

# Cloud Computing Assignment 1

Microsoft Azure

Search resources, services, and docs (G+/)

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SOCIETY FOR COMPUTER TECHN...

Home >

Virtual machines

Society for Computer Technology & Research's (ms.pict.edu)


+ Create Switch to classic Reservations Manage view Refresh Export to CSV Open query Assign tags Start Restart Stop Delete Services Maintenance

Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all Add filter

Showing 0 to 0 of 0 records.

No grouping List view

Name Subscription Resource group Location Status Operating system Size Public IP address Disks Update status



### No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

+ Create

[Learn more about Windows virtual machines](#)

[Learn more about Linux virtual machines](#)

[Give feedback](#)

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

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Home &gt; Virtual machines &gt;

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

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 \* Azure for Students

Resource group \* (New) Resource group

Create new

#### Instance details

Virtual machine name \*

Region \*

Availability options

Zone options

A resource group is a container that holds related resources for an Azure solution.

Name \*

Resource1

OK Cancel

Choose up to 3 availability zones; one vmm 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 \* Zone 1

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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

Resource group \*  
(New) Resource1  
[Create new](#)

Instance details

Virtual machine name \*  
VM1

Region \*  
(Asia Pacific) Central India

Availability options  
Availability zone

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

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

Availability zone \*  
Zone 1  

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

Security type  
Trusted launch virtual machines  
[Configure security features](#)  

Trusted launch virtual machine is required when using 1P Gallery images.

Image \*  
Ubuntu Server 24.04 LTS - x64 Gen2

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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

Username \*  
azureuser

SSH public key source  
Generate new key pair

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 \*  
VM1\_key

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 \*  
HTTP (80), HTTPS (443), SSH (22)  

☒ HTTP (80)  
☒ HTTPS (443)  
☒ SSH (22)

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## Create a virtual machine



✓ Validation passed



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**

## Price

1 X Standard D2s v3

by Microsoft

[Terms of use](#) | [Privacy policy](#)

Subscription credits apply

**8.7354 INR/hr**[Pricing for other VM sizes](#)

## TERMS

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

Name

REVATI RANADE

Preferred e-mail address

C2K221281@ms.pict.edu

Preferred phone number

02024371101

&lt; Previous

Next &gt;

Create

[Download a template for automation](#)[Give feedback](#)

## CreateVm-canonical.ubuntu-24\_04-lts-server-20250303113426 | Overview



Search



Delete



Cancel



Redeploy



Download



Refresh

## Overview

Inputs

Outputs

Template



## Your deployment is complete



Deployment name: CreateVm-canonical.ubuntu-24\_04-lts-server-2...

Start time: 3/3/2025, 11:36:42 AM

Subscription: [Azure for Students](#)

Correlation ID: 2ca6490f-9e05-44c2-8eb2-512dca1cd5d3

Resource group: [Resource1](#)

## Deployment details



## Next steps

[Setup auto-shutdown](#) Recommended[Monitor VM health, performance and network dependencies](#) Recommended[Run a script inside the virtual machine](#) Recommended[Go to resource](#)[Create another VM](#)

## Give feedback

[Tell us about your experience with deployment](#)

## Cost Management

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Home > CreateVm-canonical.ubuntu-24.04-lts-server-20250303113426 | Overview >

VM1  
Virtual machine

Help me copy this VM in any region

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Connect

Connect

Bastion

Networking

Settings

Availability + scale

Security

Backup + disaster recovery

Operations

Monitoring

Automation

Help

Connect > Start > Restart > Stop > Hibernate > Capture > Delete > Refresh > Open in mobile > Feedback > CLI / PS

Essentials

Resource group (move) : Resource1

Status : Running

Location : Central India (Zone 1)

Subscription (move) : Azure for Students

Subscription ID : ad5a6ae6-d1c2-4d22-a19b-d8a6fd758e79

Availability zone : 1

Tags (edit) : Add tags

Operating system : Linux (ubuntu 24.04)

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

Public IP address : 20.40.47.208

Virtual network/subnet : VM1-vnet/default

DNS name : Not configured

Health state : -

Time created : 3/3/2025, 6:06 AM UTC

JSON View

Properties

Monitoring

Capabilities (7)

Recommendations

Tutorials

Virtual machine

Computer name : VM1

Operating system : Linux (ubuntu 24.04)

VM generation : V2

VM architecture : x64

Agent status : Ready

Agent version : 2.12.0.2

Hibernation : Disabled

Network

Public IP address : 20.40.47.208 ( Network interface vm1676\_z1 )

Public IP address (IPv6) : -

Private IP address : 10.0.0.4

Private IP address (IPv6) : -

Virtual network/subnet : VM1-vnet/default

DNS name : Configure

Size

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Home > VM1

VM1 | Connect  
Virtual machine

Refresh > Troubleshoot > More Options > Feedback

Connecting using  
Public IP address | 20.40.47.208

Admin username : azureuser

Port (change) : 22 > Check access

Just-in-time policy : Unsupported by plan

Recommended

SSH using Azure CLI

Quickly connect in browser. Supports Microsoft Entra ID authentication. Private key not required.

