

Azure Virtual Machine Management and Scaling

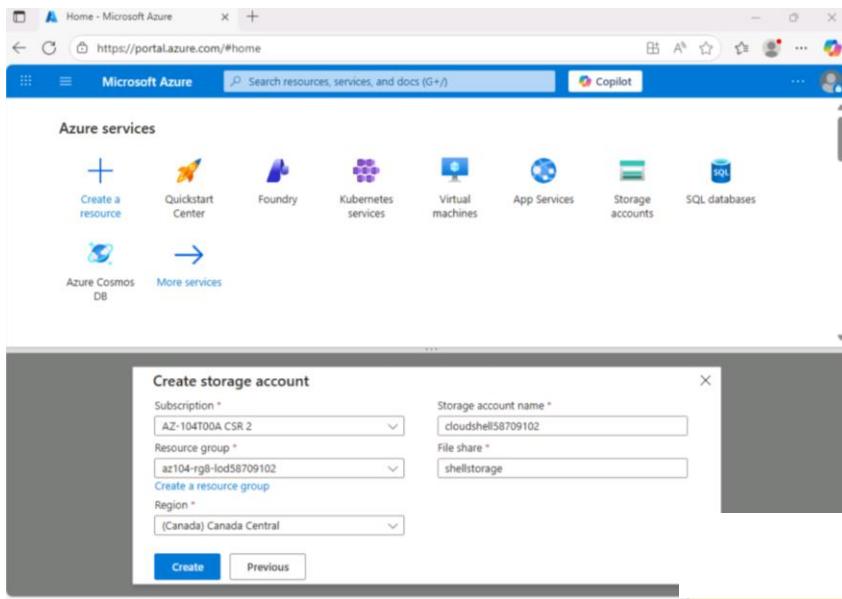
Project Overview

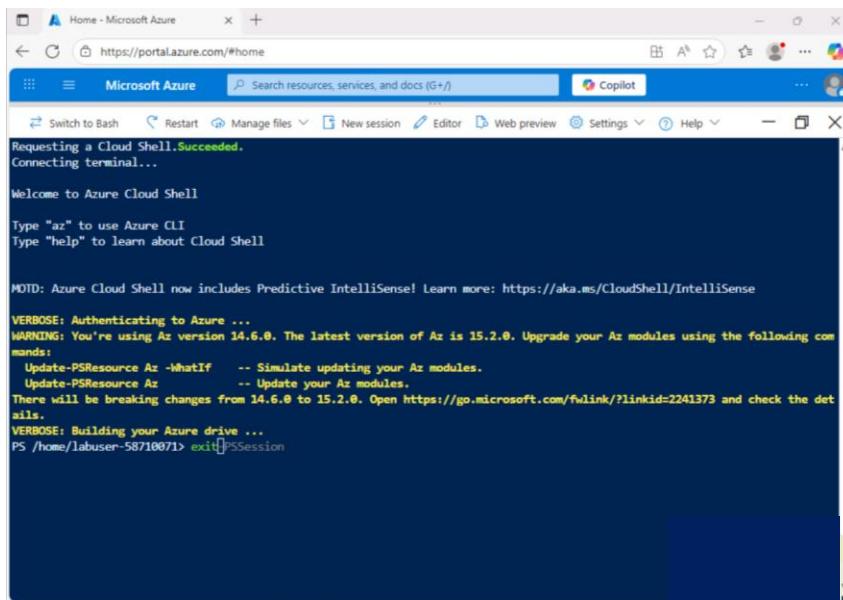
This document presents hands-on experience managing and scaling Microsoft Azure virtual machines in a cloud environment. The focus is on operational administration tasks commonly performed in production cloud environments, including:

- Virtual machine configuration
 - Availability and resiliency considerations
 - Compute and storage scaling
 - Automated scaling using Virtual Machine Scale Sets
 - Administration using Azure Portal, PowerShell, and CLI
-

Cloud Shell Environment Preparation

This section documents the preparation of the Azure Cloud Shell environment to support command-line administration tasks, including verification of subscription context and readiness for PowerShell and CLI operations.





```
Requesting a Cloud Shell...Succeeded.
Connecting terminal...
Welcome to Azure Cloud Shell

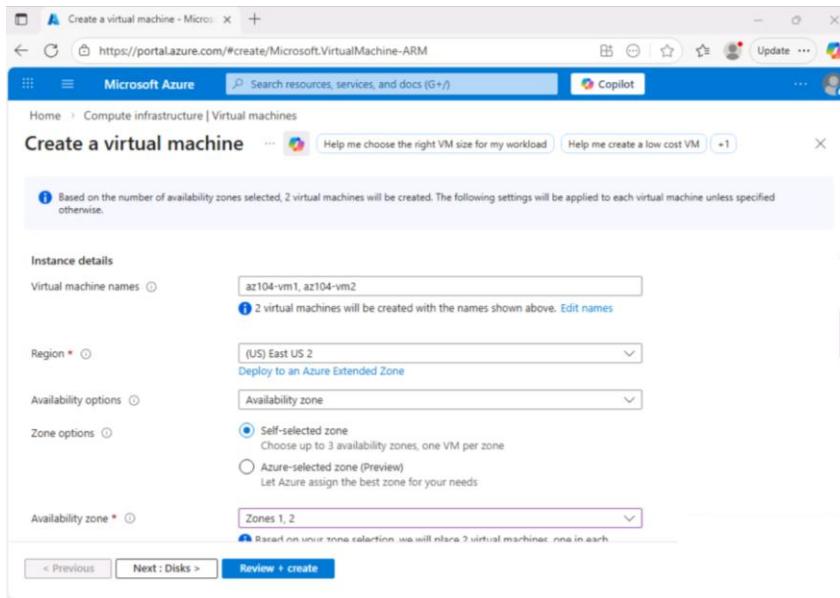
Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

MOTD: Azure Cloud Shell now includes Predictive IntelliSense! Learn more: https://aka.ms/CloudShell/IntelliSense

VERBOSE: Authenticating to Azure ...
WARNING: You're using Az version 14.6.0. The latest version of Az is 15.2.0. Upgrade your Az modules using the following commands:
Update-PSResource Az -WhatIf    -- Simulate updating your Az modules.
Update-PSResource Az             -- Update your Az modules.
There will be breaking changes from 14.6.0 to 15.2.0. Open https://go.microsoft.com/fwlink/?linkid=2241373 and check the details.
VERBOSE: Building your Azure drive ...
PS /home/labuser-58710071> exit[PSSession]
```

Availability and Resiliency Configuration for Azure Virtual Machines

This section highlights configuration decisions related to availability zones and redundancy options designed to improve fault tolerance and ensure service continuity.



Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

Instance details

Virtual machine names: az104-vm1, az104-vm2
2 virtual machines will be created with the names shown above. [Edit names](#)

Region *: (US) East US 2
[Deploy to an Azure Extended Zone](#)

Availability options: Availability zone

Zone options: Self-selected zone
Choose up to 3 availability zones, one VM per zone
Azure-selected zone (Preview)
Let Azure assign the best zone for your needs

Availability zone *: Zones 1, 2
Based on your zone selection, we will place 2 virtual machines, one in each.

< Previous | Next : Disks > | Review + create

Create a virtual machine - Microsoft Azure

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Microsoft Azure

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Copilot

Home > Compute infrastructure | Virtual machines

Create a virtual machine

Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

Security type: Standard

Image*: Windows Server 2025 Datacenter - x64 Gen2

VM architecture: x64

Run with Azure Spot discount:

Size*: Standard_D2s_v3 - 2 vcpus, 8 GiB memory (\$137.24)

Review + create

Next : Disks >

< Previous

Create a virtual machine - Microsoft Azure

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

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Create a virtual machine

Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

Username*: localadmin

Password*:

Confirm password*:

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports*: None Allow selected ports

Select inbound ports: Select one or more ports

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create

Next : Disks >

< Previous

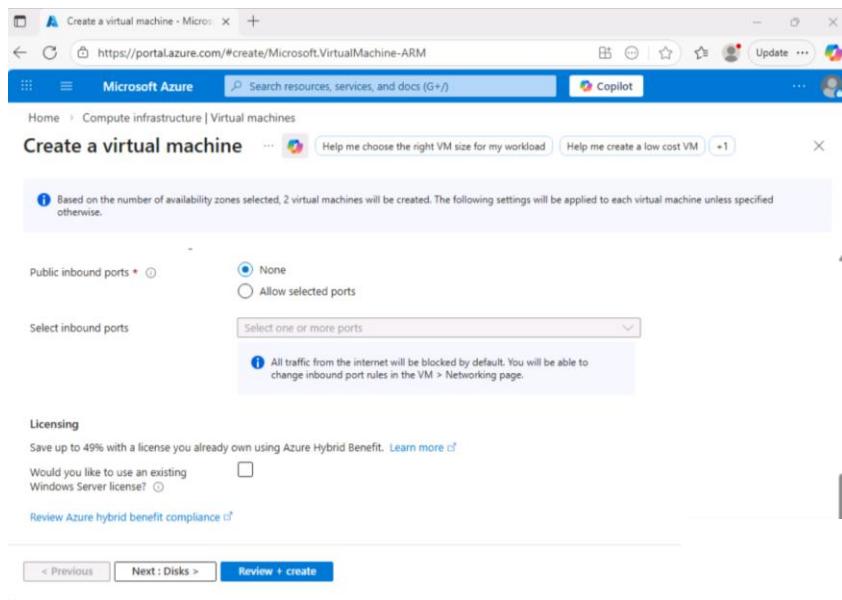
Create a virtual machine

Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

Public inbound ports * None Allow selected ports
Select inbound ports
All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Licensing
Save up to 49% with a license you already own using Azure Hybrid Benefit. [Learn more](#)
Would you like to use an existing Windows Server license?
[Review Azure hybrid benefit compliance](#)

< Previous



Create a virtual machine

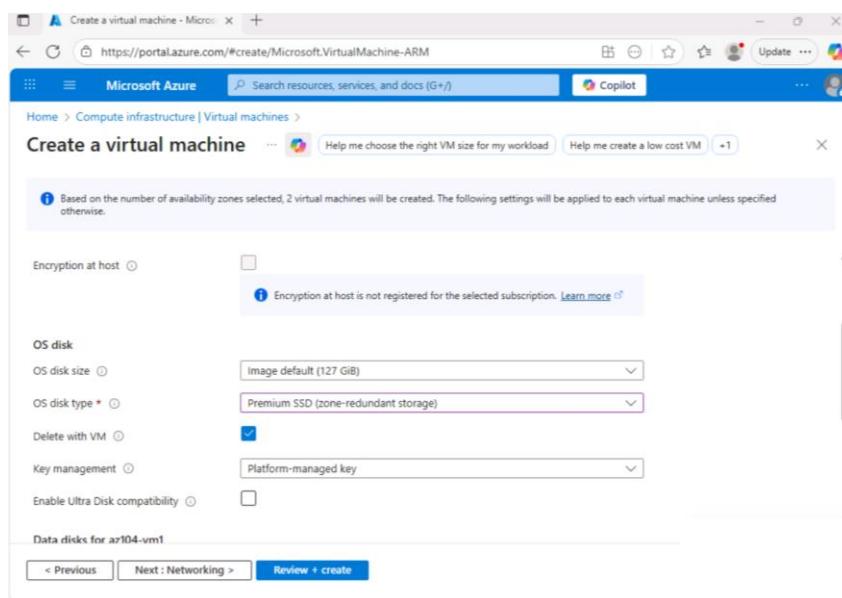
Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

Encryption at host
Encryption at host is not registered for the selected subscription. [Learn more](#)

OS disk
OS disk size Image default (127 GiB) [Custom](#)
OS disk type * Premium SSD (zone-redundant storage) [Standard SSD](#) [Standard HDD](#)
Delete with VM
Key management Platform-managed key [Customer-managed key](#)
Enable Ultra Disk compatibility

Data disks for az104-vm1

< Previous



Create a virtual machine - Microsoft Azure

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Microsoft Azure

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Create a virtual machine

Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

change inbound port rules in the VM > Networking page.

Delete public IP and NIC when VM is deleted

Enable accelerated networking

Load balancing

You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Load balancing options None

Azure load balancer
Supports all TCP/UDP network traffic, port-forwarding, and outbound flows.

Application gateway
Web traffic load balancer for HTTP/HTTPS with URL-based routing, SSL termination, session persistence, and web application firewall.

