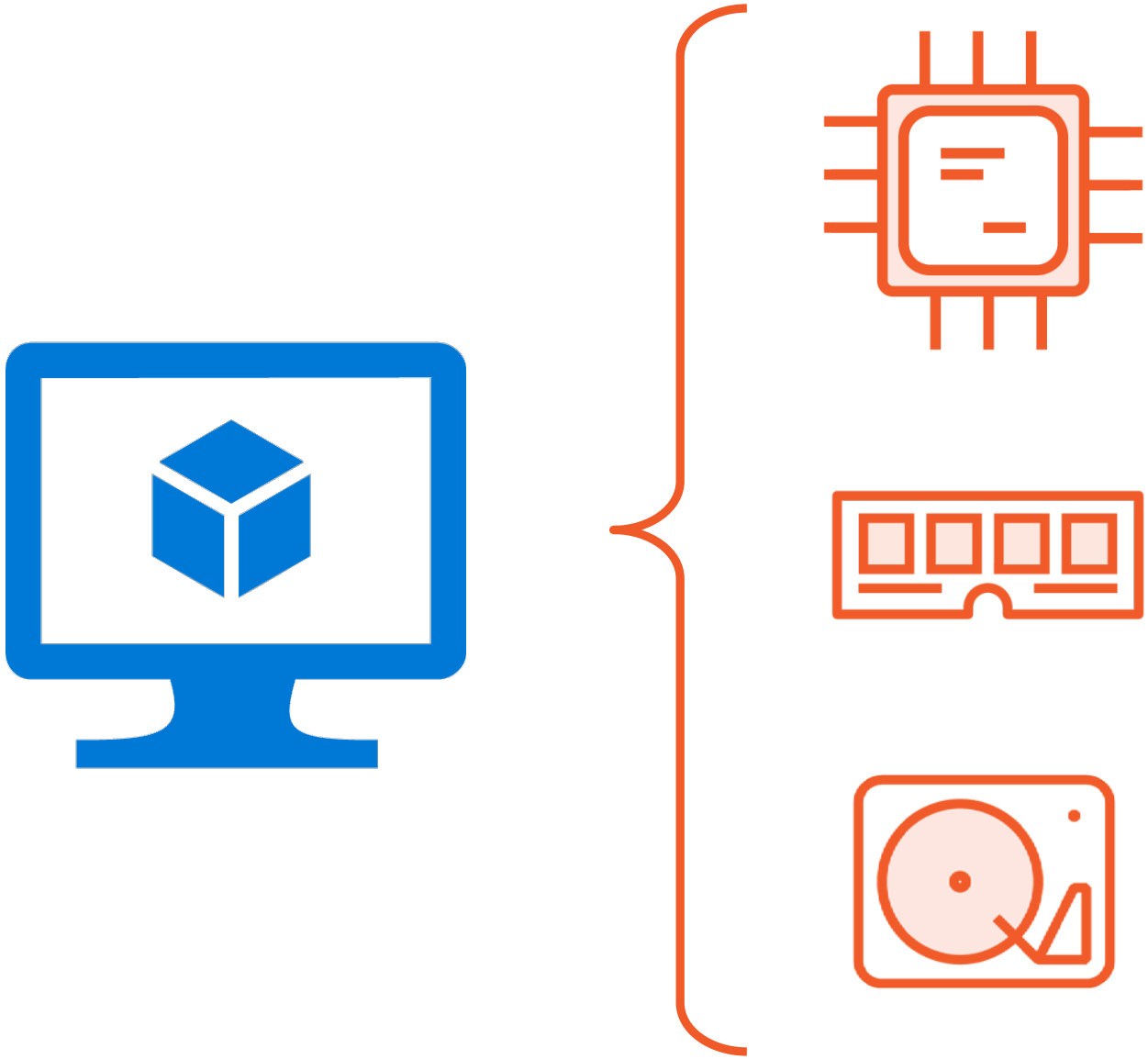
- Resizing the OS disk
- Allocating space