Public IP address (20.40.47.208)

Select

Local machine > Azure portal

Most common

Native SSH

No additional software needed. Private key required for connection. Best for those with existing SSH tools.

Public IP address (20.40.47.208)

Select

Local machine

More ways to connect (3)

Native SSH

Connect from your local machine (Windows)

Prerequisites configured

Port 22 access

Port 22 on this virtual machine is accessible from the local machine IP (103.97.166.170). Learn more

Change the port for connecting to this virtual machine on the Connect page of the virtual machine.

Public IP address: 20.40.47.208

A public IP address is required to connect via this connection method.

Configured

Open a local shell (on Windows)

Open Terminal (Windows 11), PowerShell (Windows 10 or less), or a shell of your choice. Or switch the local machine OS above to view more instructions.

Copy and execute SSH command

Provide a path to your SSH private key file on your local machine.

/home/pict/Desktop/31163\_LP2/VM1\_key.pem

Can't find your private key? Reset your SSH private key

SSH to VM with specified private key.

ssh -i /home/pict/Desktop/31163\_LP2/VM1\_key.pem azureuser@20.4...

Other Information

Using a Linux subsystem like WSL or Ubuntu on Terminal?

Copy your private key path to the Linux subsystem and ensure it has the correct read-only access.

Move your private key to the Linux subsystem. Use chmod to assign read-only access, then SSH.

Close > Troubleshooting > Give feedback

```
az@pict-041f1e5-2025:~$ chmod 500 /home/pict/Downloads/VM1_key.pem
az@pict-041f1e5-2025:~$ ssh -t /home/pict/Downloads/VM1_key.pem azureuser@20.40.47.208
Welcome to Ubuntu 24.04.2 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 Mon Mar 3 06:22:37 UTC 2025

System load:	0.0	Processes:	130
Usage of /:	5.4% of 28.02GB	Users logged in:	0
Memory usage:	3%	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@VM1:~$
```

24 packages can be upgraded. Run 'apt list --upgradable' to see them.

```
azureuser@VM1:~$ sudo apt install nginx
```

Reading package lists... Done

Building dependency tree... Done

Reading state information... Done

The following additional packages will be installed:

nginx-common

Suggested packages:

fcgiwrap nginx-doc ssl-cert

The following NEW packages will be installed:

nginx nginx-common

0 upgraded, 2 newly installed, 0 to remove and 31 not upgraded.

Need to get 552 kB of archives.

After this operation, 1596 kB of additional disk space will be used.

Do you want to continue? [Y/n] y

Get:1 <http://azure.archive.ubuntu.com/ubuntu/noble-updates/main amd64 nginx-common all 1.24.0-2ubuntu7.1> [31.2 kB]

Get:2 <http://azure.archive.ubuntu.com/ubuntu/noble-updates/main amd64 nginx amd64 1.24.0-2ubuntu7.1> [521 kB]

Fetched 552 kB in 0s (11.0 MB/s)

Preconfiguring packages ...

Selecting previously unselected package nginx-common.

(Reading database ... 67834 files and directories currently installed.)

Preparing to unpack .../nginx-common\_1.24.0-2ubuntu7.1\_all.deb ...

Unpacking nginx-common (1.24.0-2ubuntu7.1) ...

Selecting previously unselected package nginx.

Preparing to unpack .../nginx\_1.24.0-2ubuntu7.1\_amd64.deb ...

Unpacking nginx (1.24.0-2ubuntu7.1) ...

Setting up nginx (1.24.0-2ubuntu7.1) ...

Setting up nginx-common (1.24.0-2ubuntu7.1) ...

Created symlink `/etc/systemd/system/multi-user.target.wants/nginx.service` → `/usr/lib/systemd/system/nginx.service`.

Processing triggers for ufw (0.36.2-6) ...

Processing triggers for man-db (2.12.0-4build2) ...

Progress: [ 89%] [#####]

```
azureuser@VM1:~$ sudo systemctl status nginx
```

nginx.service - A high performance web server and a reverse proxy server

Loaded: loaded (/usr/lib/systemd/system/nginx.service; **enabled**; preset: **enabled**)

Active: **active (running)** since Mon 2025-03-03 06:24:38 UTC; 44s ago

Docs: `man:nginx(8)`

Process: 2413 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master\_process on; (code=exited, status=0/SUCCESS)

Process: 2415 ExecStart=/usr/sbin/nginx -g daemon on; master\_process on; (code=exited, status=0/SUCCESS)

Main PID: 2416 (nginx)

Tasks: 3 (limit: 9458)

Memory: 2.4M (peak: 2.5M)

CPU: 19ms

CGroup: /system.slice/nginx.service

└─2416 "nginx: master process /usr/sbin/nginx -g daemon on; master\_process on;"

└─2417 "nginx: worker process"

└─2418 "nginx: worker process"

Mar 03 06:24:38 VM1 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...

Mar 03 06:24:38 VM1 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.

```
azureuser@VM1:~$
```

```
azureuser@VM1:~$ sudo apt install nginx -y
```

Reading package lists... Done

Building dependency tree... Done

Reading state information... Done

nginx is already the newest version (1.24.0-2ubuntu7.1).

