

## Module 2: Azure Virtual Machines and Networking

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### Demo - 1

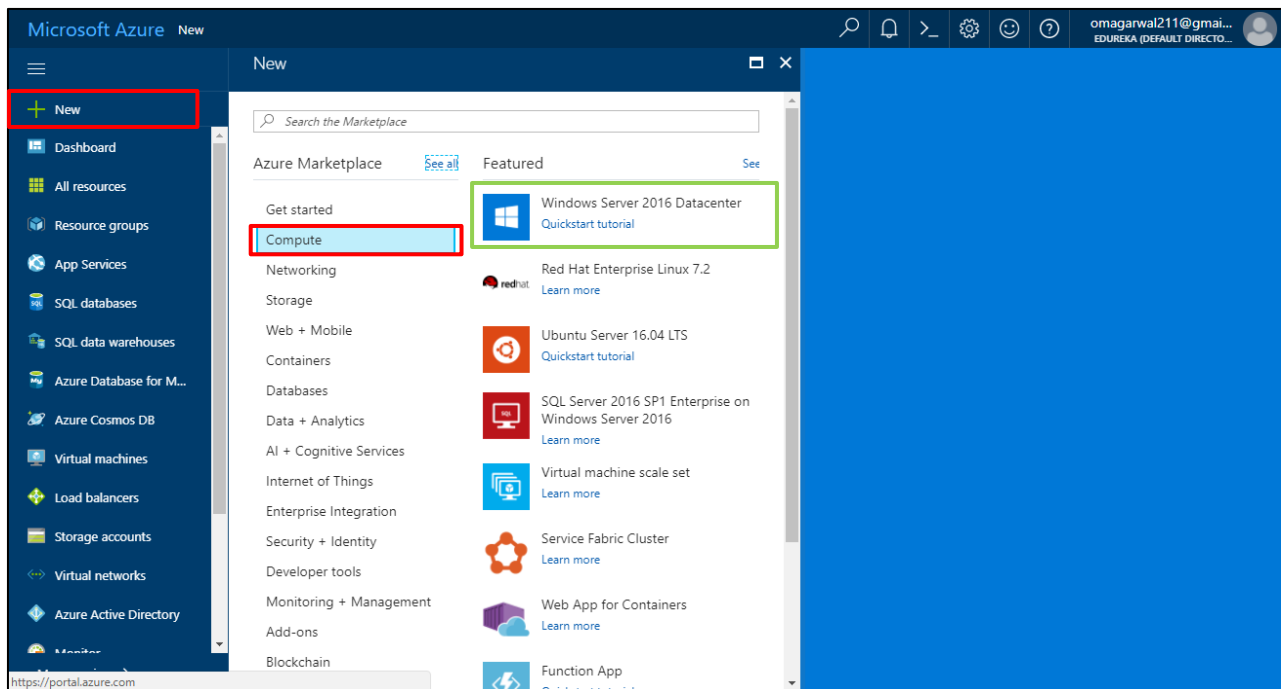
edureka!

**edureka!**

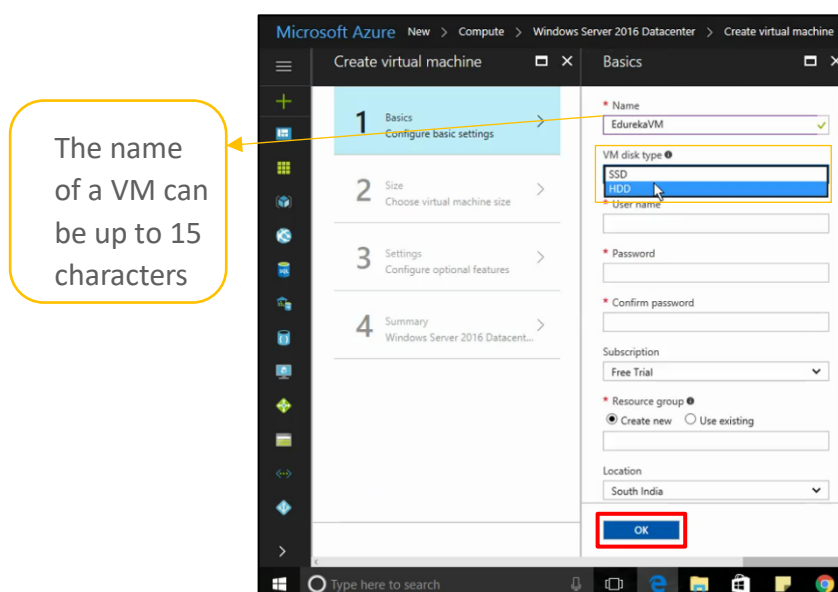
## Demo 1 – Creating A Windows Virtual Machine And Connect To It

