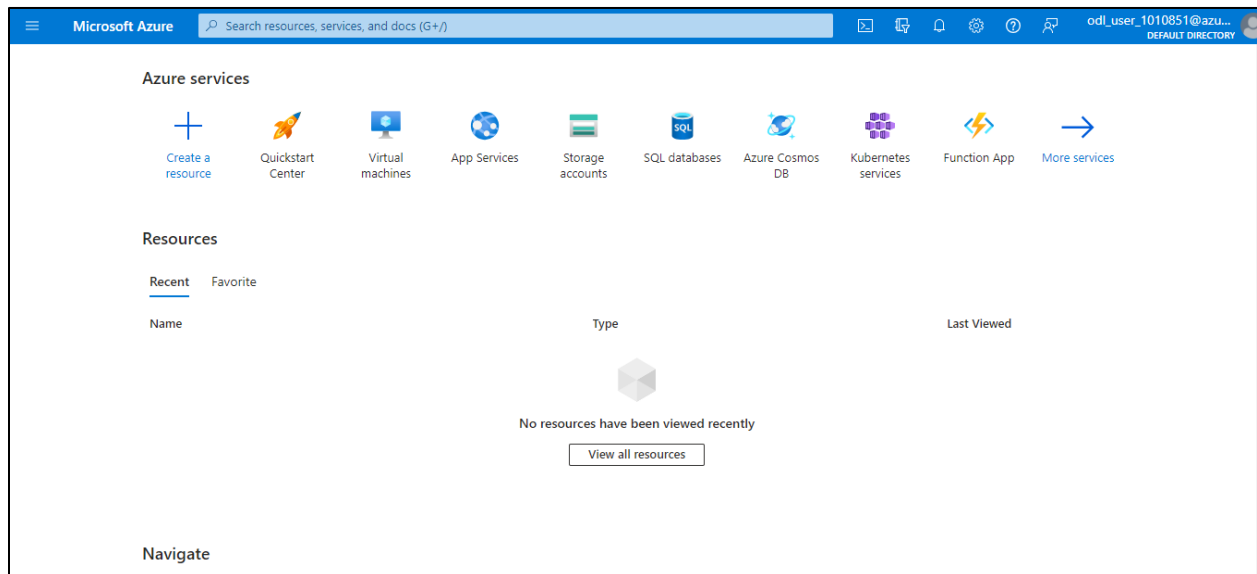


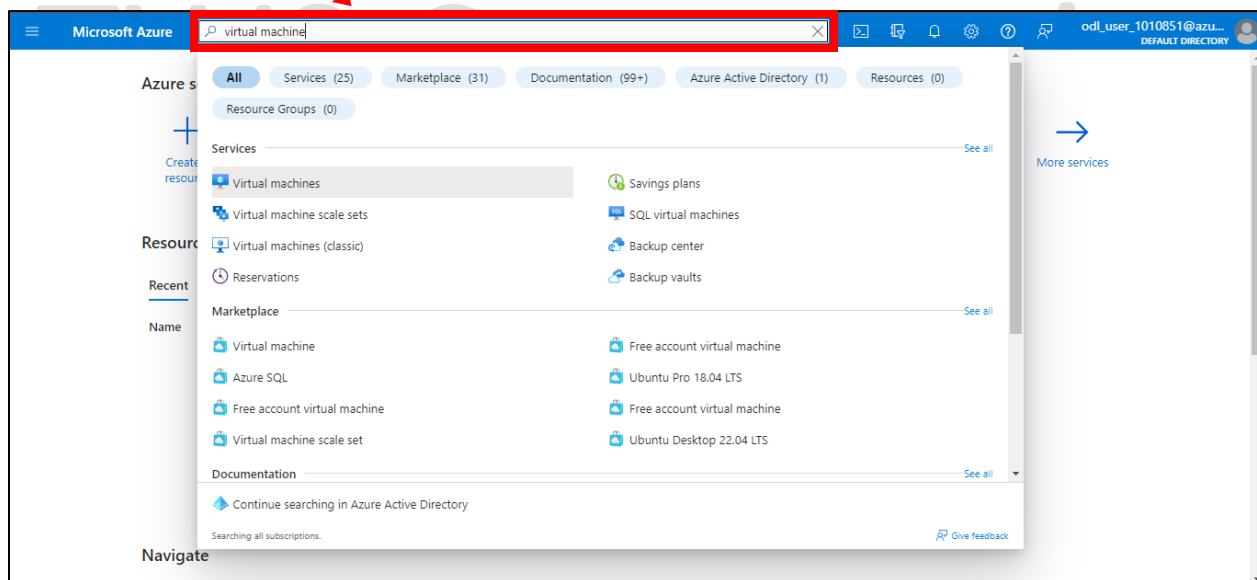
Create Virtual Machine (VM) in Azure

To create **Virtual Machine (VM)** in Azure, please follow below steps.

Step 1: Login to your Azure account.

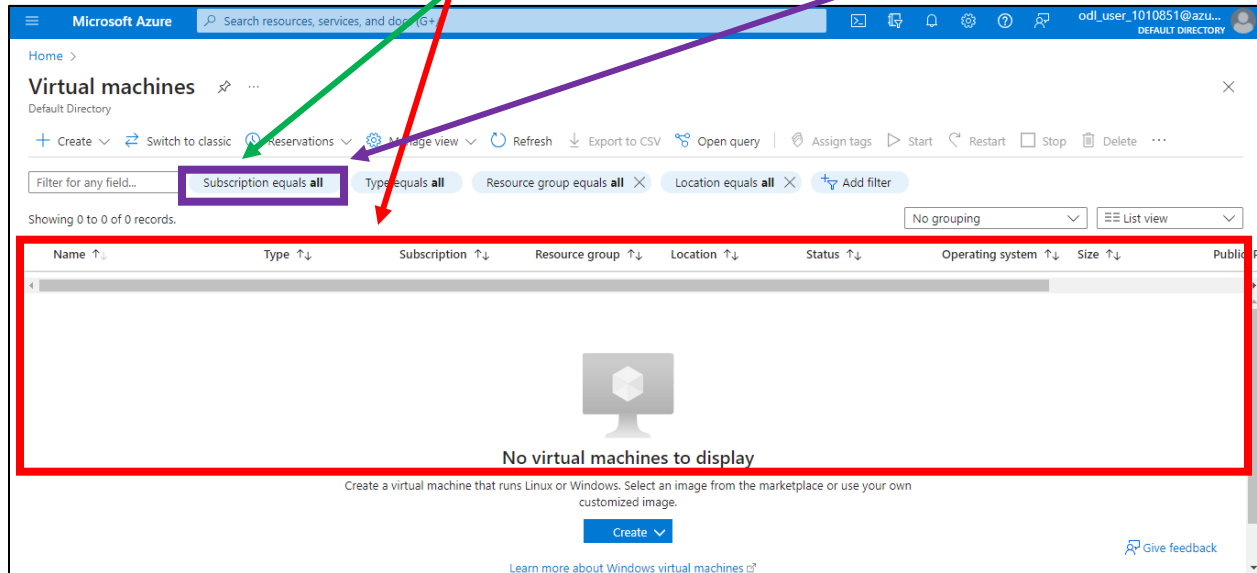


Step 2: Search and goto Virtual Machine service.



