Placement Empowerment Program

Cloud Computing and DevOps Centre

Set Up a Virtual Machine in the CloudCreate a free-tier AWS, Azure, or GCP account. Launch a virtual machine and SSH into it.

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Introduction:

Setting up a Virtual Machine (VM) in the cloud allows users to run applications and services remotely. In this task, we will create a free-tier Virtual Machine on Microsoft Azure, which provides cloud computing resources for beginners and professionals. The process involves setting up an Azure account, launching a VM with the desired configuration, and connecting to it using SSH. We will choose the password-based authentication method to access the VM securely. Once connected, we can execute commands and deploy applications remotely. This setup helps in learning cloud computing, server management, and remote access. By completing this task, users gain hands-on experience with cloud-based virtual machines.

Overview:

Here's an overview of the task :

1. **Azure Account Setup** – Create a free-tier Azure account to access cloud resources.
2. **Virtual Machine Creation** – Launch a VM by selecting OS, size, and authentication type.
3. **Authentication Method** – Choose password-based login for easy SSH access.
4. **Retrieve Public IP** – Obtain the VM's public IP address from the Azure portal.
5. **SSH Connection** – Use the terminal to connect to the VM using the provided credentials.
6. **Remote Access & Usage** – Successfully log in to the VM and perform basic operations.

Objectives:

The objective of this task is to understand the fundamentals of cloud computing by setting up a virtual machine on Microsoft Azure. It aims to guide users in creating and configuring a free-tier VM, selecting appropriate settings, and enabling secure remote access using SSH with a password-based authentication method. By successfully connecting to the VM, users will learn how to manage and operate a cloud-based server. This hands-on experience helps in developing essential skills in cloud infrastructure, networking, and remote server

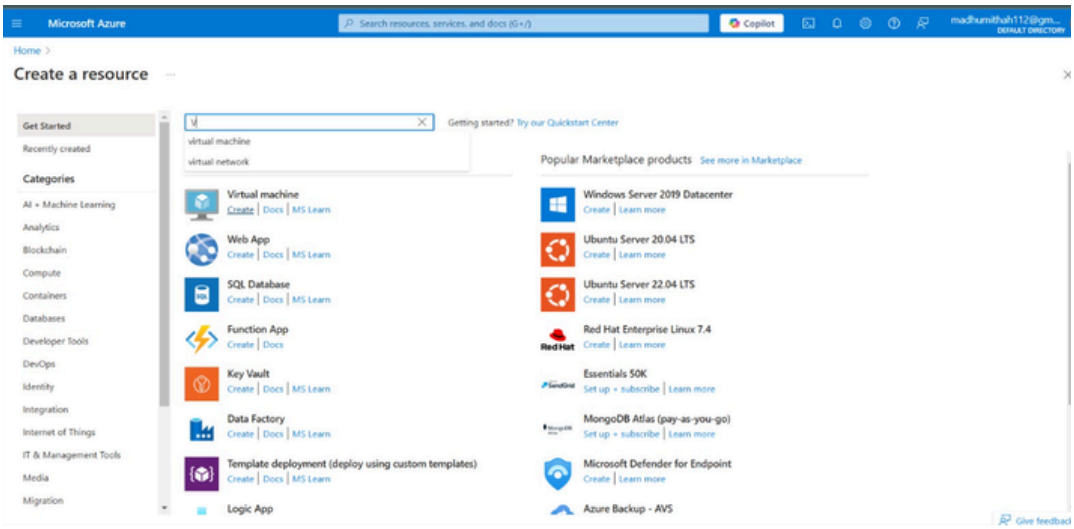
management, which are crucial for working with cloud platforms and modern computing environments.