### ➤ Creating a Windows Virtual Machine

**Step 1:** In the Portal, Goto: **+New > Compute > Select a Windows Server of your choice:**



**Step 2:** In the VM Creation **Basic** blade, Enter the VM name and select the desired disk type as shown below:



**Step 3:** After selecting the Disk type, Enter the Credentials for VM server login and other select the desired options:

Microsoft Azure New > Create virtual machine > Basics

1 Basics  
Configure basic settings

2 Size  
Choose virtual machine size

3 Settings  
Configure optional features

4 Summary  
Windows Server 2016 Datacent...

Name: EurekaVM ✓

VM disk type: HDD

User name: edurekaRA ✓

Password: ..... ✓

Confirm password: ..... ✓

Subscription: Pay-As-You-Go

Resource group: Create new (selected) / Use existing

Resource group: Edu533rg ✓

Location: South India

Save money

OK

Enter User Credentials that you use to login to your VM for a Terminal

Create a New Resource Group for this purpose

**Step 4:** In the VM Size blade, select the desired VM size from the list of different Tier listed below

Microsoft Azure New > Create virtual machine > Choose a size

1 Basics  
Done

2 Size  
Choose virtual machine size

3 Settings  
Configure optional features

4 Summary  
Windows Server 2016 Datacent...

Choose a size  
Browse the available sizes and their features

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. Recommended sizes are determined by the publisher of the selected image based on hardware and software requirements.

Supported disk type: HDD

Minimum vCPUs: 1

Minimum memory (GiB): 0

Name	vCPU	Memory	Price (INR/MONTH)
D1_V2 Standard	1	3.5 GB	6,442.00
A1 Standard	1	1.75 GB	4,327.45

★ Recommended View all

You can filter the disk types (SSD/HDD) here

Select View all to check all kinds of disks available

**Step 5:** In the VM settings blade, you can select an existing Availability set or create one (discussed in Mod-4 in detail):

**High availability**

- \* Availability set: None

**Storage**

Use managed disks: ☐ No ☒ Yes

**Network**

- \* Virtual network: (new) Edu533rg-vnet
- \* Subnet: default (10.0.0.0/24)
- \* Public IP address: (new) EdurekaVM-ip
- \* Network security group (firewall): (new) EdurekaVM-nsg

**Extensions**

Extensions: ☐ No ☒ Yes

**OK**

Availability sets provide redundancy to your application

- It is recommended that you group two or more virtual machines in an availability set
- This configuration ensures that during either a **planned or unplanned maintenance event**, at least one virtual machine will be available

**Planned maintenance events** are periodic updates made by Microsoft to the underlying Azure platform to improve overall reliability, performance, and security of the platform infrastructure that your VMs run on

**Unplanned maintenance events** occur when the hardware or physical infrastructure underlying your VM has faulted because of local network failures, local disk failures, or other rack level failures

**Step 6:** To create an Availability Set, click on Availability set > Create new > Fill in the details and click **OK**:

**Settings**

**High availability**

- \* Availability set: None

**Storage**

Use managed disks: ☐ No ☒ Yes

**Network**

- \* Virtual network: (new) Edu533rg-vnet
- \* Subnet: default (10.0.0.0/24)
- \* Public IP address: (new) EdurekaVM-ip
- \* Network security group (firewall): (new) EdurekaVM-nsg

