

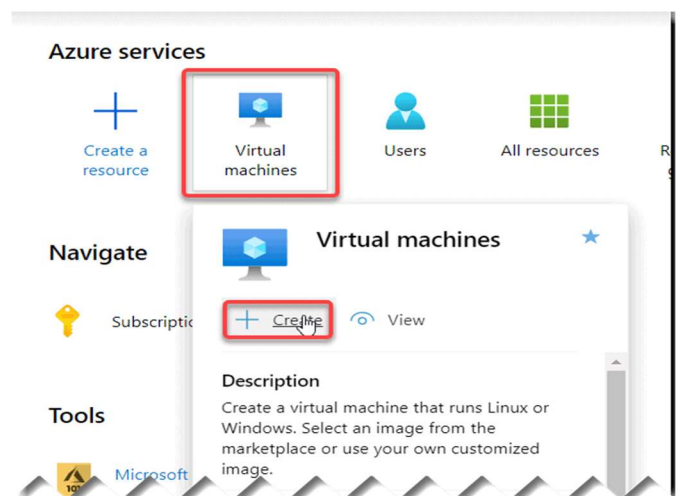
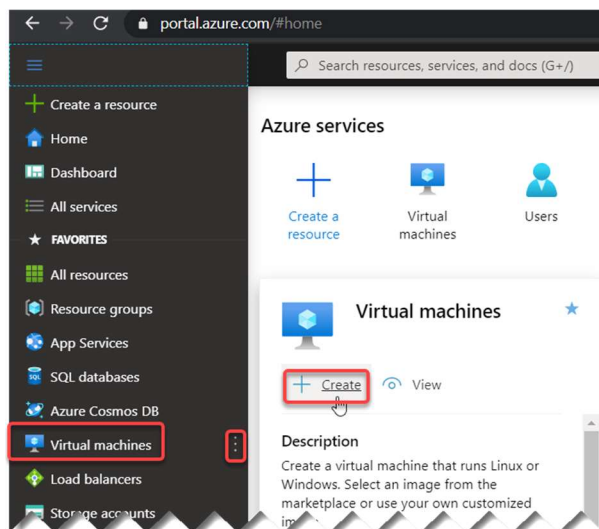
## Lab 1: Create Azure Virtual Machine (Window VM)

### Objective:

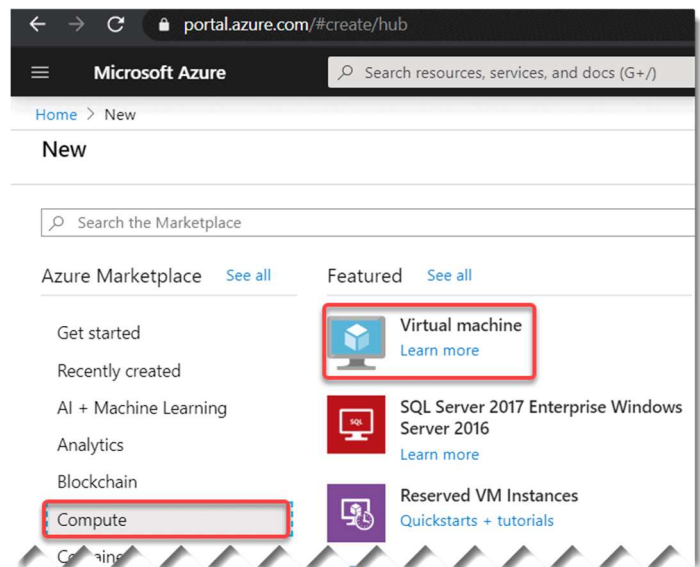
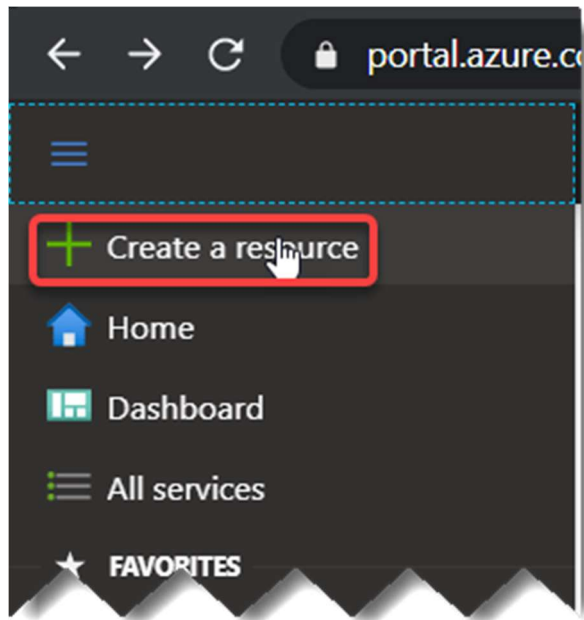
In this Exercise, we will be creating the Azure Windows and Linux VM in Azure subscription which can be used for your test, development, and production environments. Configuring the high availability will help you to reduce the downtime of the Azure VMs. We have also explained how to set up the monitoring, storage, VM size, and configure the disk encryption in Azure VM, which will help to encrypt the disk and secure the disk data.