Create Virtual Machine (VM) in Azure

Step 3: Here you will see all the **virtual machines** present in your subscriptions and which of them are **running** and other info. And look for the **subscription** which is selected, you can change the subscription filter if your VM is present in other subscription or you can select **ALL** value in Subscription filter.



And as of now, we don't have any virtual machines present in our subscription.

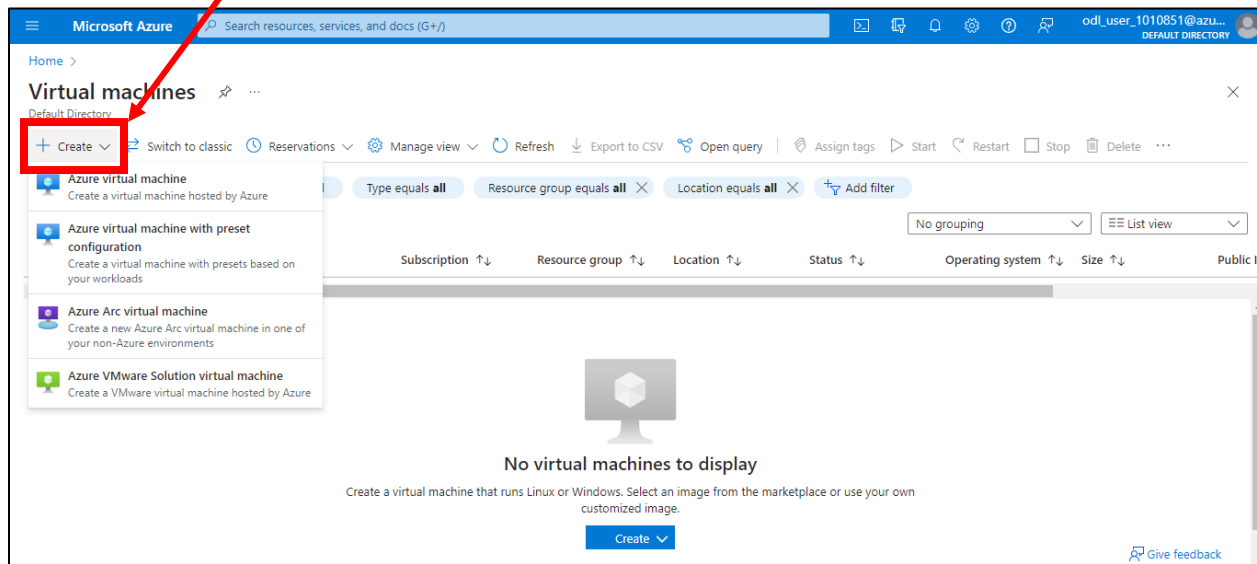
So now, we'll create a Virtual Machine (VM) and then will connect to it.



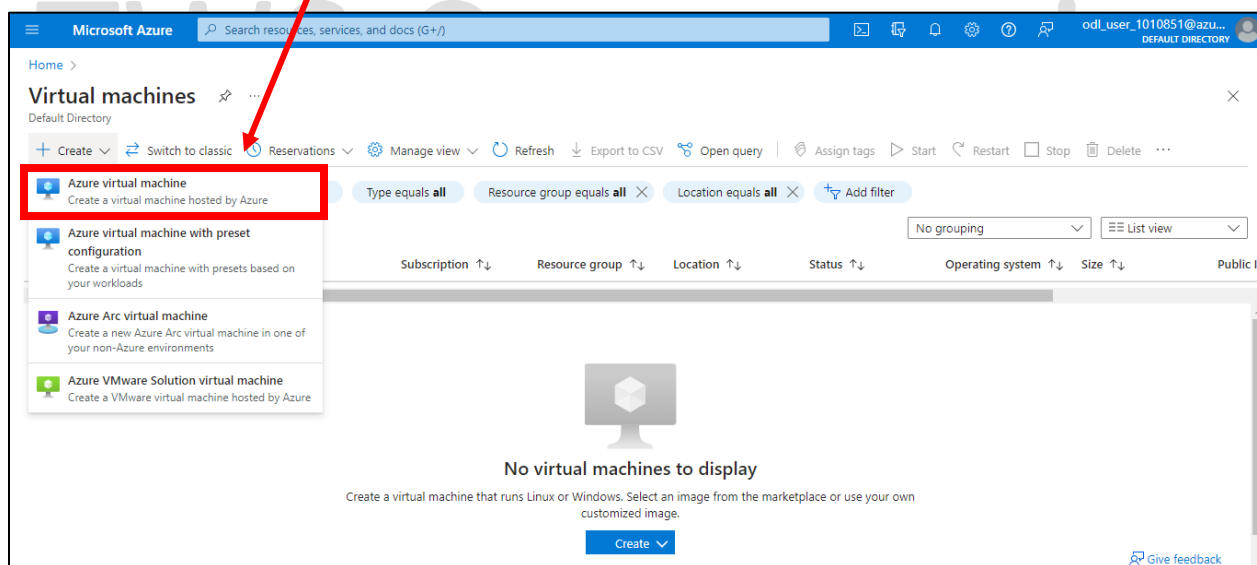
Create Virtual Machine (VM) in Azure

Create Virtual Machine in Azure -

Step 1: Click on Create button.

