

Lab Manual- Create VM on Azure Portal

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1 OBJECTIVE

Azure Virtual machine will let us create and use virtual machines in the cloud as Infrastructure as a Service. We can use an image provided by Azure, or partner, or we can use our own to create the virtual machine.

Virtual machines can be created and managed using:

- Azure Portal
- Azure PowerShell
- ARM templates
- Azure CLI

Following are the configuration choices that Azure offers while creating a Virtual Machine.

- Operating system (Windows and Linux)
- VM size, which determines factors such as processing power, how many disks we attach etc.
- The region where VM will be hosted
- VM extension, which gives additional capabilities such as running anti-virus etc.
- Compute, Networking, and Storage elements will be created during the provisioning of the virtual machine.

2 VM Sizes

It is important to select the right VM size and type for the working of our virtual machine perfectly. So, these are the VM sizes that are available within Azure.

Type	Sizes	Description
General-purpose	B, Dsv3, Dv3, DSv2, Dv2, DS, D, Av2, A0-7	It has balanced CPU-to -memory ratio, It is ideal for testing and development, small to medium databases, and low to medium traffic web servers.
Compute-optimized	Fsv2, Fs, F	It has a high CPU-to-memory ratio. It is suitable for medium traffic web servers, network appliances, batch processes.

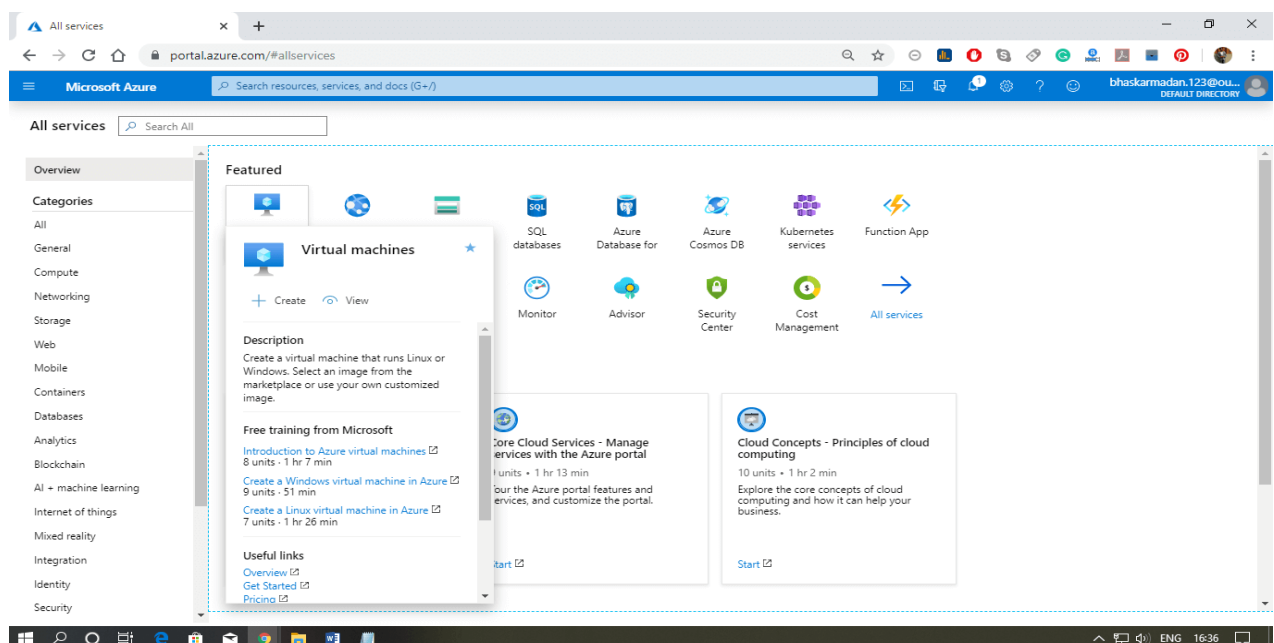
Memory-optimized	Esv3, Ev3, M, GS, G, DSv2, DS, Dv2, D	Is has a high memory-to-CPU ratio. Great for relational database servers, medium to large caches, and in-memory analytics.
Storage optimized	Ls	It has high disk throughput and IO that is Ideal for Big Data, SQL, and NoSQL databases.
GPU	NV, NC, NCv2, ND	It is a specialized virtual machine that is targeted for heavy graphic rendering and video editing. Available with single or multiple GPUs.
High performance compute	H, A8-11	It is the fastest and most powerful CPU virtual machine with optional high-throughput network interfaces (RDMA).