Step-by-Step Overview

Step 1:

Create a Virtual Machine on Azure

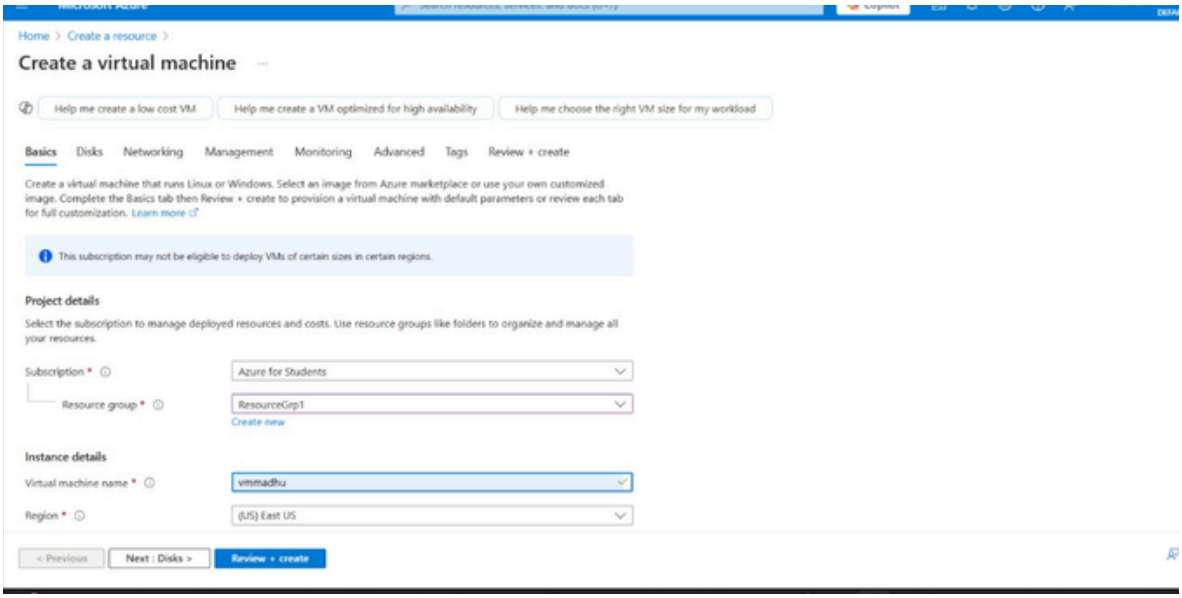
1. **Log in to the Azure portal:**
   - **Visit Azure Portal and log in with your Azure account credentials.**
   - **Create a Virtual Machine:**
- In the left pane, click on **"Create a resource"**.
- Under **"Compute"**, click on **"Virtual Machine"**.
  -



Step 2

Configure your VM:

- **Subscription:** Choose your free-tier subscription.
- **Resource Group:** Create a new resource group or select an existing one.
- **Virtual Machine Name:** Choose a unique name for your VM.
- **Region:** Choose a region that's eligible for the free tier (e.g., East US, West US).
- **Image:** Choose an image like Ubuntu (or any free-tier eligible OS).
- **Size:** Select a free-tier VM size, such as B1s.
- **Authentication Type:** Choose **SSH public key** for Linux VMs.
- **Username:** Choose a username for the VM (this will be used to log in via SSH).
- **SSH Public Key:** Either use an existing SSH public key or generate a new one (instructions for generating one are in Step 3).


