

# Tutorial 8 A) Create Virtual Machine from Azure Portal | SSH Connect to it | (Subscription - Azure For Students\*)

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Course – MSc (DSBDA)

The screenshot shows the Microsoft Azure portal home page. The top navigation bar includes the Microsoft Azure logo, a search bar, and the user's profile (1132210013@mitwpue... MIT WORLD PEACE UNIVERSITY). Below the navigation bar, there are several sections: 'Azure services' with icons for 'Create a resource', 'All resources', 'Virtual machines', 'Quickstart Center', 'App Services', 'Storage accounts', 'SQL databases', 'Azure Cosmos DB', 'Kubernetes services', and 'More services'. The 'Resources' section has tabs for 'Recent' and 'Favorite'. Under 'Recent', there is a table with two entries: 'Windows\_group\_08261343' (Resource group, 11 hours ago) and 'Ubuntu\_group' (Resource group, 14 hours ago). Below this is a 'Navigate' section with icons for 'Subscriptions', 'Resource groups', 'All resources', and 'Dashboard'. At the bottom, there is a 'Tools' section.

The screenshot shows the Azure Virtual machines page. The top navigation bar includes the Microsoft Azure logo, a search bar, and the user's profile (1132210013@mitwpue... MIT WORLD PEACE UNIVERSITY). Below the navigation bar, there is a 'Virtual machines' section with a breadcrumb 'Home > Virtual machines'. The page title is 'Virtual machines' and the subtitle is 'MIT World Peace University (mitwpue.edu.in)'. Below the title, there are several action buttons: 'Create', 'Switch to classic', 'Reservations', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', 'Assign tags', 'Start', 'Restart', 'Stop', and 'Delete'. Below these buttons, there is a filter bar with a search box 'Filter for any field...' and several filter buttons: 'Subscription equals all', 'Type equals all', 'Resource group equals all', and 'Location equals all'. There is also an 'Add filter' button. Below the filter bar, there is a table with columns: 'Name', 'Type', 'Subscription', 'Resource group', 'Location', 'Status', 'Operating system', 'Size', and 'Public IP'. The table is currently empty.



## 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.

[Learn more about Windows virtual machines](#)

[Learn more about Linux virtual machines](#)

[Give feedback](#)

Create a virtual machine - Micro

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

Microsoft Azure

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

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MIT WORLD PEACE UNIVERSITY (...)

Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + 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 \*

Azure for Students

Resource group \*

(New) Resource group

Create new

Instance details

Virtual machine name \*

Review + create

< Previous

Next : Disks >

Give feedback

Create a virtual machine - Micro

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

Microsoft Azure

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

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Home > Virtual machines >

Create a virtual machine

Instance details

Virtual machine name \*

Ubuntu

Region \*

(Asia Pacific) Central India

Availability options

No infrastructure redundancy required

Security type

Standard

Image \*

Ubuntu Server 20.04 LTS - Gen2

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

Run with Azure Spot discount

☐

Size \*

Standard\_B2s - 2 vcpus, 4 GiB memory (₹2,356.17/month)

[See all sizes](#)

Administrator account

Authentication type

☒ SSH public key

☐ Password

Azure now automatically generates an SSH key pair for you and allows you to

Review + create

< Previous

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

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Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type \* ☐ Premium SSD (locally-redundant storage)

Delete with VM ☒

Enable encryption at host ☐

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

Encryption type \* (Default) Encryption at-rest with a platform-managed key

Enable Ultra Disk compatibility ☐

Review + create< PreviousNext: Networking >

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

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network \* ☐ (new) Ubuntu\_group\_08270050-vnet  
[Create new](#)

Subnet \* ☐ (new) default (10.0.0.0/24)

Public IP ☐ (new) Ubuntu-ip  
[Create new](#)

NIC network security group ☐ None  
☒ Basic  
☐ Advanced

Review + create< PreviousNext: Management >

Give feedback

Create a virtual machine - Micro

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

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + create

Configure monitoring and management options for your VM.

Microsoft Defender for Cloud

Microsoft Defender for Cloud provides unified security management and advanced threat protection across hybrid cloud workloads. [Learn more](#)

✔ Your subscription is protected by Microsoft Defender for Cloud basic plan.

