Module 4: Assignment - 1

Tasks To Be Performed:

1. Create a VM in the west US region

2. Select the Ubuntu image for creating the VM

3. Open the SSH port

4. Connect to the Linux VM using the terminal

Solution:

1. Create a Virtual Machine in the West US Region

Step 1: Sign in to Azure Portal

Go to Azure Portal and sign in with your Azure account credentials.

Step 2: Navigate to Virtual Machines

In the Azure Portal dashboard, click on "Virtual machines" on the left-hand menu.

If you don't see it, you can search for "Virtual machines" in the search bar at the top.

Step 3: Create a New Virtual Machine

Click on the "Create" button and select "Azure virtual machine".

Step 4: Configure Basic Settings

Fill in the required details under the "Basics" tab:

Subscription: Select your subscription.

Resource Group: Click "Create new" and enter a name, e.g., MyResourceGroup.

Virtual Machine Name: Enter a name for your VM, e.g., MyUbuntuVM.

Region: Select "West US" from the dropdown.

Availability Options: Choose as per your requirement (e.g., "No infrastructure redundancy required").

Security Type: Leave as default unless specific security requirements are needed.

Image: Click the dropdown and select "Ubuntu Server 24.04 LTS" or your preferred Ubuntu version.

Size: Choose a VM size based on your needs (e.g., "Standard B1s" for basic workloads).

Step 5: Configure Administrator Account

Under the "Administrator account" section:

Authentication Type: Select "SSH public key".

Username: Enter a username, e.g., azureuser.

SSH Public Key Source:

If you already have an SSH key:

Select "Use existing public key" and paste your public key in the provided field.

If you need to generate a new SSH key:

Select "Generate new key pair".

Enter a key pair name.

Click "Download private key and create resource". Save the private key (.pem file) securely on your local machine.

Step 6: Configure Inbound Port Rules

Public Inbound Ports: Select "Allow selected ports".

Select Inbound Ports: Check "SSH (22)" to allow SSH access.

Step 7: Review and Create

You can leave other settings as default or configure them according to your requirements.

Click "Review + create" at the bottom of the page.

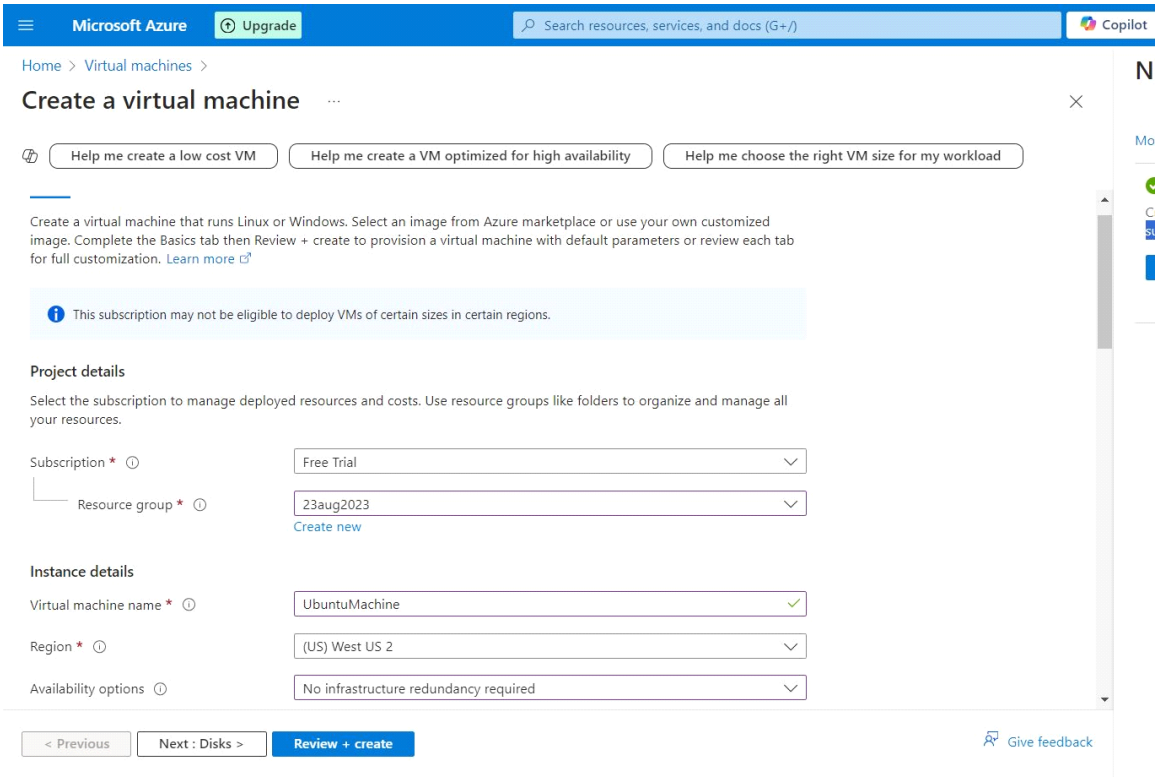
Azure will validate your settings. Once validation passes, click "Create".

