

Microsoft Azure Administrator: Create and Configure Virtual Machines

CREATE AND MANAGE VIRTUAL MACHINES



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Course Coverage of Certification Objectives



Create and Configure Virtual Machines

- Create a virtual machine
- Move virtual machines from one resource Group to another
- Manage virtual machine sizes
- Redeploy virtual machines
- Configure networking
- Add data disks
- Configure Azure Disk Encryption



Exercise Files

Slides

Code

Links to Resources

The screenshot displays the Pluralsight course page for "Securing Microsoft Azure Networks" by Michael Teske. The page is divided into several sections:

- Header:** The course title "Securing Microsoft Azure Networks" is prominently displayed, followed by the author's name "by Michael Teske". Below this is a brief description: "This course provides a fundamental understanding of Azure network security services, resources, and features to help you better secure your Azure environment. Along the way, you'll learn Microsoft's best practices and their role in your journey."
- Actions:** A row of buttons includes "Start Course" (highlighted in orange), "Bookmark", "Add to Channel", and "Download Course".
- Navigation Tabs:** A horizontal menu at the bottom of the main content area includes "Table of contents", "Description", "Transcript", "Exercise files" (which is underlined and highlighted), "Discussion", "Learning Check", and "Recommended".
- Exercise Files Section:** Below the tabs, a paragraph states: "These exercise files are intended to provide you with the assets you need to create a video-based hands-on experience. With the exercise files, you can follow along with the author and re-create the same solution on your computer. We find this to be even more effective than written lab exercises." Below this text is a button labeled "Download exercise files", which is enclosed in a green rectangular border.
- Course Author:** On the right side, a section titled "Course author" features a profile picture of Michael Teske and a bio: "Michael Teske is an Author Evangelist with Pluralsight helping people build their skills toolkit. Michael has 20+ years of experience in the IT Ops industry including 17 of those years as an IT..."
- Course Info:** Below the author's bio, a "Course info" section lists details: "Level: Beginner", "Rating: ★★★★★", "My rating: ★★★★★", "Duration: 1h 30m", and "Released: 28 May 2019".
- Share Course:** At the bottom right, a "Share course" section includes social media icons for Facebook, Twitter, and LinkedIn.



Create and Move a Virtual Machine



Create a Virtual Machine



Azure Virtual Machines still require maintenance



Must consider design considerations such as availability and scalability



Virtual machines use virtual hard disks(VHDs) for operating system and data



Extensions are available for Azure virtual machines



Resources Used by VMs

Resource	Required	Description
Resource Group	Yes	Must be contained in a resource Group
Storage account	Yes	Needs storage account
Virtual network	Yes	Must be a member of a network
Public IP	No	Can have a PIP assigned to access remotely
Network Interface	Yes	The VM needs a NIC to communicate
Data Disks	No	Can include to data disks to expand storage

Reference:

<https://bit.ly/36tgf2u>




PowerShell

```
New-AzVm -ResourceGroupName 'ps-course-rg' -Name 'windows-1'`  
-Location 'NorthCentralUS' -VirtualNetworkName 'main-vnet'`  
-SubnetName 'backend' -SecurityGroupName 'myNetworkSecurityGroup'`  
-PublicIpAddressName 'myPublicIpAddress' -OpenPorts 80,3389
```



```
az vm create --resource-group ps-course-rg --name windows-1 \  
  --image win2016datacenter --admin-username azureuser
```



Azure CLI



Move an Azure VM



All v-net resources must be moved when moving to a different subscription



VM scale sets with standard Load balancers and standard PIP cannot be moved



VMs integrated with key vault for disk encryption cannot be moved



VMs configured with Azure backup must have restore points deleted prior to moving



Move an Azure VM

+ Add
Edit columns
Delete resource group
Refresh
Export to CSV
Open query
Assign tags
Move
Delete
Export template
Feedback