< Previous Next : Management > Review + create

Create a virtual machine - Microsoft Azure

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Microsoft Azure

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Create a virtual machine

Based on the number of availability zones selected, 2 virtual machines will be created. The following settings will be applied to each virtual machine unless specified otherwise.

Configure monitoring options for your VM.

Monitoring

Alerts

Enable recommended alert rules

Diagnostics

Boot diagnostics Disable

Enable with managed storage account (recommended)

Enable with custom storage account

Enable OS guest diagnostics

Health

< Previous Next : Advanced > Review + create

Create a virtual machine - Microsoft Azure

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Microsoft Azure

Home > Compute infrastructure | Virtual machines

Create a virtual machine

Validation passed

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Price

2 X Standard D2s v3 by Microsoft **0.3760 USD/hr** Pricing for other VM sizes

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

< Previous Next > Create Download a template for a

CreateVm-MicrosoftWindowsServer.WindowsServer-202-20260129215919 ... Microsoft Azure

Deployment

Overview

Your deployment is complete

Deployment name: CreateVm-... Start time: 1/29/202...
Subscription: A2-104700A CSR 1 Correlation ID: 45e20c...
Resource group: az104-rg8-lod...

Inputs Outputs Template

Deployment details

Setup auto-shutdown Recommended
Monitor VM health, performance and network dependencies Recommended
Run a script inside the virtual machine Recommended

Go to resource Create another VM

Give feedback Tell us about your experience with deployment

Cost Management Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

Microsoft Defender for Cloud Secure your apps and infrastructure Go to Microsoft Defender for Cloud >

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Work with an e Azure experts are available online or by phone

The screenshot shows the Microsoft Azure portal interface for a virtual machine named "az104-vm1". The left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Connect, Networking, Settings, Availability + scale, Security, Backup + disaster recovery, Operations, and Monitoring. The main content area is titled "Essentials" and provides the following details:

- Resource group: az104-rg8-loc58710071
- Status: Running
- Location: East US 2 (Zone 1)
- Subscription: A2-104T00A_CSR_1
- Subscription ID: 151740e6-dfaa-48ce-af05-015d2532e400
- Availability zone: 1
- Operating system: Windows (Windows Server 2025 Datacenter)
- Size: Standard D2s v3 (2 vcpus, 8 GiB memory)
- Primary NIC public IP: 20.10.225.231
- Virtual network/subnet: vnet-eastus2/snet-eastus2-1
- DNS name: Not configured
- Health state: -
- Time created: 1/30/2026, 6:08 AM UTC

Compute and Storage Scaling

This section demonstrates adjustments to compute sizing and storage configuration to meet changing performance and capacity requirements while maintaining operational efficiency.

The screenshot shows the Microsoft Azure portal interface for the virtual machine "az104-vm1". The left sidebar has a "Size" link under the "Availability + scale" category. The main content area is titled "Size" and displays the current VM configuration:

- VM Size: D2ads_v5
- Type: General purpose
- vCPUs: 2
- RAM (GiB): 8
- Data disks: 4

A "Resize" button is visible. Below it, a message asks if the user wants to resize to "Standard_D2ds_v4". The message states: "Do you want to resize to size 'Standard_D2ds_v4'? If the virtual machine is currently running, changing its size will cause it to be restarted." At the bottom, there is a note about prices being estimates in USD and a link to the Azure pricing calculator.

az104-vm1 - Microsoft Azure

Microsoft Azure

az104-vm1 | Disks

Virtual machine

OS disk

Swap OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput
az104-vm1_OsDisk_1_717dk	Premium SSD ZRS	127	500	100

Data disks

Filter by name: Showing 1 of 1 attached data disks

Create and attach a new disk Attach existing disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput
0	vm1-disk1	Standard HDD LRS	32	500	6

Apply Discard changes

Add or remove favorites by pressing Ctrl+Shift+F

Detailed description: This screenshot shows the 'Disks' blade for the virtual machine 'az104-vm1'. On the left, a sidebar lists various management options like Overview, Activity log, and Resource visualizer. The 'Disks' option is selected. The main area shows two disk entries. The first is an 'OS disk' named 'az104-vm1_OsDisk_1_717dk' with a size of 127 GiB, storage type 'Premium SSD ZRS', and performance metrics of 500 IOPS and 100 throughput. The second entry is a 'Data disk' named 'vm1-disk1' with a size of 32 GiB, storage type 'Standard HDD LRS', and performance metrics of 500 IOPS and 6 throughput. A 'Create and attach a new disk' button is available for adding more data disks.

az104-vm1 - Microsoft Azure

Microsoft Azure

az104-vm1 | Disks

Virtual machine

OS disk

Swap OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput
az104-vm1_OsDisk_1_717dk	Premium SSD ZRS	127	500	100

Data disks

Filter by name: Showing 1 of 1 attached data disks

Create and attach a new disk Attach existing disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput
0	vm1-disk1	Standard HDD LRS	32	500	6

Apply Discard changes

Add or remove favorites by pressing Ctrl+Shift+F

Detailed description: This screenshot shows the same 'Disks' blade for 'az104-vm1' as the previous one, but the data disk's storage type has been changed from 'Standard HDD LRS' to 'Standard HDD LRS'. The rest of the interface and disk details remain the same.

Virtual machine storage configuration showing disk detachment.

The screenshot shows the Azure portal interface for managing a virtual machine named 'az104-vm1'. The left sidebar navigation bar is visible, with 'Disks' selected under the 'Settings' category. The main content area displays the 'OS disk' configuration, showing a single entry for 'az104-vm1_OsDisk_1_717de' which is a Premium SSD ZRS type disk with 127 GB of storage, 500 Max IOPS, and 100 Max throughput. Below this, the 'Data disks' section shows a message indicating 'No data disks attached'. At the bottom of the page are 'Apply' and 'Discard changes' buttons.

The screenshot shows the Azure portal interface for managing a disk named 'vm1-disk1'. The left sidebar navigation bar is visible, with 'Size + performance' selected under the 'Configuration' category. The main content area displays the 'Storage type' configuration, set to 'Standard SSD (locally-redundant storage)'. A table lists various disk sizes and their corresponding properties: Size, Disk tier, Provisioned IOPS, Provisioned throughput, and Max Shares. The '32 GiB' row is highlighted. At the bottom of the page are 'Save' and 'Discard' buttons.