**Extensions**

Extensions: ☐ No ☒ Yes

**OK**

**Change availability set**

+ Create new

None

**Create new**

- \* Name: Edu533aset
- Fault domains: 2
- Update domains: 5
- Use managed disks: ☐ No (Classic) ☒ Yes (Aligned)

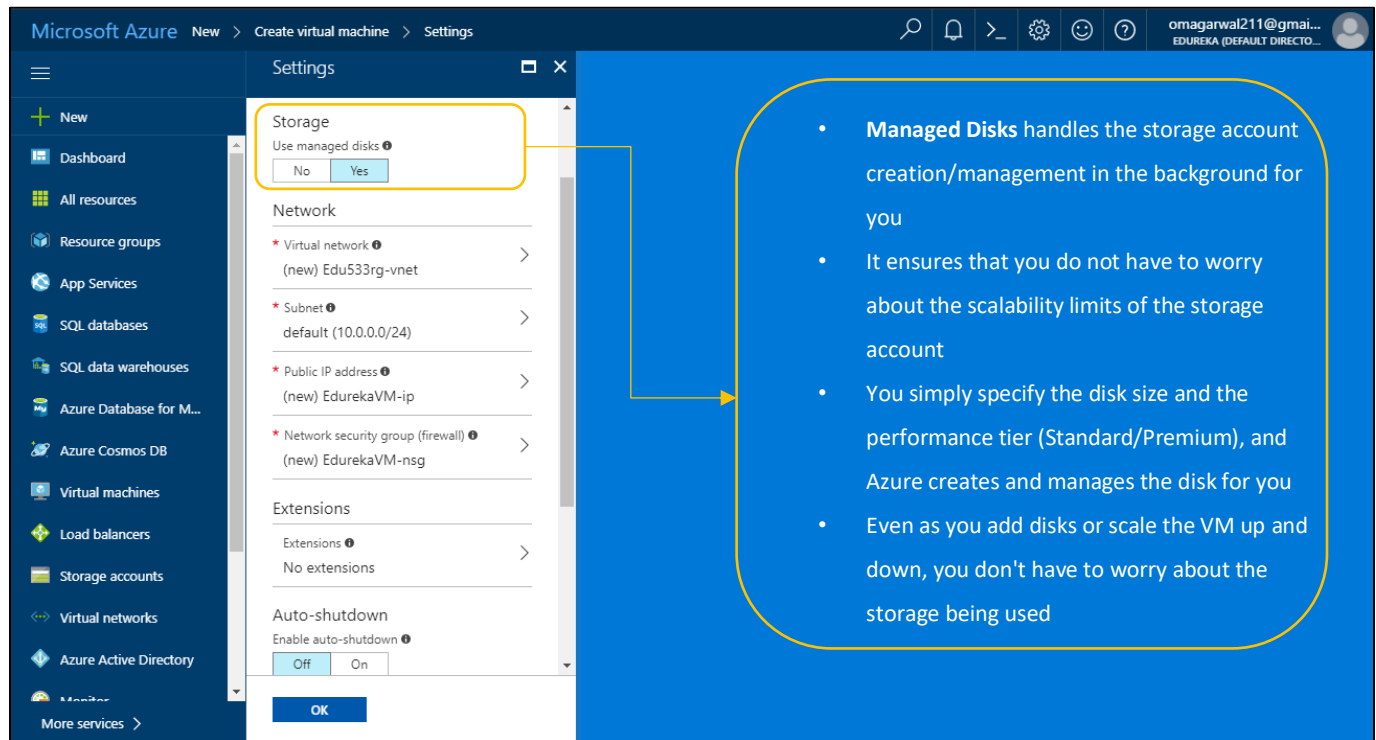
**OK**

**Update domains** indicate groups of VMs and underlying physical hardware that can be rebooted at the same time, 5 update domains are assigned by default and this can be set to between 1 and 20

This ensures that, during any planned/unplanned maintenance event, at least **One VM will be available** and meet the **99.95% Azure SLA**