3 PRE-REQUISISTE

- Accounts in Azure
- A local Computer with 4 CPU, 16 GB RAM, 200 GB disk space

4 Creating Azure Virtual machine in Azure Portal

Step 1: Click on All services and then click on the Virtual machine button, as shown in the following image.



Step 2: Click on create, then you will be redirected to the Create Virtual machine page.

Choose your Resource Group : Aditi

Type the VM Name : DemoVM

Choose the VM Image = Windows Server 2016

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 * ⓘ Microsoft Partner Network

Resource group * ⓘ aditi [Create new](#)

Instance details

Virtual machine name * ⓘ DemoVM

Region * ⓘ (US) East US

Availability options ⓘ No infrastructure redundancy required

Image * ⓘ Windows Server 2016 Datacenter - Gen1 [See all images](#)

Azure Spot instance ⓘ ☐

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

Resource Group

VM Name

Select OS Image

Step 3: After selecting the image as Windows Server 2016 Now select the size and type of VM according to your requirements.

[Home](#) > [Virtual machines](#) >

Create a virtual machine

Virtual machine name * ⓘ DemoVM

Region * ⓘ (US) East US

Availability options ⓘ No infrastructure redundancy required

Image * ⓘ Windows Server 2016 Datacenter - Gen1 [See all images](#)

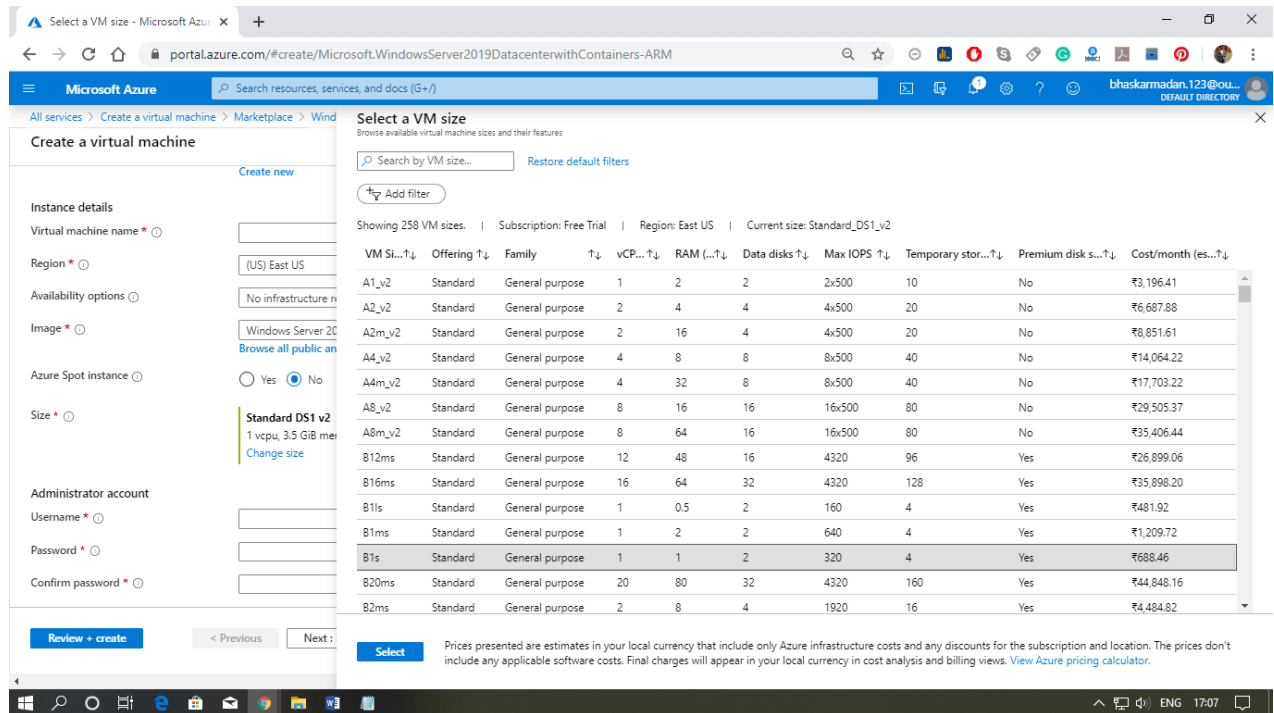
Azure Spot instance ⓘ ☐

Size * ⓘ Standard_D2s_v3 - 2 vcpus, 8 GiB memory (₹9,887.49/month) [See all sizes](#)

Administrator account

Click Here Size

Step 4: Select B1MS and click **Select**



The screenshot shows the Microsoft Azure portal interface for selecting a VM size. The left sidebar contains the 'Create a virtual machine' wizard with the following fields:

- Virtual machine name: [Empty]
- Region: (US) East US
- Availability options: No infrastructure n
- Image: Windows Server 2019 Datacenter with Containers - ARM
- Azure Spot instance: No
- Size: Standard DS1 v2 (1 vcpu, 3.5 GiB mem)
- Administrator account: Username [Empty], Password [Empty], Confirm password [Empty]

The main area is titled 'Select a VM size' and shows a table of available VM sizes. The B1ms size is highlighted.