Size	Disk tier	Provisioned IOPS	Provisioned throughput	Max Shares
4 GiB	E1	500	100	3
8 GiB	E2	500	100	3
16 GiB	E3	500	100	3
32 GiB	E4	500	100	3
64 GiB	E6	500	100	3
128 GiB	E10	500	100	3
256 GiB	E15	500	100	3
512 GiB	E20	500	100	3
1024 GiB	E30	500	100	3

The screenshot shows the 'Disks' section of the Azure portal for the virtual machine 'az104-vm1'. The left sidebar has 'Disks' selected under 'Settings'. The main area shows the 'OS disk' and 'Data disks' sections. The 'OS disk' table includes columns for Disk name, Storage type, Size (GiB), Max IOPS, and Max throughput. The 'Data disks' table includes columns for LUN, Disk name, Storage type, Size (GiB), Max IOPS, and Max throughput.

Virtual Machine Scale Set Configuration

This section documents the creation and configuration of Azure Virtual Machine Scale Sets to support consistent deployment and centralized management of multiple virtual machine instances.

The screenshot shows the 'Create a Virtual Machine Scale Set (VMSS)' wizard. Step 1: Set up your resources. It shows the subscription 'AZ-104T00A CSR 1' and resource group 'az104-rg8-lod58710071'. Step 2: Set details. It shows the scale set name 'vms1', region '(US) East US 2', and availability zone 'Zones 1, 2, 3'. A note about autoscaling is present. Step 3: Orchestration. A note about the scale set model is present. Buttons at the bottom include '< Previous', 'Next : Spot >', and 'Review + create'.

Create a Virtual Machine Scale Set (VMSS)

Orchestration mode * **Flexible**: achieve high availability at scale with identical or multiple virtual machine types
 Uniform: optimized for large scale stateless workloads

Security type Standard

Scaling

Scaling mode **Manually update the capacity**: Maintain a fixed amount of instances.
 Autoscaling: Scaling based on a CPU metric, on any schedule.
 No scaling profile: manual attach virtual machines after deployment

Instance count * 2

Configure scaling options

Instance details

Image * Windows Server 2025 Datacenter - x64 Gen2

See all images | Configure VM generation

This image is compatible with additional security features. [Click here to swap to the latest secure version](#).

< Previous Next : Spot > Review + create

Create a Virtual Machine Scale Set (VMSS)

Size * Standard_D2s_v3 - 2 vcpus, 8 GiB memory (\$137.24)

See all sizes

Enable Hibernation
Hibernate does not currently support Uniform Orchestration mode. [Learn more](#)

Administrator account

Username * localadmin

Password * *****

Confirm password * *****

Licensing

Save up to 49% with a license you already own using Azure Hybrid Benefit. [Learn more](#)

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Windows Server license?

[Review Azure hybrid benefit compliance](#)

< Previous Next : Spot > Review + create

vnet-eastus2-1

Name * vmss-vnet

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet. [Learn more](#)

+ Add a subnet

10.82.0.0/20

10.82.0.0/20 /20 Delete address space
10.82.0.0 - 10.82.15.255 4,096 addresses

Subnets	IP address range	Size	NAT gateway
subnet0	10.82.0.0 - 10.82.0.255	/24 (256 addresses)	-

Add IPv4 address space I ▾

Save Cancel

Create network security group

Name * vmss1-nsg

Inbound rules (0)

1000: default-allow-ssh Any SSH (TCP/22) ✓

1010: allow-http Any HTTP (TCP/80) ✓

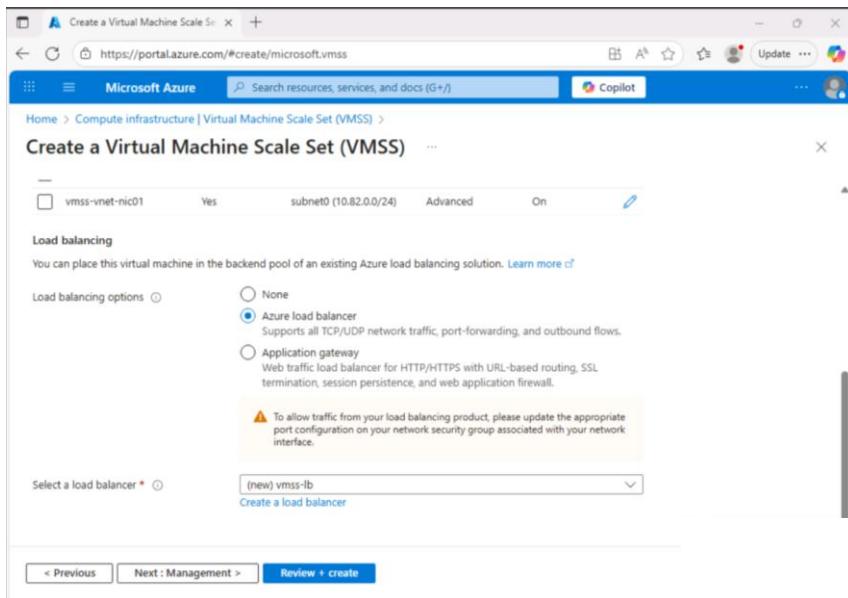
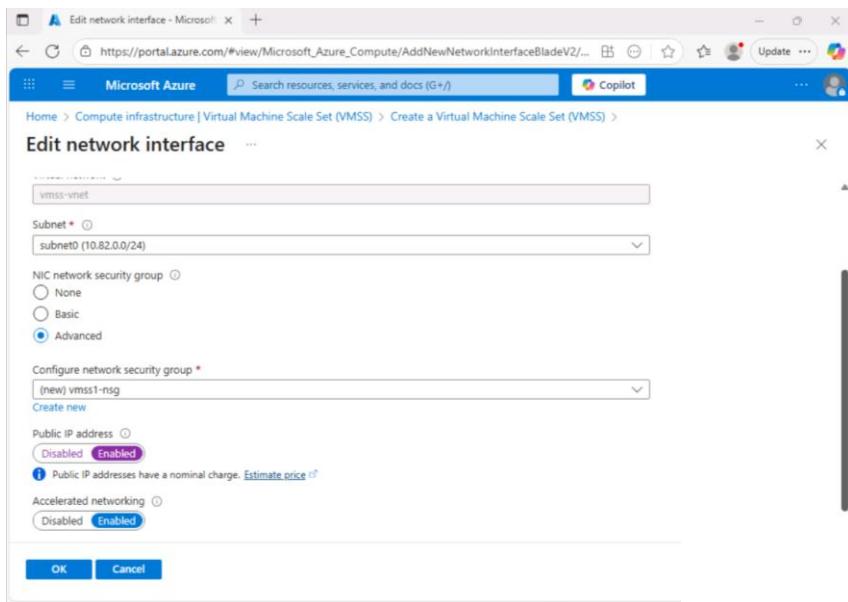
+ Add an inbound rule

Outbound rules (0)

No results.