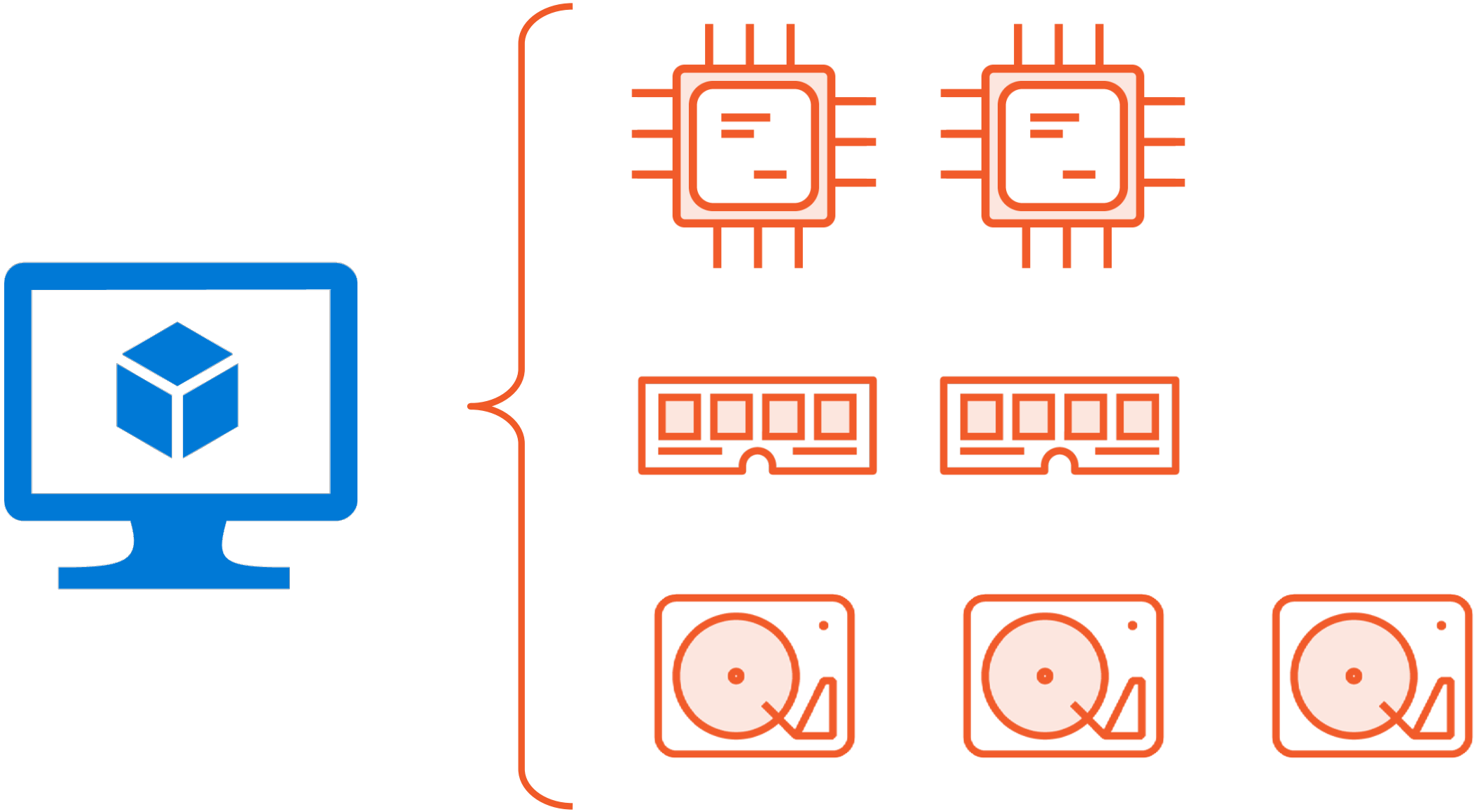
Demo

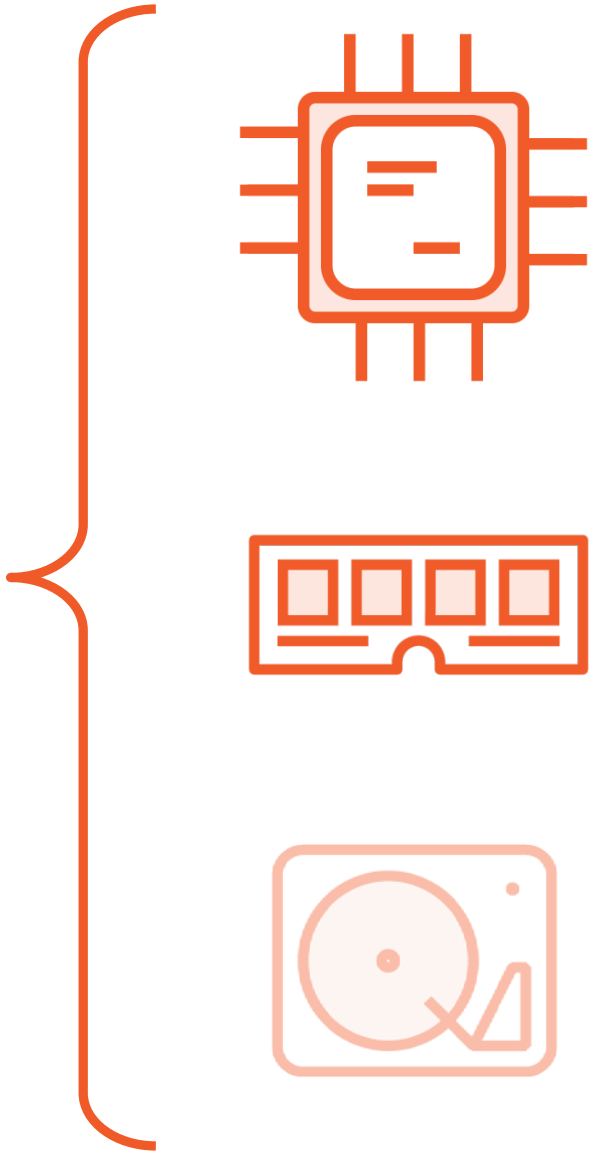


Changing VM Storage

- Adding data disks
- Allocating space
- Using Premium Storage



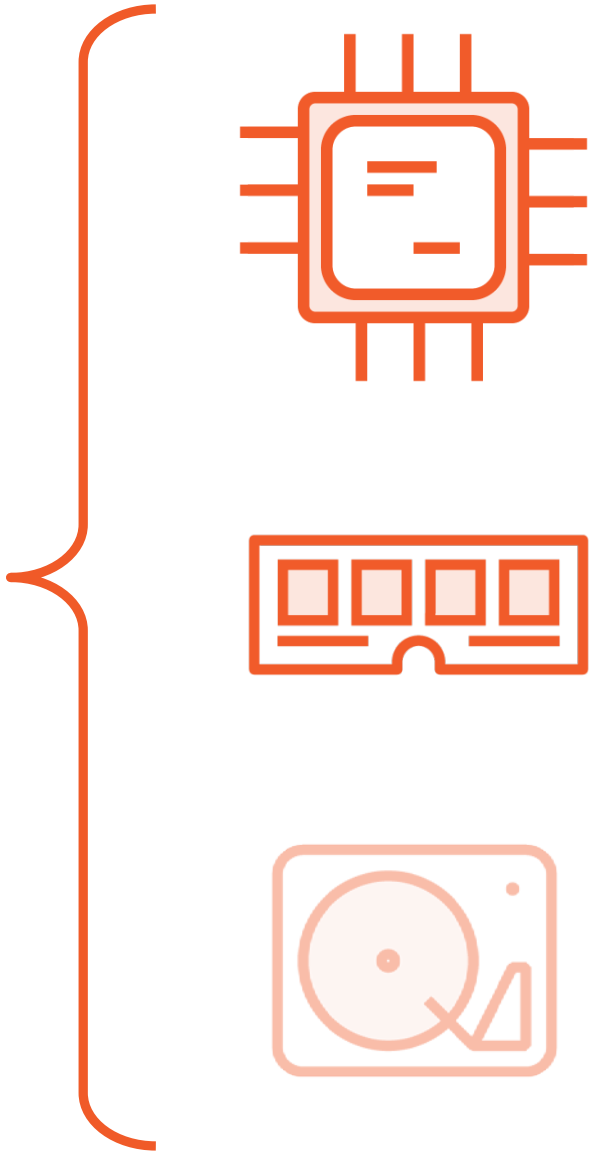




Scale within SKU

Up or down

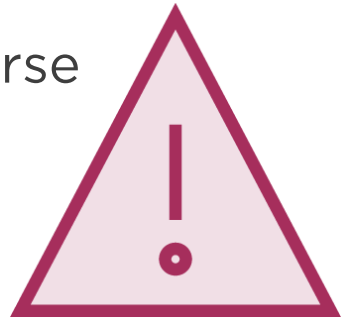
VM update

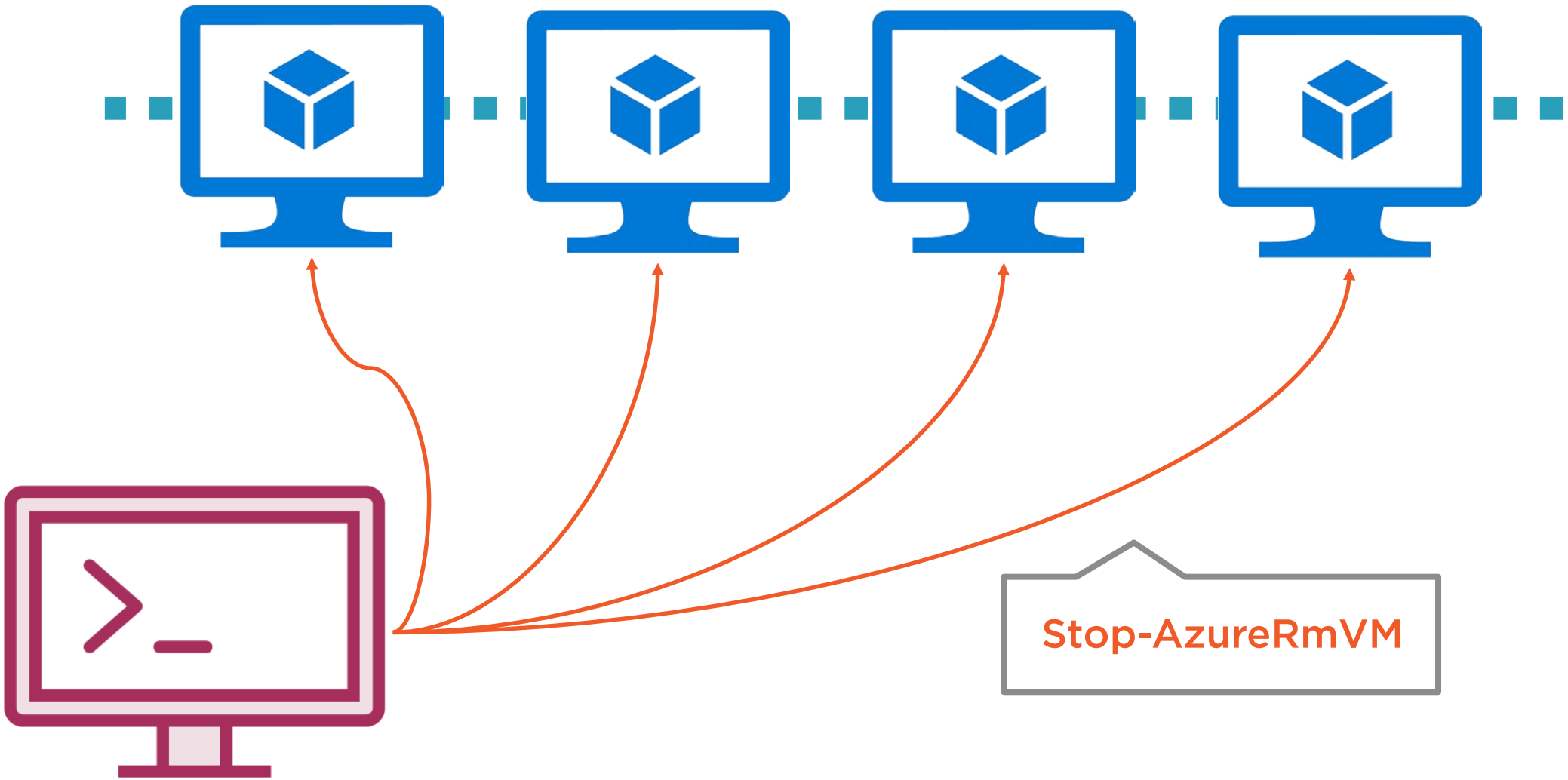