VM Size	Offering	Family	vCPUs	RAM (GiB)	Data disks (TiB)	Max IOPS	Temporary storage (TiB)	Premium disk support	Cost/month (USD)
A1_v2	Standard	General purpose	1	2	2	2x500	10	No	\$3,196.41
A2_v2	Standard	General purpose	2	4	4	4x500	20	No	\$6,687.88
A2m_v2	Standard	General purpose	2	16	4	4x500	20	No	\$8,851.61
A4_v2	Standard	General purpose	4	8	8	8x500	40	No	\$14,064.22
A4m_v2	Standard	General purpose	4	32	8	8x500	40	No	\$17,703.22
A8_v2	Standard	General purpose	8	16	16	16x500	80	No	\$29,505.37
A8m_v2	Standard	General purpose	8	64	16	16x500	80	No	\$35,406.44
B12ms	Standard	General purpose	12	48	16	4320	96	Yes	\$26,899.06
B16ms	Standard	General purpose	16	64	32	4320	128	Yes	\$35,898.20
B1ls	Standard	General purpose	1	0.5	2	160	4	Yes	\$481.92
B1ms	Standard	General purpose	1	2	2	640	4	Yes	\$1,209.72
B1s	Standard	General purpose	1	1	2	320	4	Yes	\$688.46
B20ms	Standard	General purpose	20	80	32	4320	160	Yes	\$44,848.16
B2ms	Standard	General purpose	2	8	4	1920	16	Yes	\$4,484.82

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator.](#)

Step 4: After that, set a User name and password for your Virtual Machine then click next.

Administrator account

Username * ⓘ

aditi



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 *

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 to create rules to limit inbound traffic to known IP addresses.

Licensing

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

Would you like to use an existing
Windows Server license? * ⓘ

☐

Review + create

< Previous

Next : Disks >

Step 6: You are on the disk tab now, Select the disk type you need then click next to redirect on the networking page.

[Home](#) > [Virtual machines](#) >

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 * ⓘ

Premium SSD (locally-redundant storage)



Encryption type *

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



Enable Ultra Disk compatibility ⓘ

☐

Ultra disk is available only for Availability Zones in eastus.

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
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[Create and attach a new disk](#)

[Attach an existing disk](#)

Advanced

Step 7: Select the virtual network, subnet, and IP address for the Virtual machine. We are leaving it as default because we are creating it for the training purpose.

[Home](#) > [Virtual machines](#) >

Create a virtual machine ...

Basics Disks **Networking** Management 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 *	<div>aditi-vnet</div> <div>Create new</div>
Subnet *	<div>default (10.0.0.0/24)</div> <div>Manage subnet configuration</div>
Public IP	<div>(new) DemoVM-ip</div> <div>Create new</div>
NIC network security group	<div><input type="radio"/> None</div> <div><input checked="" type="radio"/> Basic</div> <div><input type="radio"/> Advanced</div>
Public inbound ports *	<div><input type="radio"/> None</div> <div><input checked="" type="radio"/> Allow selected ports</div>
Select inbound ports *	<div>RDP (3389)</div>

Review + create

< Previous

Next : Management >

Step 8: Now select the management tab, and click next.

[Home](#) > [Virtual machines](#) >

Create a virtual machine ...

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

Configure monitoring and management options for your VM.

Azure Security Center

Azure Security Center provides unified security management and advanced threat protection across hybrid cloud workloads. [Learn more](#)

✔ Your subscription is protected by Azure Security Center standard plan.

Monitoring

Boot diagnostics ⓘ

☒ Enable with managed storage account (recommended)

☐ Enable with custom storage account

☐ Disable

Enable OS guest diagnostics ⓘ

☐

Identity

System assigned managed identity ⓘ

☐

Azure AD

Login with Azure AD ⓘ

☐

Review + create

< Previous

Next : Advanced >

Step 9: In advanced settings, you can embed an extension to the virtual machine but leave everything as default and click **Next**

Create a virtual machine ...