+ Add an outbound rule

OK



Create a Virtual Machine Scale Set

https://portal.azure.com/#create/microsoft.vmss

Microsoft Azure Search resources, services, and docs (G+)

Copilot

Home > Compute infrastructure | Virtual Machine Scale Set (VMSS) >

Create a Virtual Machine Scale Set (VMSS) ...

Your subscription is protected by Foundational Cloud Security Posture Management Free Plan.

Upgrade policy

Upgrade mode * Manual - Existing instances must be manually upgraded

Monitoring

Boot diagnostics Enable with managed storage account (recommended)
 Enable with custom storage account
 Disable

Enable notifications for instance termination

Enable notifications for OS image upgrades or re-image

Identity

There are two types of managed identity: system-assigned and user-assigned. System-assigned identities are directly linked to a single Azure resource. User-assigned identities can be associated with multiple Azure resources, and its lifecycle is independent

< Previous Next : Health Review + create

Create a Virtual Machine Scale Set

https://portal.azure.com/#create/microsoft.vmss

Microsoft Azure Search resources, services, and docs (G+)

Copilot

Home > Compute infrastructure | Virtual Machine Scale Set (VMSS) >

Create a Virtual Machine Scale Set (VMSS) ...

Validation passed

Basics

Subscription	AZ-104T00A CSR 1
Resource group	az104-rg8-lod58710071
Virtual machine scale set name	vms1
Region	East US 2
Orchestration mode	Uniform
Availability zone	1,2,3
Image	Windows Server 2025 Datacenter - Gen2
Size	Standard D2s v3 (2 vcpus, 8 GB memory)
Scaling mode	Manually update the capacity
Instance count	2
Security type	Standard
Enable hibernation	No
Username	localadmin

Spot

< Previous Next > Create Download a template for:

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with links like 'Home', 'CreateVmss-MicrosoftWindowsServer.WindowsServer-2-20260129223512 | Overview', 'Deployment', 'Delete', 'Cancel', 'Redeploy', 'Download', and 'Refresh'. Below the navigation bar, the main content area has a title 'Your deployment is complete' with a green checkmark icon. It displays deployment details: Deployment name: CreateVmss-MicrosoftWindowsServer.WindowsServer-2-20260129223512, Subscription: AZ-104T00A CSR 1, Resource group: az104-rgb-1od58710071, Start time: 1/29/2026, 10:49:51 PM, Correlation ID: Bc2530e5-4f93-4227-92e0-9df4a7485d45. There are sections for 'Deployment details' and 'Next steps', with a prominent blue button labeled 'Go to resource'.

Auto-Scaling Rules and Instance Limits

This section outlines the configuration of scale-out and scale-in rules, including performance-based triggers and instance boundaries used to automatically adjust capacity based on workload demand.

Auto-scale rule configured to increase instance count based on defined performance thresholds.

The screenshot shows the Microsoft Azure portal interface for managing a virtual machine scale set named 'vmss1'. On the left, a sidebar lists options like 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Instances', 'Resource visualizer', 'Networking', 'Settings', 'Availability + scale', 'Scaling' (which is selected), 'Availability', 'Size', and 'Security'. The main content area is titled 'Scale rule' and shows a configuration for a 'Default' rule. It includes a graph showing CPU usage over time, a threshold of 80.19%, and a trigger condition: 'Greater than 70 %'. Below this, it specifies a duration of 10 minutes and a time aggregation of 'Average'. Under the 'Rules' section, it shows an action to 'Increase percent by 50%' with a cool-down period of 5 minutes. A blue 'Add' button is visible at the bottom right.

Auto-scale rule configured to reduce instance count to optimize resource utilization.

The screenshot shows the 'Scale rule' configuration for the 'vmss1' virtual machine scale set. The 'Rules' section contains a single rule for 'Percentage CPU (Average)'. The 'Operator' is set to 'Less than' with a threshold of 30%. The 'Duration (minutes)' is 10, and the 'Time grain (minutes)' is 1. The 'Action' section specifies a 'Decrease percent by' of 5% over a 'Percentage' of 50. A preview chart shows a dip in CPU usage from 10:55 PM to 11 PM, which would trigger the scale action.

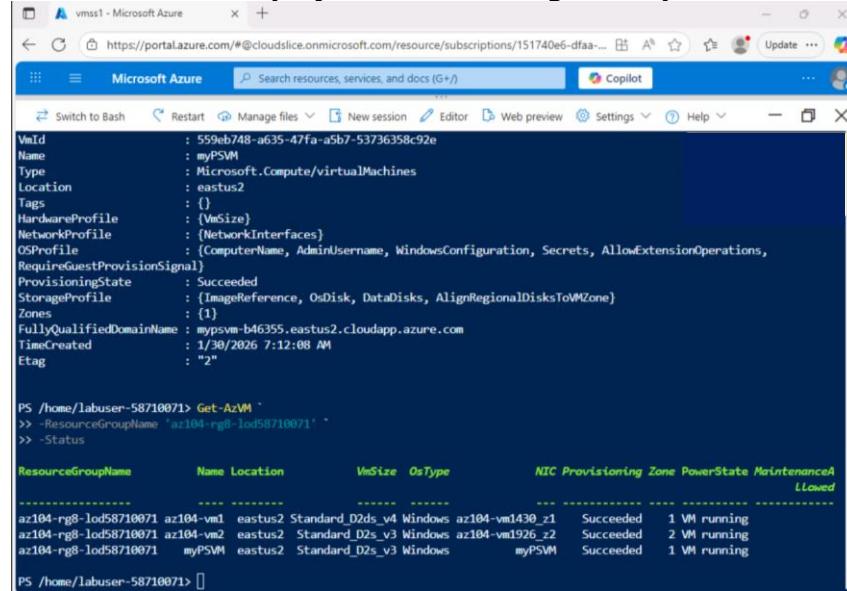
Instance limit configuration defining minimum and maximum scaling boundaries.