**Fault domains** define the group of VMs that share a common power source and network switch and by default, the VMs are separated across up to three fault domains and can be changed to between 1 and 3

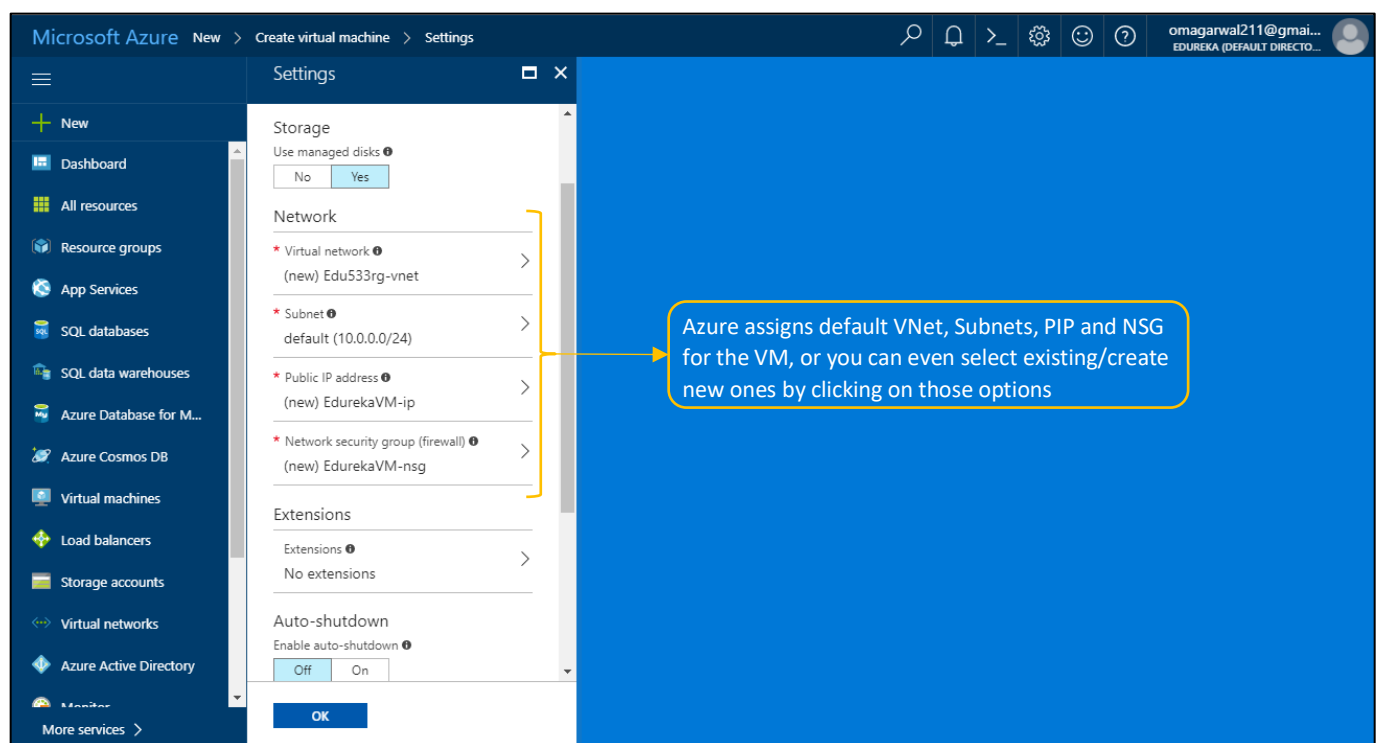
**Step 7:** In the Settings blade, select the options for Managed disks as per your requirements:



The screenshot shows the 'Settings' blade for a new virtual machine in the Microsoft Azure portal. The 'Storage' section is highlighted with a yellow box, showing the 'Use managed disks' toggle set to 'Yes'. A yellow arrow points from this box to a callout box on the right. The callout box contains the following text:

