

# Create a Linux VM Using Azure PowerShell

Date: 09-09-2025

## Introduction

The purpose of this lab is to demonstrate that I can successfully create and connect to a Linux Virtual Machine in Microsoft Azure using Azure PowerShell. This exercise is part of building my technical portfolio and serves as proof of my ability to provision cloud infrastructure, document the process, and troubleshoot issues along the way.

I performed the lab in **Azure Cloud Shell**, using the **PowerShell environment**. Cloud Shell provides a browser-based interface with Azure PowerShell pre-installed, which allowed me to run commands directly against my Azure subscription without needing to set up additional tools on my local machine.

My goal in completing this lab is to show that I can not only follow the required steps to build a Linux VM, but also capture and explain my workflow in detail. By recording commands, screenshots, and any troubleshooting I had to do, I am creating a professional artifact for my GitHub portfolio that demonstrates both technical skill and problem-solving ability.

This lab is not included in the Microsoft Learn modules for AZ-104, but I have taken it upon myself to go further by spinning up a full Linux virtual machine in Azure with PowerShell. My goal is to learn how to do the entire process end-to-end, even if it is outside the official exam scope. By practicing the full workflow, I am building confidence with Azure administration and creating evidence of my skills that I can include in my professional portfolio.

## Step 0: Verify and Set the Correct Subscription

Command to list subscriptions: Get-AzSubscription

```
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 ...  
VERBOSE: Building your Azure drive ...  
PS /home/korryn> Get-AzSubscription  
TenantId: a00556d4-7844-4937-a686-900059912e4a  


| Name                 | Id                                   | State   |
|----------------------|--------------------------------------|---------|
| ASTRAEUS             | a773d579-0bab-4aa1-b8e5-00b947e41741 | Enabled |
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | Enabled |

  
PS /home/korryn> █
```

Commands Used to Set Subscription:

Set-AZContext -Subscription "Subscription 1" - Failed  
Set-AZContext -Subscription {Subscription 1} - Failed

```
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 ...  
VERBOSE: Building your Azure drive ...  
PS /home/korryn> Get-AzSubscription  
TenantId: a00556d4-7844-4937-a686-900059912e4a  


| Name                 | Id                                   | State   |
|----------------------|--------------------------------------|---------|
| ASTRAEUS             | a773d579-0bab-4aa1-b8e5-00b947e41741 | Enabled |
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | Enabled |

  
PS /home/korryn> Set-AzContext -Subscription "Subscription 1"  
Set-AzContext: Please provide a valid tenant or a valid subscription.  
PS /home/korryn> Set-AZContext -Subscription {Subscription 1}  
Set-AzContext: Please provide a valid tenant or a valid subscription.  
PS /home/korryn> █
```

Set-AZContext -SubscriptionId "538a410-400b-4bbc-8e56-c37bfb8a78e1"

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
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 ...
VERBOSE: Building your Azure drive ...
PS /home/korryn> Get-AzSubscription

    TenantId: a00556d4-7844-4937-a686-900059912e4a



| Name                 | Id                                   | State   |
|----------------------|--------------------------------------|---------|
| ASTRAEUS             | a773d579-0bab-4aa1-b8e5-00b947e41741 | Enabled |
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | Enabled |


PS /home/korryn> Set-AzContext -Subscription "Subscription 1"
Set-AzContext: Please provide a valid tenant or a valid subscription.
PS /home/korryn> Set-AZContext -Subscription {Subscription 1}
Set-AzContext: Please provide a valid tenant or a valid subscription.
PS /home/korryn> Set-AZContext -SubscriptionId "538a410a-400b-4bbc-8e56-c37bfb8a78e1"

    Tenant: 311aa0a0-4565-4505-8b38-dd32a569f3d0



| SubscriptionName     | SubscriptionId                       | Account   | Environment |
|----------------------|--------------------------------------|-----------|-------------|
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | MSI@50342 | AzureCloud  |


PS /home/korryn>

```

## Get-AZContext

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
PS /home/korryn> Get-AzSubscription

    TenantId: a00556d4-7844-4937-a686-900059912e4a



| Name                 | Id                                   | State   |
|----------------------|--------------------------------------|---------|
| ASTRAEUS             | a773d579-0bab-4aa1-b8e5-00b947e41741 | Enabled |
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | Enabled |


PS /home/korryn> Set-AzContext -Subscription "Subscription 1"
Set-AzContext: Please provide a valid tenant or a valid subscription.
PS /home/korryn> Set-AZContext -Subscription {Subscription 1}
Set-AzContext: Please provide a valid tenant or a valid subscription.
PS /home/korryn> Set-AZContext -SubscriptionId "538a410a-400b-4bbc-8e56-c37bfb8a78e1"

    Tenant: 311aa0a0-4565-4505-8b38-dd32a569f3d0



| SubscriptionName     | SubscriptionId                       | Account   | Environment |
|----------------------|--------------------------------------|-----------|-------------|
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | MSI@50342 | AzureCloud  |


PS /home/korryn> Get-AZContext

    Tenant: 311aa0a0-4565-4505-8b38-dd32a569f3d0



| SubscriptionName     | SubscriptionId                       | Account   | Environment |
|----------------------|--------------------------------------|-----------|-------------|
| Azure subscription 1 | 538a410a-400b-4bbc-8e56-c37bfb8a78e1 | MSI@50342 | AzureCloud  |


PS /home/korryn>

```

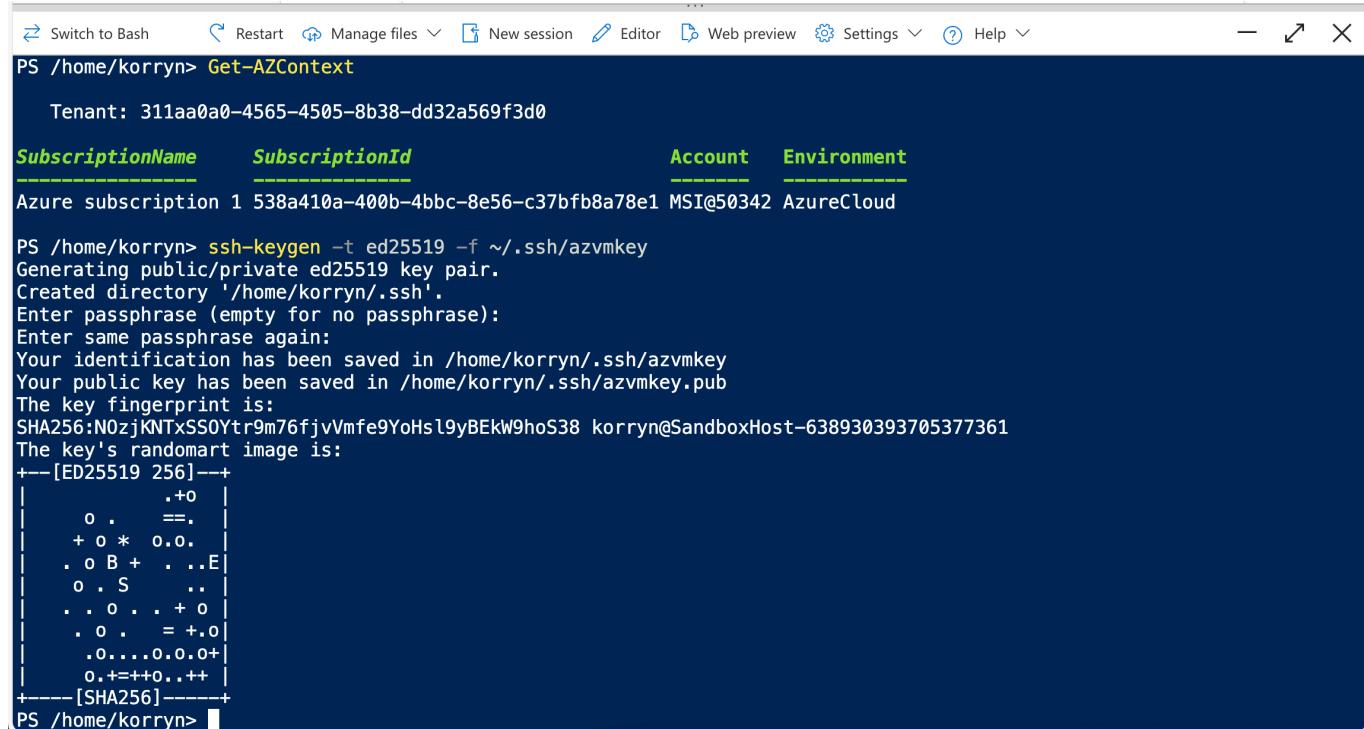
Troubleshooting: I initially tried to set the subscription by name and both attempts failed.

Commands used: `Set-AZContext -Subscription "Subscription 1"` — Failed. `Set-AZContext -Subscription {Subscription 1}` — Failed. Error observed in Cloud Shell: “Please provide a valid tenant or a valid subscription.” Root cause: I used the wrong parameter (`-Subscription`) and also tried curly braces shown in help text; Azure PowerShell expects either `-SubscriptionId` or `-SubscriptionName`, and braces are not meant to be typed. Fix: I switched to the ID-based form and, because my account spans tenants, included the tenant

explicitly: Set-AzContext -SubscriptionId "538a410a-400b-4bbc-8e56-c37bfb8a78e1" – Tenant "311aa0a0-4565-4505-8b38-dd32a569f3d0". Verification: I confirmed the active context with Get-AzContext , which showed SubscriptionName = Azure subscription 1 and the matching SubscriptionId . I captured screenshots of the failed attempts and the successful context confirmation.