**Step-1:** Login to <https://portal.azure.com>.

**Step-2:** Now click on **“Virtual machines”** option from the left side Menu and then click on **“Create”** link. Or go to **“Virtual machines”** option from the **“Azure services”** section.



One more way is to go to the same option from the **“Create a resource”** link from the left side menu and then select the **“Compute”** and **“Virtual machine”**.



Or else for the same option you can go to the “**Create a resource**” link from the “**Azure services**” section and then select the “**Compute**” and “**Virtual machine**”.

**Step- 3:** Fill the details required. A few of the options you can keep as it is but based on your business need you can change those.

- **Subscription:** Choose your correct subscription.
- **Resource group:** You can choose the existing resource group or you can create a new one by clicking the “**Create New**” option. It acts like a container that stores the resources related to an Azure solution.
- **Virtual machine name:** Provide a name for your virtual machine.
- **Region:** This is the location where you are going to create all the resources related to the virtual machine.
- **Image:** Choose the **Windows Server 2019 Datacenter**. You can change it based on your business need.
- **Size:** The size you want to assign based on your requirement. I have chosen **Standard D2s v3** as per my business requirement.

In the Administrator account section, Choose a **Username, Password** that you will use to login to the VM once created.

**Select Inbound port:** Choose **HTTP(80),RDP(3389)**. This is a very important option.

All other options you can keep as it is. Now click on “**Next:Disks >**” button.

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

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

Home > Virtual machines > Create a virtual machine

### Create a virtual machine

**Basics** Disks Networking Management 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 \* ⓘ Visual Studio Enterprise

Resource group \* ⓘ newresgroup [Create new](#)

#### Instance details

Virtual machine name \* ⓘ MyNewVM ✓

Region \* ⓘ (US) West US

Availability options ⓘ No infrastructure redundancy required

Image \* ⓘ Windows Server 2019 Datacenter [Browse all public and private images](#)

Azure Spot instance ⓘ ☐ Yes ☒ No

Size \* ⓘ 

Standard D2s v3  
2 vcpus, 8 GiB memory (₹5,645.28/month)  
[Change size](#)

Administrator account

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 \*

 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.

Since, I do not have a windows server license, you can select **No** license.

Save money

Save up to 49% with a license you already own using Azure Hybrid Benefit. [Learn more](#)

Already have a Windows Server license? \* ☐ Yes ☒ No ⓘ

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

In the next screen (**Disks**), you can add the disk architecture that you want. I kept the default option as it is. You can change it based on your business need. Click on **Next: Networking** button.

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

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

Home > Virtual machines > Create a virtual machine

### Create a virtual machine

Basics **Disks** Networking Management 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](#)

**Disk options**

OS disk type \*

Encryption type \*

Enable Ultra Disk compatibility ☐ Yes ☒ No

**Data disks**

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
<a href="#">Create and attach a new disk</a> <a href="#">Attach an existing disk</a>				

Now you can fill the below details in the Networking screen.