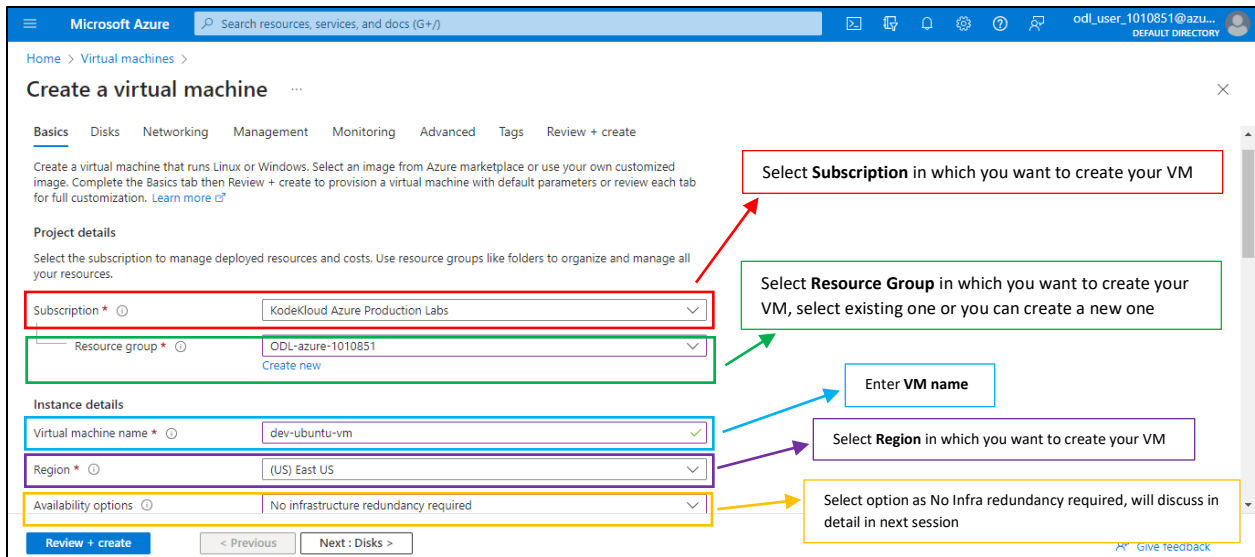


Step 2: Now click on Azure Virtual Machine.



Create Virtual Machine (VM) in Azure

Step 3: Select and enter all required details as shown below,



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

Home > Virtual machines >

Create a virtual machine

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](#)

Project details
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * KodeKloud Azure Production Labs

Resource group * ODL-azure-1010851
[Create new](#)

Instance details

Virtual machine name * dev-ubuntu-vm

Region * (US) East US

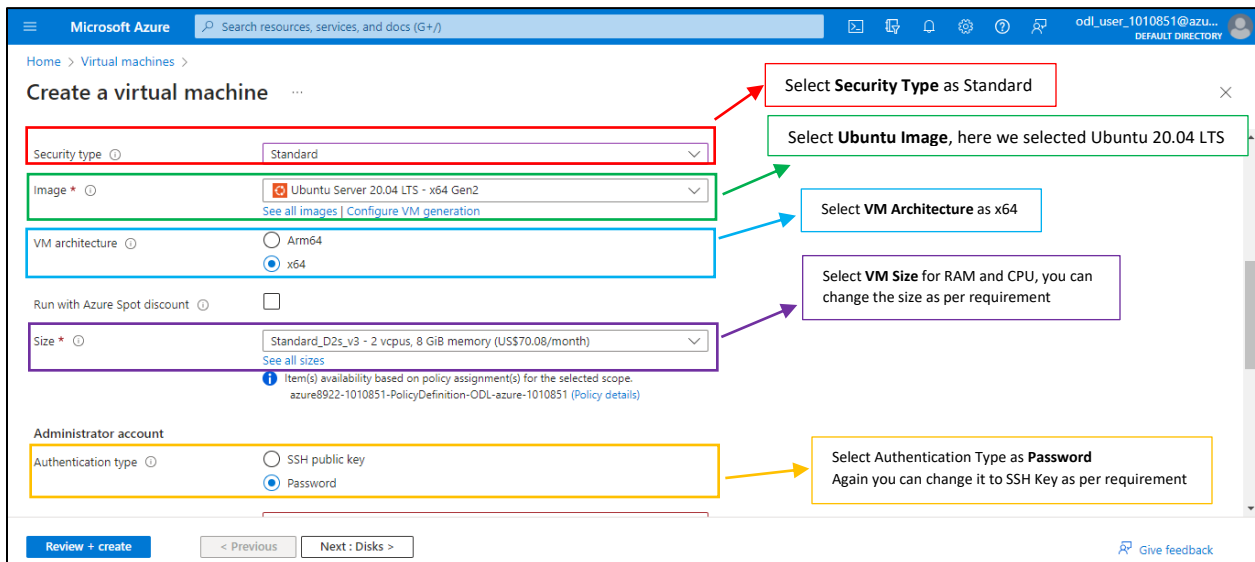
Availability options No infrastructure redundancy required

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

Annotations:

- Select **Subscription** in which you want to create your VM
- Select **Resource Group** in which you want to create your VM, select existing one or you can create a new one
- Enter **VM name**
- Select **Region** in which you want to create your VM
- Select option as No Infra redundancy required, will discuss in detail in next session

Scroll down a bit and select option as shown below,



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

Home > Virtual machines >

Create a virtual machine

Security type Standard

Image * Ubuntu Server 20.04 LTS - x64 Gen2
[See all images](#) | [Configure VM generation](#)

VM architecture ☐ Arm64 ☒ x64

Run with Azure Spot discount ☐

Size * Standard_D2s_v3 - 2 vcpus, 8 GiB memory (US\$70.08/month)
[See all sizes](#)

Administrator account

Authentication type ☐ SSH public key ☒ Password

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

Annotations:

- Select **Security Type** as Standard
- Select **Ubuntu Image**, here we selected Ubuntu 20.04 LTS
- Select **VM Architecture** as x64
- Select **VM Size** for RAM and CPU, you can change the size as per requirement
- Select Authentication Type as **Password**
Again you can change it to SSH Key as per requirement



Create Virtual Machine (VM) in Azure

Scroll down a bit and select options as shown below,

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

Home > Virtual machines >

Create a virtual machine

Username *

Password *

Confirm password *

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 *

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create | < Previous | Next: Disks >

Give feedback

Enter Username for VM

Enter Password for VM

Select Allow Selected Ports to allow access

Select Port - SSH (22), so we will be able to access that VM else you will need to add it manually. If OS is Windows, then select Port as RDP (3389).

Step 4: Click on button - **Next: Disks >**

Step 5: Select and enter info as shown below.

