

Task Eleven

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Objective: Create a free VM in the cloud and interact with it.

1. Research and learn how to start a *free* VM in your cloud account (Azure is preferred but you can also use GCP/AWS)

Step 1: Research and Start a Free VM in Azure

- Go to Azure Portal.
- Sign in with your Azure account (ensure you have a free-tier subscription).

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

Basics | Disks | Networking | Management | Monitoring | Advanced | Tags | Review + create

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 * ⓘ

Resource group * ⓘ [Create new](#)

Instance details

Virtual machine name * ⓘ

Region * ⓘ

< Previous | Next : Disks > | **Review + create**

[Give feedback](#)

- Navigate to **Virtual Machines** from the Azure dashboard.
- Click **Create > Azure Virtual Machine**.

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Availability options ⓘ

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

Using an Azure-selected zone is not supported in region 'Central India'.

Availability zone * ⓘ

You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type ⓘ [Configure security features](#)

Image * ⓘ [See all images](#) | [Configure VM generation](#)

VM architecture ⓘ

☐ Arm64

☒ x64

Run with Azure Spot discount ⓘ ☐

- Select an available free-tier VM, such as **Ubuntu Server 24.04 LTS Gen2**
- Choose a **resource group** (or create a new one).

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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 * [See all sizes](#)

Enable Hibernation ☐

Hibernate does not currently support Trusted launch and Confidential virtual machines for Linux images. [Learn more](#)

Administrator account

Authentication type ☒ SSH public key ☐ Password

Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

- Set authentication type to **SSH public key** (recommended) or **password**.

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Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username *

SSH public key source

SSH Key Type ☒ RSA SSH Format ☐ Ed25519 SSH Format

Ed25519 provides a fixed security level of no more than 128 bits for 256-bit key, while RSA could offer better security with keys longer than 3072 bits.

Key pair name *

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.

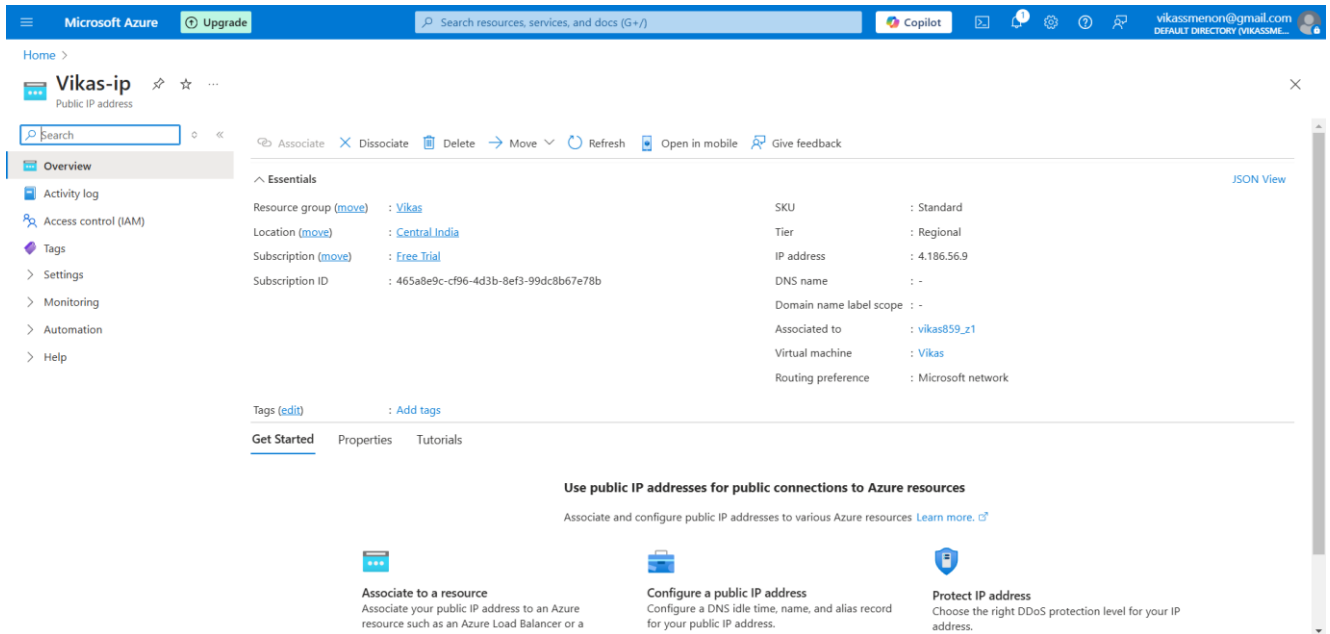
Public inbound ports * ☐ None ☒ Allow selected ports

Select inbound ports *

< Previous Next : Disks > **Review + create** [Give feedback](#)

- Ensure **Allow SSH (port 22)** is enabled under **Networking**.
- Click **Review + Create** and then **Create**.