- **Virtual Network:** Choose a **virtual network** or else you can create a new one by clicking the “**Create New**” link.
- **Subnet:** You can keep the default option as it is.
- **Public inbound ports:** choose **Allow selected ports**.
- **Select inbound ports:** This is a very important option. Choose the option as **HTTP(80)**, **RDP(3389)** here. Once you choose this option in the Basics tab it will automatically show the same option here. Keep the option as it is.

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

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual machines > Create a virtual machine

## 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) newresgroup-vnet

Create new

Subnet \* ⓘ

(new) default (10.0.0.0/24)

Public IP ⓘ

(new) MyNewVM-ip

Create new

NIC network security group ⓘ


☐ None ☒ Basic ☐ Advanced

Public inbound ports \* ⓘ

☐ None ☒ Allow selected ports

Select inbound ports \*

HTTP (80), RDP (3389)

 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

Accelerated networking ⓘ

☐ On ☒ Off

The selected VM size does not support accelerated networking.

### Load balancing

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

Place this virtual machine behind an existing load balancing solution?

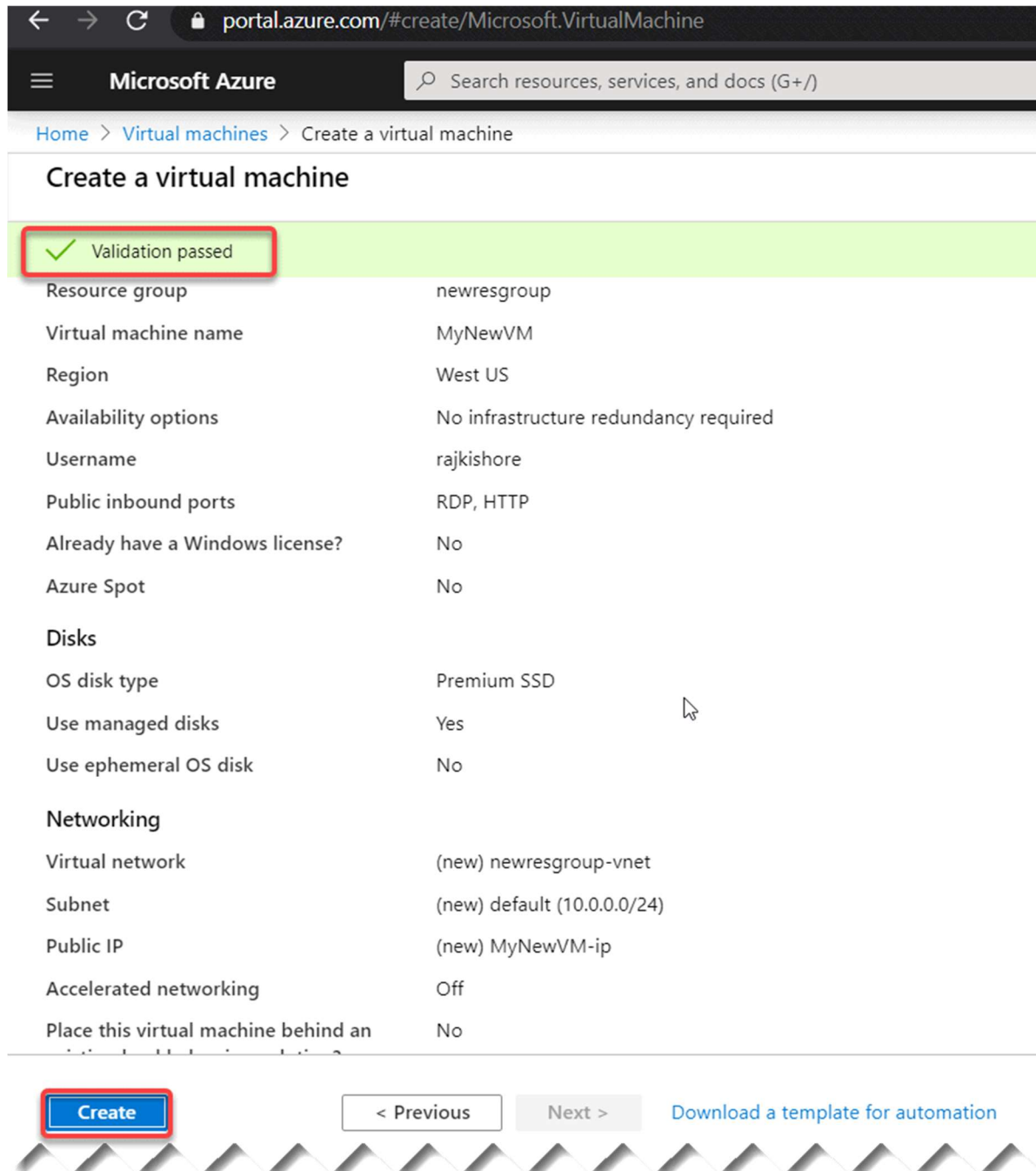
☐ Yes ☒ No

Review + create

< Previous

Next : Management >

Now for other tabs all the options you can keep as it is. Once you fill all the above details click on the **“Review + Create”** button. Azure will validate the above details internally and will show a message **“Validation passed”**.



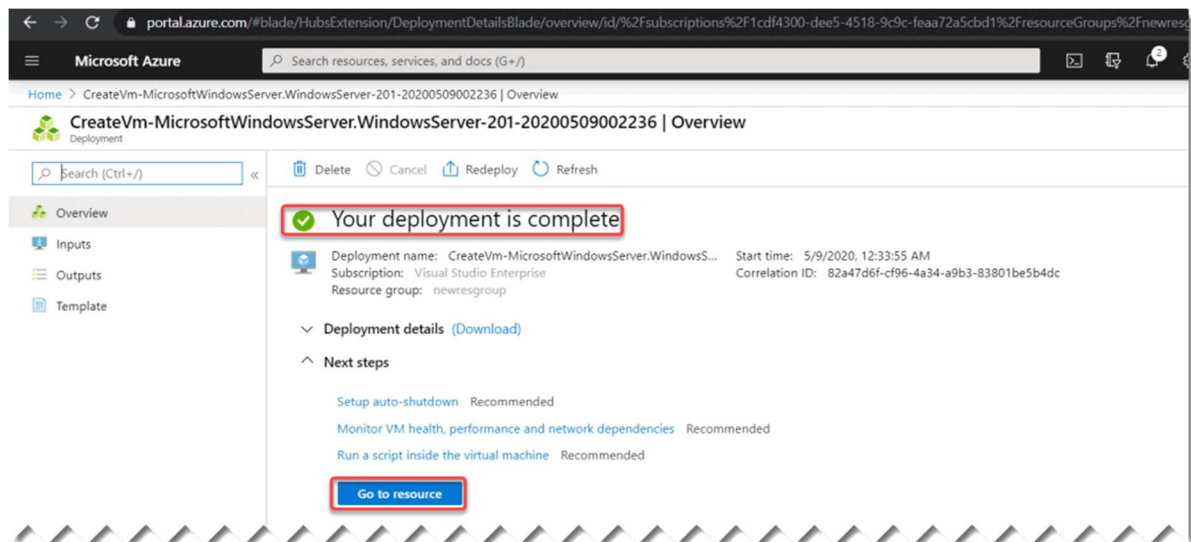
The screenshot shows the Azure portal interface for creating a virtual machine. The browser address bar displays `portal.azure.com/#create/Microsoft.VirtualMachine`. The page title is "Create a virtual machine". A green banner at the top indicates "Validation passed" with a green checkmark icon. Below this, the configuration details are listed in a table-like format:

Resource group	newresgroup
Virtual machine name	MyNewVM
Region	West US
Availability options	No infrastructure redundancy required
Username	rajkishore
Public inbound ports	RDP, HTTP
Already have a Windows license?	No
Azure Spot	No
<b>Disks</b>	
OS disk type	Premium SSD
Use managed disks	Yes
Use ephemeral OS disk	No
<b>Networking</b>	
Virtual network	(new) newresgroup-vnet
Subnet	(new) default (10.0.0.0/24)
Public IP	(new) MyNewVM-ip
Accelerated networking	Off
Place this virtual machine behind an	No