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

Home > Virtual machines >

Create a virtual machine

Basics | **Disks** | Networking | Management | Monitoring | Advanced | Tags | Review + 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](#)

VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host ☐

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

OS disk

OS disk type *

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Delete with VM ☒

Review + create | < Previous | Next: Networking >

Give feedback

Select the OS Disk, here we are selecting as Standard SSD. Change based on requirements

Click on Checkbox if you want to delete when associated VM gets deleted i.e. VM which we are creating

Create Virtual Machine (VM) in Azure

Scroll down a bit, then select and enter info as shown below,

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

Home > Virtual machines >

Create a virtual machine

Delete with VM ☒

Key management Platform-managed key

Enable Ultra Disk compatibility ☐
Ultra disk is supported in Availability Zone(s) 1,2,3 for the selected VM size Standard_D2s_v3.

Data disks for dev-ubuntu-vm
You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM
Create and attach a new disk Attach an existing disk					

Advanced

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

Select the **Key Management**, here we are keeping it as default to Platform-managed key.

You can **attach any existing managed disk** if you have OR
You can **create** and then **attach that managed disk**

Step 6: Now click on button – **Next : Networking >**

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

Home > Virtual machines >

Create a virtual machine

Basics | **Networking** | Management | Monitoring | Advanced | Tags | Review + 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) dev-ubuntu-vm-vnet
[Create new](#)

Subnet * (new) default (10.0.0.0/24)
[Create new](#)

Public IP (new) dev-ubuntu-vm-ip
[Create new](#)

NIC network security group ☐ None ☒ Basic ☐ Advanced

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

Create a new **Virtual Network (VNET)** else you can select the existing VNET

Select the **Subnet**

Select **Public IP** if any present in your subscription, else keep it as new.

Select **NIC Network Security Group**, here we're selecting as Basic



Create Virtual Machine (VM) in Azure

Scroll down a bit, then select and enter info as shown below.

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

Home > Virtual machines >

Create a virtual machine

Public inbound ports * ☐ None ☒ Allow selected ports

Select inbound ports * SSH (22)

This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Delete public IP and NIC when VM is deleted ☐

Enable accelerated networking ☒

Load balancing
You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Load balancing options ☒ None

Review + create < Previous Next: Management >

Annotations:

- Select if you want to **allow traffic on Ports**
- Select **Ports** on which you want to allow traffic
- You can select this option if you want NIC and Public IP associated with this VM.
- You can mark this checkbox if you want low latency & high throughput on NW Interface
- Select **Load Balancing Option**, in this example we'll keep it as None. You can use Azure Load Balancer or Application Gateway as per requirement.

Step 7: Now click on button – Next : Management >

Step 8: Select and enter the info as shown below,

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

Home > Virtual machines >

Create a virtual machine

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

Configure 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.

Identity

Enable system assigned managed identity ☐

Azure AD

Login with Azure AD ☐

RBAC role assignment of Virtual Machine Administrator Login or Virtual Machine

Review + create < Previous Next: Monitoring >

Annotations:

- Select checkbox if you want to create **System Managed Identity** else leave it as unchecked
- To enable corporate Active Directory credential to login to VM else leave it as unchecked

Create Virtual Machine (VM) in Azure

Scroll down a bit, then select or enter info as shown below.

Auto-shutdown

Enable auto-shutdown ☐

Guest OS updates

Patch orchestration options

Some patch orchestration options are not available for this image. [Learn more](#)

Review + create < Previous Next : Monitoring >

Step 9: Now click on button – **Next : Monitoring >**

Step 10: Select and enter the required info as shown below,

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

Home > Virtual machines >

Create a virtual machine

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Configure monitoring options for your VM.

Alerts

Enable recommended alert rules ☐

Diagnostics

Boot diagnostics ☐ Enable with managed storage account (recommended)
☐ Enable with custom storage account
☐ Disable

Enable OS guest diagnostics ☐

Review + create < Previous Next : Advanced >

Step 11: Now click on button – **Next : Advanced >**

Step 12: Select and enter the required info as shown below,

Create Virtual Machine (VM) in Azure

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

Home > Virtual machines >

Create a virtual machine

Basics Disks Networking Management Monitoring **Advanced** Tags Review + 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](#) [< Previous](#) [Next : Tags >](#) [Give feedback](#)

Select extension to add new features, like configuration management, for e.g. Custom Script Extension

Using this option, you can easily add or remove applications on your VM after VM creation.

Scroll down a bit, then select and enter info as shown below,

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

Home > Virtual machines >

Create a virtual machine

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](#)

Custom data

Custom data on the selected image will be processed by cloud-init. [Learn more about custom data for VMs](#)

User data
Pass a script, configuration file, or other data that will be accessible to your applications **throughout the lifetime of the virtual machine**. Don't use user data for storing your secrets or passwords. [Learn more about user data for VMs](#)

Enable user data ☐

Use this to inject/pass a script or other metadata or pre-install packages into a Microsoft Azure virtual machine (VM) at provisioning time.

If you want any file or data to be accessible to your applications throughout the lifetime of the virtual machine.

Scroll down till the end of the page, as **we will keep those option as default for this example.**

Proximity placement group

Proximity placement groups allow you to group Azure resources physically closer together in the same region. [Learn more](#)

Proximity placement group No proximity placement groups found

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

Step 13: Now click on button – **Next : Tags >**

Create Virtual Machine (VM) in Azure

Step 14: Select and enter the required info as shown below,

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

Home > Virtual machines >

Create a virtual machine

Basics Disks Networking Management Monitoring Advanced **Tags** Review + 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
environment	dev	13 selected
		13 selected

Review + create < Previous **Next : Review + create >** Give feedback

Step 15: Now click on button – **Next : Review + create >**

Step 16: Click on **Create** button.

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

Home > Virtual machines >

Create a virtual machine

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

✓ Validation passed

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

Price

1 X Standard D2s v3 by Microsoft

Subscription credits apply

0.0960 USD/hr

Terms of use | Privacy policy

Pricing for other VM sizes

Here you can see, how much cost it will incur per hour for your VM.