Monitoring

Boot diagnostics

☒ Enable with managed storage account (recommended)

☐ Enable with custom storage account

☐ Disable

Enable OS guest diagnostics

☐

Identity

Review + create< PreviousNext: Advanced >

Give feedback

Create a virtual machine - Micro

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

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + create

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Extensions

Extensions provide post-deployment configuration and automation.

Extensions

[Select an extension to install](#)

VM applications

VM applications contain application files that are securely and reliably downloaded on your VM after deployment. In addition to the application files, an install and uninstall script are included in the application. You can easily add or remove applications on your VM after create. [Learn more](#)

[Select a VM application to install](#)

Custom data and cloud init

Pass a cloud-init script, configuration file, or other data into the virtual machine **while it is being provisioned**. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#)

Review + create< PreviousNext: Tags >

Give feedback

Create a virtual machine - Micro

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

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + create

Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. [Learn more about tags](#)

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name	Value	Resource
Linux	Ubuntu	12 selected
	Ubuntu	12 selected

Review + create

< Previous

Next: Review + create >

Give feedback

Create a virtual machine - Micro

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

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

BasicsDisksNetworkingManagementAdvancedTagsReview + create

Validation passed

Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.

PRODUCT DETAILS

1 X Standard B2s  
by Microsoft  
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply  
**3.2276 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

Create

< Previous

Next >

[Download a template for automation](#)

Give feedback

Create a virtual machine - Microsoft Azure

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

Microsoft Azure

Home > Virtual machines >

## Create a virtual machine

Validation passed

Basics Disks Networking Management Advanced Tags **Review + create**

Cost given below is an estimate and not the final price. Please use [Pricing calculator](#)

**PRODUCT DETAILS**

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Subscription credits apply ⓘ  
**3.2276 INR/hr**  
[Pricing for other VM sizes](#)

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**Generate new key pair**

An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

[Download private key and create resource](#)

[Return to create a virtual machine](#)

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

CreateVm-canonical.0001-com-ubuntu-server-focal-2-20220827005044 | Overview

Deployment

Search (Ctrl+/) Delete Cancel Redeploy Download Refresh

**Overview**

Inputs

Outputs

Template

We'd love your feedback! →

### Deployment is in progress

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-focal-2-20220827005044 Start time: 8/27/2022, 12:53:01 AM  
Subscription: Azure for Students Correlation ID: 2d4e5881-2fa5-418a-bc67-3d60a6  
Resource group: Ubuntu\_group\_08270050

**Deployment details**

Resource	Type	Status	Operation details
Ubuntu	Microsoft.Compute/virtual-machines	Created	<a href="#">Operation details</a>
ubuntu825	Microsoft.Network/network-security-groups	Created	<a href="#">Operation details</a>
Ubuntu_group_08270050-vnet	Microsoft.Network/virtual-networks	OK	<a href="#">Operation details</a>
Ubuntu-nsg	Microsoft.Network/network-security-groups	OK	<a href="#">Operation details</a>
Ubuntu-ip	Microsoft.Network/public-ip-addresses	OK	<a href="#">Operation details</a>

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Ubuntu - Microsoft Azure

portal.azure.com/#@mitwpu.edu.in/resource/subscriptions/2b303cd0-fa66-4435-b262-5de964ad4ce4/resourcegroups/Ubuntu\_group\_08270050/providers/Micros...

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

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Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20220827005044 | Overview >

## Ubuntu

Virtual machine

Search (Ctrl+/)

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

Ubuntu virtual machine agent status is not ready. Troubleshoot the issue →

### Essentials

Resource group (move) : [Ubuntu\\_group\\_08270050](#) Operating system : Linux

Status : Running Size : Standard B2s (2 vcpus, 4 GiB memory)

Location : Central India Public IP address : [20.204.99.28](#)

Subscription (move) : [Azure for Students](#) Virtual network/subnet : [Ubuntu\\_group\\_08270050-vnet/default](#)

Subscription ID : 2b303cd0-fa66-4435-b262-5de964ad4ce4 DNS name : [Not configured](#)

Tags (edit) : Linux : Ubuntu

JSON View

### Properties Monitoring Capabilities (7) Recommendations Tutorials

#### Virtual machine

Computer name	Ubuntu
Health state	-
Operating system	Linux
Publisher	canonical

#### Networking

Public IP address	<a href="#">20.204.99.28</a>
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-

Ubuntu - Microsoft Azure

portal.azure.com/#@mitwpu.edu.in/resource/subscriptions/2b303cd0-fa66-4435-b262-5de964ad4ce4/resourcegroups/Ubuntu\_group\_08270050/providers/Micros...

