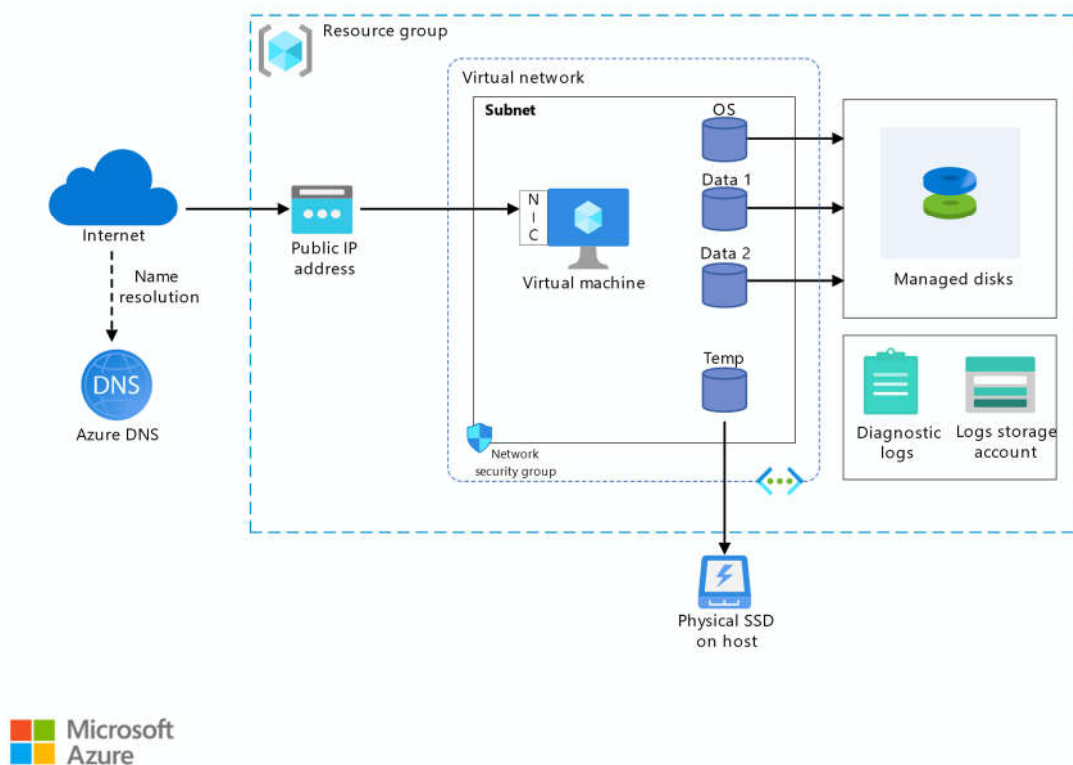


CSE 4750 Introduction to Cloud Computing Lab

Lab 1: Creating and managing VM/EC2 in Microsoft Azure

Instructions:

Architecture of VMs in Azure



Create virtual machine

1. Enter *virtual machines* in the search.
2. Under **Services**, select **Virtual machines**.
3. In the **Virtual machines** page, select **Create** and then **Azure virtual machine**. The **Create a virtual machine** page opens.

- Under **Instance details**, enter *myVM* for the **Virtual machine name** and choose *Windows Server 2022 Datacenter - Gen 2* for the **Image**. Leave the other defaults.

Instance details

Virtual machine name * ⓘ

Region * ⓘ

Availability options ⓘ

Security type ⓘ
[Configure security features](#)

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

VM architecture ⓘ
☐ Arm64
☒ x64
 Arm64 is not supported with the selected image.

- Under **Administrator account**, provide a username, such as *azureuser* and a password. The password must be at least 12 characters long and meet the [defined complexity requirements](#).

Administrator account

Username * ⓘ

Password * ⓘ

Confirm password * ⓘ

- Under **Inbound port rules**, choose **Allow selected ports** and then select **RDP (3389)** and **HTTP (80)** from the drop-down.

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.

- Leave the remaining defaults and then select the **Review + create** button at the bottom of the page.