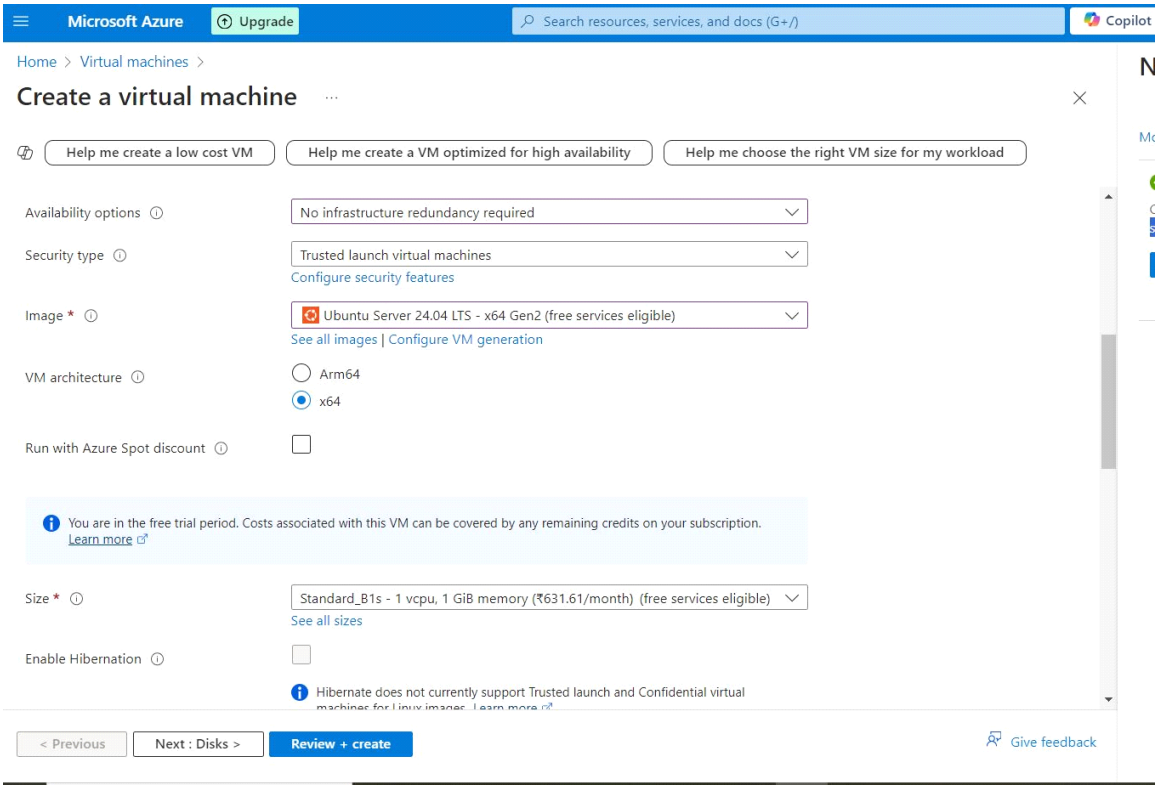
Deployment will begin and may take a few minutes to complete.