- **Managed Disks** handles the storage account creation/management in the background for you
- It ensures that you do not have to worry about the scalability limits of the storage account
- You simply specify the disk size and the performance tier (Standard/Premium), and Azure creates and manages the disk for you
- Even as you add disks or scale the VM up and down, you don't have to worry about the storage being used

**Step 8:** In the Settings blade, you can either select any existing VNets/Subnets/PIP/NSG or Create new ones here:



The screenshot shows the 'Settings' blade for a new virtual machine in the Microsoft Azure portal. The 'Network' section is highlighted with a yellow box, showing the 'Virtual network' dropdown set to '(new) Edu533rg-vnet'. A yellow arrow points from this box to a callout box on the right. The callout box contains the following text:

Azure assigns default VNet, Subnets, PIP and NSG for the VM, or you can even select existing/create new ones by clicking on those options

**Step 9:** In the VM setting blade, you can add any type of available **Extensions** by clicking on the option:

Microsoft Azure New > Create virtual machine > Settings > Extensions > New resource

**Extensions**

Add new features, like configuration management or antivirus protection, to your virtual machine using extensions. [Learn more](#)

No extensions

[Add extension](#)

Azure VM extensions are **small applications** that provide post-deployment configuration and automation tasks on Azure VMs

For example:

- Apply PowerShell Desired State configurations to a virtual machine by using the DSC extension for Windows, which we will discuss briefly in Module 4
- You can even add tools such as antivirus, security, etc

Available extensions:

- Datadog Agent for Windows (Datadog Inc.)
- Custom Script Extension (Microsoft Corp.)
- PowerShell Desired State Configuration (Microsoft Corp.)
- Octopus Deploy Tentacle Agent (Octopus Deploy Pty. Ltd.)
- Protection (Windows) (Symantec Corp.)
- Deep Security Agent