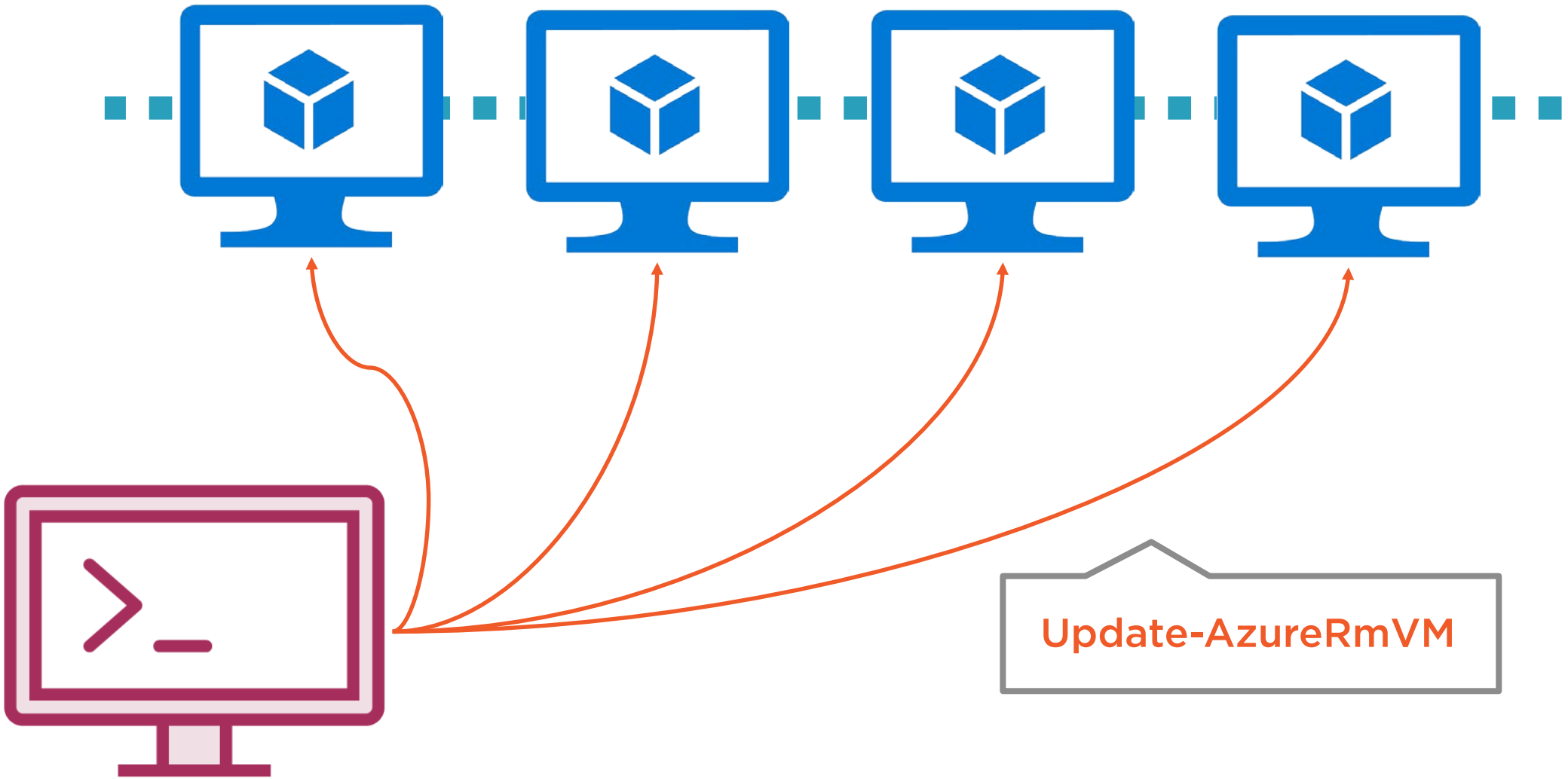
Change SKU

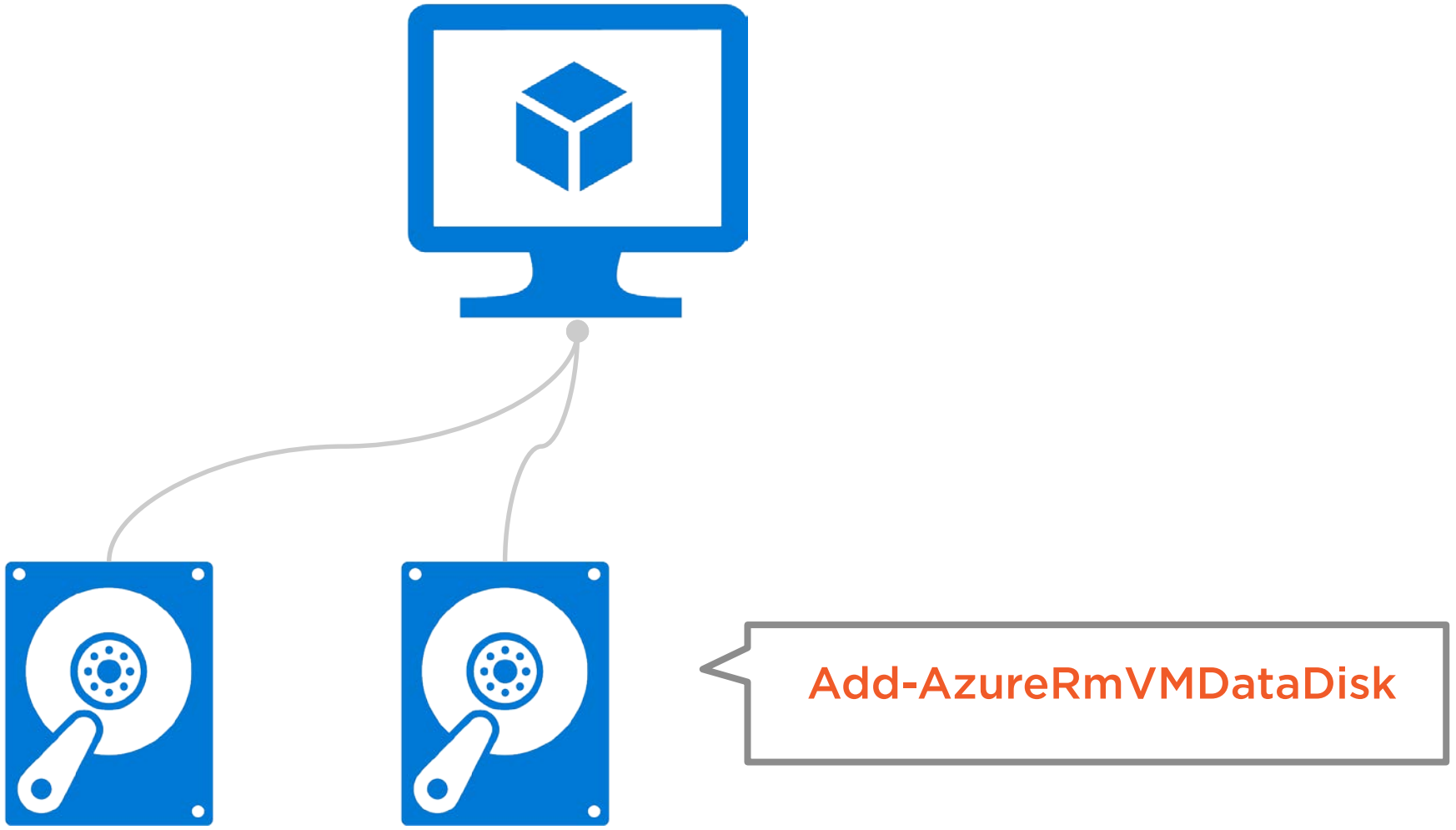
Better or worse

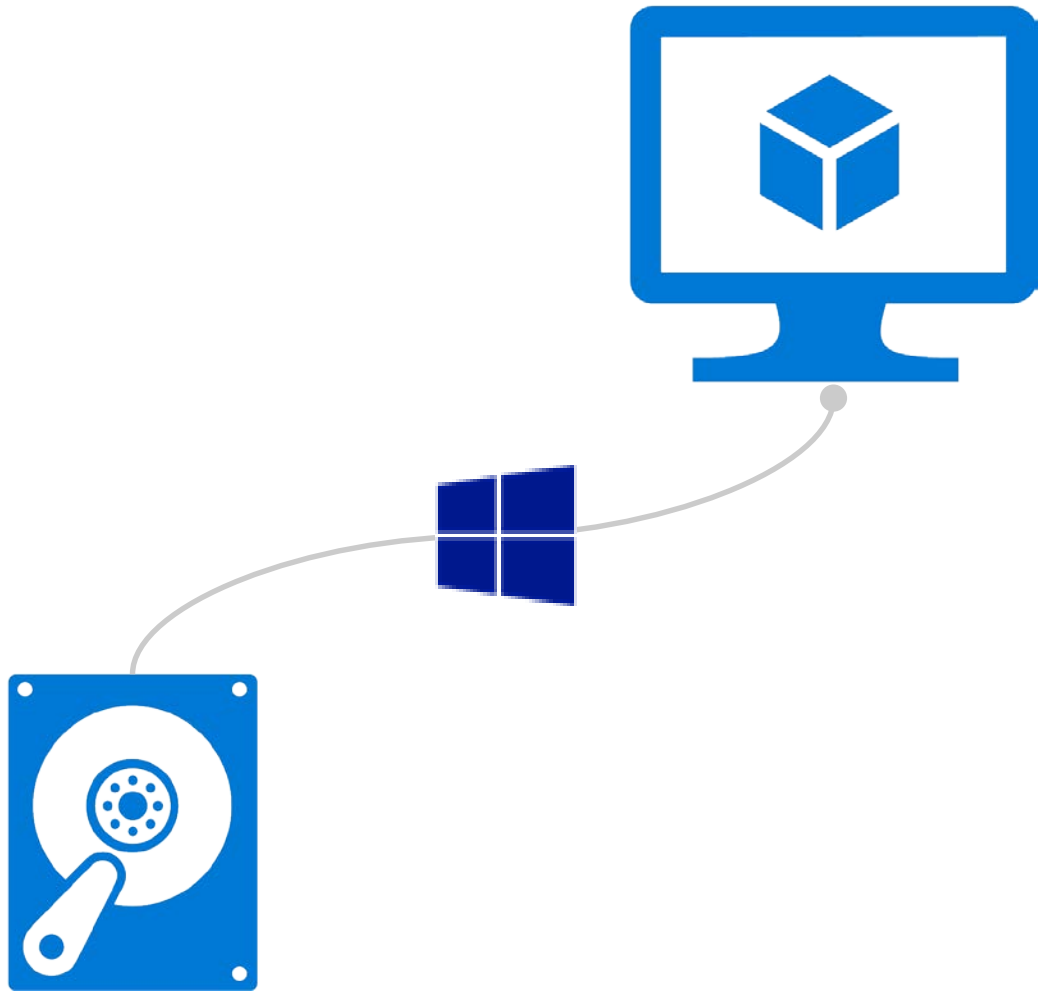
VM stop

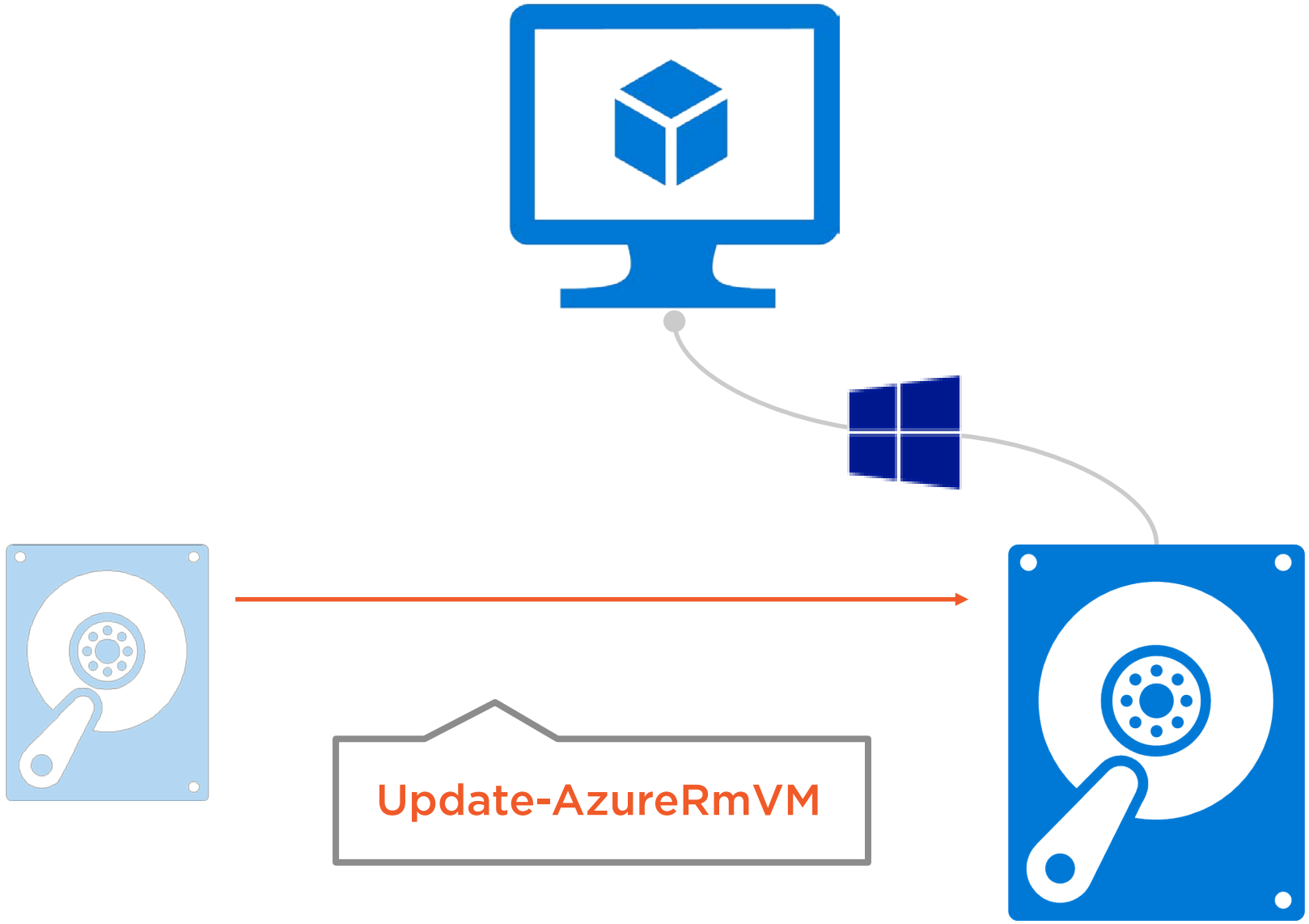


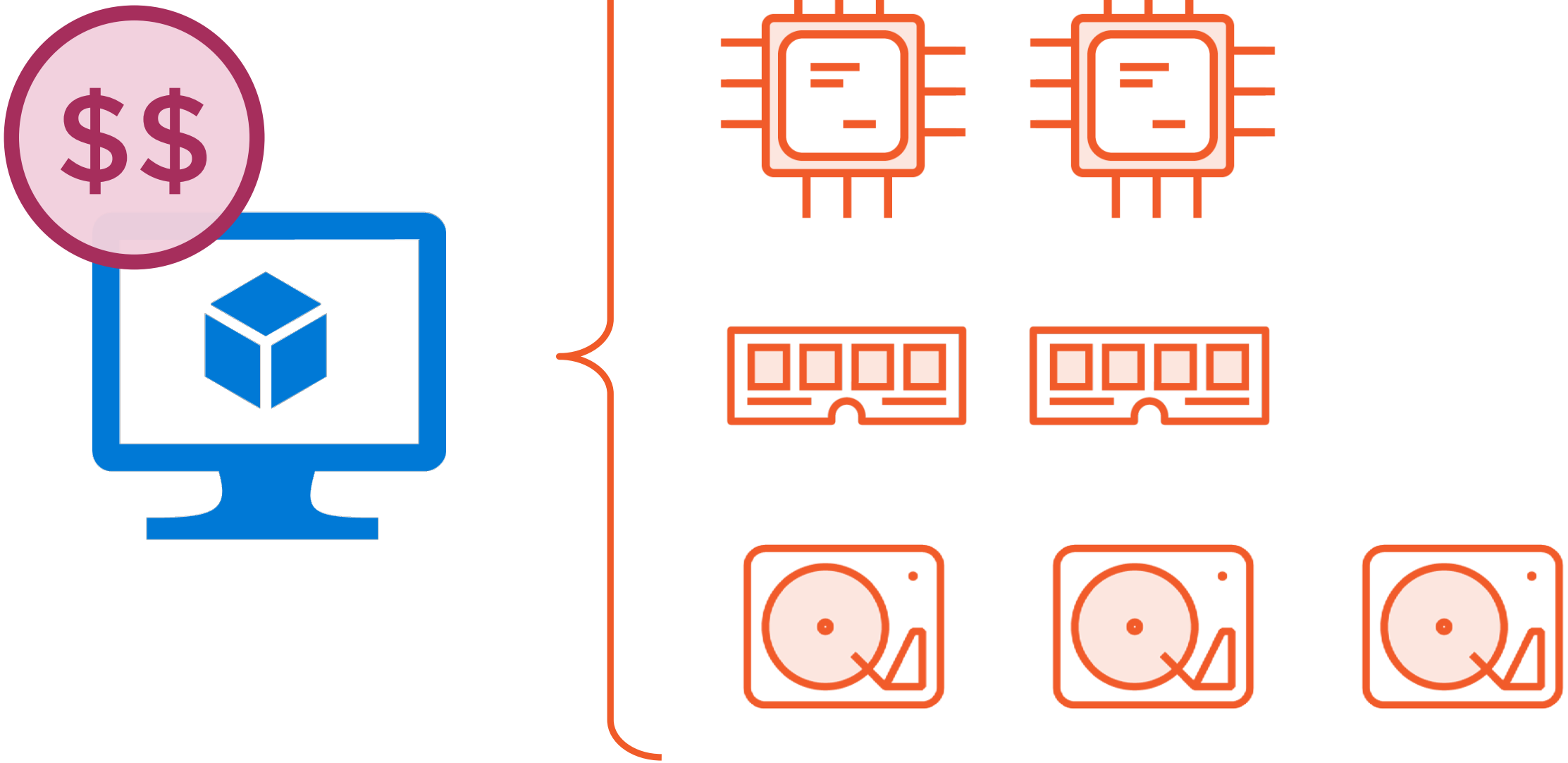

Stop-AzureRmVM

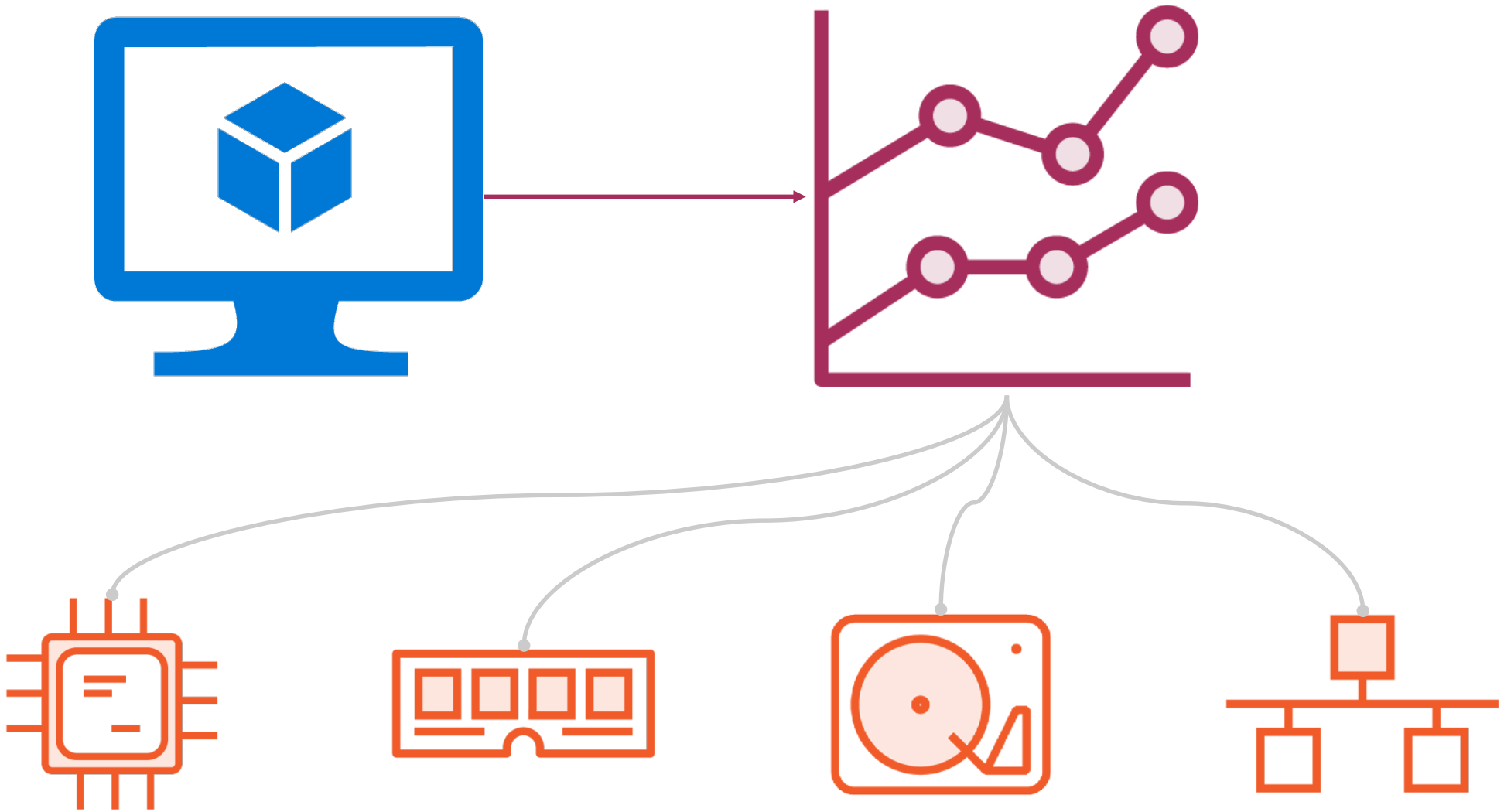

Update-AzureRmVM