TERMS

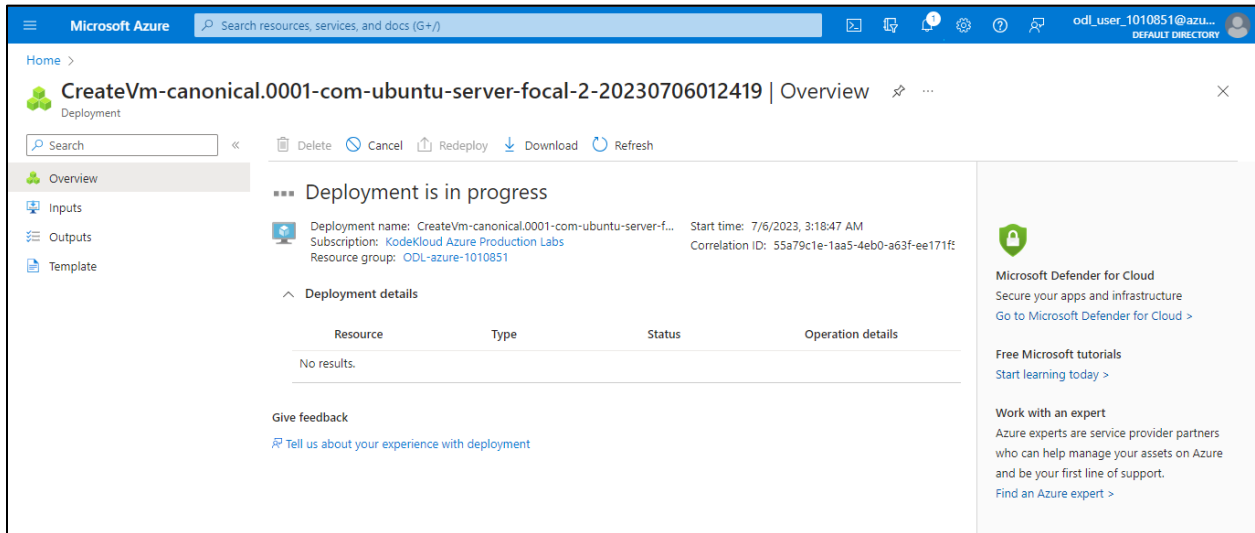
By clicking "Create", I agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above. Microsoft will bill my current payment method for the fees associated with the offering(s) with the same...

Create < Previous Next > Download a template for automation Give feedback



Create Virtual Machine (VM) in Azure

Now you will this message, as **Deployment is in progress** as it is deploying our VM and its associated resources



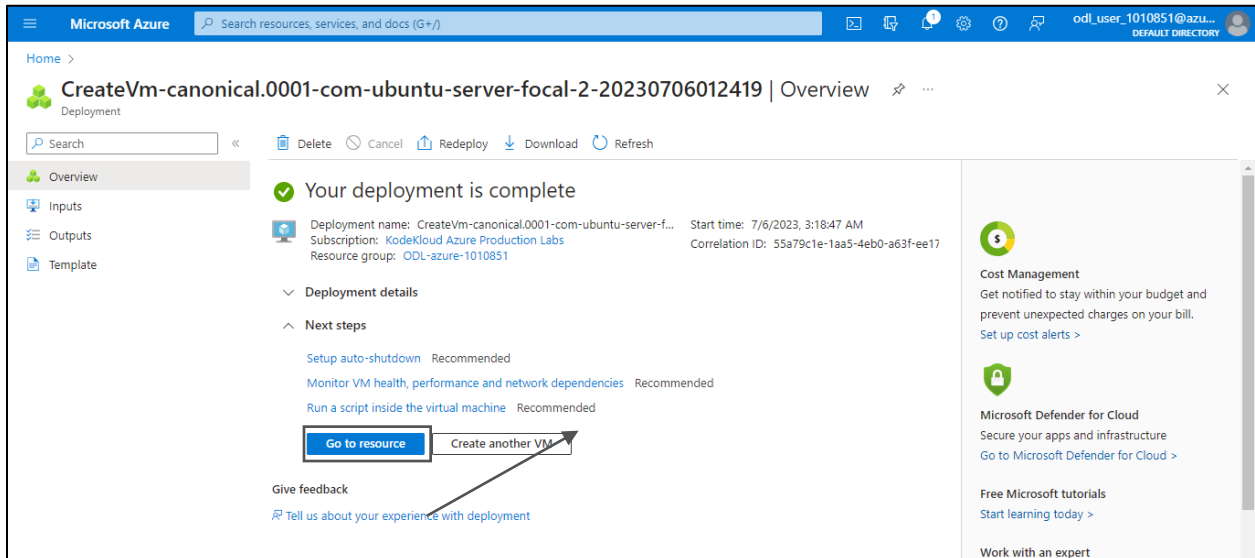
The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information. The main content area displays the deployment details for 'CreateVm-canonical.0001-com-ubuntu-server-focal-2-20230706012419'. The status is 'Deployment is in progress'. The deployment details section shows the deployment name, subscription, resource group, start time, and correlation ID. A table with columns 'Resource', 'Type', 'Status', and 'Operation details' is present, but it is empty with the message 'No results.'.

Deployment is in progress

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-f... Start time: 7/6/2023, 3:18:47 AM
Subscription: KodeKloud Azure Production Labs Correlation ID: 55a79c1e-1aa5-4eb0-a63f-ee171f
Resource group: ODL-azure-1010851

Resource	Type	Status	Operation details
No results.			

Wait for few minutes, then you will see below message that **your deployment is complete**



The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information. The main content area displays the deployment details for 'CreateVm-canonical.0001-com-ubuntu-server-focal-2-20230706012419'. The status is 'Your deployment is complete'. The deployment details section shows the deployment name, subscription, resource group, start time, and correlation ID. The 'Next steps' section includes links for 'Setup auto-shutdown', 'Monitor VM health, performance and network dependencies', and 'Run a script inside the virtual machine'. A 'Go to resource' button is highlighted with a red box and an arrow pointing to it.

Your deployment is complete

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-f... Start time: 7/6/2023, 3:18:47 AM
Subscription: KodeKloud Azure Production Labs Correlation ID: 55a79c1e-1aa5-4eb0-a63f-ee17
Resource group: ODL-azure-1010851

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](#)

Create Virtual Machine (VM) in Azure

Step 16: Click on **Go to resource** button to goto your newly created VM. And now you can see your VM.

The screenshot shows the 'Overview' page of a virtual machine named 'dev-ubuntu-vm' in the Azure portal. The left sidebar contains navigation options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, and Extensions + applications. The main content area displays the 'Essentials' section with key information: Resource group (ODL-azure-1010851), Status (Running), Location (East US), Subscription (KodeKloud Azure Production Labs), and Subscription ID (b2aec48f-6dad-4d57-ad25-dad521fe74a4). Below this, there are tabs for Properties, Monitoring, Capabilities (7), Recommendations, and Tutorials. The 'Properties' tab is active, showing details like Computer name (dev-ubuntu-vm), Operating system (Linux (ubuntu 20.04)), Image publisher (canonical), and Networking information (Public IP address: 20.127.18.218, Network interface: dev-ubuntu-vm72).

Now you can also goto Virtual Machine Service to see what virtual machines are present now. Check the steps given at start of this document. And then you will see all the **VMs present in your subscription**.