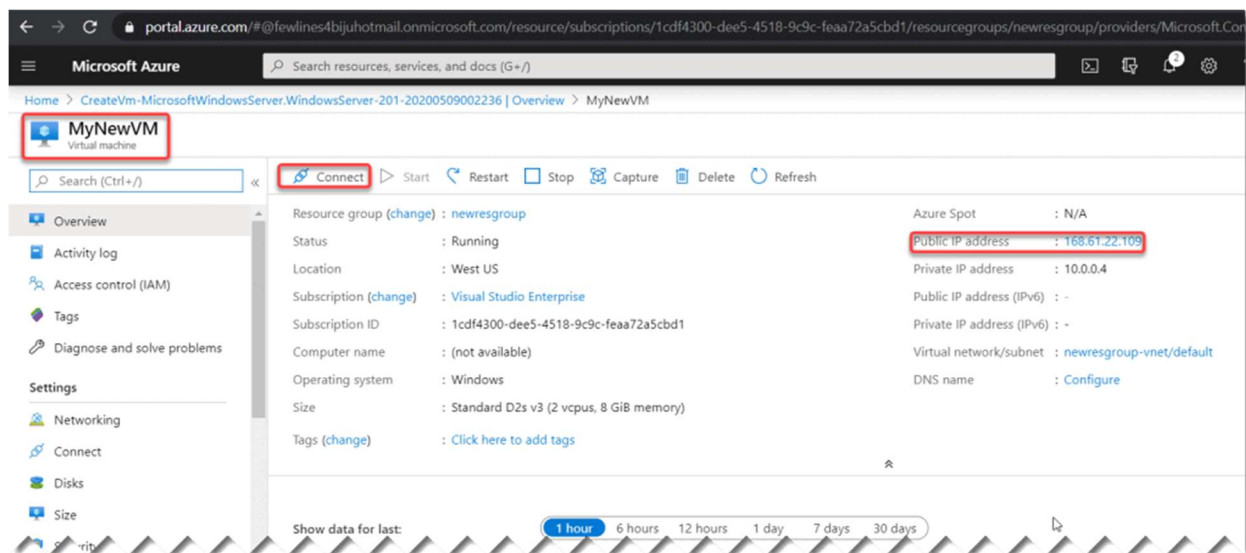
At the bottom, there is a "Create" button (highlighted with a red box), a "< Previous" button, a "Next >" button, and a link "Download a template for automation".

**Step- 4:** Now click on the **“Create”** button. It will show you **“Your deployment is complete”**. Now click on **“Go to resource”**