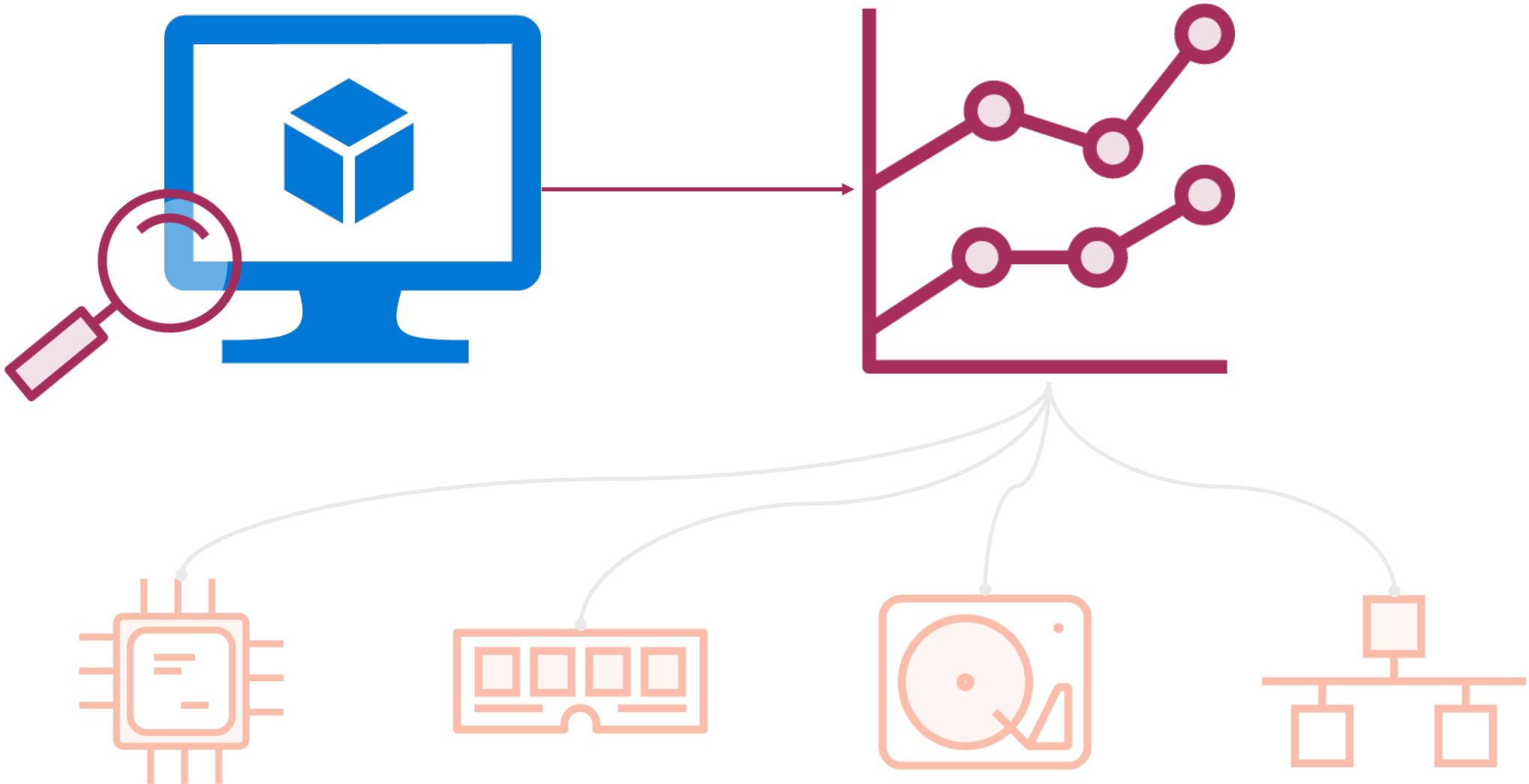

Add-AzureRmVMDataDisk

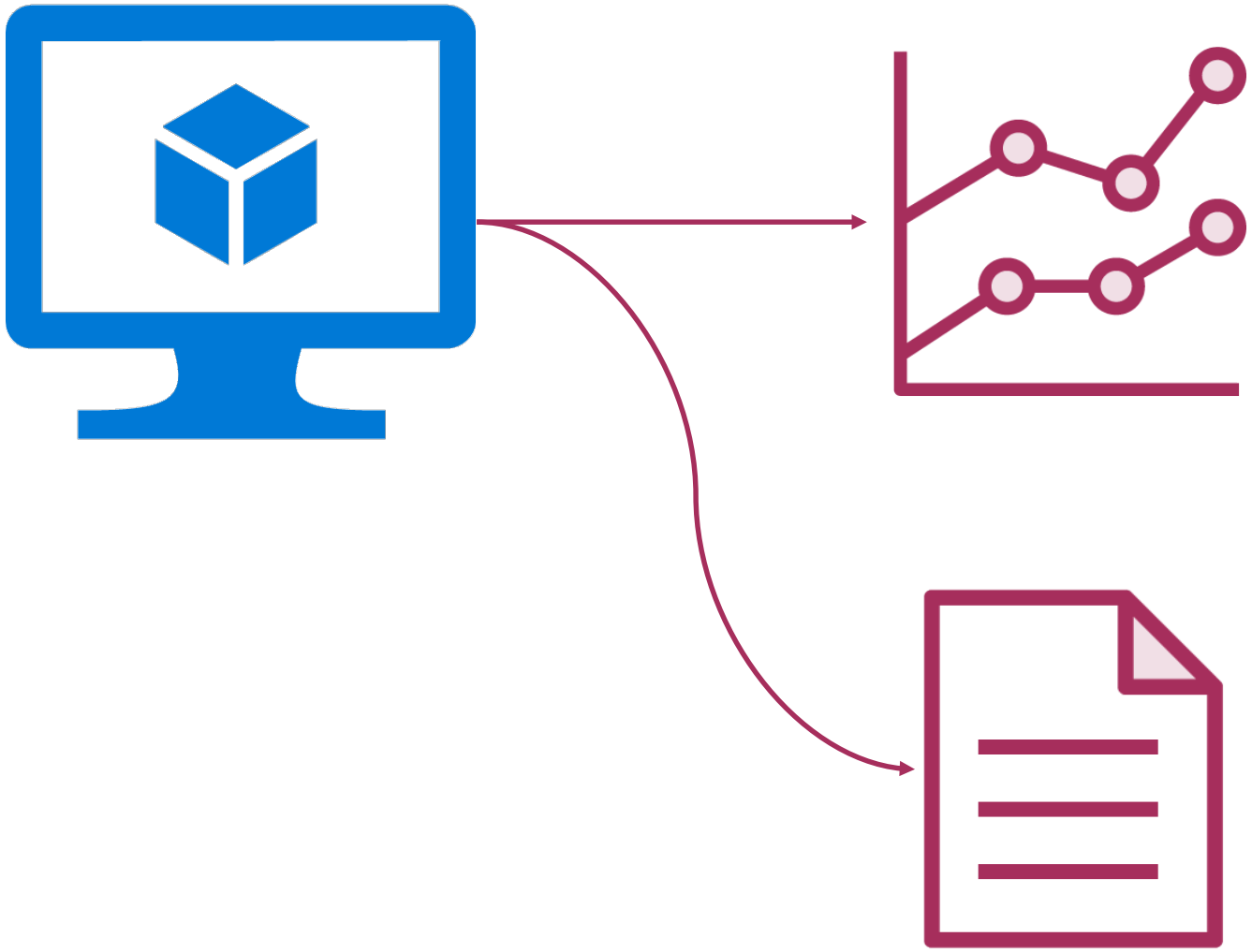


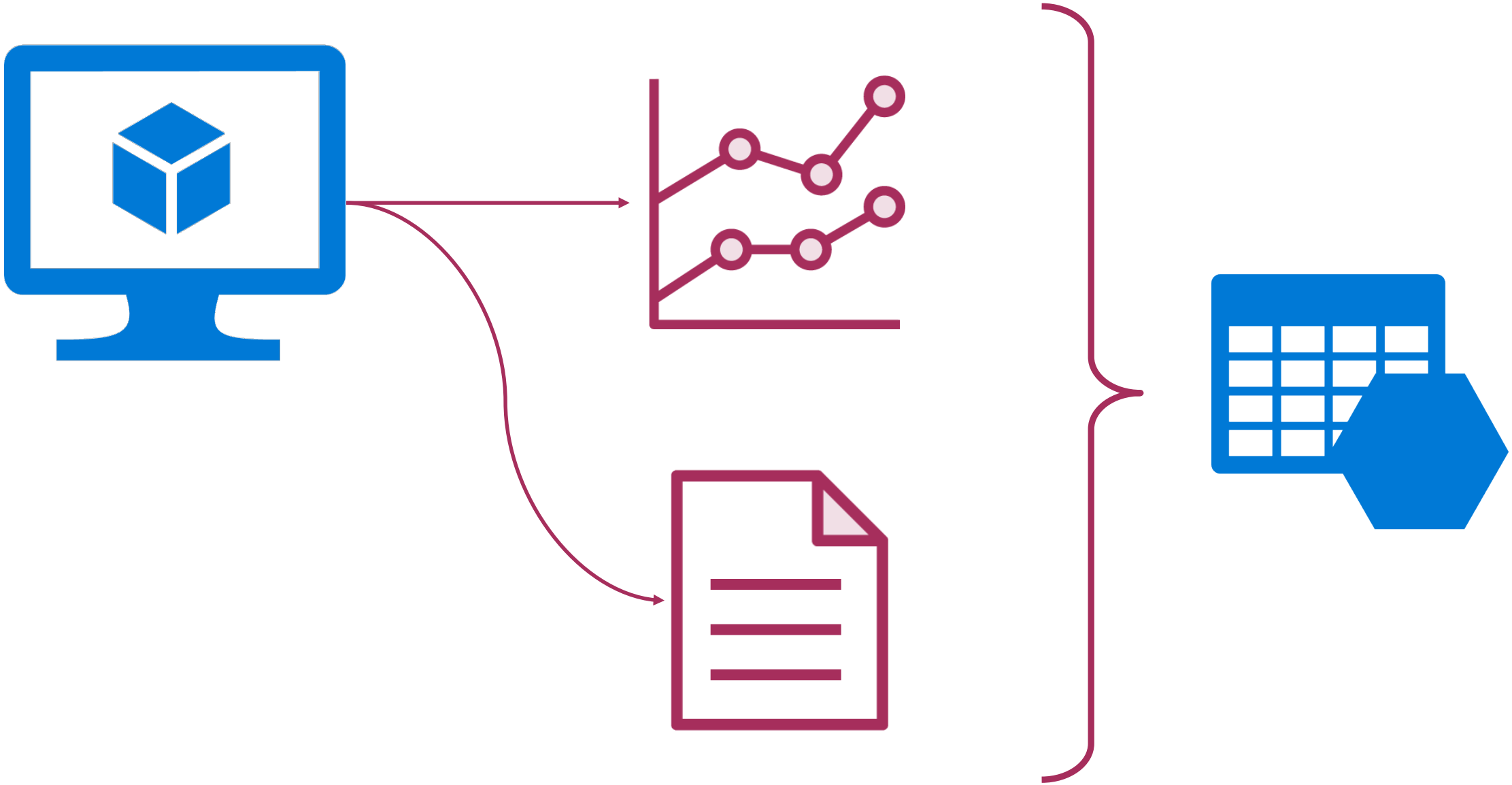

Update-AzureRmVM



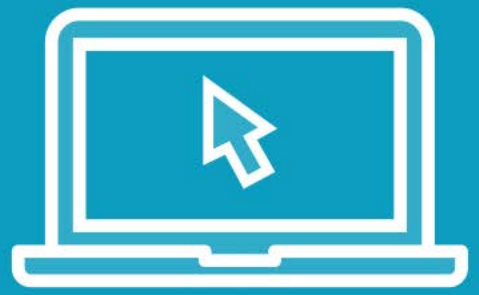








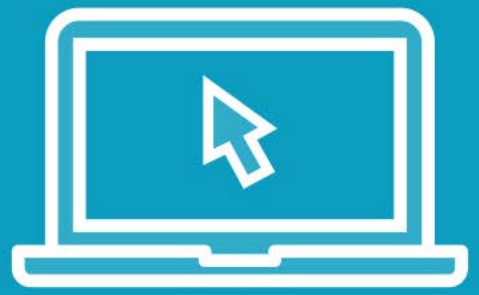
Demo



Configuring VM Diagnostics

- Windows configuration