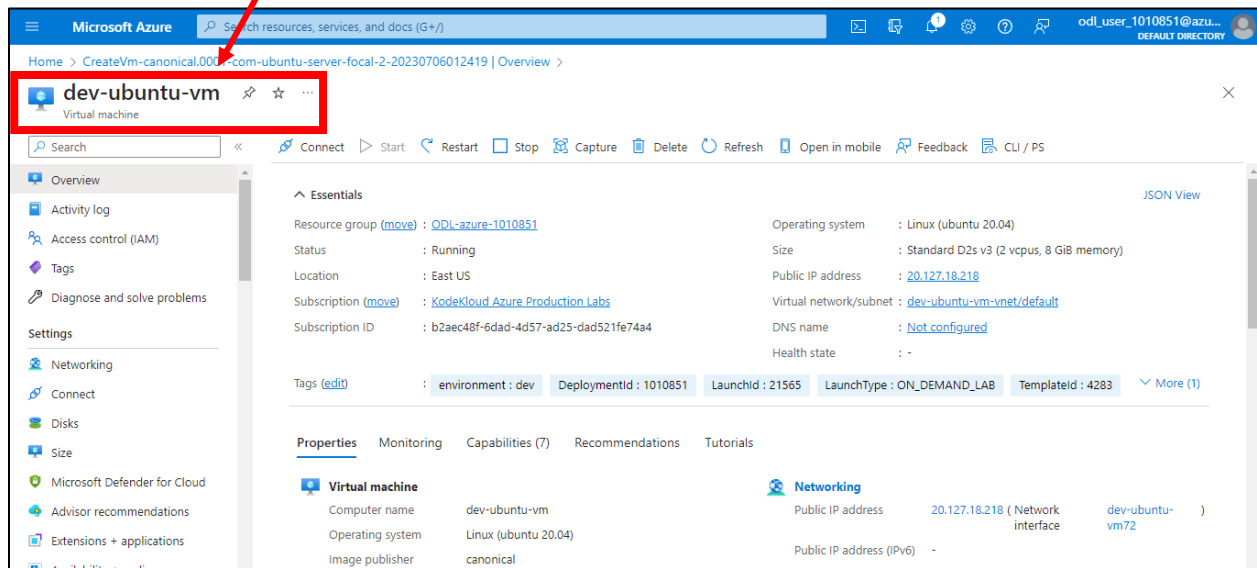
The screenshot shows the 'Virtual machines' page in the Azure portal. The top navigation bar includes 'Create', 'Switch to classic', 'Reservations', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', 'Assign tags', 'Start', 'Restart', 'Stop', and 'Delete'. Below the navigation bar, there are filters for 'Subscription equals all', 'Type equals all', 'Resource group equals all', and 'Location equals all'. The table below shows a single record for the virtual machine 'dev-ubuntu-vm'. A red box highlights the first row of the table, and a red arrow points to the 'Status' column.

Name	Type	Subscription	Resource group	Location	Status	Operating system	Size	Public IP
dev-ubuntu-vm	Virtual machine	KodeKloud Azure Pro...	ODL-azure-1010851	East US	Running	Linux	Standard_D2s_v3	20.127.18.218

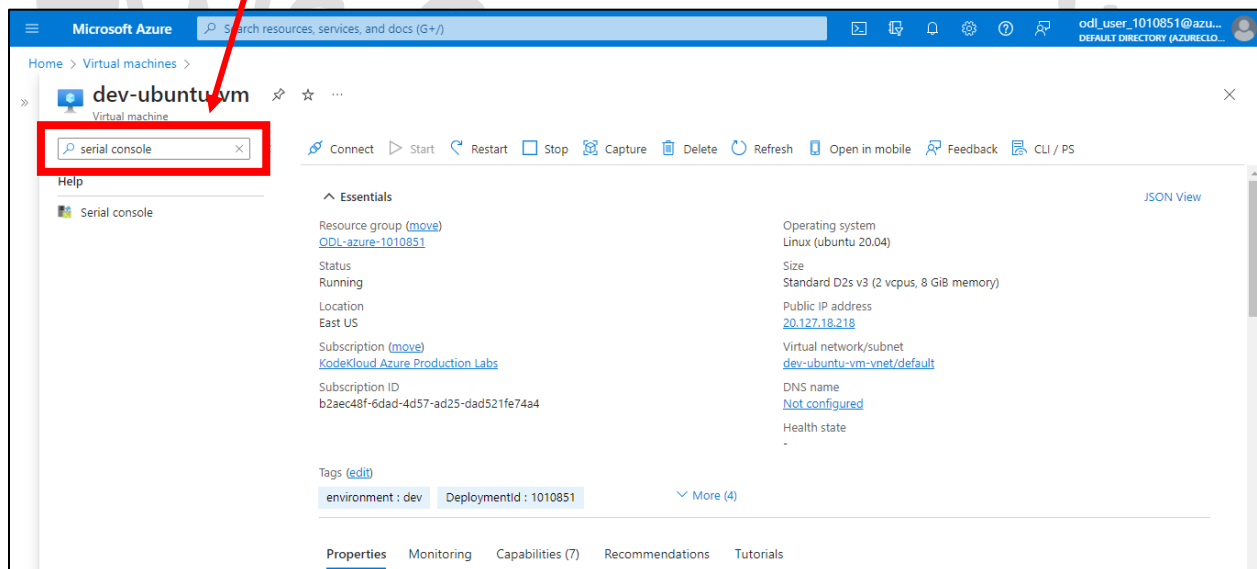
Create Virtual Machine (VM) in Azure

Connecting to Virtual Machine using Serial Console -

Step 1: Goto your Virtual Machine.