**Step 10:** At the end of the VM creation, let us configure the monitoring of the resources and click **OK**:

Microsoft Azure New > Create virtual machine > Settings

**Monitoring**

Boot diagnostics

Disabled **Enabled**

Guest OS diagnostics

Disabled **Enabled**

Diagnostics storage account

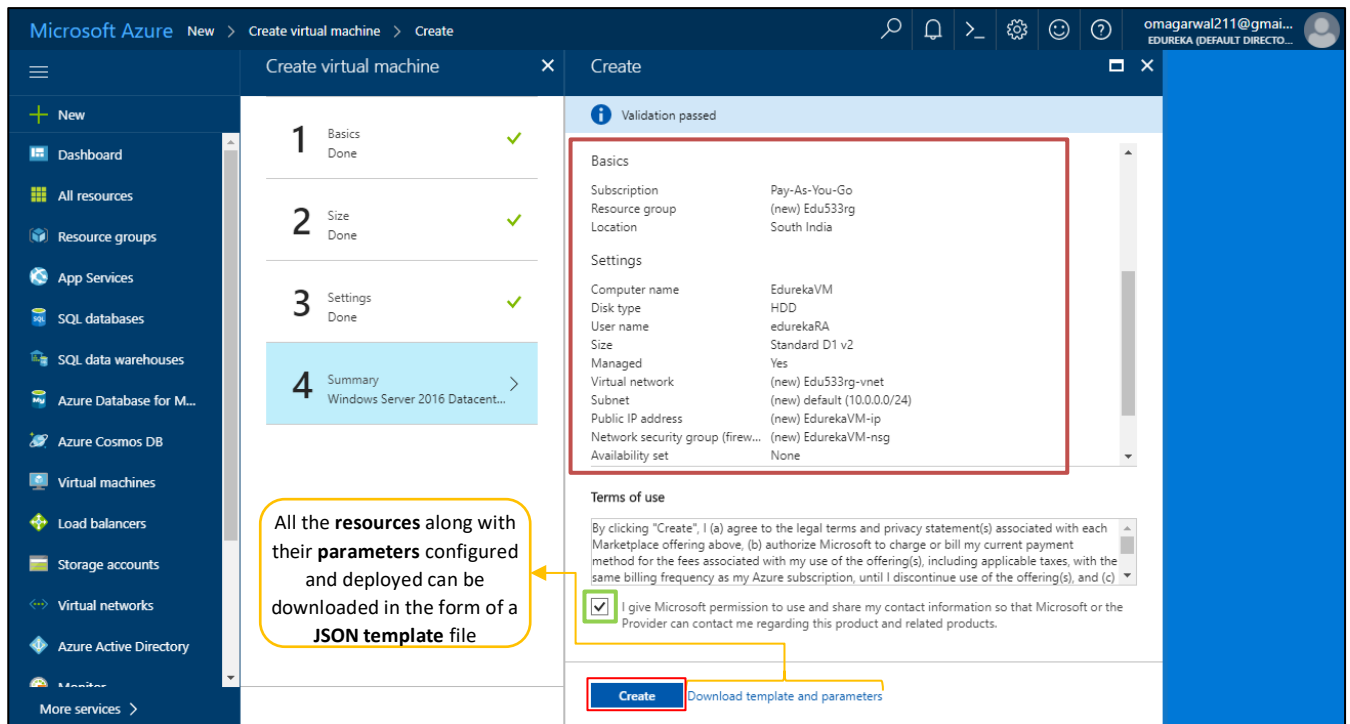
(new) edu533rgdiag987

**OK**

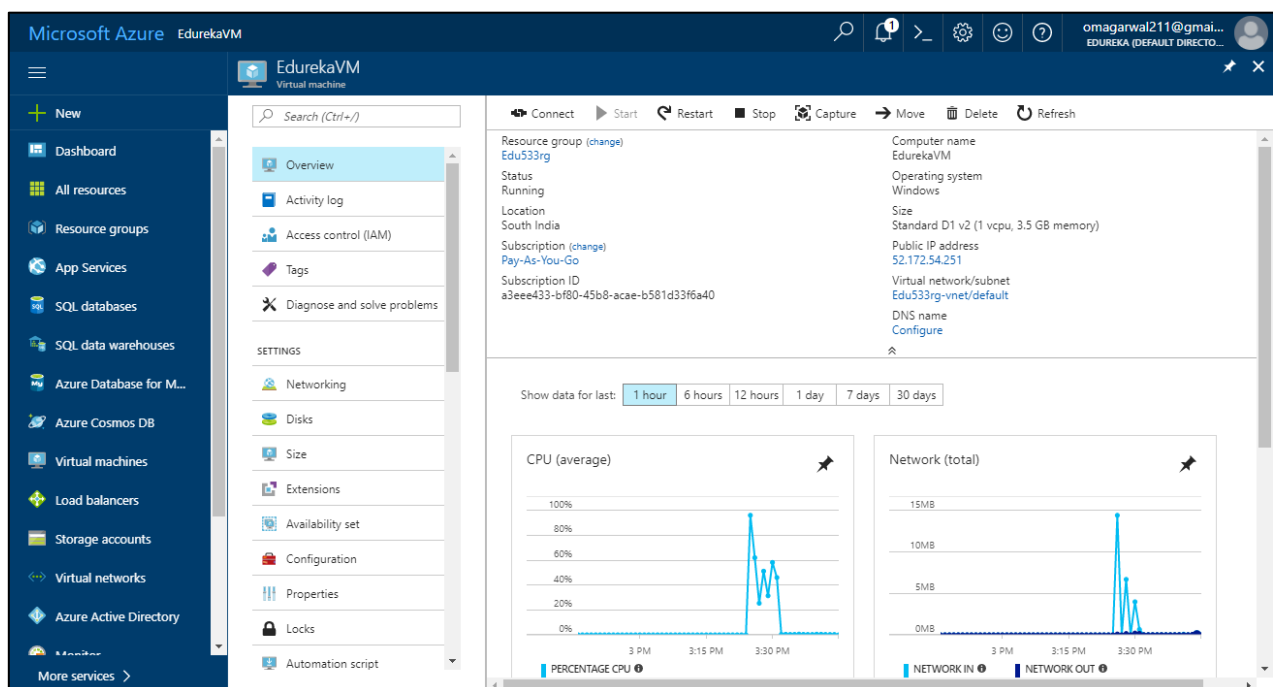
- While booting the VM, there can be many reasons why that VM gets into a non-bootable state
- The Boot diagnostics feature enable you to easily diagnose and recover your VMs from boot failures