- Linux configuration
- Diagnostics VM extension

Demo



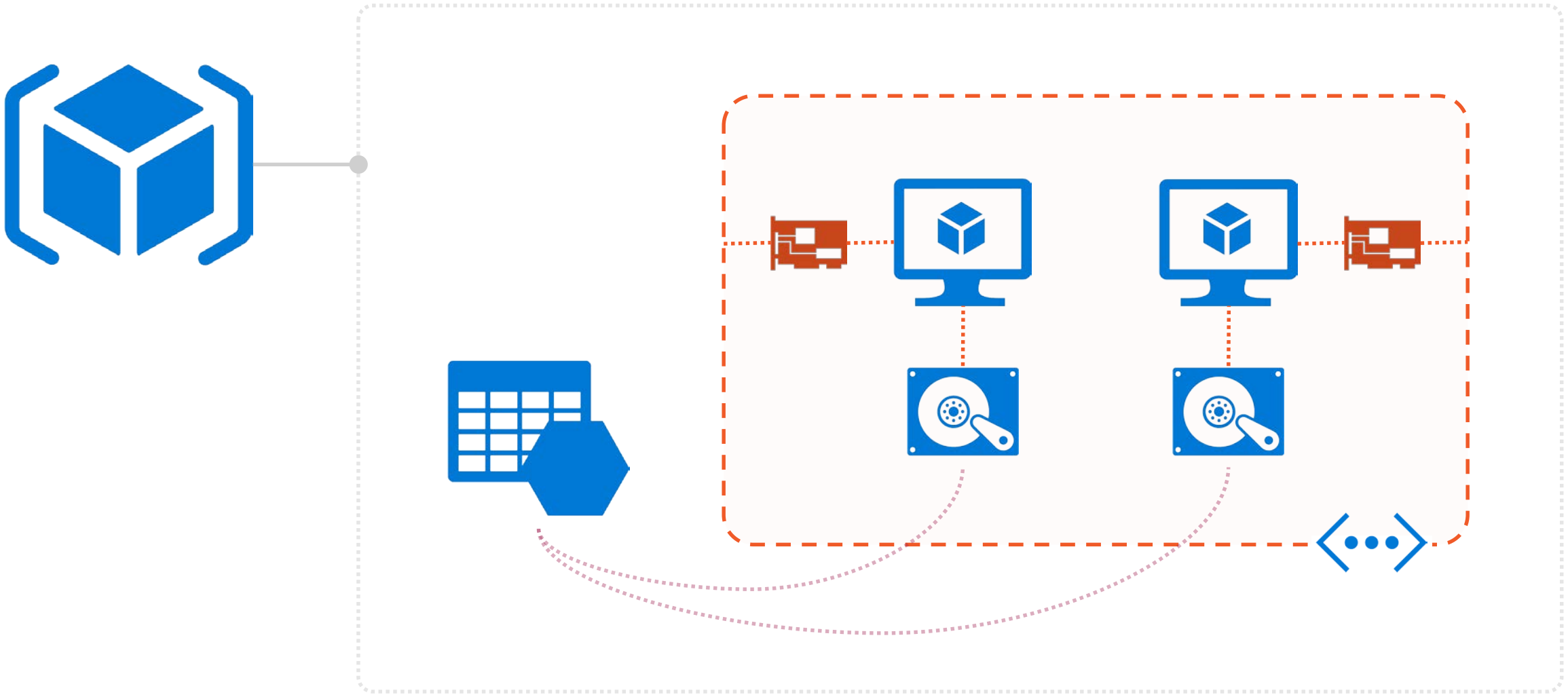
Viewing VM Diagnostics

- Azure Portal graphs
- Table Storage logs

Course Summary

Setup PowerShell

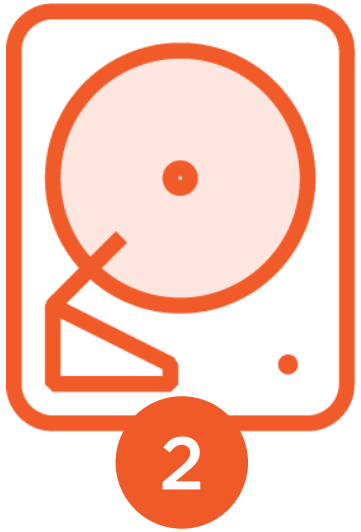
Create VMs



Course Summary

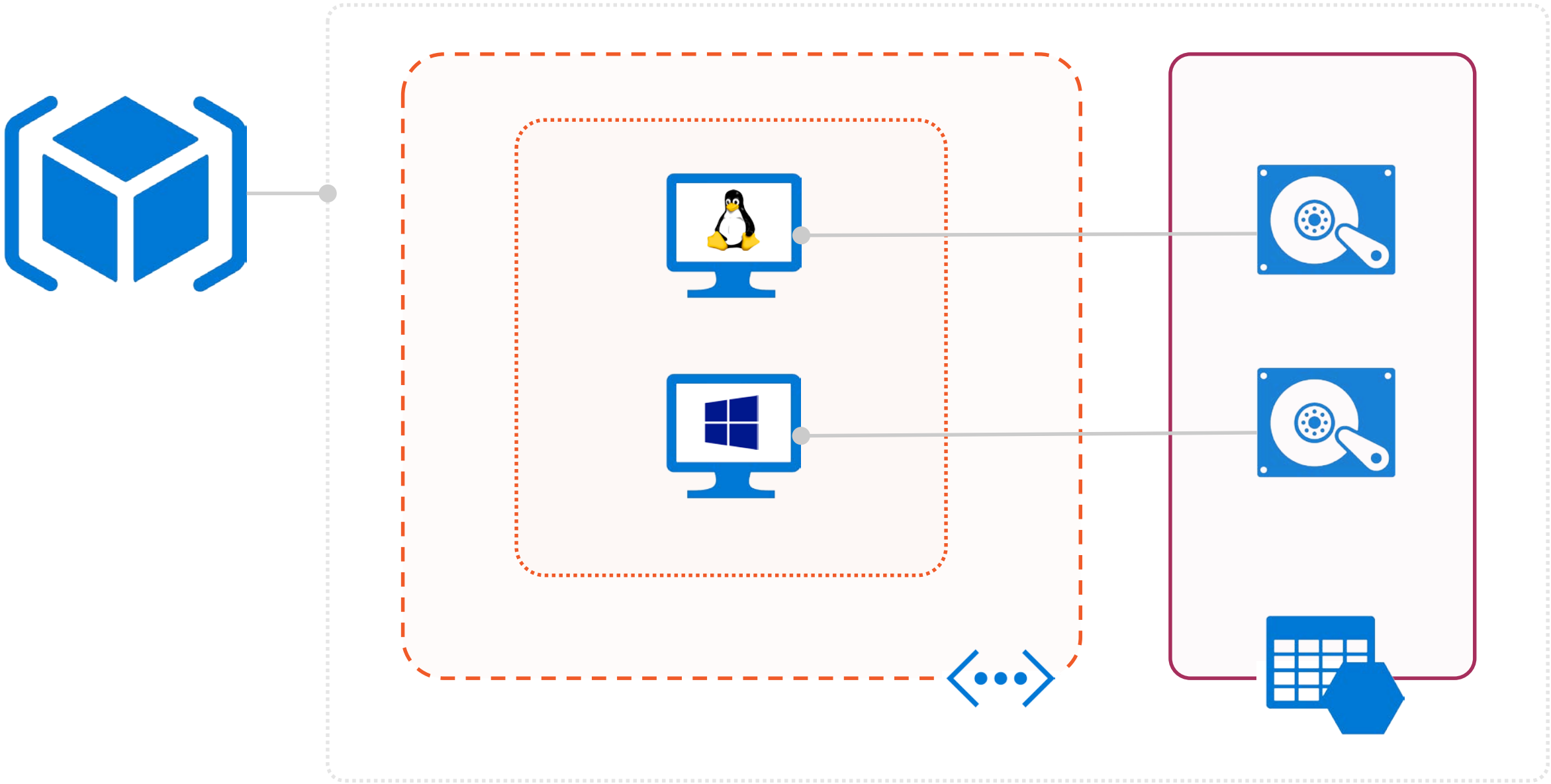
Setup PowerShell