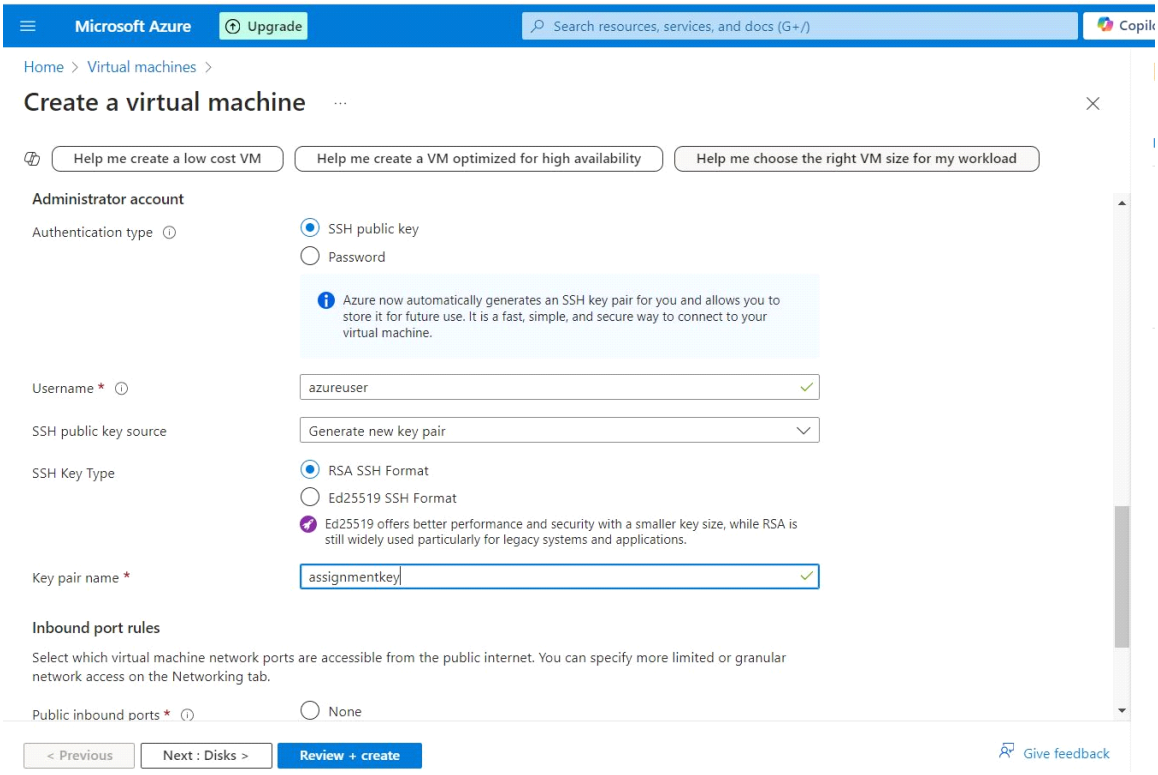
2. Select the Ubuntu Image for Creating the VM