Home > Create a resource >
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
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
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 * ResourceGrp1
Create new
Instance details
Virtual machine name * vmmadhu
Region * (US) East US
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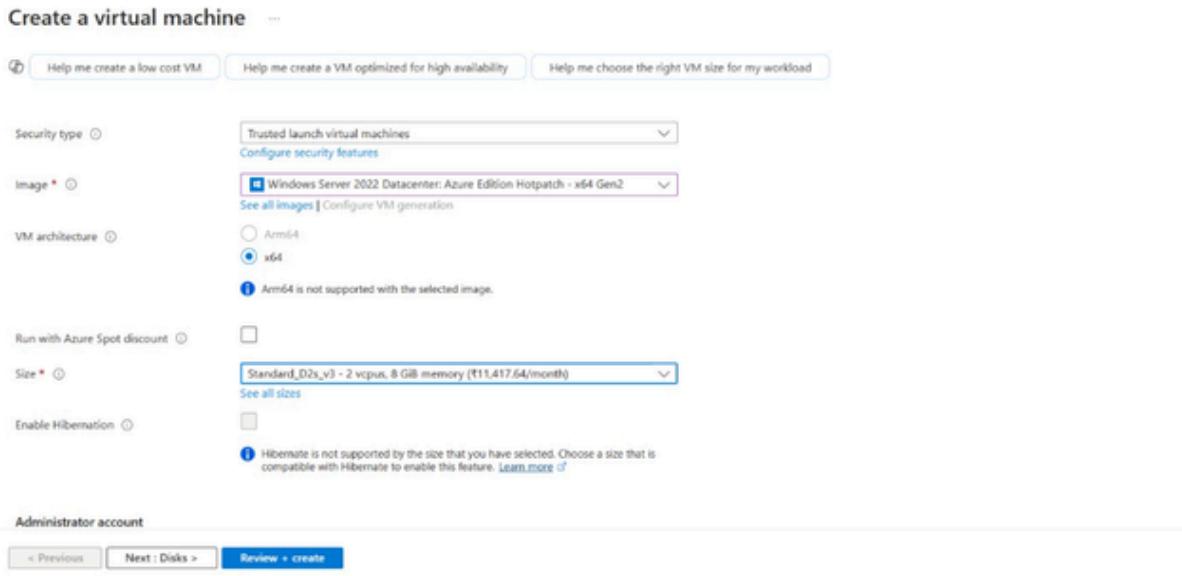
Create a virtual machine
Help me create a low cost VM
Help me create a VM optimized for high availability
Help me choose the right VM size for my workload
Security type Trusted launch virtual machines
Configure security features