^ Essentials

Subscription (change) : ps-course-development
Deployments : 7

Subscription ID : 8bc4fbf0-6ad5-4922-aaaa-226b44e5db84

Tags (change) : location : Dublin project : ux environment : staging

Filter by name...
Type == all
Location == all
Add filter

Showing 1 to 7 of 7 records.
☐ Show hidden types ⓘ
No grouping
List view

<input checked="" type="checkbox"/> Name ↑↓	Type ↑↓	Location ↑↓
<input checked="" type="checkbox"/> automation-ps1	Automation Account	East US 2
<input checked="" type="checkbox"/> demo-rg-vnet	Virtual network	Central US
<input checked="" type="checkbox"/> linux-1	Virtual machine	Central US
<input checked="" type="checkbox"/> linux-1-nsg	Network security group	Central US
<input checked="" type="checkbox"/> linux-1429	Network interface	Central US
<input checked="" type="checkbox"/> linux-1_disk1_b81dab00cc2f40fbb977539219a09b53	Disk	Central US
<input checked="" type="checkbox"/> teskestorageaccount	Storage account	Central US

```
Move-AzResource -DestinationResourceGroupName 'ps-course-rg' `
```

```
-ResourceId <myResourceId,myResourceId,myResourceId>
```

```
Move-AzResource -DestinationSubscriptionId "8bc4fbf0-blah-blah-blah-226b44e5db84" `
```

```
-DestinationResourceGroupName 'ps-course-rg' `
```

```
-ResourceId <myResourceId,myResourceId,myResourceId>
```

Move an Azure VM using PowerShell

Each example supports moving multiple resources via comma separated list.



Demo



Create and move an Azure VM



Manage Virtual Machine Sizes



Manage Virtual Machine Sizes

Dashboard > Virtual machines > linux-1 > DEMO-RG >

linux-1

Virtual machine

Search (Ctrl+ /)

<<

Connect

Start

Restart

Stop

Capture

Delete

Refresh

Share to mobile

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Networking

Connect

Disks

Size

Security

Advisor recommendations

Extensions

Continuous delivery

Availability + scaling

Configuration

Identity

Properties

Locks

Advisor (1 of 4): Log Analytics agent health issues should be resolved on your machines →

Essentials

Resource group (change) : DEMO-RG

Status : Stopped (deallocated)

Location : Central US

Subscription (change) : ps-course-development

Subscription ID : 8bc4fbf0-6ad5-4922-aaaa-226b44e5db84

Tags (change) : environment : staging

Operating system : Linux

Size : Standard D2s v3 (2 vcpus, 8 GiB memory)

Public IP address : -

Virtual network/subnet : demo-rg-vnet/default

DNS name : -

Properties

Monitoring

Capabilities

Recommendations (4)

Tutorials

Virtual machine

Computer name : linux-1

Operating system : Linux

SKU : 18.04-LTS

Publisher : Canonical

VM generation : V1

Host : None

Proximity placement group : N/A

Colocation status : N/A

Networking

Public IP address : -

Public IP address (IPv6) : -

Private IP address : 10.0.0.4

Private IP address (IPv6) : -

Virtual network/subnet : demo-rg-vnet/default

DNS name : -

Size

Size : Standard D2s v3

vCPUs : 2

Availability + scaling

Manage Virtual Machine Sizes

The screenshot displays the Azure portal interface for managing a virtual machine. The breadcrumb navigation at the top reads: Dashboard > Virtual machines > linux-1 > DEMO-RG >. The main heading is 'linux-1', with the subtitle 'Virtual machine'. Below this is a search bar and buttons for 'Connect' and 'Start'. A left-hand navigation pane lists various options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Disks, Size, Security, Advisor recommendations, Extensions, Continuous delivery, Availability + scaling, Configuration, Identity, Properties, and Locks. The 'Settings' section is expanded, showing a list of settings: Networking, Connect, Disks, Size (highlighted with a red box), Security, Advisor recommendations, Extensions, Continuous delivery, Availability + scaling, Configuration, Identity, Properties, and Locks. The 'Size' setting is selected, and its details are shown on the right. The 'Size' is currently 'Standard D2s v3 (2 vcpus, 8 GiB memory)'. Below this, the 'Networking' section shows the public IP address as '-', the private IP address as '10.0.0.4', and the virtual network/subnet as 'demo-rg-vnet/default'. The 'Size' section shows the current size as 'Standard D2s v3' and the number of vCPUs as '2'.