## Step 1: Generate SSH Key Pair

```
ssh-keygen -t ed25519 -f ~/.ssh/azvmkey
```



The screenshot shows a terminal window with the following content:

```
PS /home/korryn> Get-AZContext
Tenant: 311aa0a0-4565-4505-8b38-dd32a569f3d0

SubscriptionName      SubscriptionId      Account      Environment
Azure subscription 1  538a410a-400b-4bbc-8e56-c37bfb8a78e1  MSI@50342  AzureCloud

PS /home/korryn> ssh-keygen -t ed25519 -f ~/.ssh/azvmkey
Generating public/private ed25519 key pair.
Created directory '/home/korryn/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/korryn/.ssh/azvmkey
Your public key has been saved in /home/korryn/.ssh/azvmkey.pub
The key fingerprint is:
SHA256:N0zjKNTxSS0Ytr9m76fjvVmfe9YoHs19yBEkW9hos38 korryn@SandboxHost-638930393705377361
The key's randomart image is:
+--[ED25519 256]--+
|          .+o |
|       o . ==. |
| + o * o.o. |
| . o B + . .E|
| o . S .. |
| . . o . . + o |
| . o . = +.o |
| .o....o.0.0+ |
| o.+==+o...++ |
+---[SHA256]---+
PS /home/korryn>
```

## Step 2: Create a Resource Group

```
New-AzResourceGroup -Name "LinuxVM-RG" -Location "EastUS"
```

Region: East US

Reasoning: I chose EastUS as the region because it is widely available for Azure deployments and commonly used in labs and tutorials. For this exercise, my priority was a reliable, standard region rather than proximity or special features.

```

PS /home/korryn> ssh-keygen -t ed25519 -f ~/.ssh/azvmkey
Generating public/private ed25519 key pair.
Created directory '/home/korryn/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/korryn/.ssh/azvmkey
Your public key has been saved in /home/korryn/.ssh/azvmkey.pub
The key fingerprint is:
SHA256:N0zjKNTxSS0Ytr9m76fjvVmfe9YoHs19yBEkW9hoS38 korryn@SandboxHost-638930393705377361
The key's randomart image is:
+--[ED25519 256]--+
|          .+o |
| o .    ==. |
| + o *  o.o. |
| . o B + . .E|
| o . S    .. |
| . . o . . + o |
| . o .    =+.o |
| .o....o.0.0+ |
| o.+==+o..++ |
+---[SHA256]----+
PS /home/korryn> New-AzResourceGroup -Name "LinuxVM-RG" -Location "EastUS"

ResourceGroupName : LinuxVM-RG
Location         : eastus
ProvisioningState : Succeeded
Tags             :
ResourceId       : /subscriptions/538a410a-400b-4bbc-8e56-c37bfb8a78e1/resourceGroups/LinuxVM-RG

PS /home/korryn>

```

## Step 3: Load Public Key into a Variable

\$pubKey = Get-Content ~/.ssh/azvmkey.pub

\$pubKey

```

PS /home/korryn> Enter passphrase (empty for no passphrase):
PS /home/korryn> Enter same passphrase again:
PS /home/korryn> Your identification has been saved in /home/korryn/.ssh/azvmkey
PS /home/korryn> Your public key has been saved in /home/korryn/.ssh/azvmkey.pub
PS /home/korryn> The key fingerprint is:
PS /home/korryn> SHA256:N0zjKNTxSS0Ytr9m76fjvVmfe9YoHs19yBEkW9hoS38 korryn@SandboxHost-638930393705377361
PS /home/korryn> The key's randomart image is:
PS /home/korryn> +--[ED25519 256]--+
PS /home/korryn> |          .+o |
PS /home/korryn> | o .    ==. |
PS /home/korryn> | + o *  o.o. |
PS /home/korryn> | . o B + . .E|
PS /home/korryn> | o . S    .. |
PS /home/korryn> | . . o . . + o |
PS /home/korryn> | . o .    =+.o |
PS /home/korryn> | .o....o.0.0+ |
PS /home/korryn> | o.+==+o..++ |
PS /home/korryn> +---[SHA256]----+
PS /home/korryn> New-AzResourceGroup -Name "LinuxVM-RG" -Location "EastUS"

ResourceGroupName : LinuxVM-RG
Location         : eastus
ProvisioningState : Succeeded
Tags             :
ResourceId       : /subscriptions/538a410a-400b-4bbc-8e56-c37bfb8a78e1/resourceGroups/LinuxVM-RG

PS /home/korryn> $pubKey = Get-Content ~/.ssh/azvmkey.pub
PS /home/korryn> $pubKey
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAIGe4TgKwF5p8cJ6B6p+iYa06uNAIuuUwpHBnIZ/DxDw8 korryn@SandboxHost-638930393705377361
PS /home/korryn>

```

## Step 4: Define the Linux Username

\$user = "azureuser"

\$user

```
Switch to Bash Restart Manage files New session Editor Web preview Settings Help
Your public key has been saved in /home/korryn/.ssh/azvmkey.pub
The key fingerprint is:
SHA256:N0zjKNTxSSOYtr9m76fjvVmfe9YoHs19yBEkW9hoS38 korryn@SandboxHost-638930393705377361
The key's randomart image is:
+--[ED25519 256]--+
|          .+o |
|       o . ==. |
| + o * o.o. |
| . o B + . .E|
| o . S .. |
| . . o . . + o|
| . o . = +.o |
| .0....o.0.o+|
| o.+==o..++|
+---[SHA256]---+
PS /home/korryn> New-AzResourceGroup -Name "LinuxVM-RG" -Location "EastUS"
ResourceGroupName : LinuxVM-RG
Location         : eastus
ProvisioningState : Succeeded
Tags             :
ResourceId       : /subscriptions/538a410a-400b-4bbc-8e56-c37bfb8a78e1/resourceGroups/LinuxVM-RG

PS /home/korryn> $pubKey = Get-Content ~/ssh/azvmkey.pub
PS /home/korryn> $pubKey
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAIGe4TgKwF5p8cJ6B6p+iYa06uNAIuuUwpHBnIZ/DxDw8 korryn@SandboxHost-638930393705377361
PS /home/korryn> $user = "azureuser"
PS /home/korryn> $user
azureuser
PS /home/korryn>
```

## Step 5: Create a Credential Object

\$pw = ConvertTo-SecureString "unused" -AsPlainText -Force

\$cred = New-Object System.Management.Automation.PSCredential(\$user, \$pw)

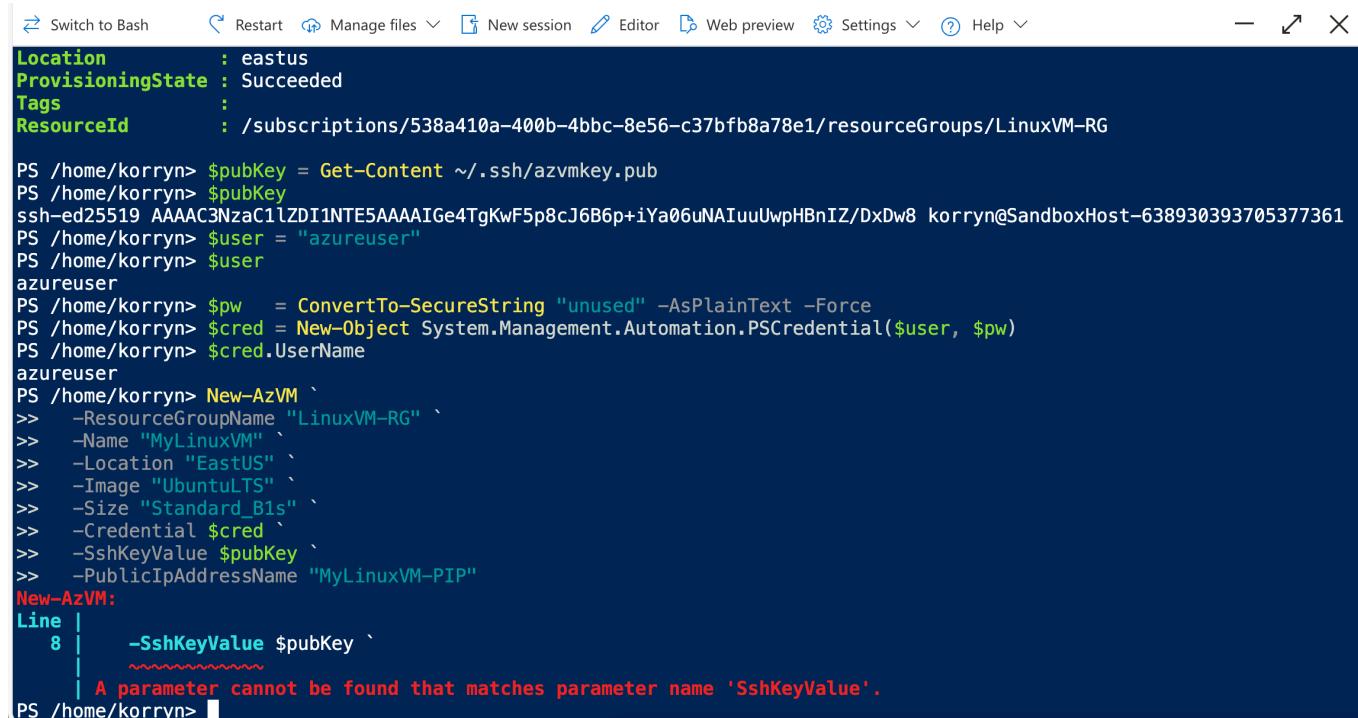
\$cred.UserName

```
Switch to Bash Restart Manage files New session Editor Web preview Settings Help
+--[ED25519 256]--+
|          .+o |
|       o . ==. |
| + o * o.o. |
| . o B + . .E|
| o . S .. |
| . . o . . + o|
| . o . = +.o |
| .0....o.0.o+|
| o.+==o..++|
+---[SHA256]---+
PS /home/korryn> New-AzResourceGroup -Name "LinuxVM-RG" -Location "EastUS"
ResourceGroupName : LinuxVM-RG
Location         : eastus
ProvisioningState : Succeeded
Tags             :
ResourceId       : /subscriptions/538a410a-400b-4bbc-8e56-c37bfb8a78e1/resourceGroups/LinuxVM-RG

PS /home/korryn> $pubKey = Get-Content ~/ssh/azvmkey.pub
PS /home/korryn> $pubKey
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAIGe4TgKwF5p8cJ6B6p+iYa06uNAIuuUwpHBnIZ/DxDw8 korryn@SandboxHost-638930393705377361
PS /home/korryn> $user = "azureuser"
PS /home/korryn> $user
azureuser
PS /home/korryn> $pw = ConvertTo-SecureString "unused" -AsPlainText -Force
PS /home/korryn> $cred = New-Object System.Management.Automation.PSCredential($user, $pw)
PS /home/korryn> $cred.UserName
azureuser
PS /home/korryn>
```