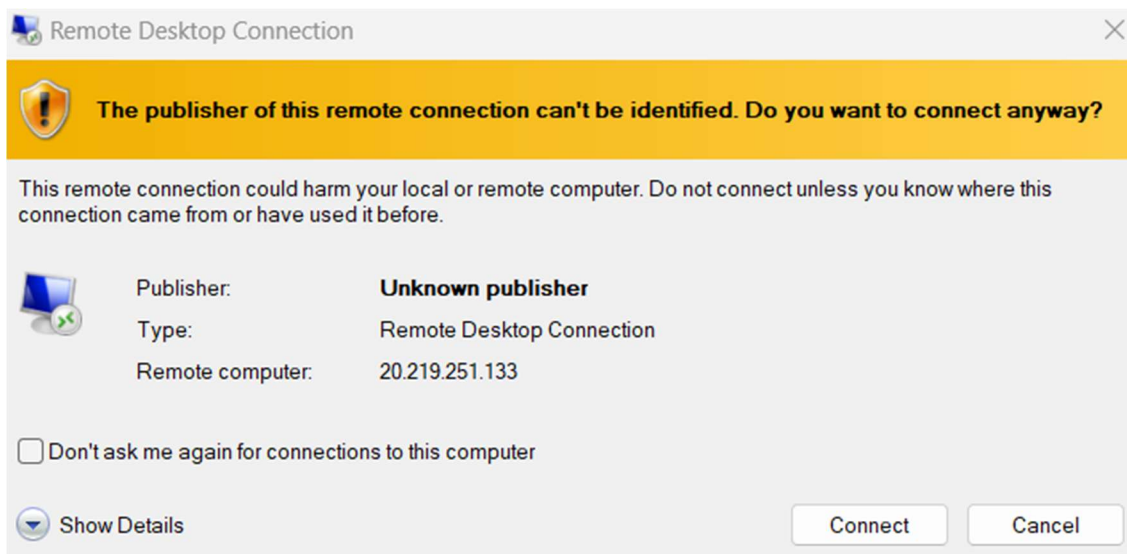


**Step- 5:** Congratulations, Now you have created the VM successfully. Click on the **Connect** button to connect to the VM.



**Step-6** Click on the **Connect** button to connect to the VM and download RDP , enter username and password of your virtual machine.





## **Lab 2: Create Azure Virtual Machine (Linux VM)**

Now let's discuss here, **how to create Linux Virtual Machine in Azure.**

**Step-1:** Follow the **step-1 to Step-2** from the above section.

**Step-2:** On the **Create a Virtual Machine** page, Provide the below details

- **Subscription:** Select a **valid subscription** that you want to use here to create a **Linux virtual machine**.
- **Resource group:** Choose the existing resource group or you can create a new one by clicking the “**Create New**” option.
- **Virtual machine name:** You need to provide a name for your virtual machine.
- **Region:** Select the **region or location**.
- **Image:** Choose the **Ubuntu Server 20.04 LTS – Gen1** as the **image** option.
- **Size:** Select the size based on your business requirement. Click on the **see all sizes** link to check all the options available.
- **Authentication Type:** Select the **authentication type** based on your need.
- **Username:** Provide a username.
- **SSH public key source:** Select the default option **Generate new key pair**.
- **Key Pair Name:** Provide a name for the key pair.
- **Public inbound Ports:** Select the **Allow selected ports** option.
- **Select Inbound Ports:** Select the **HTTP (80), SSH (22)** option.

Keep the other tab values as it is, Finally click on the **Review + Create** button.

# Create a virtual machine ...

- Basics
- Disks
- Networking
- Management
- 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 \* ⓘ

Visual Studio Enterprise

Resource group \* ⓘ

Demo123

Create new

## Instance details

Virtual machine name \* ⓘ

TSINFONEWVM

Region \* ⓘ

(US) East US

Availability options ⓘ

No infrastructure redundancy required

Image \* ⓘ

Ubuntu Server 20.04 LTS - Gen1

See all images

Azure Spot instance ⓘ ☐

Size \* ⓘ 

Standard\_B1ms - 1 vcpu, 2 GiB memory (₹1,088.68/month) ✓  
[See all sizes](#)

**Administrator account**

Authentication type ⓘ 

☒ SSH public key  
☐ Password

**i** 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 \* ⓘ 

azureuser ✓

SSH public key source 

Generate new key pair ✓

Key pair name \* 

TSINFONEWV\_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), 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.

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

**Step-3:** Now, it will validate all the details provided by you and will show you **Validation Passed**. Click on the **Create** button to create the **Azure Linux Virtual Machine**.

**Step-4:** Click on the **Download private key and create resource** button to download the key details that you need while connecting the virtual machine.

## Generate new key pair

**i** 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](#)

**Step-5:** It will take a few minutes and then will show you that **Your deployment is complete**. Click on the **Go to Resource** button to navigate to the **Linux Virtual Machine** that you have created.



## Your deployment is complete



Deployment name: CreateVm-canonical.0001-com-ubuntu

Subscription: Visual Studio Enterprise

Resource group: Demo123

▼ **Deployment details** [\(Download\)](#)

^ **Next steps**

[Setup auto-shutdown](#) Recommended

[Monitor VM health, performance and network dependencies](#)

[Run a script inside the virtual machine](#) Recommended

**Go to resource**

Create another VM