Dashboard > Virtual machines > linux-1 > DEMO-RG >

linux-1
Virtual machine

Search (Ctrl+ /) << >> Connect Start

Advisor (1 of 4): Log A

Essentials

Resource group (change)

Status

Location

Subscription (change)

Subscription ID

Tags (change)

Properties Monitoring

Virtual machine

Computer name

Operating system

SKU

Publisher

VM generation

Host

Proximity placement

Colocation status

Availability + scaling

Settings

Networking

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Configuration

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Locks

Share to mobile

Operating system : Linux

Size : Standard D2s v3 (2 vcpus, 8 GiB memory)

Public IP address : -

Virtual network/subnet : demo-rg-vnet/default

DNS name : -

Networking

Public IP address -

Public IP address (IPv6) -

Private IP address 10.0.0.4

Private IP address (IPv6) -

Virtual network/subnet demo-rg-vnet/default



DNS name -























Size

Size Standard D2s v3

vCPUs 2

Manage Virtual Machine Sizes

Display cost : **Monthly**vCPUs : **All**RAM (GiB) : **All** Add filter Most used sizes by Azure usersShowing 302 VM sizes. | Subscription: ps-course-development | Region: Central US | Current size: Standard_D2s_v3 | [Learn more about VM sizes](#)

VM Size 	Family 	vCPUs 	RAM (GiB) 	Data disks 	Max IOPS 	Temp storage (GiB) 	Premium disk 
 Most used by Azure users The most used sizes by users in Azure							
DS1_v2 	General purpose	1	3.5	4	3200	7	Supported
D2s_v3 	General purpose	2	8	4	3200	16	Supported
B2s 	General purpose	2	4	4	1280	8	Supported
B1s 	General purpose	1	1	2	320	4	Supported
B2ms 	General purpose	2	8	4	1920	16	Supported
B1ms 	General purpose	1	2	2	640	4	Supported
B1ls 	General purpose	1	0.5	2	160	4	Supported
DS2_v2 	General purpose	2	7	8	6400	14	Supported
B4ms 	General purpose	4	16	8	2880	32	Supported
D4s_v3 	General purpose	4	16	8	6400	32	Supported
DS3_v2 	General purpose	4	14	16	12800	28	Supported
D8s_v3 	General purpose	8	32	16	12800	64	Supported
 D-Series v4 The latest generation D family sizes recommended for your general purpose needs							

[Resize](#)

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator.](#)

 [Availability + scaling](#)

vCPUs

2



Demo



Manage virtual machine sizes



Redeploy Virtual Machines



Redeploy Virtual Machines



Cannot connect via RDP or SSH



Difficulty troubleshooting application access on Azure VM



Redeploy shuts down the VM and moves to new node and powers back up



Redeploy Virtual Machines

linux-1 | Redeploy

Virtual machine

re

Overview

Settings

Networking

Security

Advisor recommendations

Properties

Operations

Disaster recovery

Configuration management (Pre...

Support + troubleshooting

Resource health

Boot diagnostics

Performance diagnostics (Preview)

Reset password

Redeploy

New support request

Can't connect to your virtual machine?


Try redeploying your virtual machine, which will migrate it to a new Azure host. If you continue, the virtual machine will be restarted and you will lose any data on the temporary drive. While the redeployment is in progress, the virtual machine will be unavailable.

[Learn more](#)

Redeploy



Redeploy Virtual Machines

 **linux-1 | Redeploy**
Virtual machine

Overview

Settings

- Networking
- Security
- Advisor recommendations
- Properties

Operations

- Disaster recovery
- Configuration management (Pre...

Support + troubleshooting

- Resource health
- Boot diagnostics
- Performance diagnostics (Preview)
- Reset password
- Redeploy**
- New support request

Can't connect to your virtual machine?

Try redeploying your virtual machine, which will migrate it to a new Azure host. If you continue, the virtual machine will be restarted and you will lose any data on the temporary drive. While the redeployment is in progress, the virtual machine will be unavailable.

[Learn more](#)

Redeploy



Reploy Virtual Machines

PowerShell

```
Set-AzVM -Redeploy -ResourceGroupName 'ps-course-rg' -Name "linux-1"
```

Azure CLI

```
az vm redeploy --resource-Group ps-course-rg --name linux-1
```



Demo



Redeploy a virtual machine



Next Up

Configure Virtual Machines