# Step 6: Create the Linux VM

```
New-AzVM -ResourceGroupName "LinuxVM-RG"  
-Name "MyLinuxVM" -Location "EastUS"  
-Image "UbuntuLTS" -Size "Standard_B1s"  
-Credential $cred -SshKeyValue $pubKey  
-PublicIpAddressName "MyLinuxVM-PIP"
```



The screenshot shows a terminal window with the following session history:

```
PS /home/korryn> $pubKey = Get-Content ~/.ssh/azvmkey.pub  
PS /home/korryn> $pubKey  
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAIGe4TgKwF5p8cJ6B6p+iYa06uNAIuuUwpHBnIZ/DxDw8 korryn@SandboxHost-638930393705377361  
PS /home/korryn> $user = "azureuser"  
PS /home/korryn> $user  
azureuser  
PS /home/korryn> $pw = ConvertTo-SecureString "unused" -AsPlainText -Force  
PS /home/korryn> $cred = New-Object System.Management.Automation.PSCredential($user, $pw)  
PS /home/korryn> $cred.UserName  
azureuser  
PS /home/korryn> New-AzVM  
>> -ResourceGroupName "LinuxVM-RG" `  
>> -Name "MyLinuxVM" `  
>> -Location "EastUS" `  
>> -Image "UbuntuLTS" `  
>> -Size "Standard_B1s" `  
>> -Credential $cred `  
>> -SshKeyValue $pubKey `  
>> -PublicIpAddressName "MyLinuxVM-PIP"  
New-AzVM:  
Line |  
 8 |     -SshKeyValue $pubKey `  
    |~~~~~`  
    | A parameter cannot be found that matches parameter name 'SshKeyValue'.  
PS /home/korryn>
```

*vmConfig = New-AzVMConfig -VMName "MyLinuxVM" -VMSize "Standard\_B1s" -SshKeyValue \$pubKey*

```

PS /home/korryn> $user = "azureuser"
PS /home/korryn> $user
azureuser
PS /home/korryn> $pw = ConvertTo-SecureString "unused" -AsPlainText -Force
PS /home/korryn> $cred = New-Object System.Management.Automation.PSCredential($user, $pw)
PS /home/korryn> $cred.UserName
azureuser
PS /home/korryn> New-AzVM ` 
>>   -ResourceGroupName "LinuxVM-RG" ` 
>>   -Name "MyLinuxVM" ` 
>>   -Location "EastUS" ` 
>>   -Image "UbuntuLTS" ` 
>>   -Size "Standard_B1s" ` 
>>   -Credential $cred ` 
>>   -SshKeyValue $pubKey ` 
>>   -PublicIpAddressName "MyLinuxVM-PIP"
New-AzVM:
Line | 8 |   -SshKeyValue $pubKey ` 
     |   ~~~~~
     | A parameter cannot be found that matches parameter name 'SshKeyValue'.
PS /home/korryn> $vmConfig = New-AzVMConfig -VMName "MyLinuxVM" -VMSize "Standard_B1s"
PS /home/korryn> $vmConfig

Name          : MyLinuxVM
HardwareProfile : {VmSize}

PS /home/korryn>

```

`$vmConfig.HardwareProfile.VmSize`

```

PS /home/korryn> $user = "azureuser"
PS /home/korryn> $user
azureuser
PS /home/korryn> New-AzVM ` 
>>   -ResourceGroupName "LinuxVM-RG" ` 
>>   -Name "MyLinuxVM" ` 
>>   -Location "EastUS" ` 
>>   -Image "UbuntuLTS" ` 
>>   -Size "Standard_B1s" ` 
>>   -Credential $cred ` 
>>   -SshKeyValue $pubKey ` 
>>   -PublicIpAddressName "MyLinuxVM-PIP"
New-AzVM:
Line | 8 |   -SshKeyValue $pubKey ` 
     |   ~~~~~
     | A parameter cannot be found that matches parameter name 'SshKeyValue'.
PS /home/korryn> $vmConfig = New-AzVMConfig -VMName "MyLinuxVM" -VMSize "Standard_B1s"
PS /home/korryn> $vmConfig

Name          : MyLinuxVM
HardwareProfile : {VmSize}

PS /home/korryn> $vmConfig.HardwareProfile.VmSize
Standard_B1s
PS /home/korryn>

```

`vmConfig = Set-AzVMOperatingSystem -VM $vmConfig -Linux -ComputerName "MyLinuxVM"`  
`vmConfig.OSProfile`

```

New-AzVM:
Line | 8 | -SshKeyValue $pubKey `

| A parameter cannot be found that matches parameter name 'SshKeyValue'.
PS /home/korryn> $vmConfig = New-AzVMConfig -VMName "MyLinuxVM" -VmSize "Standard_B1s"
PS /home/korryn> $vmConfig

Name      : MyLinuxVM
HardwareProfile : {VmSize}

PS /home/korryn> $vmConfig.HardwareProfile.VmSize
Standard_B1s
PS /home/korryn> $vmConfig = Set-AzVMOperatingSystem -VM $vmConfig -Linux -ComputerName "MyLinuxVM" -Credential $cred
-DisablePasswordAuthentication
PS /home/korryn> $vmConfig.OSProfile

ComputerName      : MyLinuxVM
AdminUsername     : azureuser
AdminPassword     : unused
CustomData        :
WindowsConfiguration   :
LinuxConfiguration    : Microsoft.Azure.Management.Compute.Models.LinuxConfiguration
Secrets           :
AllowExtensionOperations  :
RequireGuestProvisionSignal  :

PS /home/korryn>

```

*vmConfig = Add-AzVMSshPublicKey -VM \$vmConfig -KeyData \$pubKey -Path "/home/user/.ssh/authorized\_keys"*

*\$vmConfig.OSProfile.LinuxConfiguration*

```

HardwareProfile : {VmSize}

PS /home/korryn> $vmConfig.HardwareProfile.VmSize
Standard_B1s
PS /home/korryn> $vmConfig = Set-AzVMOperatingSystem -VM $vmConfig -Linux -ComputerName "MyLinuxVM" -Credential $cred
-DisablePasswordAuthentication
PS /home/korryn> $vmConfig.OSProfile

ComputerName      : MyLinuxVM
AdminUsername     : azureuser
AdminPassword     : unused
CustomData        :
WindowsConfiguration   :
LinuxConfiguration    : Microsoft.Azure.Management.Compute.Models.LinuxConfiguration
Secrets           :
AllowExtensionOperations  :
RequireGuestProvisionSignal  :

PS /home/korryn> $vmConfig = Add-AzVMSshPublicKey -VM $vmConfig -KeyData $pubKey -Path "/home/$user/.ssh/authorized_keys"
PS /home/korryn> $vmConfig.OSProfile.LinuxConfiguration

DisablePasswordAuthentication : True
Ssh                         : Microsoft.Azure.Management.Compute.Models.SshConfiguration
ProvisionVMAgent            :
PatchSettings               :
EnableVMAgentPlatformUpdates  :

PS /home/korryn>

```

*\$vmConfig = Set-AzVMSourceImage -VM \$vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -Skus "20\_04-lts-gen2" -Version "latest"*

*\$vmConfig.StorageProfile.ImageReference.Sku*

```

PS /home/korryn> $vmConfig.HardwareProfile.VmSize
Standard_B1s
PS /home/korryn> $vmConfig = Set-AzVMOperatingSystem -VM $vmConfig -Linux -ComputerName "MyLinuxVM" -Credential $cred
-DisablePasswordAuthentication
PS /home/korryn> $vmConfig.OSProfile

ComputerName      : MyLinuxVM
AdminUsername     : azureuser
AdminPassword     : unused
CustomData        :
WindowsConfiguration :
LinuxConfiguration : Microsoft.Azure.Management.Compute.Models.LinuxConfiguration
Secrets           :
AllowExtensionOperations :
RequireGuestProvisionSignal :

PS /home/korryn> $vmConfig = Add-AzVMSshPublicKey -VM $vmConfig -KeyData $pubKey -Path "/home/$user/.ssh/authorized_keys"
PS /home/korryn> $vmConfig.OSProfile.LinuxConfiguration

DisablePasswordAuthentication : True
Ssh                          : Microsoft.Azure.Management.Compute.Models.SshConfiguration
ProvisionVMAgent            :
PatchSettings               :
EnableVMAgentPlatformUpdates :

PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -Skus
"20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2

```

New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM \$vmConfig -  
PublicIpAddressName "MyLinuxVM-PIP" -OpenPorts 22

```

PS /home/korryn> $vmConfig = Add-AzVMSshPublicKey -VM $vmConfig -KeyData $pubKey -Path "/home/$user/.ssh/authorized_keys"
PS /home/korryn> $vmConfig.OSProfile.LinuxConfiguration

DisablePasswordAuthentication : True
Ssh                          : Microsoft.Azure.Management.Compute.Models.SshConfiguration
ProvisionVMAgent            :
PatchSettings               :
EnableVMAgentPlatformUpdates :

PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -Skus
"20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig -PublicIpAddressName "MyLinuxVM-PIP" -OpenPorts 22
New-AzVM: Parameter set cannot be resolved using the specified named parameters. One or more parameters issued cannot be used together or an insufficient number of parameters were provided.
PS /home/korryn>

```

New-AzPublicIpAddress -Name "MyLinuxVM-PIP" -ResourceGroupName "LinuxVM-RG" -  
Location "EastUS" -AllocationMethod Static -Sku Standard

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
CustomData :
WindowsConfiguration :
LinuxConfiguration : Microsoft.Azure.Management.Compute.Models.LinuxConfiguration
Secrets :
AllowExtensionOperations :
RequireGuestProvisionSignal :

PS /home/korryn> $vmConfig = Add-AzVMSShPublicKey -VM $vmConfig -KeyData $pubKey -Path "/home/$user/.ssh/authorized_keys"
PS /home/korryn> $vmConfig.OSProfile.LinuxConfiguration