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 Azure hybrid benefit compliance](#)

[Review + create](#)


[< Previous](#)

[Next : Disks >](#)

8. After validation runs, select the **Create** button at the bottom of the page.

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

Create a virtual machine ...

 Validation passed

Basics

Subscription	myAzureSubscription
Resource group	(new) myVM_group_08290738
Virtual machine name	myVM
Region	East US
Availability options	No infrastructure redundancy required
Security type	Standard
Image	Windows Server 2022 Datacenter: Azure Edition - Gen2
VM architecture	x64
Size	Standard D2s v3 (2 vcpus, 8 GiB memory)
Username	azureuser
Public inbound ports	RDP
Already have a Windows license?	No

[Create](#)

[< Previous](#)

[Next >](#)

[Download a template for automation](#)

9. After deployment is complete, select **Go to resource**.

Next steps

[Setup auto-shutdown](#) Recommended

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

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

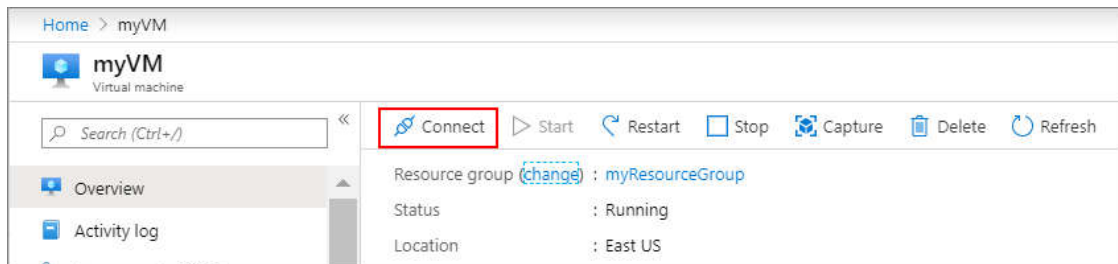
[Go to resource](#)

[Create another VM](#)

Connect to virtual machine

Create a remote desktop connection to the virtual machine. These directions tell you how to connect to your VM from a Windows computer. On a Mac, you need an RDP client such as this [Remote Desktop Client](#) from the Mac App Store.

1. On the overview page for your virtual machine, select the **Connect > RDP**.



2. In the **Connect with RDP** tab, keep the default options to connect by IP address, over port 3389, and click **Download RDP file**.

RDP SSH Bastion

Connect with RDP

✓ Suggested method for connecting

To connect to your virtual machine via RDP, select an IP address, optionally change the port number, and download the RDP file.

IP address *

Public IP address (192.168.1.253) ▼

Port number *

3389

Download RDP File

3. Open the downloaded RDP file and click **Connect** when prompted.
4. In the **Windows Security** window, select **More choices** and then **Use a different account**. Type the username as **localhost\username**, enter the password you created for the virtual machine, and then click **OK**.
5. You may receive a certificate warning during the sign-in process. Click **Yes** or **Continue** to create the connection.

Install web server

To see your VM in action, install the IIS web server. Open a PowerShell prompt on the VM and run the following command:

PowerShell:

```
Install-WindowsFeature -name Web-Server -IncludeManagementTools
```

When done, close the RDP connection to the VM.

View the IIS welcome page

In the portal, select the VM and in the overview of the VM, hover over the IP address to show **Copy to clipboard**. Copy the IP address and paste it into a browser tab. The default IIS welcome page will open, and should look like this:

Task:

- I. Create 2 VMs, 1 Ubuntu server image and 1 Window server image.
- II. Establish a connection to those servers using HTTP, RDS, SSH (use putty for ssh)
- III. Install a web server on those VMs server

Clean up resources

When no longer needed, you can delete the resource group, virtual machine, and all related resources.

1. On the Overview page for the VM, select the **Resource group** link.
2. At the top of the page for the resource group, select **Delete resource group**.
3. A page will open warning you that you are about to delete resources. Type the name of the resource group and select **Delete** to finish deleting the resources and the resource group.