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Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20220827005044 | Overview > Ubuntu

## Ubuntu | Connect

Virtual machine

Search (Ctrl+/)

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Settings Networking Connect Disks Size Microsoft Defender for Cloud Advisor recommendations Extensions + applications Continuous delivery Availability + scaling

To improve security, enable just-in-time access on this VM. →

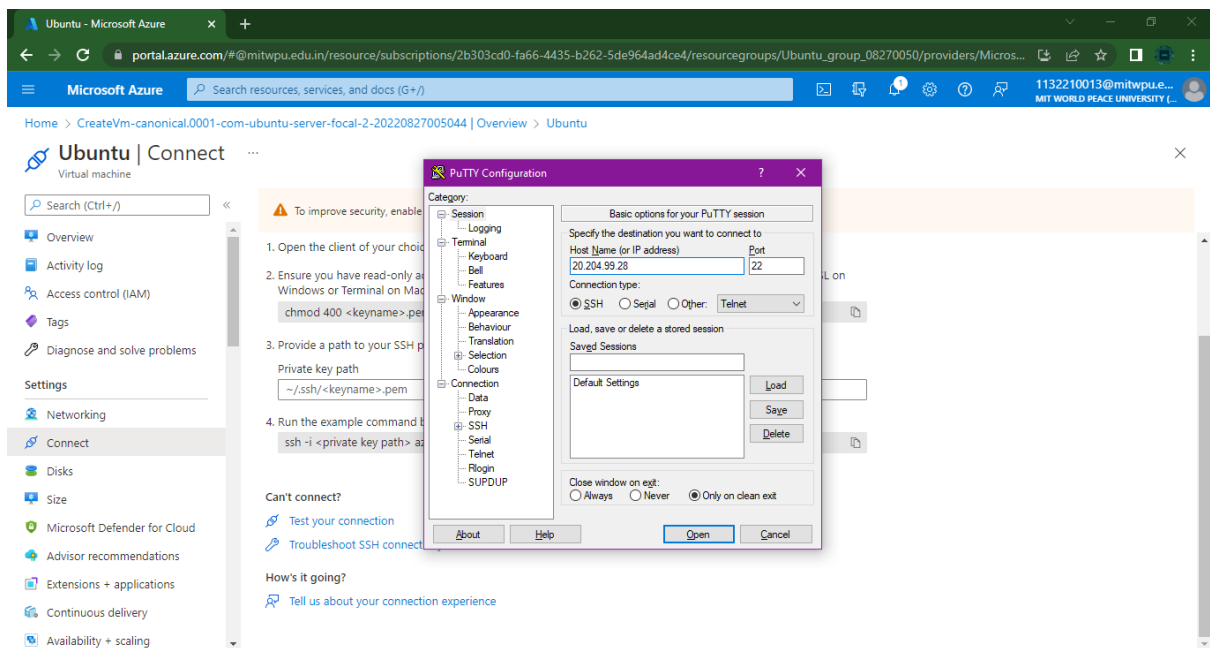
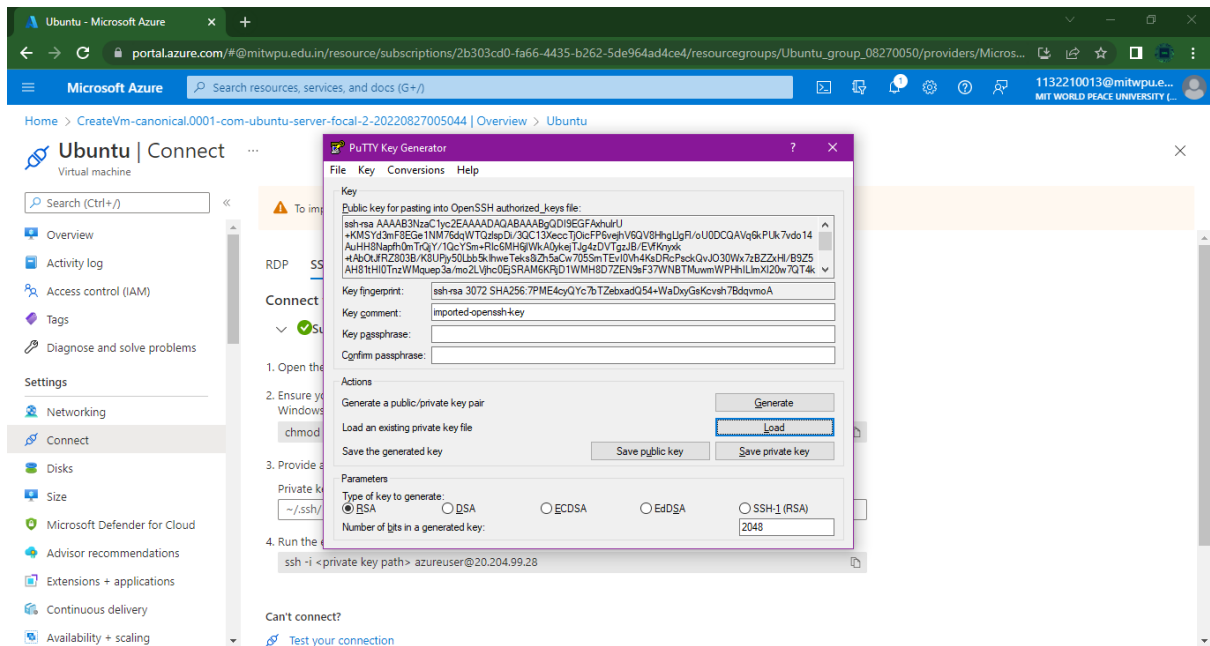
RDP **SSH** Bastion