DisablePasswordAuthentication : True
Ssh : Microsoft.Azure.Management.Compute.Models.SshConfiguration
ProvisionVMAgent :
PatchSettings :
EnableVMAgentPlatformUpdates :

PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -SkuSkus
"20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig -PublicIpAddressName "MyLin
uxVM-PIP" -OpenPorts 22
New-AzVM: Parameter set cannot be resolved using the specified named parameters. One or more parameters issued cannot
be used together or an insufficient number of parameters were provided.
PS /home/korryn> New-AzPublicIpAddress -Name "MyLinuxVM-PIP" -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -Alloc
ationMethod Static -Sku Standard

ResourceGroupName Name Location PublicIpAllocationMethod IPAddress PublicIpAddressVersion IdleTimeoutIn
Minutes
----- -----
LinuxVM-RG MyLinuxVM-PIP eastus Static 172.172.141.64 IPv4 4

PS /home/korryn> [REDACTED]

```

```

$rg = "LinuxVM - RG"; $loc = "EastUS"; $subnet = New-AzVirtualNetworkSubnetConfig -Name
"default" -AddressPrefix "10.0.0.0/24"
$vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location
$loc -AddressPrefix "10.0.0.0/16" -Subnet $subnet

```

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
CustomData :
WindowsConfiguration :
LinuxConfiguration : Microsoft.Azure.Management.Compute.Models.LinuxConfiguration
Secrets :
AllowExtensionOperations :
RequireGuestProvisionSignal :

PS /home/korryn> $vmConfig = Add-AzVMSShPublicKey -VM $vmConfig -KeyData $pubKey -Path "/home/$user/.ssh/authorized_keys"
PS /home/korryn> $vmConfig.OSProfile.LinuxConfiguration

DisablePasswordAuthentication : True
Ssh : Microsoft.Azure.Management.Compute.Models.SshConfiguration
ProvisionVMAgent :
PatchSettings :
EnableVMAgentPlatformUpdates :

PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -SkuSkus
"20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig -PublicIpAddressName "MyLin
uxVM-PIP" -OpenPorts 22
New-AzVM: Parameter set cannot be resolved using the specified named parameters. One or more parameters issued cannot
be used together or an insufficient number of parameters were provided.
PS /home/korryn> New-AzPublicIpAddress -Name "MyLinuxVM-PIP" -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -Alloc
ationMethod Static -Sku Standard

ResourceGroupName Name Location PublicIpAllocationMethod IPAddress PublicIpAddressVersion IdleTimeoutIn
Minutes
----- -----
LinuxVM-RG MyLinuxVM-PIP eastus Static 172.172.141.64 IPv4 4

PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressP
refix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> [REDACTED]

```

```

$rg = "LinuxVM-RG"; $loc = "EastUS"; $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix "" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access Allow
$nsg = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -SecurityRules $sshRule

```

The screenshot shows a terminal window with the following content:

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
— ↗ X

Ssh : Microsoft.Azure.Management.Compute.Models.SshConfiguration
ProvisionVMAgent :
PatchSettings :
EnableVMAgentPlatformUpdates :

PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -Skus "20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig -PublicIpAddressName "MyLinuxVM-PIP" -OpenPorts 22
New-AzVM: Parameter set cannot be resolved using the specified named parameters. One or more parameters issued cannot be used together or an insufficient number of parameters were provided.
PS /home/korryn> New-AzPublicIpAddress -Name "MyLinuxVM-PIP" -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -AllocationMethod Static -Sku Standard

ResourceGroupName Name Location PublicIpAllocationMethod IPAddress PublicIpAddressVersion IdleTimeoutInMinutes
----- ----- ----- -----
LinuxVM-RG MyLinuxVM-PIP eastus Static 172.172.141.64 IPv4 4

PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressPrefix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access Allow
PS /home/korryn> $nsg = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -SecurityRules $sshRule
PS /home/korryn>

```

```

$nic = New-AzNetworkInterface -Name "MyLinuxVM-nic" -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -SubnetId $vnet.Subnets[0].Id -NetworkSecurityGroupId $nsg.Id -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id

```

```

PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical" -Offer "UbuntuServer" -Skus "20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig -PublicIpAddressName "MyLinuxVM-PIP" -OpenPorts 22
New-AzVM: Parameter set cannot be resolved using the specified named parameters. One or more parameters issued cannot be used together or an insufficient number of parameters were provided.
PS /home/korryn> New-AzPublicIpAddress -Name "MyLinuxVM-PIP" -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -AllocationMethod Static -Sku Standard



| ResourceGroupName | Name          | Location | PublicIpAllocationMethod | IpAddress      | PublicIpAddressVersion | IdleTimeoutInMinutes |
|-------------------|---------------|----------|--------------------------|----------------|------------------------|----------------------|
| LinuxVM-RG        | MyLinuxVM-PIP | eastus   | Static                   | 172.172.141.64 | IPv4                   | 4                    |



PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressPrefix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access Allow
PS /home/korryn> $nsg = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -SecurityRules $sshRule
PS /home/korryn> $nic = New-AzNetworkInterface -Name "MyLinuxVM-nic" -ResourceGroupName "LinuxVM-RG" -Location "EastUS"
PS /home/korryn> >> -SubnetId $vnet.Subnets[0].Id `
PS /home/korryn> >> -NetworkSecurityGroupId $nsg.Id `
PS /home/korryn> >> -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id
PS /home/korryn>

```

\$vmConfig = Add-AzVMNetworkInterface -VM \$vmConfig -Id \$nic.Id -Primary

```

"20_04-lts-gen2" -Version "latest"
PS /home/korryn> $vmConfig.StorageProfile.ImageReference.Sku
20_04-lts-gen2
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig -PublicIpAddressName "MyLinuxVM-PIP" -OpenPorts 22
New-AzVM: Parameter set cannot be resolved using the specified named parameters. One or more parameters issued cannot be used together or an insufficient number of parameters were provided.
PS /home/korryn> New-AzPublicIpAddress -Name "MyLinuxVM-PIP" -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -AllocationMethod Static -Sku Standard



| ResourceGroupName | Name          | Location | PublicIpAllocationMethod | IpAddress      | PublicIpAddressVersion | IdleTimeoutInMinutes |
|-------------------|---------------|----------|--------------------------|----------------|------------------------|----------------------|
| LinuxVM-RG        | MyLinuxVM-PIP | eastus   | Static                   | 172.172.141.64 | IPv4                   | 4                    |



PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressPrefix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access Allow
PS /home/korryn> $nsg = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -SecurityRules $sshRule
PS /home/korryn> $nic = New-AzNetworkInterface -Name "MyLinuxVM-nic" -ResourceGroupName "LinuxVM-RG" -Location "EastUS"
PS /home/korryn> >> -SubnetId $vnet.Subnets[0].Id `
PS /home/korryn> >> -NetworkSecurityGroupId $nsg.Id `
PS /home/korryn> >> -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id
PS /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn>

```

New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM \$vmConfig

```

actionMethod Static -Sku Standard

ResourceGroupName Name Location PublicIpAllocationMethod IPAddress PublicIpAddressVersion IdleTimeoutInMinutes
----- ----- ----- ----- -----
LinuxVM-RG MyLinuxVM-PIP eastus Static 172.172.141.64 IPv4 4

PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressPrefix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access Allow
PS /home/korryn> $nsg = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -SecurityRules $sshRule
PS /home/korryn> $nic = New-AzNetworkInterface -Name "MyLinuxVM-nic" -ResourceGroupName "LinuxVM-RG" -Location "EastUS"
>>   -SubnetId $vnet.Subnets[0].Id `
>>   -NetworkSecurityGroupId $nsg.Id `
>>   -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id
PS /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig
WARNING: Upcoming breaking changes in the cmdlet 'New-AzVM':
The default VM size will change from 'Standard_D2s_v3' to 'Standard_D2s_v5'.
- This change will take effect on '11/1/2025'
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in Azure PowerShell.

```

## Issues encountered and fixes:

- **Invalid parameter ( -SshKeyValue )**

I first tried a one-line `New-AzVM` with `-SshKeyValue`, which works in Azure CLI but **not** in Azure PowerShell. PowerShell doesn't have that parameter.

**Fix:** Switched to the **By-VM configuration** approach:

1. `New-AzVMConfig (name/size)`
2. `Set-AzVMOperatingSystem (Linux, hostname, username, disable passwords)`
3. `Add-AzVMSshPublicKey (inject my SSH public key)`
4. `Set-AzVMSourceImage (Ubuntu 20.04 LTS)`

- Parameter-set conflict on `New-AzVM`

I then mixed `-VM $vmConfig` with “simple mode” flags (`-PublicIpAddressName`, `-OpenPorts 22`) and got:

“Parameter set cannot be resolved... One or more parameters issued cannot be used together...”

Root cause: In By-VM mode, I must build networking myself and cannot use the simple auto-network flags.

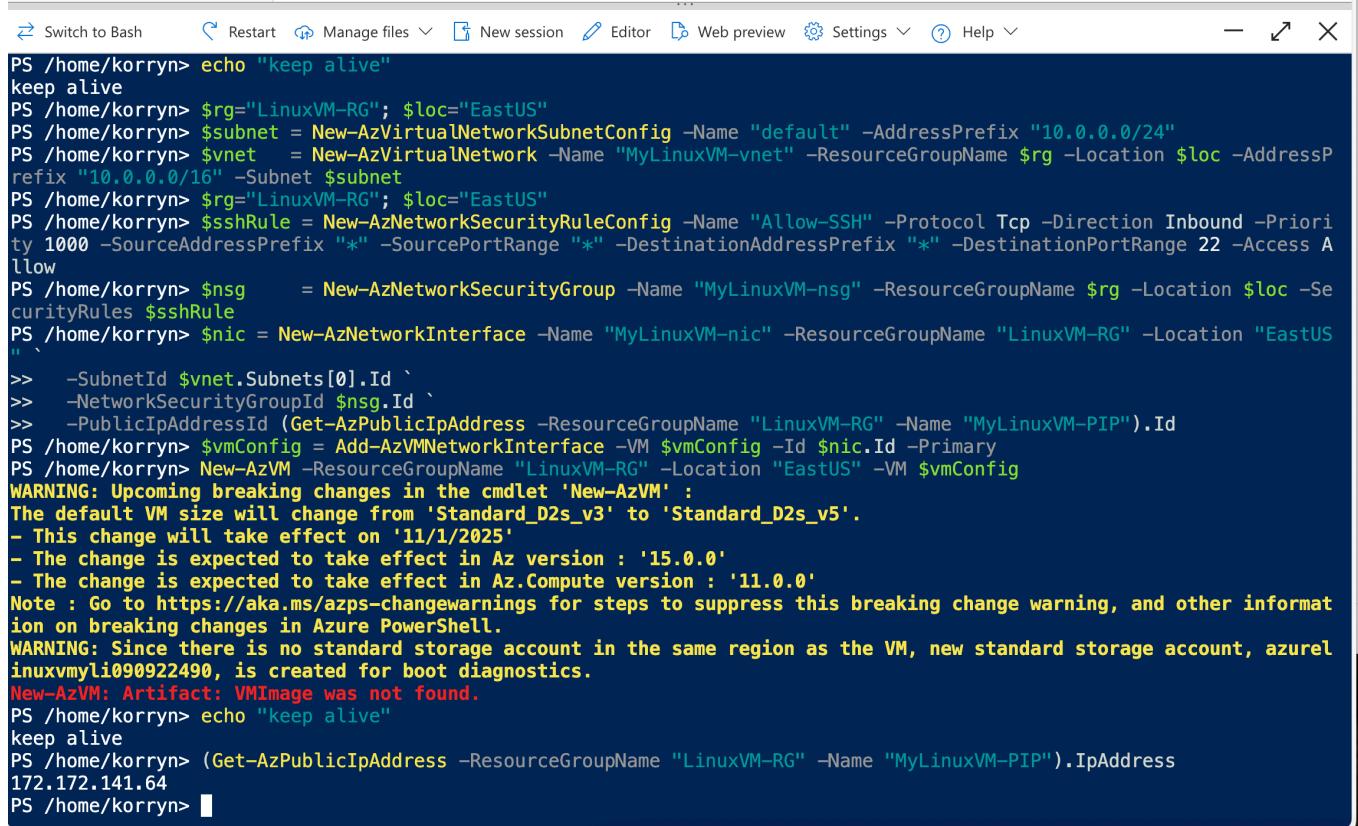
**Fix:** Manually created the network resources:

`New-AzPublicIpAddress` → `New-AzVirtualNetwork (subnet)` → `New-AzNetworkSecurityGroup (SSH rule)` → `New-AzNetworkInterface (wired to subnet/NSG/PIP)` → `Add-AzVMNetworkInterface` to attach the NIC to `$vmConfig`, then `New-AzVM -VM $vmConfig`.

Result: VM deployed successfully using the configuration method.

## Step 7: Retrieve the VM's Public IP Address

```
(Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
```



```
PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet   = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressP
refix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priori
ty 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access A
llow
PS /home/korryn> $nsg      = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -Se
curityRules $sshRule
PS /home/korryn> $nic = New-AzNetworkInterface -Name "MyLinuxVM-nic" -ResourceGroupName "LinuxVM-RG" -Location "EastUS
"
>> -SubnetId $vnet.Subnets[0].Id `
>> -NetworkSecurityGroupId $nsg.Id `
>> -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id
PS /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig
WARNING: Upcoming breaking changes in the cmdlet 'New-AzVM' :
The default VM size will change from 'Standard_D2s_v3' to 'Standard_D2s_v5'.
- This change will take effect on '11/1/2025'
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other informat
ion on breaking changes in Azure PowerShell.
WARNING: Since there is no standard storage account in the same region as the VM, new standard storage account, azurel
inuxvmmyli090922490, is created for boot diagnostics.
New-AzVM: Artifact: VMImage was not found.
PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
172.172.141.64
PS /home/korryn> █
```

## Step 8: Connect via SSH

ssh [azureuser@172.172.141.64](mailto:azureuser@172.172.141.64)

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
keep alive
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $subnet = New-AzVirtualNetworkSubnetConfig -Name "default" -AddressPrefix "10.0.0.0/24"
PS /home/korryn> $vnet = New-AzVirtualNetwork -Name "MyLinuxVM-vnet" -ResourceGroupName $rg -Location $loc -AddressPrefix "10.0.0.0/16" -Subnet $subnet
PS /home/korryn> $rg="LinuxVM-RG"; $loc="EastUS"
PS /home/korryn> $sshRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access Allow
PS /home/korryn> $nsg = New-AzNetworkSecurityGroup -Name "MyLinuxVM-nsg" -ResourceGroupName $rg -Location $loc -SecurityRules $sshRule
PS /home/korryn> $nic = New-AzNetworkInterface -Name "MyLinuxVM-nic" -ResourceGroupName "LinuxVM-RG" -Location "EastUS"
```
>> -SubnetId $vnet.Subnets[0].Id `
>> -NetworkSecurityGroupId $nsg.Id `
>> -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id
PS /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig
WARNING: Upcoming breaking changes in the cmdlet 'New-AzVM' :
The default VM size will change from 'Standard_D2s_v3' to 'Standard_D2s_v5'.
- This change will take effect on '11/1/2025'
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in Azure PowerShell.
WARNING: Since there is no standard storage account in the same region as the VM, new standard storage account, azurel
inuxvmyli090922490, is created for boot diagnostics.
New-AzVM: Artifact: VMImage was not found.
PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
172.172.141.64
PS /home/korryn> ssh azureuser@172.172.141.64
ssh: connect to host 172.172.141.64 port 22: Connection timed out
PS /home/korryn>

```

## Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status

```

Switch to Bash Restart Manage files New session Editor Web preview Settings Help
```
>> -SubnetId $vnet.Subnets[0].Id `
>> -NetworkSecurityGroupId $nsg.Id `
>> -PublicIpAddressId (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").Id
PS /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn> New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM $vmConfig
WARNING: Upcoming breaking changes in the cmdlet 'New-AzVM' :
The default VM size will change from 'Standard_D2s_v3' to 'Standard_D2s_v5'.
- This change will take effect on '11/1/2025'
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in Azure PowerShell.
WARNING: Since there is no standard storage account in the same region as the VM, new standard storage account, azurel
inuxvmyli090922490, is created for boot diagnostics.
New-AzVM: Artifact: VMImage was not found.
PS /home/korryn> echo "keep alive"
keep alive
PS /home/korryn> (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
172.172.141.64
PS /home/korryn> ssh azureuser@172.172.141.64
>
PS /home/korryn> st 172.172.141.64 port 22: Connection timed out
PS /home/korryn> edit-AzDataProtectionPolicyRetentionRuleClientObject -Policy $pol -Name Weekly -LifeCycles $lifecycle
PS /home/korryn> e
PS /home/korryn> Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status
Get-AzVM: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found.
For more details please go to https://aka.ms/ARMResourceNotFoundFixame}
ErrorCode: ResourceNotFound
ErrorMessage: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found. For more details please go to https://aka.ms/ARMResourceNotFoundFix
ErrorTarget:
StatusCode: 404
ReasonPhrase: Not Found
OperationID : ffb8e61a-e336-49e4-bfdf-fca28ee4b1c1
PS /home/korryn>

```

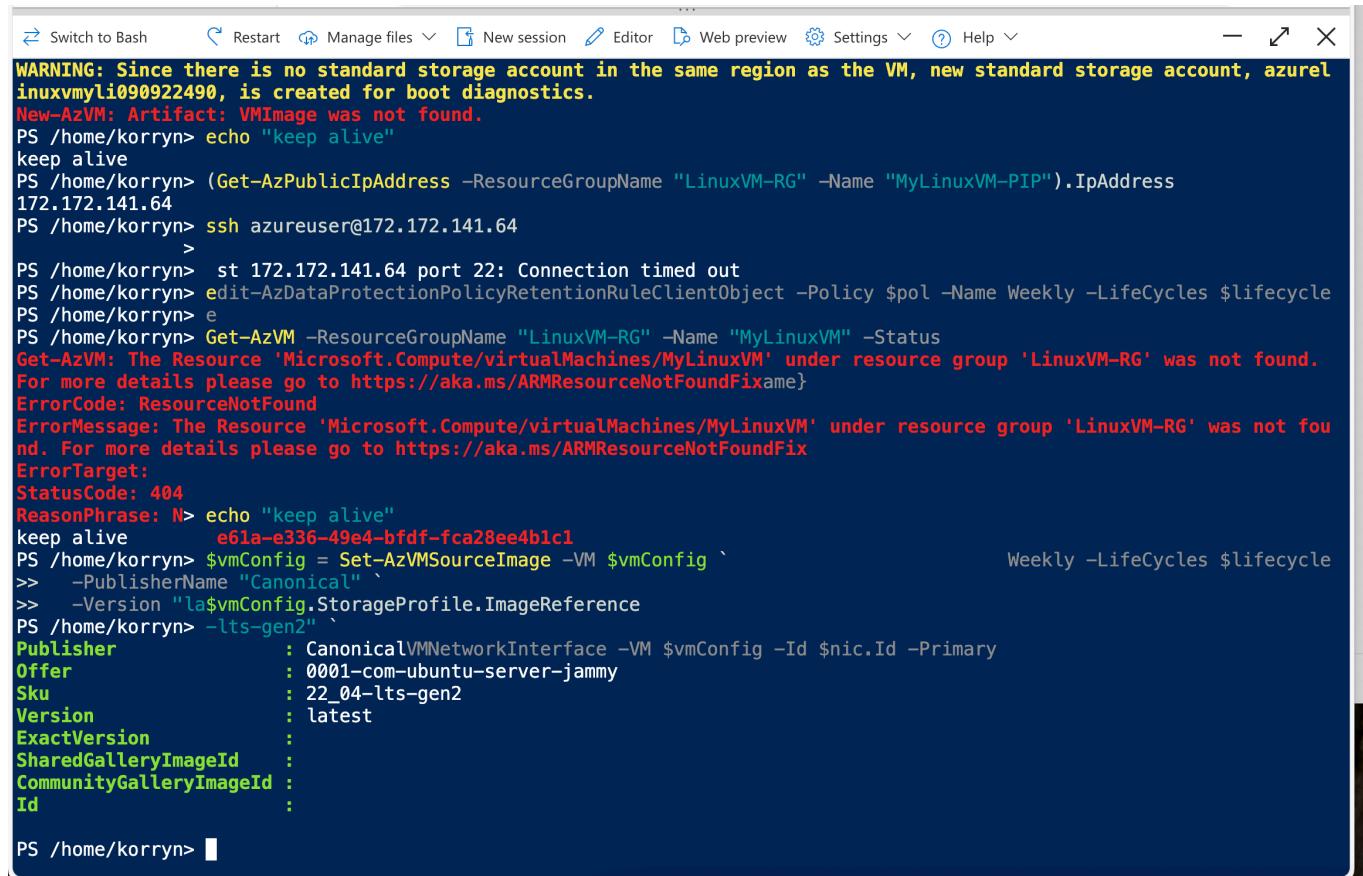
I attempted to connect with `ssh azureuser@172.172.141.64` and received `Connection timed out`. After checking the deployment, I found that the prior `New-AzVM` call had failed with “Artifact: VMImage was not found.” That failure meant the VM was never created, even though the Public IP resource did exist—so there was nothing listening on port 22 at that address. In short: the IP was real, but no VM was behind it, which is why SSH timed out.