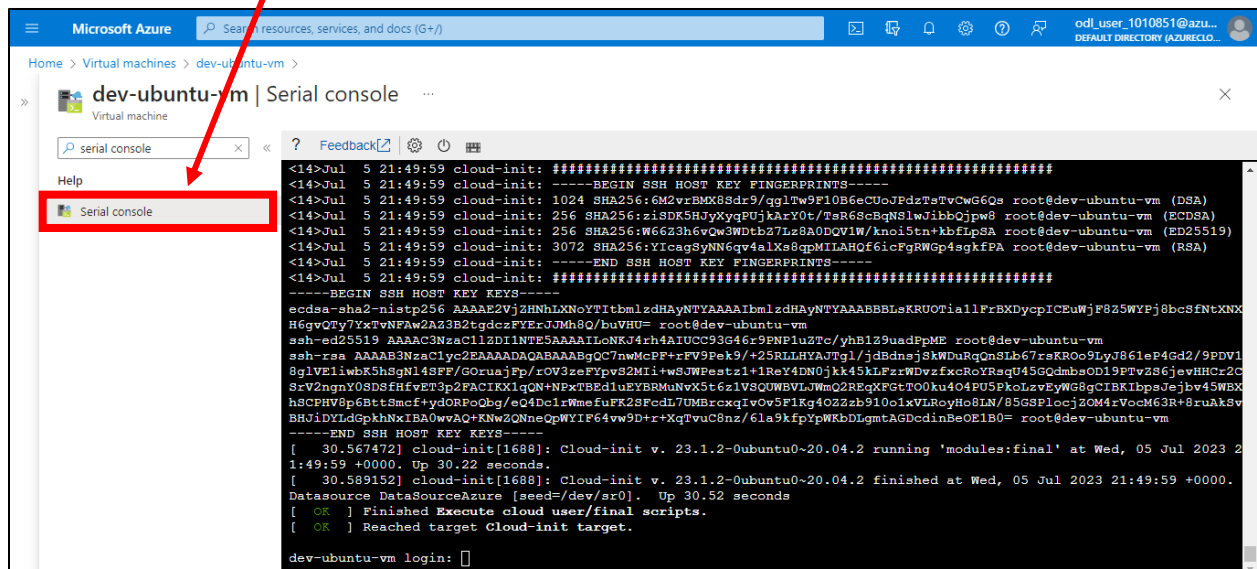


Step 2: Search Serial Console in search bar.

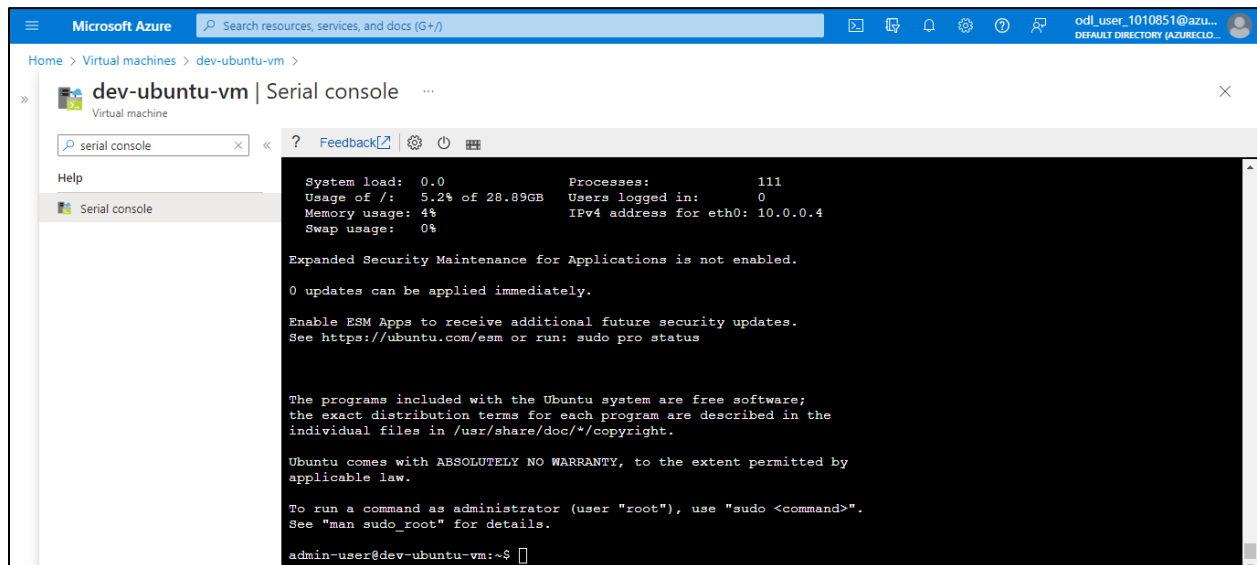


Create Virtual Machine (VM) in Azure

Step 3: Click on Serial Console button.



Step 4: Enter Username and Password to login to VM.



If the user credentials are correct then you will be able to access the VM using Serial Console.

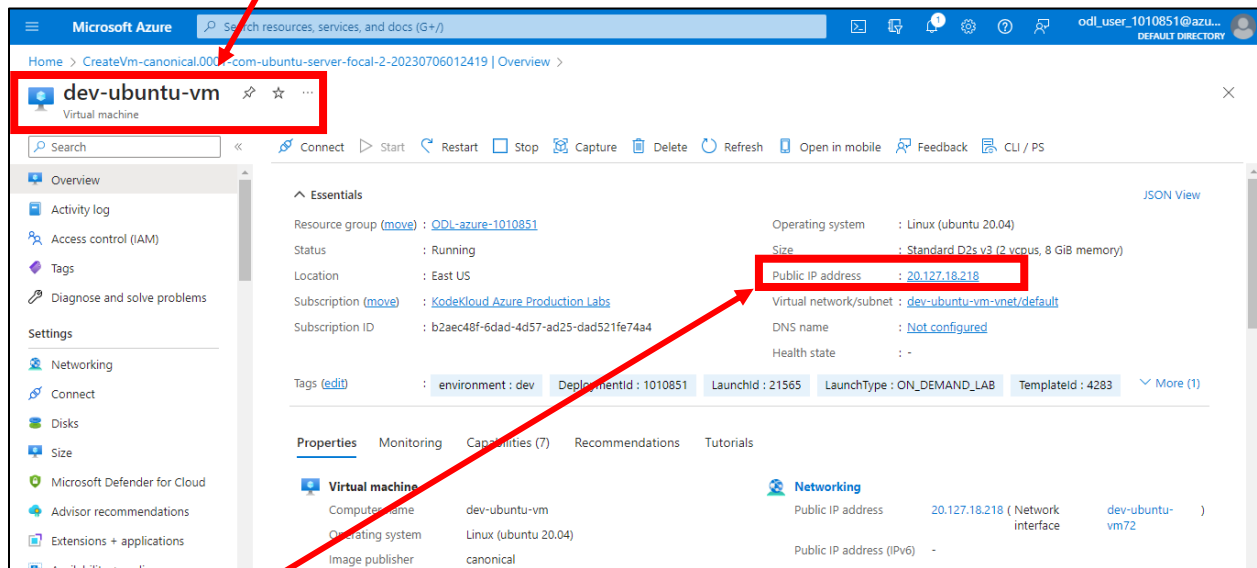
Step 5: To disconnect serial console session / Logout just execute below command,