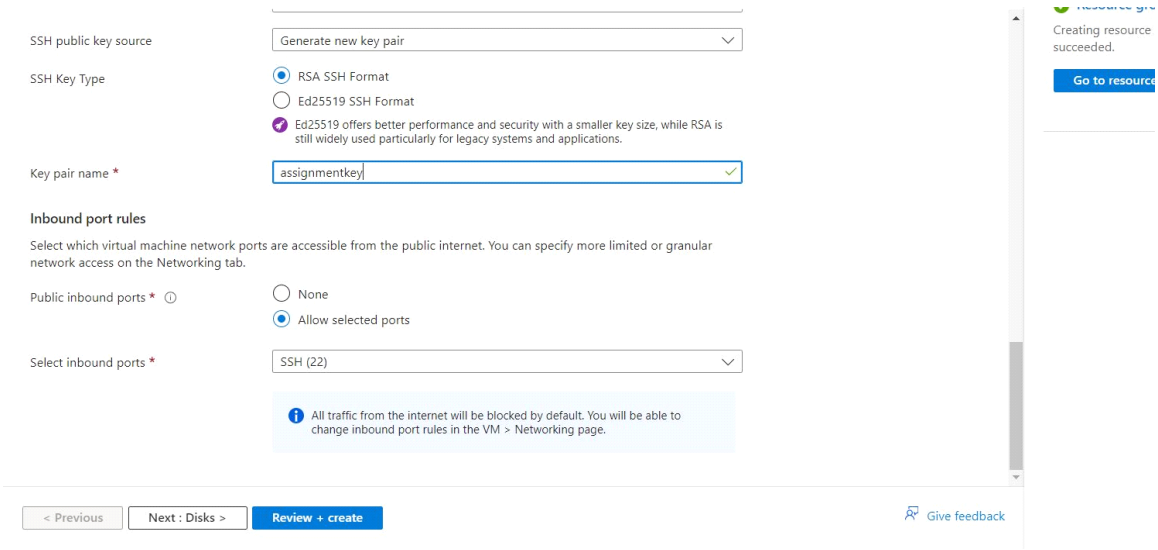
This step was covered during the "Basics" configuration:

Under "Image", you selected "Ubuntu Server 20.04 LTS" or your preferred version during VM setup.


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
Home > Virtual machines >
Create a virtual machine
Help me create a low cost VM
Help me create a VM optimized for high availability
Help me choose the right VM size for my workload
Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. Learn more
This subscription may not be eligible to deploy VMs of certain sizes in certain regions.
Project details
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.
Subscription * Free Trial
Resource group * 23aug2023
Create new
Instance details
Virtual machine name * UbuntuMachine
Region * (US) West US 2
Availability options No infrastructure redundancy required
< Previous
Next : Disks >
Review + create
Give feedback


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
Home > Virtual machines >
Create a virtual machine
Help me create a low cost VM
Help me create a VM optimized for high availability
Help me choose the right VM size for my workload
Availability options No infrastructure redundancy required
Security type Trusted launch virtual machines
Configure security features
Image * Ubuntu Server 24.04 LTS - x64 Gen2 (free services eligible)
See all images | Configure VM generation
VM architecture Arm64
x64
Run with Azure Spot discount
You are in the free trial period. Costs associated with this VM can be covered by any remaining credits on your subscription.
Learn more
Size * Standard_B1s - 1 vcpu, 1 GiB memory (₹631.61/month) (free services eligible)
See all sizes
Enable Hibernation
Hibernate does not currently support Trusted launch and Confidential virtual
< Previous
Next : Disks >
Review + create
Give feedback





3. Open the SSH Port

This step was also addressed during the VM creation:

By selecting "Allow selected ports" and choosing "SSH (22)", you have configured the Network Security Group (NSG) to allow SSH traffic.

If you need to verify or modify the SSH port settings after creation:

Step 1: Navigate to the VM

In the Azure Portal, go to "Virtual machines" and select your VM (MyUbuntuVM).

Step 2: Go to Networking Settings

In the VM overview, click on "Networking" in the left-hand menu.

Step 3: Verify Inbound Port Rules

Ensure there is an inbound rule allowing traffic on port 22 for SSH.