Next move: I will redo Steps 6–8 using a known-good Canonical Ubuntu image identifier, then re-deploy the VM, re-confirm the Public IP, and attempt SSH again.

## Step 6.1: Create the Linux VM

```
$vmConfig = Set-AzVMSourceImage -VM $vmConfig -PublisherName "Canonical"  
-Offer "0001-com-ubuntu-server-jammy" -Skus "22_04-lts-gen2"  
-Version "latest"
```

```
$vmConfig.StorageProfile.ImageReference
```



```
Switch to Bash Restart Manage files New session Editor Web preview Settings Help  
WARNING: Since there is no standard storage account in the same region as the VM, new standard storage account, azurleinuxvmly090922490, is created for boot diagnostics.  
New-AzVM: Artifact: VMImage was not found.  
PS /home/korryn> echo "keep alive"  
keep alive  
PS /home/korryn> (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress  
172.172.141.64  
PS /home/korryn> ssh azureuser@172.172.141.64  
>  
PS /home/korryn> st 172.172.141.64 port 22: Connection timed out  
PS /home/korryn> edit-AzDataProtectionPolicyRetentionRuleClientObject -Policy $pol -Name Weekly -LifeCycles $lifecycle  
PS /home/korryn> e  
PS /home/korryn> Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status  
Get-AzVM: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found.  
For more details please go to https://aka.ms/ARMResourceNotFoundFixame}  
ErrorCode: ResourceNotFound  
ErrorMessage: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found. For more details please go to https://aka.ms/ARMResourceNotFoundFix  
ErrorTarget:  
StatusCode: 404  
ReasonPhrase: N> echo "keep alive"  
keep alive e61a-e336-49e4-bfdf-fca28ee4b1c1  
PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig ` Weekly -LifeCycles $lifecycle  
-> -PublisherName "Canonical" `  
-> -Version "la$vmConfig.StorageProfile.ImageReference"  
PS /home/korryn> -lts-gen2`  
Publisher : CanonicalVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary  
Offer : 0001-com-ubuntu-server-jammy  
Sku : 22_04-lts-gen2  
Version : latest  
ExactVersion :  
SharedGalleryImageId :  
CommunityGalleryImageId :  
Id :  
  
PS /home/korryn> |
```

```
$vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
```

```
$vmConfig.NetworkProfile.NetworkInterfaces | Format-Table Id, Primary
```

```

PS /home/korryn> (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
172.172.141.64
PS /home/korryn> ssh azureuser@172.172.141.64
    >
PS /home/korryn> st 172.172.141.64 port 22: Connection timed out
PS /home/korryn> edit-AzDataProtectionPolicyRetentionRuleClientObject -Policy $pol -Name Weekly -LifeCycles $lifecycle
PS /home/korryn> e
PS /home/korryn> Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status
Get-AzVM: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found.
For more details please go to https://aka.ms/ARMResourceNotFoundFixame}
ErrorMessage: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found. For more details please go to https://aka.ms/ARMResourceNotFoundFix
ErrorTarget:
StatusCode: 404
ReasonPhrase: N> echo "keep alive"
keep alive      e61a-e336-49e4-bfdf-fca28ee4b1c1
PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig `                               Weekly -LifeCycles $lifecycle
>>   -PublisherName "Canonical" ` 
>>   -Version "la$vmConfig.StorageProfile.ImageReference"
PS /home/korryn> -lts-gen2" ` 
Publisher          : CanonicalVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
Offer              : 0001-com-ubuntu-server-jammy
Sku                : 22_04-lts-gen2
Version           : latest
ExactVersion       :
SharedGalleryImageId  :
CommunityGalleryImageId :
Id                 $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn> $vmConfig.NetworkProfile.NetworkInterfaces | Format-Table Id, Primary
PS /home/korryn> $vmConfig.StorageProfile.ImageReference
Id /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
-- 
/subscriptions/538a410a-400b-4bbc-8e56-c37bfb8a78e1/resourceGroups/LinuxVM-RG/providers/Microsoft.Network/networkInt...
PS /home/korryn> 

```

New-AzVM -ResourceGroupName "LinuxVM-RG" -Location "EastUS" -VM \$vmConfig

```

PS /home/korryn> 
Error: The Resource 'Microsoft.Compute/virtualMachines/MyLinuxVM' under resource group 'LinuxVM-RG' was not found. For more details please go to https://aka.ms/ARMResourceNotFoundFix
ErrorTarget:
StatusCode: 404
ReasonPhrase: N> echo "keep alive"
keep alive      e61a-e336-49e4-bfdf-fca28ee4b1c1
PS /home/korryn> $vmConfig = Set-AzVMSourceImage -VM $vmConfig `                               Weekly -LifeCycles $lifecycle
>>   -PublisherName "Canonical" ` 
>>   -Version "la$vmConfig.StorageProfile.ImageReference"
PS /home/korryn> -lts-gen2" ` 
Publisher          : CanonicalVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
Offer              : 0001-com-ubuntu-server-jammy
Sku                : 22_04-lts-gen2
Version           : latest
ExactVersion       :
SharedGalleryImageId  :
CommunityGalleryImageId :
Id                 $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
PS /home/korryn> $vmConfig.NetworkProfile.NetworkInterfaces | Format-Table Id, Primary
PS /home/korryn> $vmConfig.StorageProfile.ImageReference
Id /home/korryn> $vmConfig = Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id -Primary
-- 
WARNING: Upcoming breaking changes in the cmdlet 'New-AzVM' :
The default VM size will change from 'Standard_D2s_v3' to 'Standard_D2s_v5'.
- This change will take effect on '11/1/2025' in "EastUS" -Name "LinuxVM-RG"
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in Azure PowerShell.

RequestId IsSuccess StatusCode ReasonPhrase
----- ----- -----
True        OK

PS /home/korryn>
PS /home/korryn> 

```

```
Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status
```

The screenshot shows a terminal window with the following content:

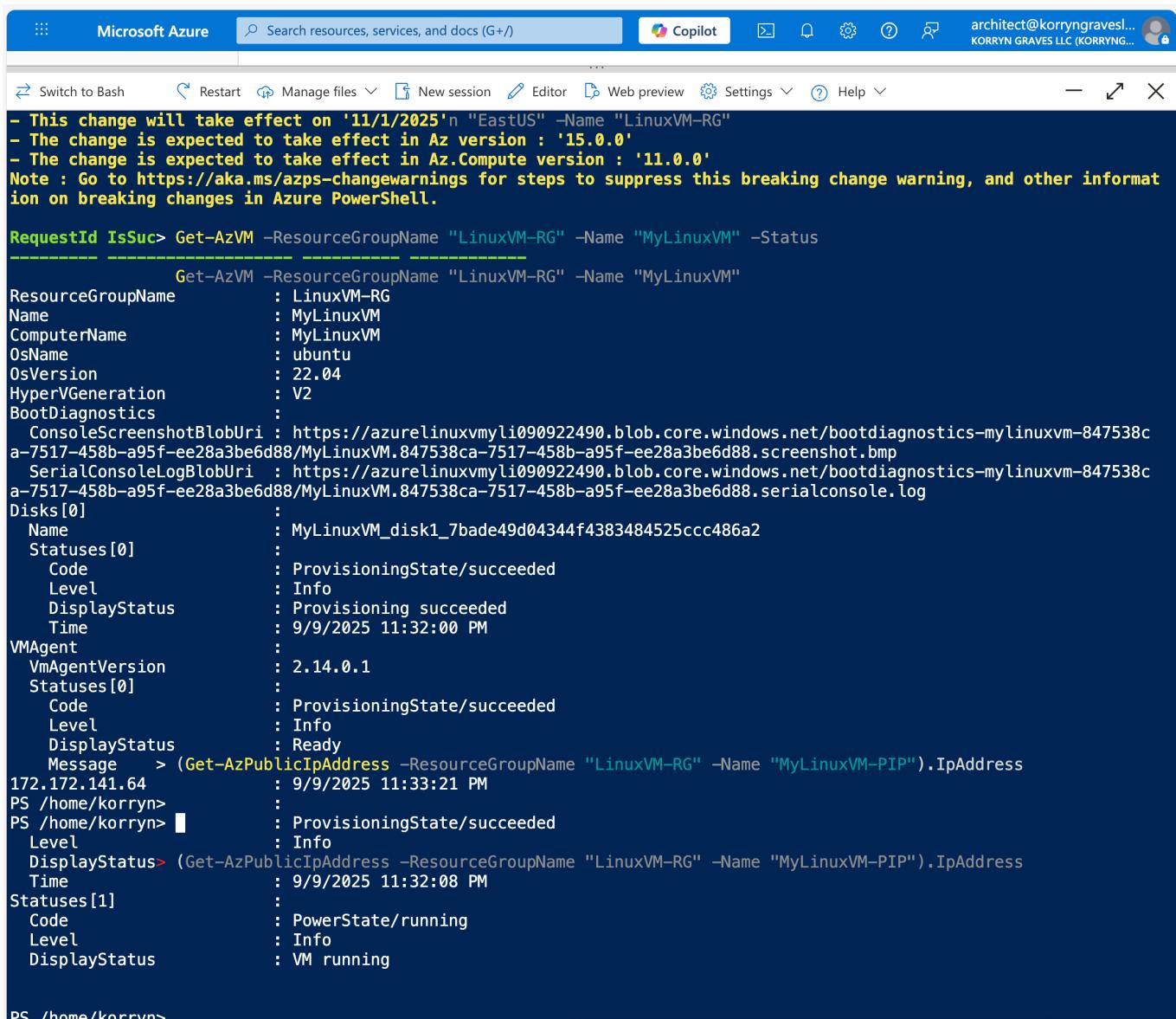
```
PS /home/korryn> Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status
-----  
- This change will take effect on '11/1/2025' in "EastUS" -Name "LinuxVM-RG"  
- The change is expected to take effect in Az version : '15.0.0'  
- The change is expected to take effect in Az.Compute version : '11.0.0'  
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in Azure PowerShell.  
  
RequestId IsSuc> Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status  
-----  
Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM"  
ResourceGroupName : LinuxVM-RG  
Name : MyLinuxVM  
ComputerName : MyLinuxVM  
OsName : ubuntu  
OsVersion : 22.04  
HyperVGeneration : V2  
BootDiagnostics :  
  ConsoleScreenshotBlobUri : https://azurelinuxvmyli090922490.blob.core.windows.net/bootdiagnostics-mylinuxvm-847538ca-7517-458b-a95f-ee28a3be6d88/MyLinuxVM.847538ca-7517-458b-a95f-ee28a3be6d88.screenshot.bmp  
  SerialConsoleLogBlobUri : https://azurelinuxvmyli090922490.blob.core.windows.net/bootdiagnostics-mylinuxvm-847538ca-7517-458b-a95f-ee28a3be6d88/MyLinuxVM.847538ca-7517-458b-a95f-ee28a3be6d88.serialconsole.log  
Disks[0] :  
  Name : MyLinuxVM_disk1_7bade49d04344f4383484525ccc486a2  
  Statuses[0] :  
    Code : ProvisioningState/succeeded  
    Level : Info  
    DisplayStatus : Provisioning succeeded  
    Time : 9/9/2025 11:32:00 PM  
VMAgent :  
  VmAgentVersion : 2.14.0.1  
  Statuses[0] :  
    Code : ProvisioningState/succeeded  
    Level : Info  
    DisplayStatus : Ready  
    Message : Guest Agent is running  
    Time : 9/9/2025 11:33:21 PM  
  Statuses[0] :  
    Code : ProvisioningState/succeeded  
    Level : Info  
    DisplayStatus : Provisioning succeeded  
    Time : 9/9/2025 11:32:08 PM  
  Statuses[1] :  
    Code : PowerState/running  
    Level : Info  
    DisplayStatus : VM running  
  
PS /home/korryn>
```

This step fixed the earlier “VMImage was not found” error by switching to Canonical’s Ubuntu 22.04 LTS identifiers; no further issues occurred in 6.1.

## Step 7.1: Get the VM's Public IP

```
(Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
```

172.172.141.64



The screenshot shows a Microsoft Azure Cloud Shell interface. At the top, there's a navigation bar with 'Microsoft Azure', a search bar ('Search resources, services, and docs (G+)'), and various icons for Copilot, Help, and account information ('architect@korryngraves...', 'KORRYN GRAVES LLC (KORRYNG...)'). Below the navigation bar is a toolbar with buttons for 'Switch to Bash', 'Restart', 'Manage files', 'New session', 'Editor', 'Web preview', 'Settings', and 'Help'. The main area is a terminal window displaying PowerShell commands and their outputs.

```
- This change will take effect on '11/1/2025' in "EastUS" -Name "LinuxVM-RG"
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in Azure PowerShell.

RequestId IsSuc> Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM" -Status
Get-AzVM -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM"
ResourceGroupName : LinuxVM-RG
Name : MyLinuxVM
ComputerName : MyLinuxVM
OsName : ubuntu
OsVersion : 22.04
HyperVGeneration : V2
BootDiagnostics :
  ConsoleScreenshotBlobUri : https://azurelinuxvmyli090922490.blob.core.windows.net/bootdiagnostics-mylinuxvm-847538ca-7517-458b-a95f-ee28a3be6d88/MyLinuxVM.847538ca-7517-458b-a95f-ee28a3be6d88.screenshot.bmp
  SerialConsoleLogBlobUri : https://azurelinuxvmyli090922490.blob.core.windows.net/bootdiagnostics-mylinuxvm-847538ca-7517-458b-a95f-ee28a3be6d88/MyLinuxVM.847538ca-7517-458b-a95f-ee28a3be6d88.serialconsole.log
Disks[0] :
  Name : MyLinuxVM_disk1_7bade49d04344f4383484525ccc486a2
  Statuses[0] :
    Code : ProvisioningState/succeeded
    Level : Info
    DisplayStatus : Provisioning succeeded
    Time : 9/9/2025 11:32:00 PM
VMAgent :
  VmAgentVersion : 2.14.0.1
  Statuses[0] :
    Code : ProvisioningState/succeeded
    Level : Info
    DisplayStatus : Ready
    Message > (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
    172.172.141.64 : 9/9/2025 11:33:21 PM
PS /home/korryn> :
PS /home/korryn> :
  Level : Info
  DisplayStatus > (Get-AzPublicIpAddress -ResourceGroupName "LinuxVM-RG" -Name "MyLinuxVM-PIP").IpAddress
  Time : 9/9/2025 11:32:08 PM
Statuses[1] :
  Code : PowerState/running
  Level : Info
  DisplayStatus : VM running

PS /home/korryn>
```

## Step 8.1: Connect Via SSH

```
ssh -i ~/.ssh/azvmkey azureuser@172.172.141.64
```

```
Switch to Bash Restart Manage files New session Editor Web preview Settings Help — × ×

VmAgentVersion : 2.14.0.1
Statuses[0] :
  Code : ProvisioningState/succeeded
  Level : Info
  DisplayStatus : Ready
  Message > ssh -i ~/.ssh/azvmkey azureuser@172.172.141.64      e "MyLinuxVM-PIP").IpAddress
The authenticity of host '172.172.141.64 (172.172.141.64)' can't be established.
ED25519 key fingerprint is SHA256:hk47U0es12JLGPFZeT1iZnL2s0RsMn0KzrmHwxBbY.
This key is not known by any other names. Name "LinuxVM-RG" -Name "MyLinuxVM"
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.172.141.64' (ED25519) to the list of known hosts. LinuxVM-PIP).IpAddress
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)
Statuses[1] :
  * Documentation: https://help.ubuntu.com
  * Management: https://landscape.canonical.com
  * Support: https://ubuntu.com/pro

System information as of Tue Sep  9 23:39:19 UTC 2025
PS /home/korryn>
System load: 0.0          Processes:           105
Usage of /: 5.4% of 28.89GB  Users logged in:    0
Memory usage: 31%          IPv4 address for eth0: 10.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@MyLinuxVM:~$
```

whoami && hostname && lsb\_release -ds

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

Switch to Bash Restart Manage files New session Editor Web preview Settings Help

```
DisplayStatus : Ready
Message > ssh -i ~/.ssh/azvmkey azureuser@172.172.141.64 e "MyLinuxVM-PIP").IpAddress
The authenticity of host '172.172.141.64 (172.172.141.64)' can't be established.
ED25519 key fingerprint is SHA256:hk47UQes12JLGPFlZeT71iZnL2s0RsMn0KzrmHwXHbY.
This key is not known by any other names. Name "LinuxVM-RG" -Name "MyLinuxVM"
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.172.141.64' (ED25519) to the list of known hosts.LinuxVM-PIP").IpAddress
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)
Statuses[1] :
 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Tue Sep 9 23:39:19 UTC 2025
PS /home/korryn>
System load: 0.0 Processes: 105
Usage of /: 5.4% of 28.89GB Users logged in: 0
Memory usage: 31% IPv4 address for eth0: 10.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

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individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@MyLinuxVM:~$ whoami && hostname && lsb_release -ds
azureuser
MyLinuxVM
Ubuntu 22.04.5 LTS
azureuser@MyLinuxVM:~$
```

## Cleanup

exit

```
Switch to Bash Restart Manage files New session Editor Web preview Settings Help
ED25519 key fingerprint is SHA256:hk47UQes12JLGPFlZeT71iZnL2s0RsMn0KzrmHWxHbY.
This key is not known by any other names. Name "LinuxVM-RG" -Name "MyLinuxVM"
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.172.141.64' (ED25519) to the list of known hosts. LinuxVM-PIP").IpAddress
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)
Statuses[1] :
 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Tue Sep 9 23:39:19 UTC 2025
PS /home/korryn>
System load: 0.0 Processes: 105
Usage of /: 5.4% of 28.89GB Users logged in: 0
Memory usage: 31% IPv4 address for eth0: 10.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@MyLinuxVM:~$ whoami && hostname && lsb_release -ds
azureuser
MyLinuxVM
Ubuntu 22.04.5 LTS
azureuser@MyLinuxVM:~$ exit
logout
Connection to 172.172.141.64 closed.
PS /home/korryn>
```

Remove-AzResourceGroup -Name "LinuxVM-RG" -Force

Pressed Ctrl+C to stop the foreground command.

```
Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue | Select
ResourceGroupName, ProvisioningState
```

The screenshot shows a Microsoft Azure Cloud Shell interface. The terminal window displays the following command and its execution:

```
PS /home/korryn> Remove-AzResourceGroup -Name "LinuxVM-RG" -Force
```