exit

Create Virtual Machine (VM) in Azure

Connecting to Virtual Machine using SSH Client -

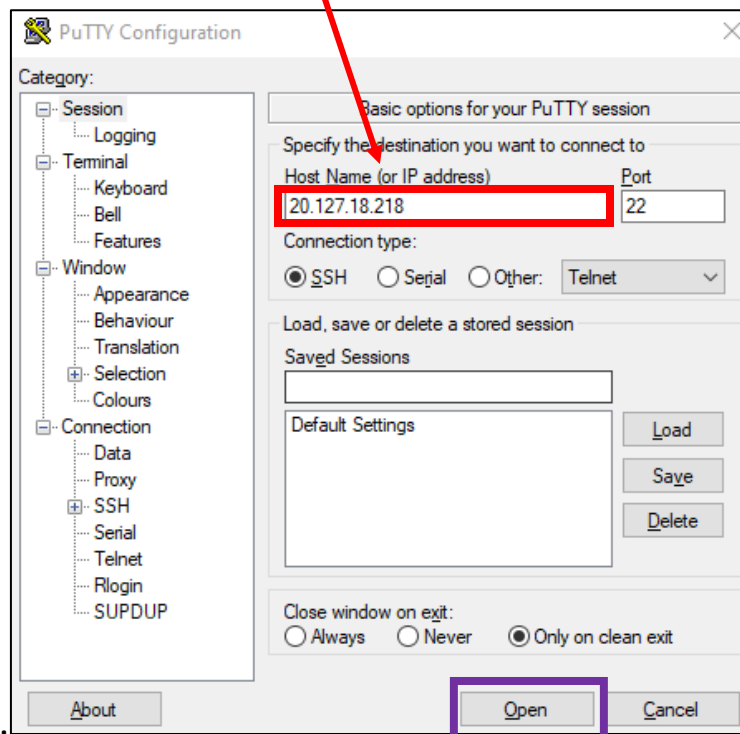
Step 1: Goto your Virtual Machine.



Step 2: Copy Public IP of your VM.

Note – Port 22 inbound is already added when we created the VM

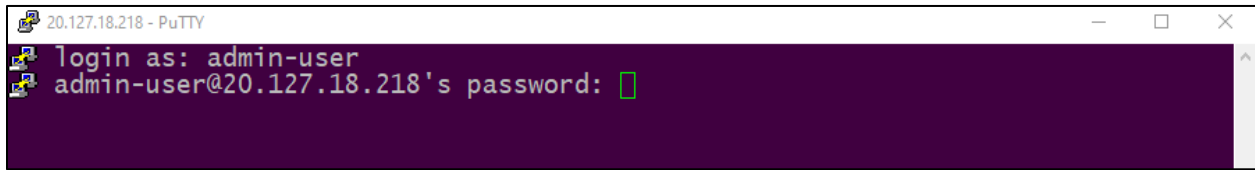
Step 3: Open Putty application and enter Public IP copied from Step 2 in host field and **port** should be 22.



Create Virtual Machine (VM) in Azure

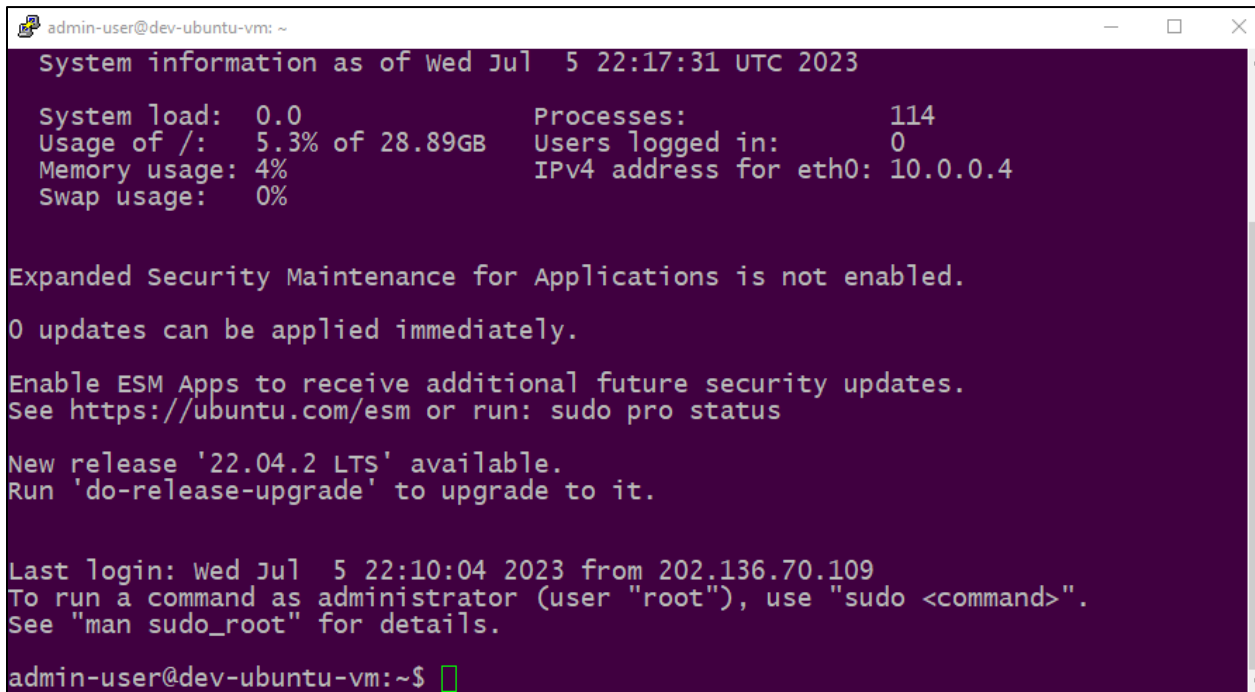
Step 6: Click on **Open** button.

Step 7: Enter the **user name** and **password** to login to VM. Hit Enter button.



```
20.127.18.218 - PuTTY
login as: admin-user
admin-user@20.127.18.218's password: █
```

And that's it, finally you are able to connect to your Azure Virtual Machine using SSH Client i.e. Putty



```
admin-user@dev-ubuntu-vm: ~
System information as of Wed Jul  5 22:17:31 UTC 2023

System load:  0.0                Processes:           114
Usage of /:   5.3% of 28.89GB    Users logged in:    0
Memory usage: 4%                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

New release '22.04.2 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Wed Jul  5 22:10:04 2023 from 202.136.70.109
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

admin-user@dev-ubuntu-vm:~$ █
```