The screenshot shows the 'Scaling' configuration for the 'vmss1' virtual machine scale set. Under 'Scale mode', 'Scale based on a metric' is selected. The 'Rules' section includes two rules: 'Scale out' (when average CPU usage is above 70%, increase instances by 1) and 'Scale in' (when average CPU usage is below 30%, decrease instances by 1). The 'Instance limits' section sets the 'Minimum' to 2 and the 'Maximum' to 10. The 'Default' value is also set to 2. A note at the bottom states: 'This scale condition is executed when none condition(s) match'.

Command-Line Administration

This section demonstrates virtual machine management tasks performed using Azure PowerShell and Azure CLI, highlighting automation-friendly alternatives to portal-based administration.

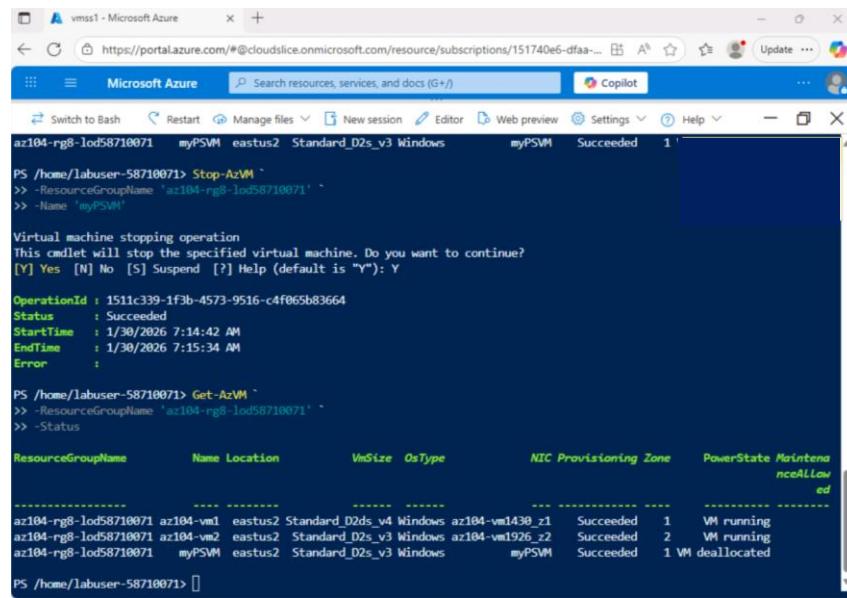
Virtual machine deployment and management performed using Azure PowerShell.



```
PS /home/labuser-58710071> Get-AzVM
>> -ResourceGroupName 'az104-rg8-1od58710071'
>> -Status

ResourceGroupName          Name Location        VmSize OsType           NIC Provisioning Zone PowerState MaintenanceAllowed
-----              ----  -----        -----  -----  -----  -----  -----  -----  -----
az104-rg8-1od58710071  az104-vm1  eastus2 Standard_D2ds_v4 Windows az104-vm1430_z1  Succeeded  1 VM running
az104-rg8-1od58710071  az104-vm2  eastus2 Standard_D2s_v3 Windows az104-vm1926_z2  Succeeded  2 VM running
az104-rg8-1od58710071  myPSVM    eastus2 Standard_D2s_v3 Windows      myPSVM   Succeeded  1 VM running

PS /home/labuser-58710071>
```



```
PS /home/labuser-58710071> Stop-AzVM
>> -ResourceGroupName 'az104-rg8-1od58710071'
>> -Name 'myPSVM'

Virtual machine stopping operation
This cmdlet will stop the specified virtual machine. Do you want to continue?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

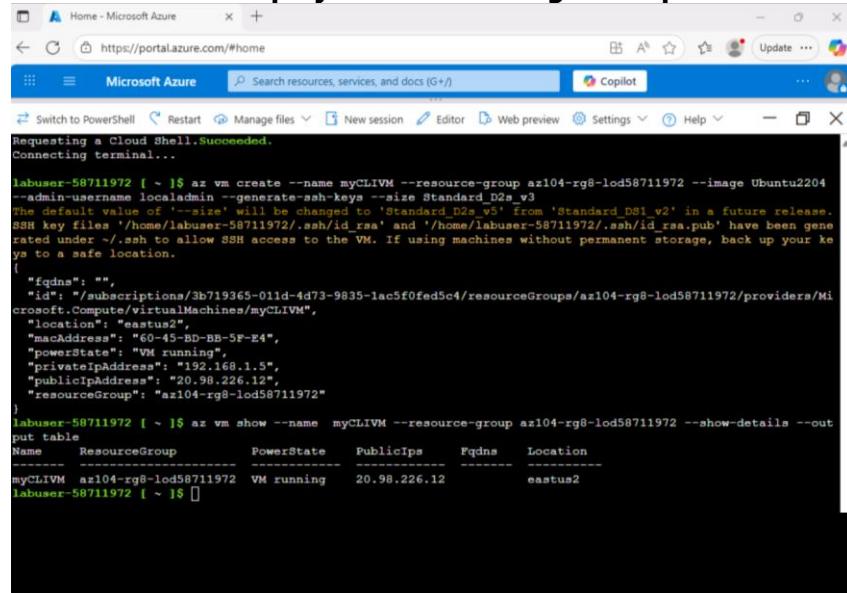
OperationId : 1511c339-1f3b-4573-9516-c4f065b83664
Status       : Succeeded
StartTime    : 1/30/2026 7:14:42 AM
EndTime     : 1/30/2026 7:15:34 AM
Error       :

PS /home/labuser-58710071> Get-AzVM
>> -ResourceGroupName 'az104-rg8-1od58710071'
>> -Status

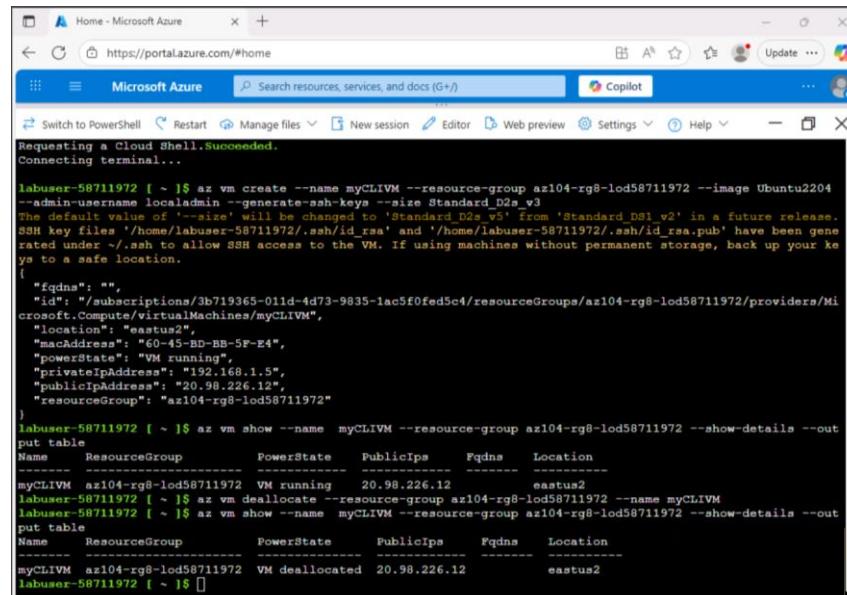
ResourceGroupName          Name Location        VmSize OsType           NIC Provisioning Zone PowerState MaintenanceAllowed
-----              ----  -----        -----  -----  -----  -----  -----  -----  -----
az104-rg8-1od58710071  az104-vm1  eastus2 Standard_D2ds_v4 Windows az104-vm1430_z1  Succeeded  1 VM running
az104-rg8-1od58710071  az104-vm2  eastus2 Standard_D2s_v3 Windows az104-vm1926_z2  Succeeded  2 VM running
az104-rg8-1od58710071  myPSVM    eastus2 Standard_D2s_v3 Windows      myPSVM   Succeeded  1 VM deallocated

PS /home/labuser-58710071>
```