### Connect via SSH with client

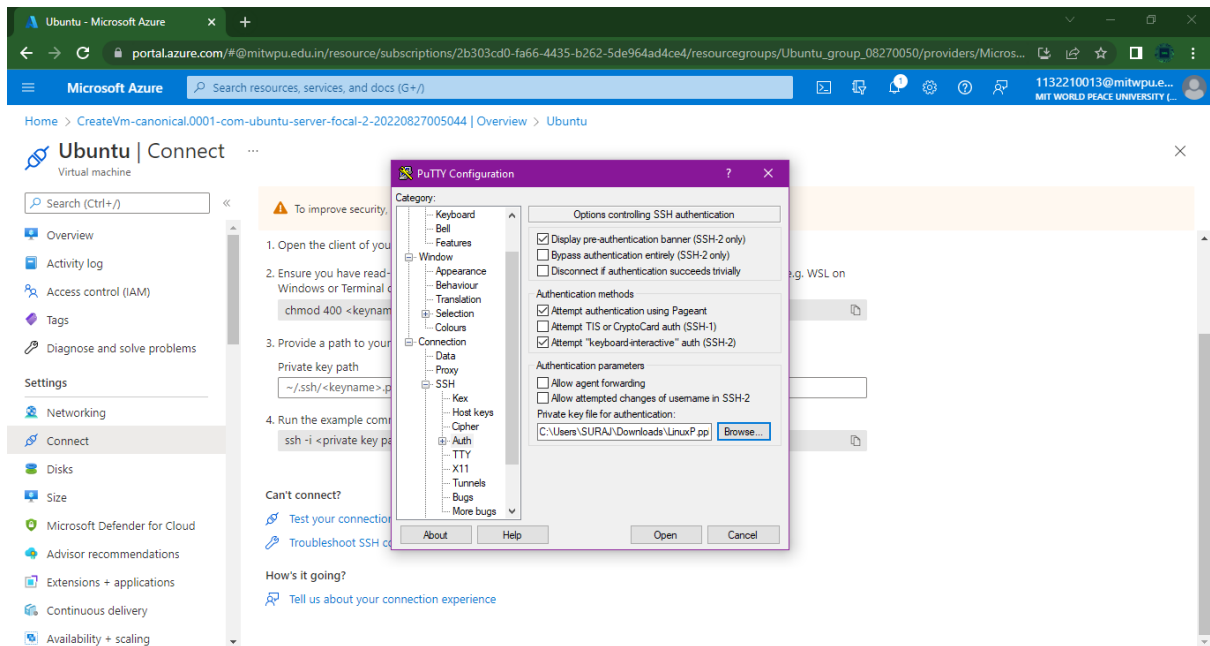
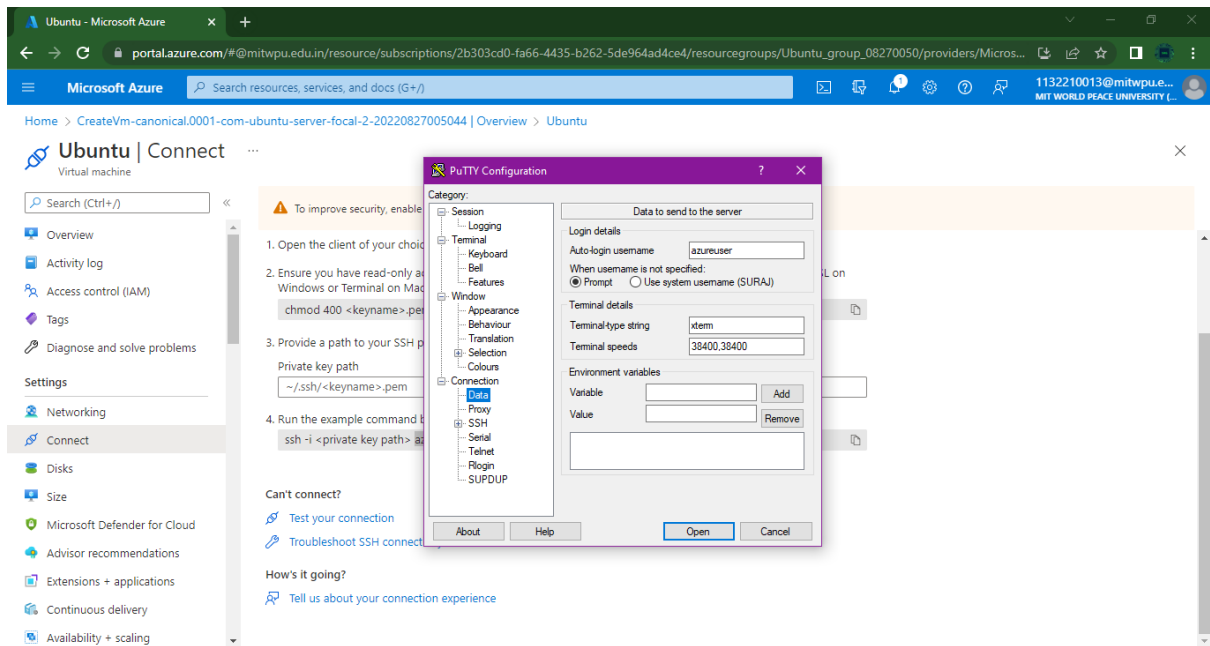
✓ Suggested method for connecting