- Wait for the VM to be deployed and note its **public IP** from the Azure dashboard.



Step 2: Ping the VM from Kali Linux

```
(kali@kali)~$ ping -c 4 4.186.56.9
PING 4.186.56.9 (4.186.56.9) 56(84) bytes of data:
64 bytes from 4.186.56.9: icmp_seq=1 ttl=46 time=38.2 ms
64 bytes from 4.186.56.9: icmp_seq=2 ttl=46 time=42.0 ms
64 bytes from 4.186.56.9: icmp_seq=3 ttl=46 time=40.2 ms
64 bytes from 4.186.56.9: icmp_seq=4 ttl=46 time=41.8 ms

— 4.186.56.9 ping statistics —
4 packets transmitted, 4 received, 0% packet loss, time 3099ms
rtt min/avg/max/mdev = 38.229/40.558/42.043/1.529 ms
```

- Open Kali Linux terminal.
- Run the command:

ping -c 4 <4.186.56.9>

- If the ping fails, check Azure's **Networking > Inbound Rules**:
 1. Ensure an inbound rule exists for ICMP (ping) requests.
 2. If not, create a new rule allowing ICMP from **anywhere**.

Step 3: Login to the VM via SSH

```
(kali㉿kali)-[~]
└─$ sudo ssh -i /home/kali/Downloads/Vikas_key.pem azureuser@4.186.56.9

[sudo] password for kali:
The authenticity of host '4.186.56.9 (4.186.56.9)' can't be established.
ED25519 key fingerprint is SHA256:FHBYLk8cWXHdpdRUm9J0inMneH5ubyQAL984jRTq0aY.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? fingerprint
Please type 'yes', 'no' or the fingerprint: fingerprint
Please type 'yes', 'no' or the fingerprint: the fingerprint
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '4.186.56.9' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1021-azure x86_64)

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

System information as of Sun Feb 16 12:27:54 UTC 2025

System load:  0.08               Processes:    108
Usage of /:   5.4% of 28.02GB     Users logged in: 0
Memory usage: 29%               IPv4 address for eth0: 10.0.0.4
Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.
   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

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>".
```

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

```
azureuser@Vikas:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 60:45:bd:ce:ed:1c brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.4/24 metric 100 brd 10.0.0.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::6245:bdf:fece:ed1c/64 scope link
        valid_lft forever preferred_lft forever
```

- If you chose **SSH key-based authentication**, ensure your private key is available.
- Connect using:

ssh -i /home/kali/Downloads/Vikas_key.pem azureuser@4.186.56.9

- Replace /path/to/private_key with the actual location of your private key.
 - Replace username with the default username (e.g., azureuser).
- Once logged in, run: **ip a**

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

azureuser@Vikas:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 60:45:bd:ce:ed:1c brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.4/24 metric 100 brd 10.0.0.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::6245:bdff:fece:ed1c/64 scope link
        valid_lft forever preferred_lft forever
```

Step 4 : Find your public IP and try pinging your public IP from cloud VM. Are you able to do it?

1. Find your own public IP:

curl ifconfig.me

```
(kali㉿kali)~[~]
$ curl -4 ifconfig.me

49.47.240.204
```

2. Note down the IP and try pinging it from the Azure VM:

```
(kali㉿kali)-[~]
$ curl -4 ifconfig.me
49.47.240.204

(kali㉿kali)-[~]
$ sudo ssh -i /home/kali/Downloads/Vikas_key.pem azureuser@4.186.56.9

Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1021-azure x86_64)

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

System information as of Sun Feb 16 13:48:09 UTC 2025

System load:  0.0               Processes:    111
Usage of /:   5.5% of 28.02GB   Users logged in: 0
Memory usage: 32%              IPv4 address for eth0: 10.0.0.4
Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

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

your router/ISP is blocking ICMP requests.

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

Last login: Sun Feb 16 13:39:27 2025 from 49.47.240.204
azureuser@Vikas:~$ ping -c 4 49.47.240.204
PING 49.47.240.204 (49.47.240.204) 56(84) bytes of data.

— 49.47.240.204 ping statistics —
4 packets transmitted, 0 received, 100% packet loss, time 3084ms
```

ping -c 4 49.47.240.204

Note: While try pinging the public IP from cloud VM, no packets are transmitted. It might be because of ISP restriction as there is no internal fire wall blockage.

Step 5: Shut It Down the VM

- Shut down the VM safely:

sudo shutdown -h now

Step 6: Destroy/Terminate the VM

1. Go to **Azure Portal > Virtual Machines**.
2. Select your VM and click **Delete**.
3. Delete the associated **resource group** to remove all dependencies.
4. Confirm deletion and ensure all resources are removed.