If not, click "Add inbound port rule" and configure:

Destination Port Ranges: 22

Protocol: TCP

Action: Allow

Priority: e.g., 1000

Name: e.g., Allow-SSH

Click "Add" to save the rule.

4. Connect to the Linux VM Using the Terminal

If you prefer using PowerShell or Command Prompt, you don't need to worry about the chmod command. Just follow these steps:

Step 1: Verify the SSH Key Permissions

Windows handles SSH keys differently, so you don't need to run chmod. Instead, ensure that your .pem file is accessible only by you:

Place the .pem file in a secure directory, such as your user profile folder.

Avoid storing the key in a publicly accessible directory.

Step 2: Connect Using PowerShell

Open PowerShell:

Press Windows + X and select Windows PowerShell or Command Prompt.

Navigate to the Directory Containing the .pem File:

Use the cd command to change to the directory where your .pem file is located

cd C:\Users\John\Downloads\

Connect to the VM Using SSH:

Run the SSH command with the path to your .pem file:

ssh -i C:\Users\John\Downloads\assignmentkey.pem azureuser@<Public-IP-Address>

Replace <Public-IP-Address> with your VM's actual public IP address.

Example:

ssh -i C:\Users\John\Downloads\assignmentkey.pem azureuser@52.170.123.456

ssh -i C:\Users\John\Downloads\assignmentkey.pem azureuser@52.170.123.456

Step 3: Accept the SSH Fingerprint

You may be prompted to accept the host's fingerprint. Type yes and press Enter.

azureuser@UbuntuMachine: ~

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Suttu> cd Downloads
PS C:\Users\Suttu\Downloads> ssh -i C:\Users\Suttu\Downloads\assignmentkey.pem azureuser@52.250.125.130
>>
The authenticity of host '52.250.125.130 (52.250.125.130)' can't be established.
ECDSA key fingerprint is SHA256:hfPM+9/GYc51SIcKbpxlkx6kP8whZOnwv0Fy97n77ws.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '52.250.125.130' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1013-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Fri Aug 23 15:35:28 UTC 2024

  System load:  0.0               Processes:             109
  Usage of /:   5.0% of 28.02GB   Users logged in:       0
  Memory usage: 29%               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 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@UbuntuMachine: $
```

azureuser@UbuntuMachine: ~

```
:\Users\Suttu>cd Downloads

:\Users\Suttu\Downloads>chmod 400 C:\Users\Suttu\Downloads\assignmentkey.pem
chmod' is not recognized as an internal or external command,
perable program or batch file.

:\Users\Suttu\Downloads>chmod 400 assignmentkey.pem
chmod' is not recognized as an internal or external command,
perable program or batch file.

:\Users\Suttu\Downloads>

:\Users\Suttu\Downloads>chmod 400 \Downloads\assignmentkey.pem
chmod' is not recognized as an internal or external command,
perable program or batch file.

:\Users\Suttu\Downloads>chmod 400 \assignmentkey.pem
chmod' is not recognized as an internal or external command,
perable program or batch file.

:\Users\Suttu\Downloads>ssh -i C:\Users\Suttu\Downloads\assignmentkey.pem azureuser@52.250.125.130
elcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1013-azure x86_64)

* Documentation:  https://help.ubuntu.com
* Management:     https://landscape.canonical.com
* Support:        https://ubuntu.com/pro

System information as of Fri Aug 23 15:36:58 UTC 2024

 System load:  0.02              Processes:             112
 Usage of /:   5.1% of 28.02GB   Users logged in:       1
 Memory usage: 31%               IPv4 address for eth0: 10.0.0.4
 Swap usage:   0%


xpanded Security Maintenance for Applications is not enabled.

 updates can be applied immediately.

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


ast login: Fri Aug 23 15:35:31 2024 from 223.233.83.56
o run a command as administrator (user "root"), use "sudo <command>".
ee "man sudo_root" for details.

zureuser@UbuntuMachine:~$
zureuser@UbuntuMachine:~$
```