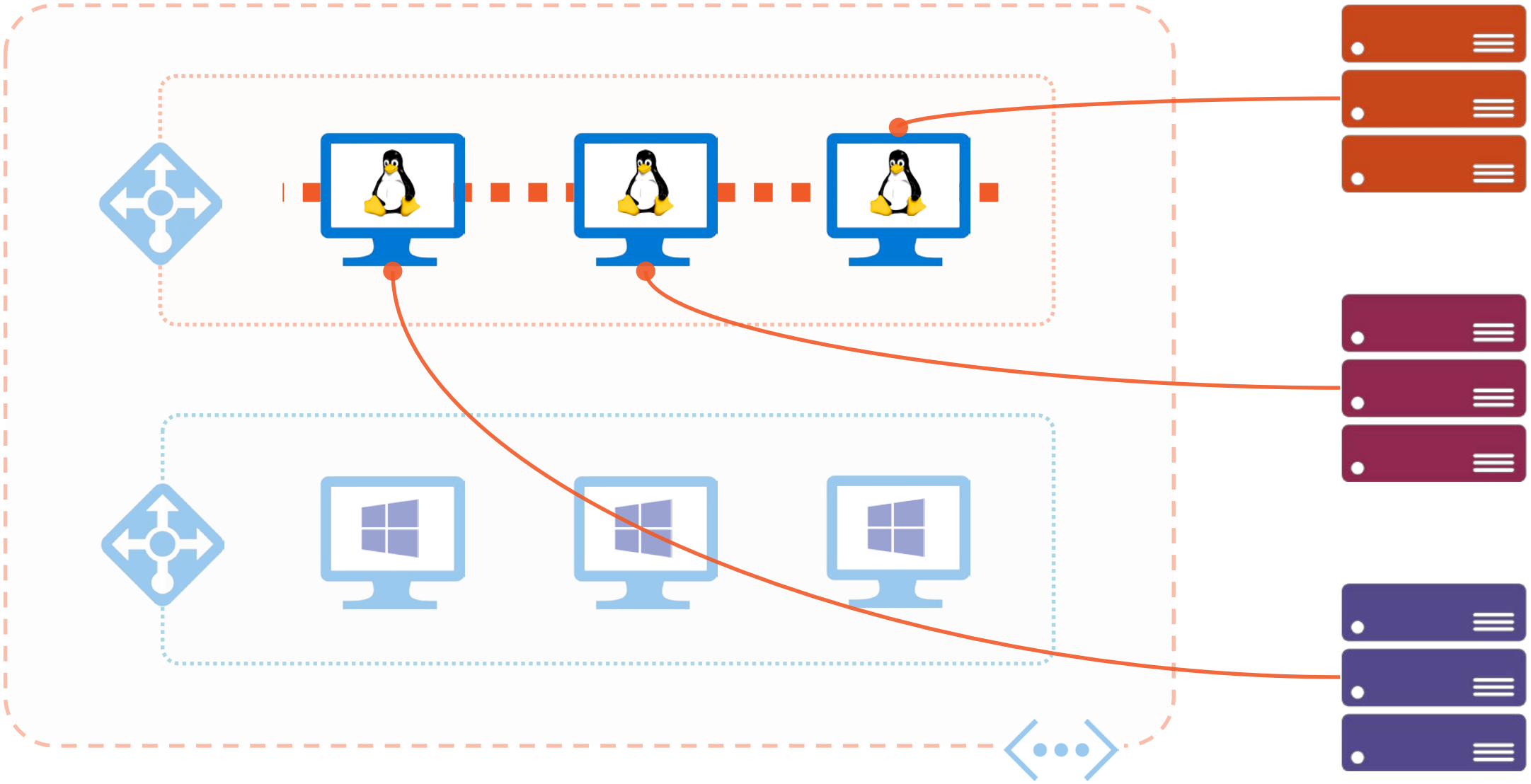
Create VMs

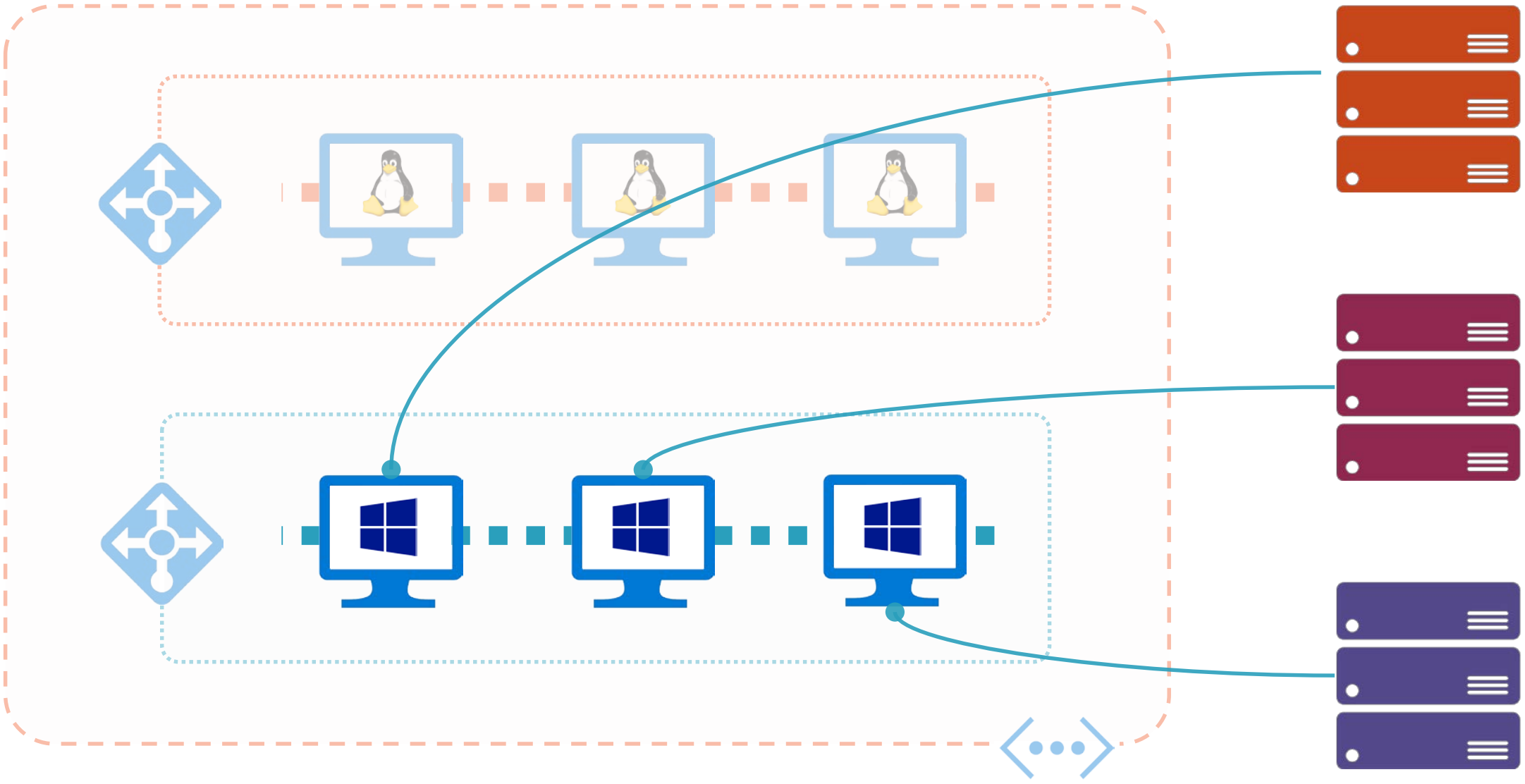


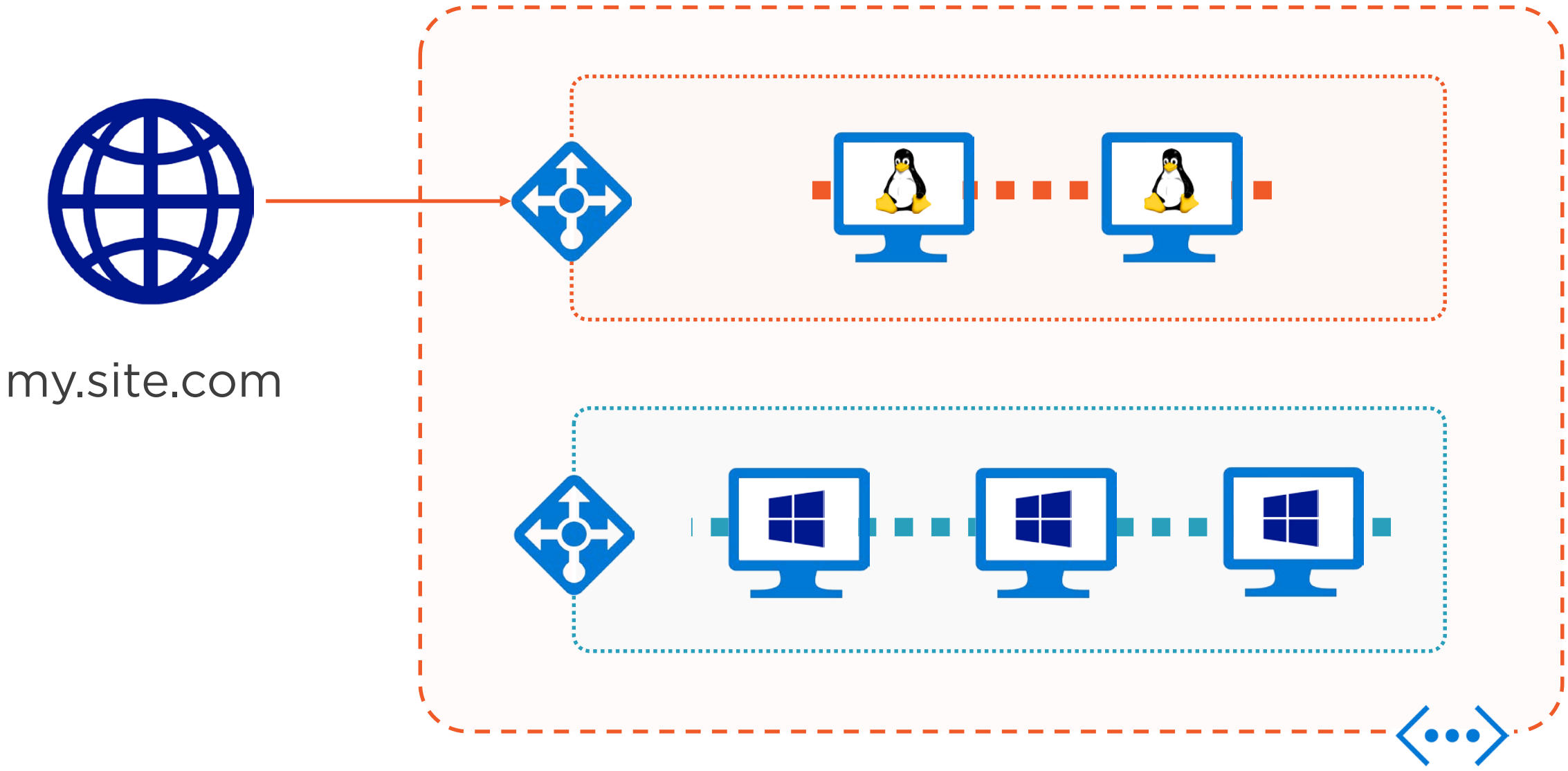
Custom Images

Load Balancers





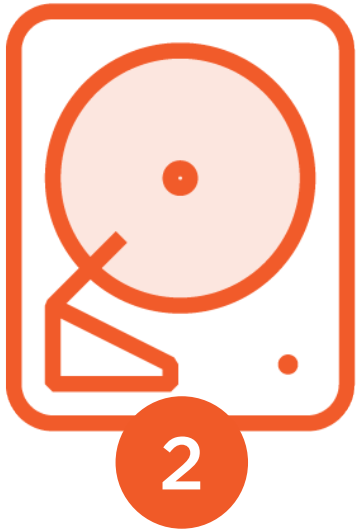



my.site.com

Course Summary

Setup PowerShell

Create VMs

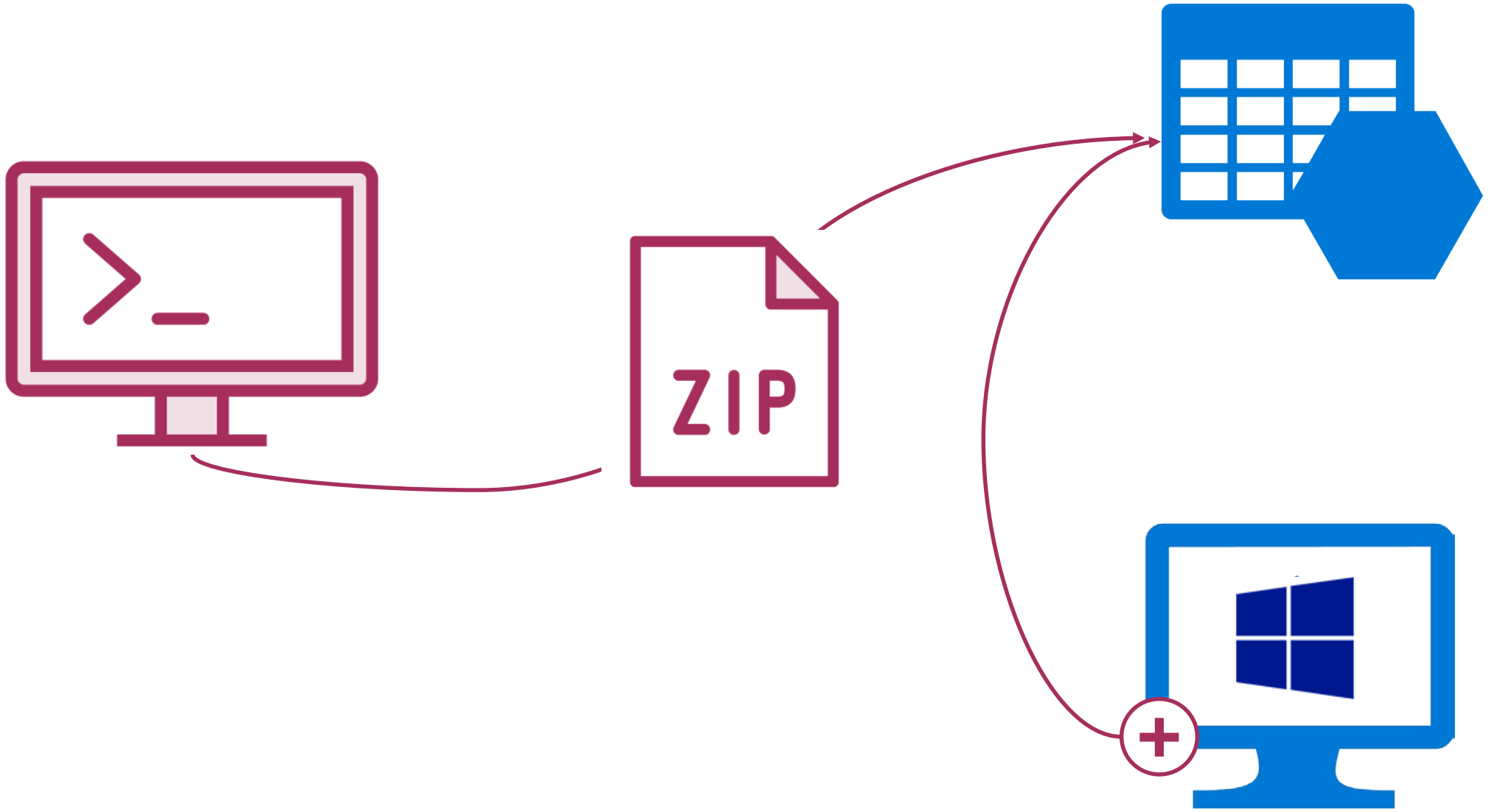