1. Open the client of your choice, for example WSL on Windows, Terminal on Mac or Shell on Linux.
2. Ensure you have read-only access to the private key. Chmod is only supported on Linux subsystems (e.g. WSL on Windows or Terminal on Mac).  
`chmod 400 <keyname>.pem`
3. Provide a path to your SSH private key file. Replace/reset your SSH private key. ⓘ  
Private key path
4. Run the example command below to connect to your VM.  
`ssh -i <private key path> azureuser@20.204.99.28`

Can't connect?  
[Test your connection](#)







```
azureuser@Ubuntu: ~  
# Using username "azureuser".  
# Authenticating with public key "imported-openssh-key"  
Welcome to Ubuntu 20.04.4 LTS (GNU/Linux 5.15.0-1017-azure x86_64)
```

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

System information as of Fri Aug 26 19:25:33 UTC 2022

```
System load:  0.15      Processes:      118  
Usage of /:   5.0% of 28.89GB   Users logged in:  0  
Memory usage: 7%      IPv4 address for eth0: 10.0.0.4  
Swap usage:   0%
```

1 update can be applied immediately.

To see these additional updates run: `apt list --upgradable`

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@Ubuntu:~$
```

```
azureuser@Ubuntu: ~  
azureuser@Ubuntu:~$ ls -al  
total 28  
drwxr-xr-x 4 azureuser azureuser 4096 Aug 26 19:25 .  
drwxr-xr-x 3 root      root      4096 Aug 26 19:23 ..  
-rw-r--r-- 1 azureuser azureuser  220 Feb 25  2020 .bash_logout  
-rw-r--r-- 1 azureuser azureuser 3771 Feb 25  2020 .bashrc  
drwx----- 2 azureuser azureuser 4096 Aug 26 19:25 .cache  
-rw-r--r-- 1 azureuser azureuser  807 Feb 25  2020 .profile  
drwx----- 2 azureuser azureuser 4096 Aug 26 19:23 .ssh  
azureuser@Ubuntu:~$
```