Image * Windows Server 2022 Datacenter: Azure Edition Hotpatch - x64 Gen2
See all images | Configure VM generation
VM architecture Arm64
x64
Arm64 is not supported with the selected image.
Run with Azure Spot discount
Size * Standard_D2s_v3 - 2 vcpus, 8 GiB memory (₹11,417.64/month)
See all sizes
Enable Hibernation
Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. Learn more
Administrator account
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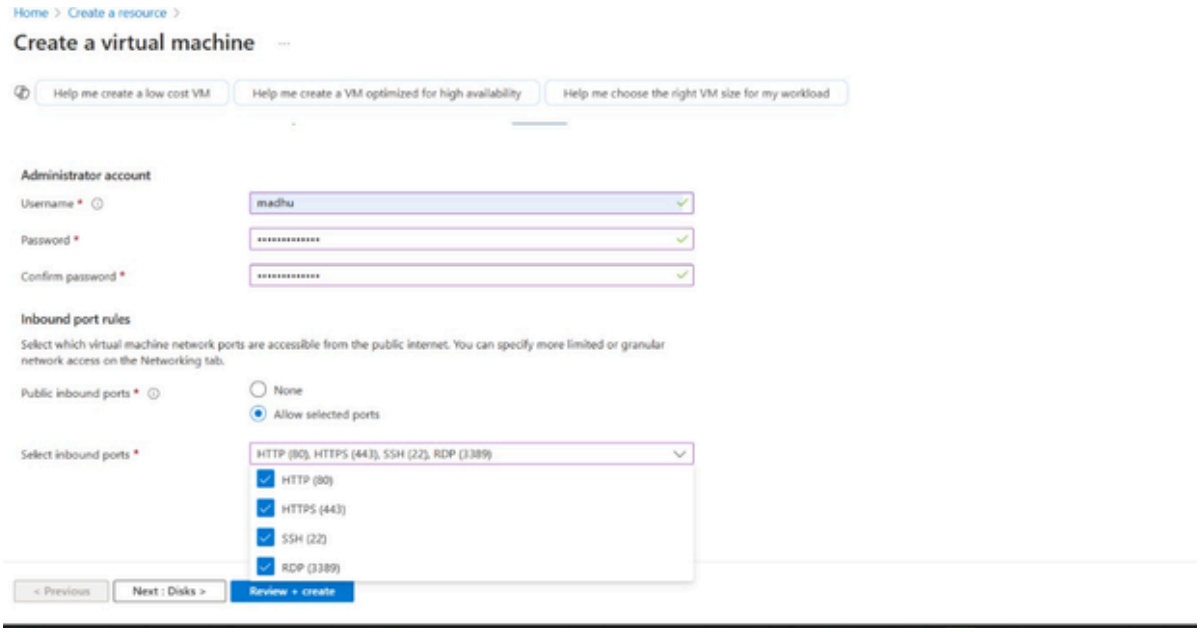
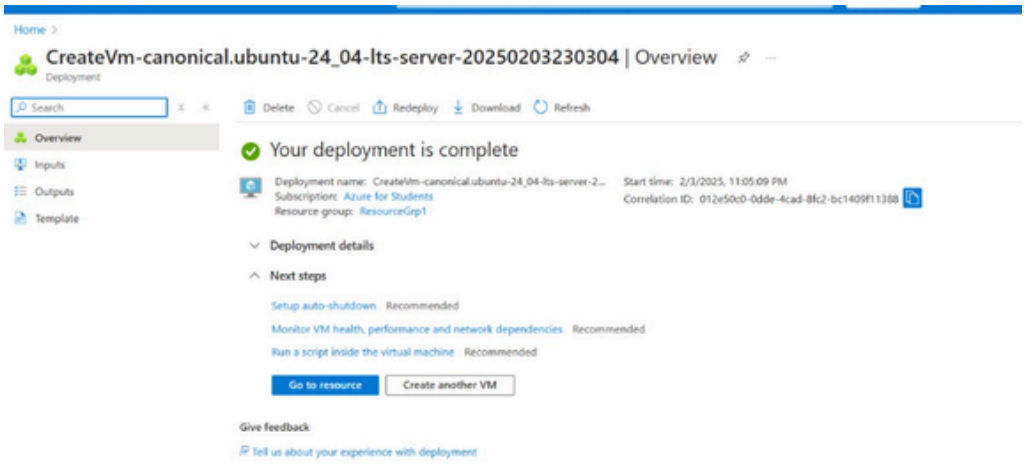
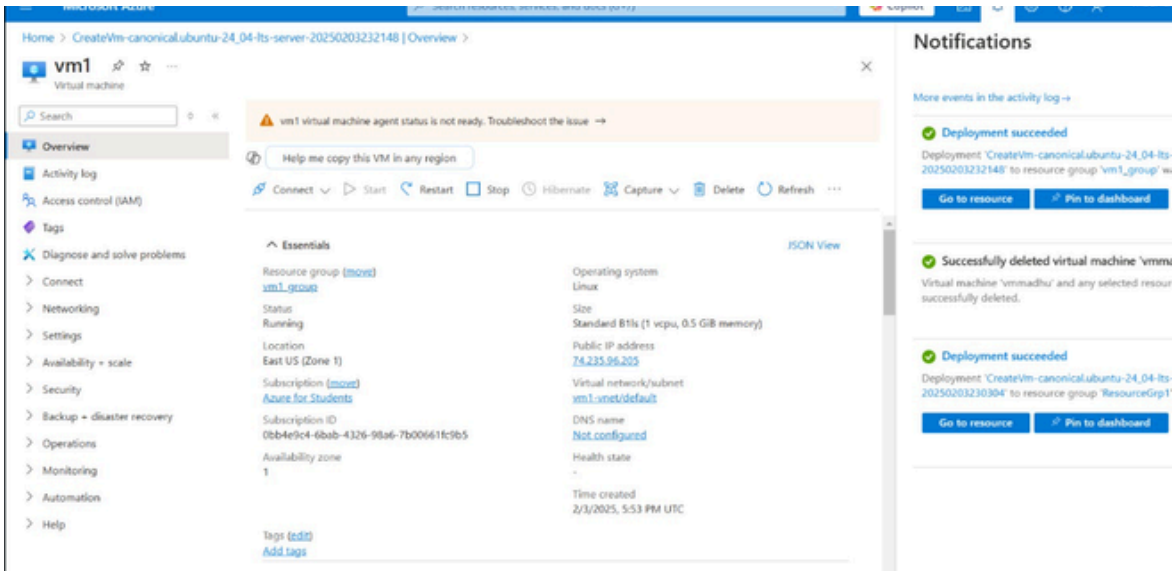