0 upgraded, 0 newly installed, 0 to remove and 31 not upgraded.

```
azureuser@VM1:~$
```

```
azureuser@VM1:~$ sudo systemctl start nginx
```

```
azureuser@VM1:~$ sudo systemctl enable nginx
```

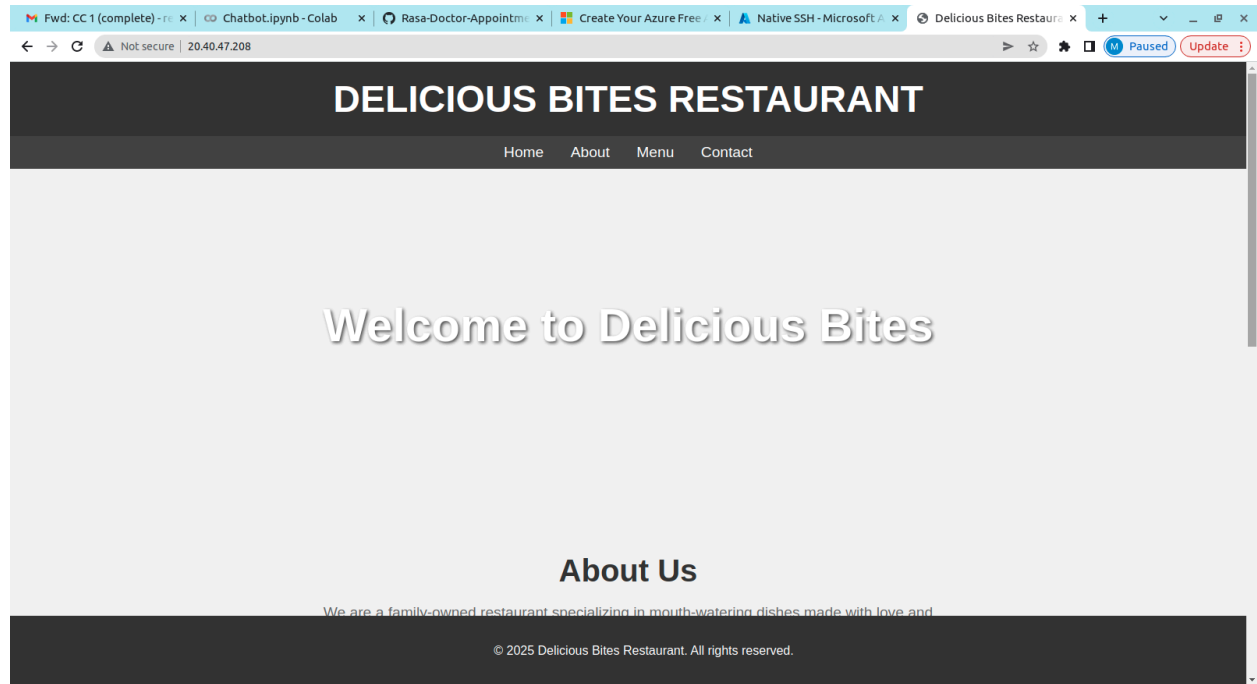
Synchronizing state of nginx.service with SysV service script with `/usr/lib/systemd/systemd-sysv-install`.

Executing: `/usr/lib/systemd/systemd-sysv-install enable nginx`

```
azureuser@VM1:~$
```

```
azureuser@VM1: ~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-03-03 06:24:38 UTC; 3min 1s ago
     Docs: man:nginx(8)
    Main PID: 2416 (nginx)
      Tasks: 3 (limit: 9458)
     Memory: 2.4M (peak: 2.5M)
        CPU: 19ms
    CGroup: /system.slice/nginx.service
            └─2416 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
               └─2417 "nginx: worker process"
                 └─2418 "nginx: worker process"

Mar 03 06:24:38 VM1 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Mar 03 06:24:38 VM1 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
azureuser@VM1: ~$
```



```
Mar 03 06:24:38 VM1 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Mar 03 06:24:38 VM1 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
azureuser@VM1: ~$ sudo apt install nginx -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.24.0-2ubuntu7.1).
0 upgraded, 0 newly installed, 0 to remove and 31 not upgraded.
azureuser@VM1: ~$ sudo systemctl start nginx
azureuser@VM1: ~$ sudo systemctl enable nginx
Synchronizing state of nginx.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable nginx
azureuser@VM1: ~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
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     Docs: man:nginx(8)
    Main PID: 2416 (nginx)
      Tasks: 3 (limit: 9458)
     Memory: 2.4M (peak: 2.5M)
        CPU: 19ms
    CGroup: /system.slice/nginx.service
            └─2416 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
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                 └─2418 "nginx: worker process"

Mar 03 06:24:38 VM1 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Mar 03 06:24:38 VM1 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
azureuser@VM1: ~$ sudo nano /var/www/html/index.html
azureuser@VM1: ~$ sudo chown -R www-data:www-data /var/www/html/
azureuser@VM1: ~$ sudo chmod -R 755 /var/www/html/
azureuser@VM1: ~$
```