Virtual machine deployment and management performed using Azure CLI.



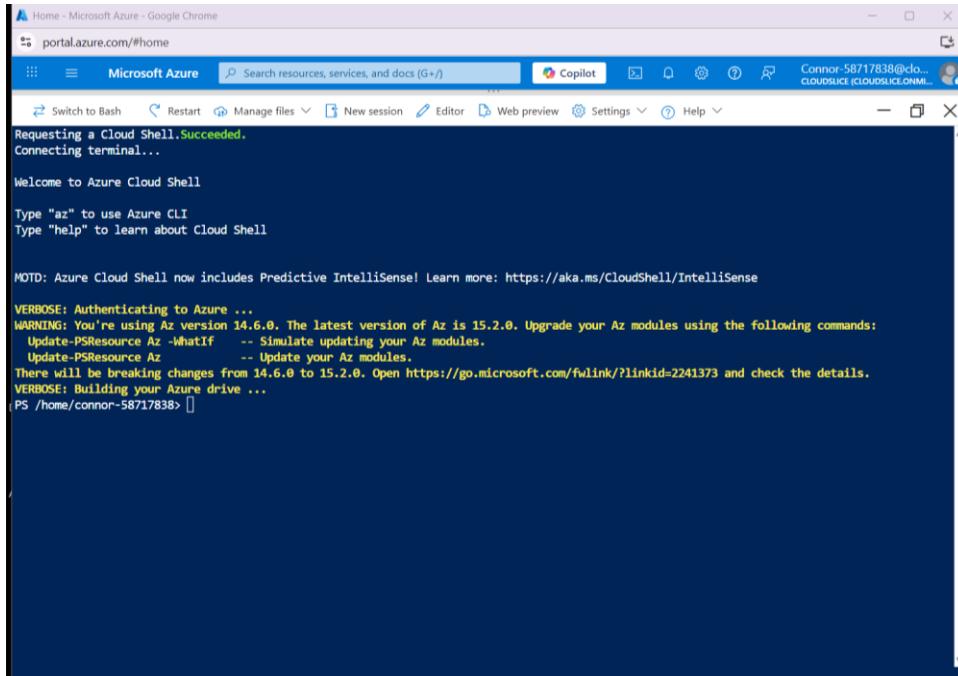
```
Requesting a Cloud Shell.Succeeded.
Connecting terminal...
labuser-58711972 [ ~ ]$ az vm create --name myCLIVM --resource-group az104-rg8-lod58711972 --image Ubuntu2204
--admin-username localadmin --generate-ssh-keys --size Standard_D2s_v3
The default value of '--size' will be changed to 'Standard_D2s_v5' from 'Standard_DS1_v2' in a future release.
SSH key files '/home/labuser-58711972/.ssh/id_rsa' and '/home/labuser-58711972/.ssh/id_rsa.pub' have been generated under ~/.ssh to allow SSH access to the VM. If using machines without permanent storage, back up your keys to a safe location.
{
  "fqdns": "",
  "id": "/subscriptions/3b719365-011d-4d73-9835-1ac5f0fed5c4/resourceGroups/az104-rg8-lod58711972/providers/Microsoft.Compute/virtualMachines/myCLIVM",
  "location": "eastus2",
  "macAddress": "60-45-BD-BB-5F-E4",
  "powerState": "VM running",
  "privateIpAddress": "192.168.1.5",
  "publicIpAddress": "20.98.226.12",
  "resourceGroup": "az104-rg8-lod58711972"
}
labuser-58711972 [ ~ ]$ az vm show --name myCLIVM --resource-group az104-rg8-lod58711972 --show-details --out
put table
Name   ResourceGroup    PowerState    PublicIps      Fqdns     Location
-----+-----+-----+-----+-----+-----+
myCLIVM  az104-rg8-lod58711972  VM running    20.98.226.12  eastus2
labuser-58711972 [ ~ ]$ 
```



```
Requesting a Cloud Shell.Succeeded.
Connecting terminal...
labuser-58711972 [ ~ ]$ az vm create --name myCLIVM --resource-group az104-rg8-lod58711972 --image Ubuntu2204
--admin-username localadmin --generate-ssh-keys --size Standard_D2s_v3
The default value of '--size' will be changed to 'Standard_D2s_v5' from 'Standard_DS1_v2' in a future release.
SSH key files '/home/labuser-58711972/.ssh/id_rsa' and '/home/labuser-58711972/.ssh/id_rsa.pub' have been generated under ~/.ssh to allow SSH access to the VM. If using machines without permanent storage, back up your keys to a safe location.
{
  "fqdns": "",
  "id": "/subscriptions/3b719365-011d-4d73-9835-1ac5f0fed5c4/resourceGroups/az104-rg8-lod58711972/providers/Microsoft.Compute/virtualMachines/myCLIVM",
  "location": "eastus2",
  "macAddress": "60-45-BD-BB-5F-E4",
  "powerState": "VM running",
  "privateIpAddress": "192.168.1.5",
  "publicIpAddress": "20.98.226.12",
  "resourceGroup": "az104-rg8-lod58711972"
}
labuser-58711972 [ ~ ]$ az vm show --name myCLIVM --resource-group az104-rg8-lod58711972 --show-details --out
put table
Name   ResourceGroup    PowerState    PublicIps      Fqdns     Location
-----+-----+-----+-----+-----+
myCLIVM  az104-rg8-lod58711972  VM running    20.98.226.12  eastus2
labuser-58711972 [ ~ ]$ az vm deallocate --resource-group az104-rg8-lod58711972 --name myCLIVM
labuser-58711972 [ ~ ]$ az vm show --name myCLIVM --resource-group az104-rg8-lod58711972 --show-details --out
put table
Name   ResourceGroup    PowerState    PublicIps      Fqdns     Location
-----+-----+-----+-----+-----+
myCLIVM  az104-rg8-lod58711972  VM deallocated  20.98.226.12  eastus2
labuser-58711972 [ ~ ]$ 
```