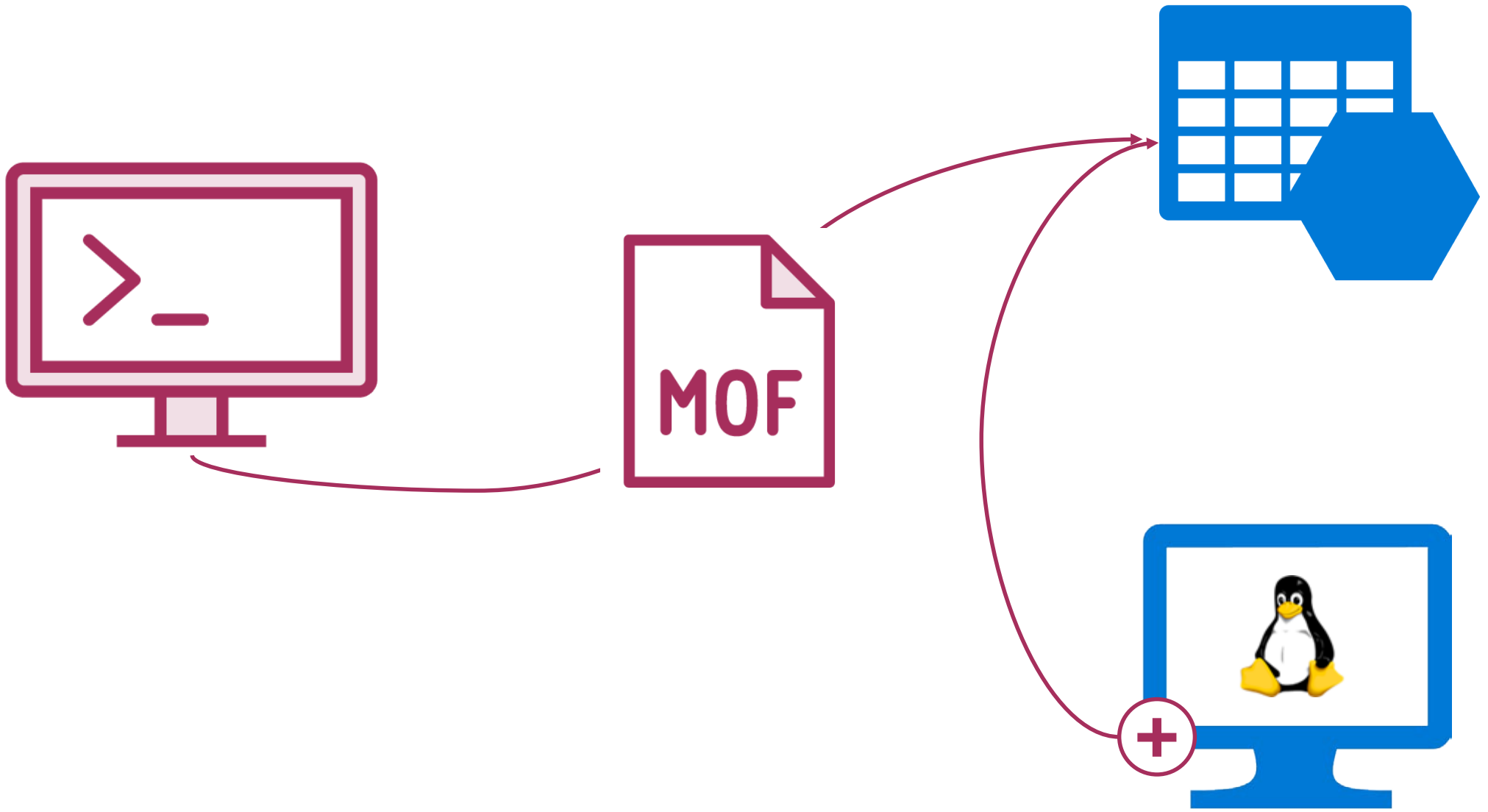
Custom Images

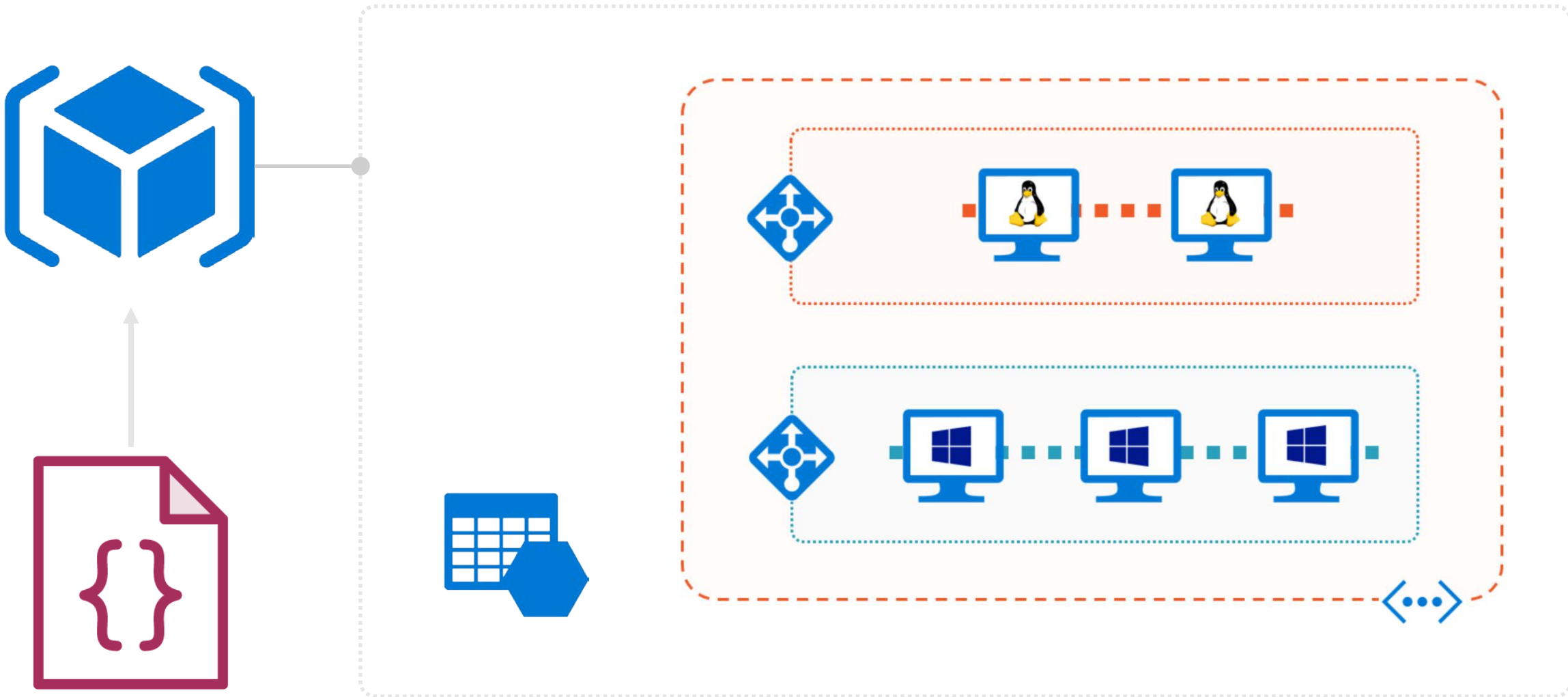
Load Balancers

ARM Templates

PowerShell DSC


ZIP

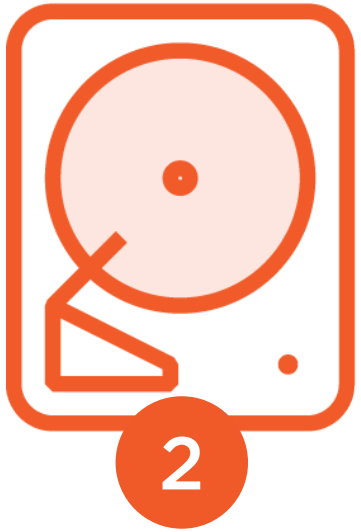

MOF



Course Summary

Setup PowerShell

Create VMs

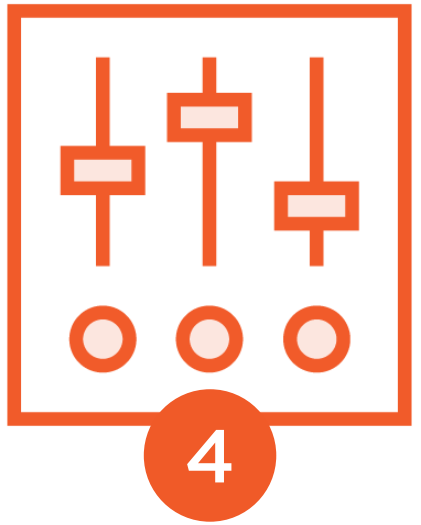


Custom Images

Load Balancers

ARM Templates

PowerShell DSC



Administering VMs

Scaling Up & Down

Summary

Security

- By-exception VM access
- OS update management
- Network perimeter security

Summary

Performance

- Scaling VMs up & down
- Adding & resizing disks
- Being aware of downtime

Summary

Monitoring

- Capturing diagnostics
- Configuring data collection
- Viewing VM data