Basics Disks Networking Management **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](#)

Custom data

Pass a 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

i Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. [Learn more about custom data for VMs](#)

User data

Review + create

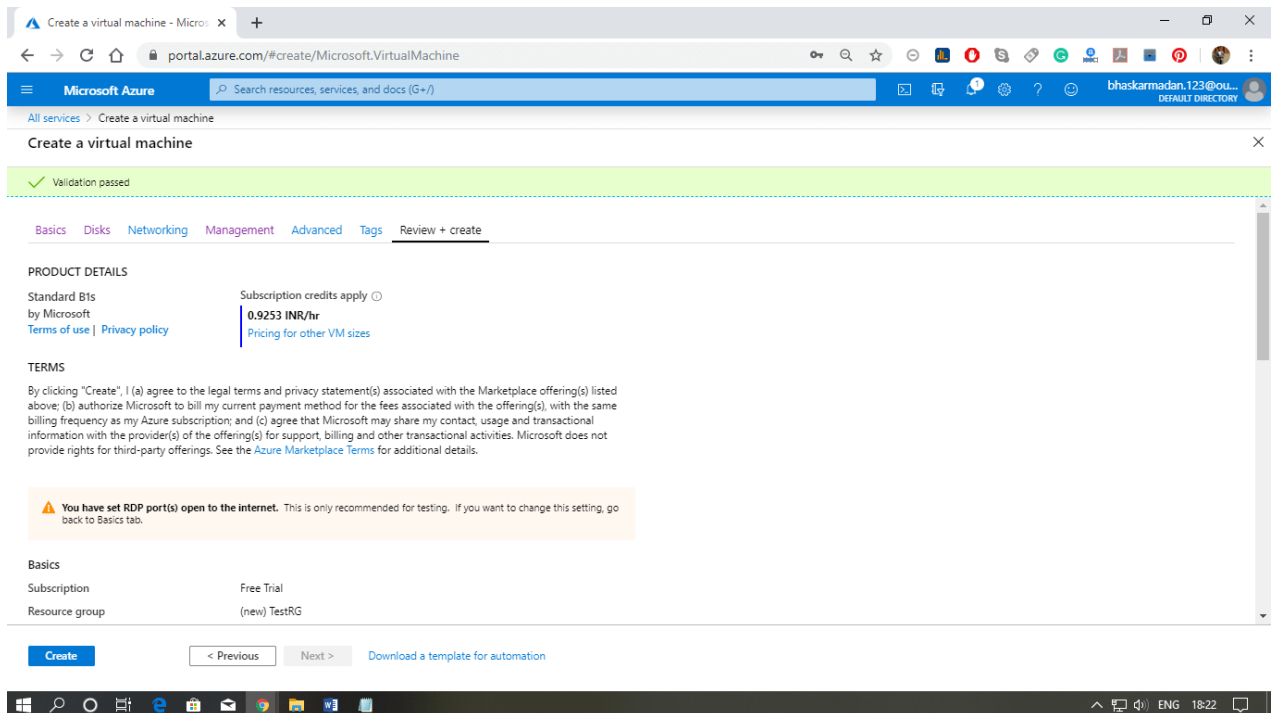
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Next : Tags >