Virtual Machine Administration Using Azure Cloud Shell

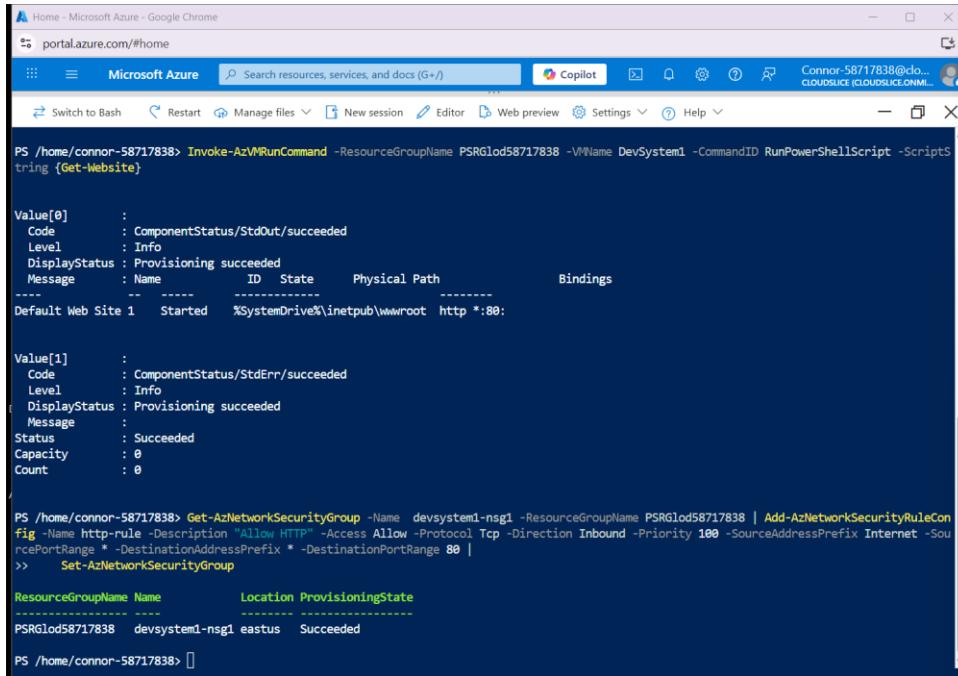
This section demonstrates administrative management of an existing Azure virtual machine using Azure Cloud Shell, including reviewing configuration details and performing operational tasks through command-line tools.



```
A Home - Microsoft Azure - Google Chrome
portal.azure.com/#home
Microsoft Azure Search resources, services, and docs (G +)
Copilot Connor-58717838@clou... cloudslice (CLOUDSHELL.ONML...
Switch to Bash Restart Manage files New session Editor Web preview Settings Help
Requesting a Cloud Shell.Succeeded.
Connecting terminal...
Welcome to Azure Cloud Shell
Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

MOTD: Azure Cloud Shell now includes Predictive IntelliSense! Learn more: https://aka.ms/CloudShell/IntelliSense

VERBOSE: Authenticating to Azure ...
WARNING: You're using Az version 14.6.0. The latest version of Az is 15.2.0. Upgrade your Az modules using the following commands:
Update-PSResource Az -WhatIf -- Simulate updating your Az modules.
Update-PSResource Az -- Update your Az modules.
There will be breaking changes from 14.6.0 to 15.2.0. Open https://go.microsoft.com/fwlink/?linkid=2241373 and check the details.
VERBOSE: Building your Azure drive ...
PS /home/connor-58717838> 
```



```
PS /home/connor-58717838> Invoke-AzVMRunCommand -ResourceGroupName PSRGlod58717838 -VMName DevSystem1 -CommandId RunPowerShellScript -ScriptString {Get-Website}

Value[0] :
Code : ComponentStatus/StdOut/succeeded
Level : Info
DisplayStatus : Provisioning succeeded
Message : Name ID State Physical Path Bindings
---- -- -----
Default Web Site 1 Started %SystemDrive%\inetpub\wwwroot http *:80:

Value[1] :
Code : ComponentStatus/StdErr/succeeded
Level : Info
DisplayStatus : Provisioning succeeded
Message :
Status : Succeeded
Capacity : 0
Count : 0

PS /home/connor-58717838> Get-AzNetworkSecurityGroup -Name devsystem1-nsg1 -ResourceGroupName PSRGlod58717838 | Add-AzNetworkSecurityRuleConfig -Name http-rule -Description "Allow HTTP" -Access Allow -Protocol Tcp -Direction Inbound -Priority 100 -SourceAddressPrefix Internet -SourcePortRange * -DestinationAddressPrefix * -DestinationPortRange 80 |
>>> Set-AzNetworkSecurityGroup

ResourceGroupName Name Location ProvisioningState
----- -----
PSRGlod58717838 devsystem1-nsg1 eastus Succeeded

PS /home/connor-58717838> 
```