Home > Create a resource >
Create a virtual machine
Help me create a low cost VM
Help me create a VM optimized for high availability
Help me choose the right VM size for my workload
Administrator account
Username * madhu
Password *
Confirm password *
Inbound port rules
Select which virtual machine network 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 * HTTP (80), HTTPS (443), SSH (22), RDP (3389)
HTTP (80)
HTTPS (443)
SSH (22)
RDP (3389)
< Previous Next : Disks > Review + create



Step 3

Access your VM via SSH

1. **Get the VM's Public IP:**
   - **After your VM is created, go to Virtual Machines in the Azure portal.**
   - **Select your newly created VM, and note the Public IP Address under the Overview section.**



SSH into your VM:

- Open a terminal (or command prompt on Windows using Git Bash).

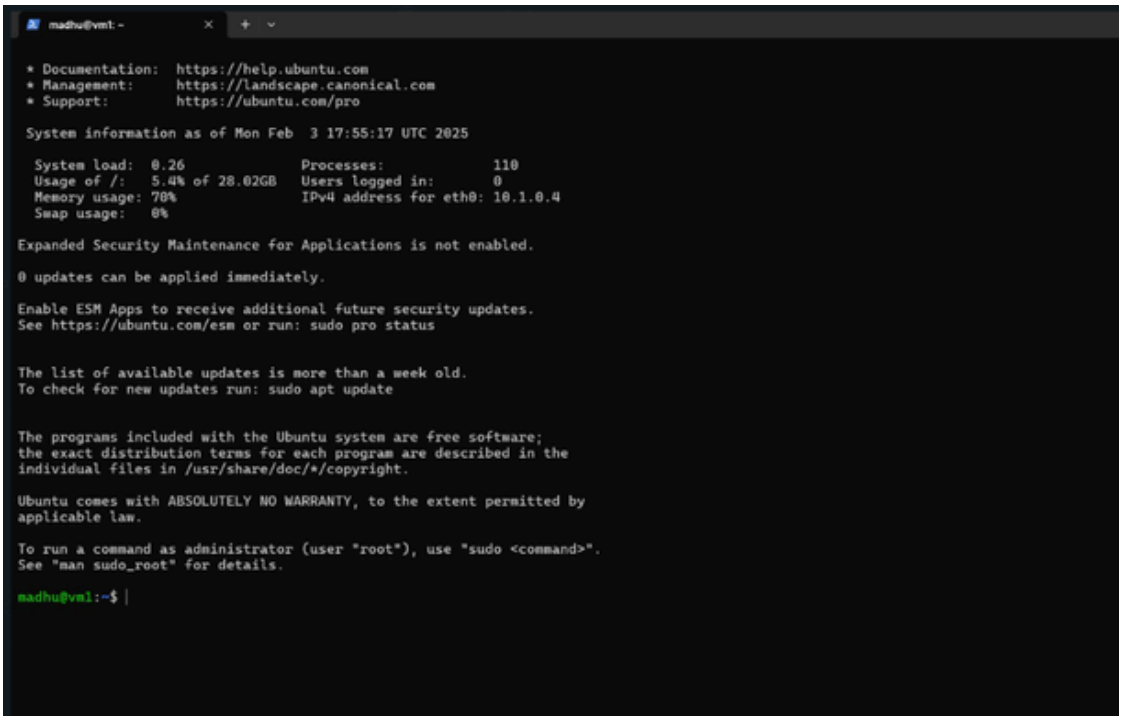
Use the following SSH command:ssh -i ~/.ssh/my_azure_key username@<VM_PUBLIC_IP>

Replace username with the one you selected while setting up the VM and <VM_PUBLIC_IP> with the actual IP address of the VM.

Step 4:

Accept the SSH fingerprint:

- The first time you connect, you might be asked to accept the SSH fingerprint. Type yes and hit Enter.



Outcomes

1. **Successfully created a free-tier Azure Virtual Machine.**
2. **Configured VM settings, including OS, size, and authentication method.**
3. **Retrieved the public IP address of the VM.**
4. **Connected to the VM using SSH with a password.**
5. **Verified remote access and executed basic commands inside the VM.**