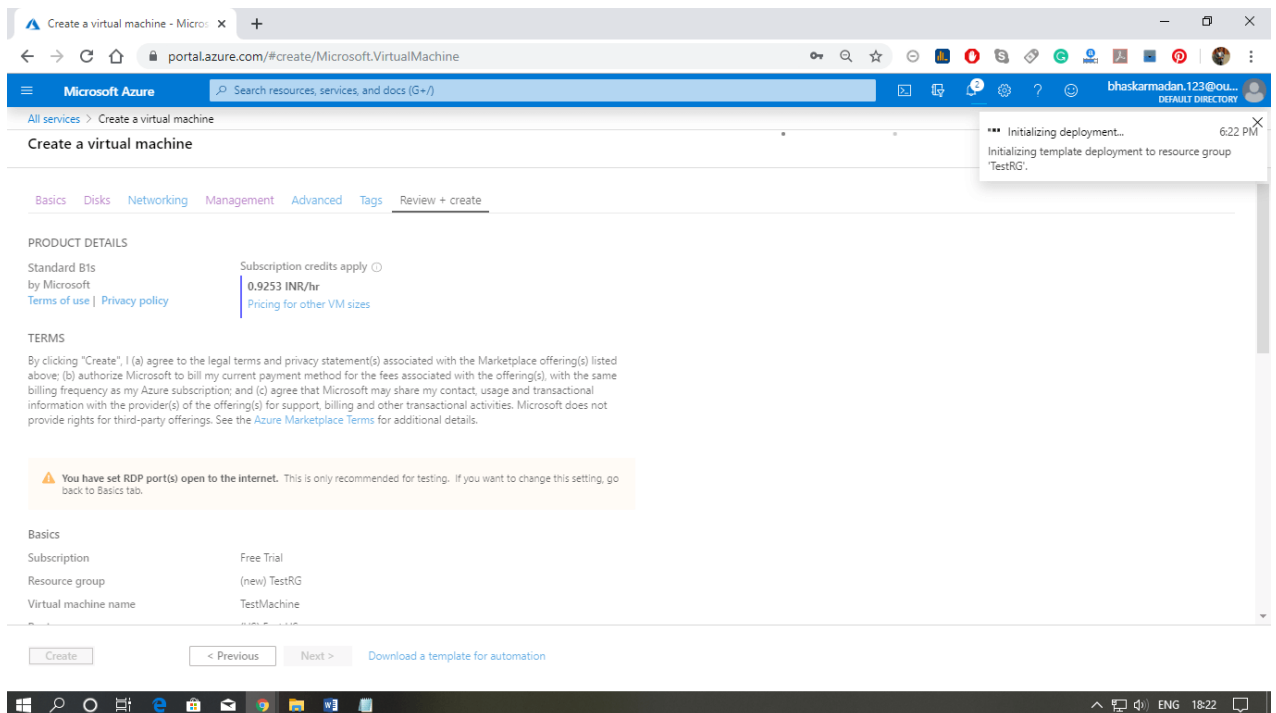
Click Next

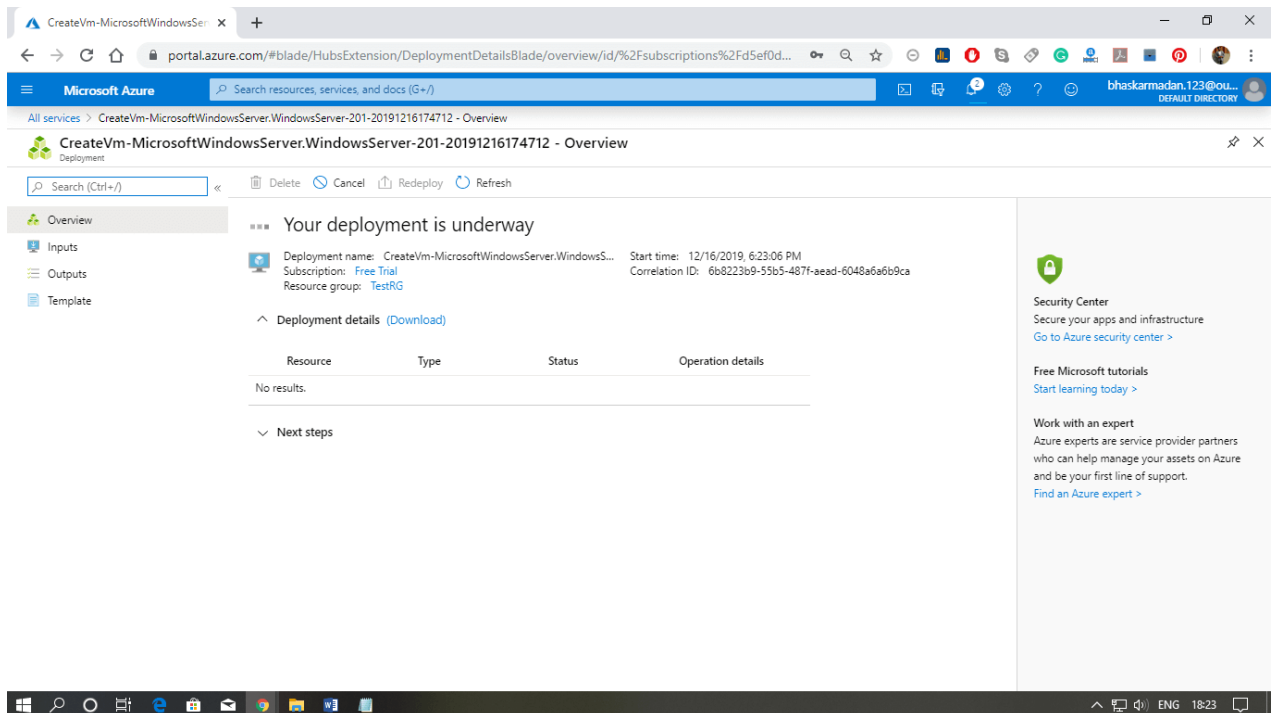
Step 10: Leave the tag default and click next

Step 10: Now, on the review and create a window, click on the create button



Step 11: Now, on the review and create a window, click on the create button





When your Virtual Machine is created, the following window will appear. You can now use your virtual machine.