The output of the command is shown in the terminal window:

```
ED25519 key fingerprint is SHA256:hk47UQes12JLGPFlZeT71iZnL2s0RsMn0KzrmHWxHbY.
This key is not known by any other names. Name "LinuxVM-RG" -Name "MyLinuxVM"
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.172.141.64' (ED25519) to the list of known hosts. LinuxVM-PIP").IpAddress
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)
Statuses[1] :
 * Documentation: https://help.ubuntu.com/ning
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Tue Sep 9 23:39:19 UTC 2025
PS /home/korryn>
 System load: 0.0          Processes:           105
 Usage of /: 5.4% of 28.89GB  Users logged in:      0
 Memory usage: 31%          IPv4 address for eth0: 10.0.0.4
 Swap usage:  0%
Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.
Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue | Select ResourceGroupName, ProvisioningState
Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue | Select ResourceGroupName, ProvisioningState
PS /home/korryn> Remove-AzResourceGroup -Name "LinuxVM-RG" -Force {Force}
Id      Name          PSJobTypeName   State       HasMoreData    Location        Command
---  ---  ---  ---  ---  ---  ---
1    Long Running 0... AzureLongRunni... Running      True      localhost  Remove-AzResourceGroup
PS /home/korryn> VM:~$ whoami && hostname && lsb_release -ds
PS /home/korryn> Get-AzResourceGroup
Ubuntu 22.04.5 LTS
azureuser@MyLinuxVM:~$ exit
logout
Connection to 172.172.141.64 closed.
PS /home/korryn> Remove-AzVM -Name "MyLinuxVM" -ResourceGroupName "LinuxVM-RG"
```

Remove-AzResourceGroup -Name "LinuxVM-RG" -Force

Remove-AzResourceGroup -Name "LinuxVM-RG" -Force -AsJob

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Switch to Bash Restart Manage files New session Editor Web preview Settings Help

```
PS /home/korryn> System load: 0.0 Processes: 105
Usage of /: 5.4% of 28.89GB Users logged in: 0
Memory usage: 31% IPv4 address for eth0: 10.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue | Select ResourceGroupName, Prov
>> Select ResourceGroupName, ProvisioningState<VM-RG" -ErrorAction SilentlyContinue | Select ResourceGroupName, Prov
PS /home/korryn> rceGroupName, Provisio -Name "LinuxVM-RG" -Force {Force}
PS /home/korryn> Get-AzResourceGroup State HasMoreData Location Command
PS /home/korryn> ----- -----
PS /home/korryn> ng 0.. AzureLongRunni... Running True localhost Remove-AzResourceGroup
>> Select ResourceGroupName, ProvisioningState<VM-RG" -ErrorAction SilentlyContinue |
PS /home/korryn> rceGroupName, Provisiome && lsb_release -ds
PS /home/korryn>
PS /home/korryn> Get-Job | Where-Object { $_.Command -like "Remove-AzResourceGroup*" } | Format-Table Id, State
PS /home/korryn> S
Id State/korryn> VM:~$ exit
>> Format-Table Id, State, PSBeginTime, PSEndTimed -like "Remove-AzResourceGroup*" } |
>> Format-Table Id, State, PSBeginTime,
Id State PSBeginTime PSENDTimeVM" -ResourceGroupName "LinuxVM-RG"
-- -----
1 Completed 9/9/2025 11:53:01 PM 9/9/2025 11:53:01 PM
PS /home/korryn>
PS /home/korryn> █
PS /home/korryn> Get-AzResourceGroup
PS /home/korryn>
PS /home/korryn> Get-AzResourceGroup
PS /home/korryn>
PS /home/korryn> Get-AzSubscription
```

```
$ rg = Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue; if ($null -eq $rg) { "CONFIRMED: LinuxVM-RG deleted" } else { "STILL EXISTS: " + $rg.ProvisioningState }
```

The screenshot shows a Microsoft Azure Cloud Shell interface. At the top, there's a navigation bar with links like 'Switch to Bash', 'Restart', 'Manage files', 'New session', 'Editor', 'Web preview', 'Settings', 'Help', and user information 'architect@korrngraves... KORRYN GRAVES LLC (KORRYN...)'. Below the navigation bar, the main area displays a PowerShell session history.

```

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue | Select ResourceGroupName, Prov
>> Select ResourceGroupName, ProvisioningState$VM-RG" -ErrorAction SilentlyContinue | Select ResourceGroupName, Prov
PS /home/korrny> rceGroupname, Provisio -Name "LinuxVM-RG" -Force {Force}
PS /home/korrny> Get-AzResourceGroup State HasMoreData Location Command
PS /home/korrny> -----
PS /home/korrny> ng 0... AzureLongRunni... Running True localhost Remove-AzResourceGroup
>> Select ResourceGroupName, ProvisioningState$VM-RG" -ErrorAction SilentlyContinue |
PS /home/korrny> rceGroupname, Provi$ome && lsb_release -ds
PS /home/korrny>
PS /home/korrny> Get-Job | Where-Object { $_.Command -like "Remove-AzResourceGroup*" } | Format-Table Id, State
PS /home/korrny> S
Id State$korrny> $rg = Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue; if ($null -eq $rg) { "CON
FIRMED: LinuxVM-R # #" } else { "STILL EXISTS: " + $rg.ProvisioningState }ntlyContinue; if ($null -eq $rg) { "CON
PS /home/korrny> M-RG deleted else { "STILL EXISTS: " + $rg.Provisioni
PS /home/korrny> inTime PSEndTimeVM" -ResourceGroupName "LinuxVM-RG"
PS /home/korrny> -----
PS /home/korrny> 2025 11:53:01 PM 9/9/2025 11:53:01 PM
PS /home/korrny>
PS /home/korrny> $rg = Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue; if ($null -eq $rg) { "CON
FIRMED: LinuxVM-RG deleted" } else { "STILL EXISTS: " + $rg.ProvisioningState }
CONFIRMED: LinuxVM-RG deleted
PS /home/korrny> |
PS /home/korrny> Get-AzResourceGroup
PS /home/korrny>
PS /home/korrny>
PS /home/korrny> Get-AzSubscription
PS /home/korrny>
PS /home/korrny>
PS /home/korrny>
PS /home/korrny>
PS /home/korrny>
PS /home/korrny> $rg = Get-AzResourceGroup -Name "LinuxVM-RG" -ErrorAction SilentlyContinue; if ($null -eq $rg) { "CON
FIRMED: LinuxVM-RG deleted" } else { "STILL EXISTS: " + $rg.ProvisioningState }

```

## Conclusion

This lab shows end-to-end competency with provisioning, securing, connecting to, and cleaning up a Linux VM in Azure using Azure PowerShell from Cloud Shell. I did not rely on a wizard; I built each layer deliberately (identity, compute, image, and networking), captured verification outputs, and resolved real errors along the way.

### What I learned

- Context matters. Azure PowerShell operates against a single active context. I learned to verify and set it with `Get-AzContext` and `Set-AzContext`, and to prefer `-SubscriptionId` (and `-Tenant`) when accounts span tenants.
- Two ways to create a VM. The simple `New-AzVM` mode is quick but limited. The by-VM configuration flow is explicit and reliable: create a `$vmConfig`, set the OS profile, inject the

SSH key, set the image, and wire up networking. I used the configuration approach to get full control and clearer troubleshooting.

- Image selection is precise. Marketplace images are identified by Publisher, Offer, SKU, and Version. A generic alias led to “VMImage was not found.” Switching to Canonical / 0001-com-ubuntu-server-jammy / 22\_04-Its-gen2 / latest resolved it. I now understand how to choose and verify the image I’m deploying.
- How SSH actually gets enabled. Disabling password auth and injecting my public key with Add-AzVMSshPublicKey creates /home//.ssh/authorized\_keys during provisioning. The NSG must also allow TCP/22. Both are required for a successful SSH login.
- Networking is a chain. Public IP → NIC → Subnet (in a VNet) → NSG rule. I created each resource, attached them in the right order, and verified the attachment in \$vmConfig.NetworkProfile.
- Verification discipline. After each step I printed state (context, key contents, VM size, OS profile, image reference, NIC attachments, VM status). Inside the VM I confirmed username, hostname, and OS release.
- Cost hygiene and teardown. I deleted the entire resource group and used -AsJob to let Azure finish the long-running operation in the background, then confirmed deletion with a no-output check and a “job completed” entry.

## Roadblocks and how I fixed them

- Wrong parameter on Set-AzContext. Using -Subscription (and even curly braces copied from help output) failed with “valid tenant or subscription.” Fix: use -SubscriptionId (and -Tenant), then verify with Get-AzContext.
- Tried -SshKeyValue on New-AzVM (PowerShell). That parameter is an Azure CLI pattern, not available in Azure PowerShell. Fix: switch to the by-VM flow and use Add-AzVMSshPublicKey.
- Parameter-set conflict on New-AzVM. I mixed by-VM (-VM \$vmConfig) with simple flags (-OpenPorts, -PublicIpAddressName). Fix: build all network resources manually (Public IP, VNet/Subnet, NSG, NIC), attach the NIC to \$vmConfig, then call New-AzVM -VM \$vmConfig.
- “Artifact: VMImage was not found.” The first image alias did not resolve for my region/offer. Fix: select Canonical’s precise identifiers for Ubuntu 22.04 LTS (Gen2) and redeploy.
- SSH connection timed out (initial attempt). The Public IP existed, but the VM had not been created due to the image error, so nothing was listening on port 22. Fix: redeploy with the correct image and NSG rule; SSH then succeeded.
- Slow cleanup. Resource group delete appeared to hang. Fix: run Remove-AzResourceGroup with -AsJob, watch the job reach Completed, and confirm deletion by checking that Get-AzResourceGroup returns no output.

## Why this matters

This lab demonstrates practical Azure administration beyond a point-and-click demo: authenticate and target the correct subscription and tenant; provision compute with an understood image lineage; secure access with SSH keys and least-privilege NSG rules; build and attach networking explicitly; verify states at each layer; and tear down cleanly to avoid cost. The result is a reproducible, well-documented workflow that I can adapt to Windows VMs, Azure CLI, or infrastructure as code (Bicep/ARM/Terraform). For my portfolio, it proves not just that I can create a VM, but that I can reason through failures, fix them, and finish the job.