Create a new Diagnostics storage account in order to store all the diagnostic log data by mentioning the resource group

**Step 11:** You will be directed to the **Summary** page after successful validation and below is the summary of our VM, click **Create**:

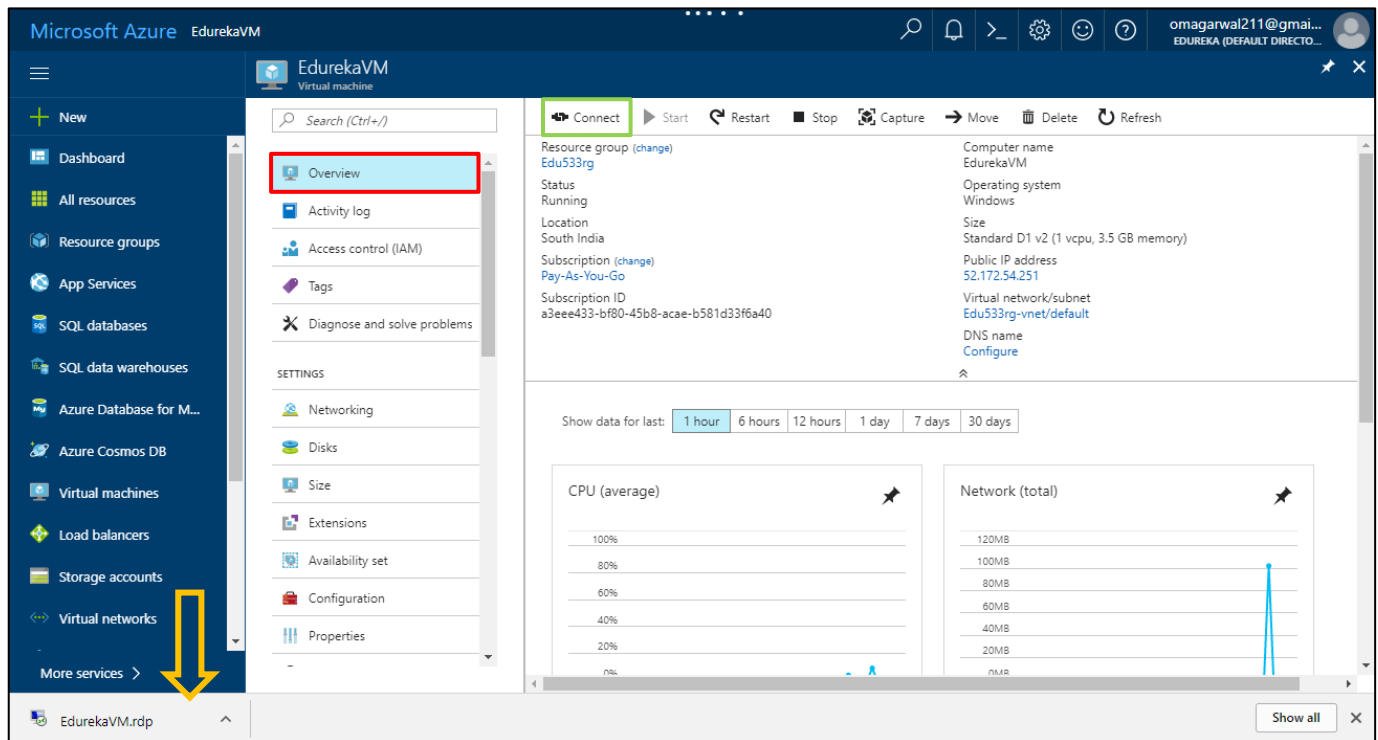


**Step 12:** Once the new VM is deployed and running, you will be redirected to the Overview window as shown below:

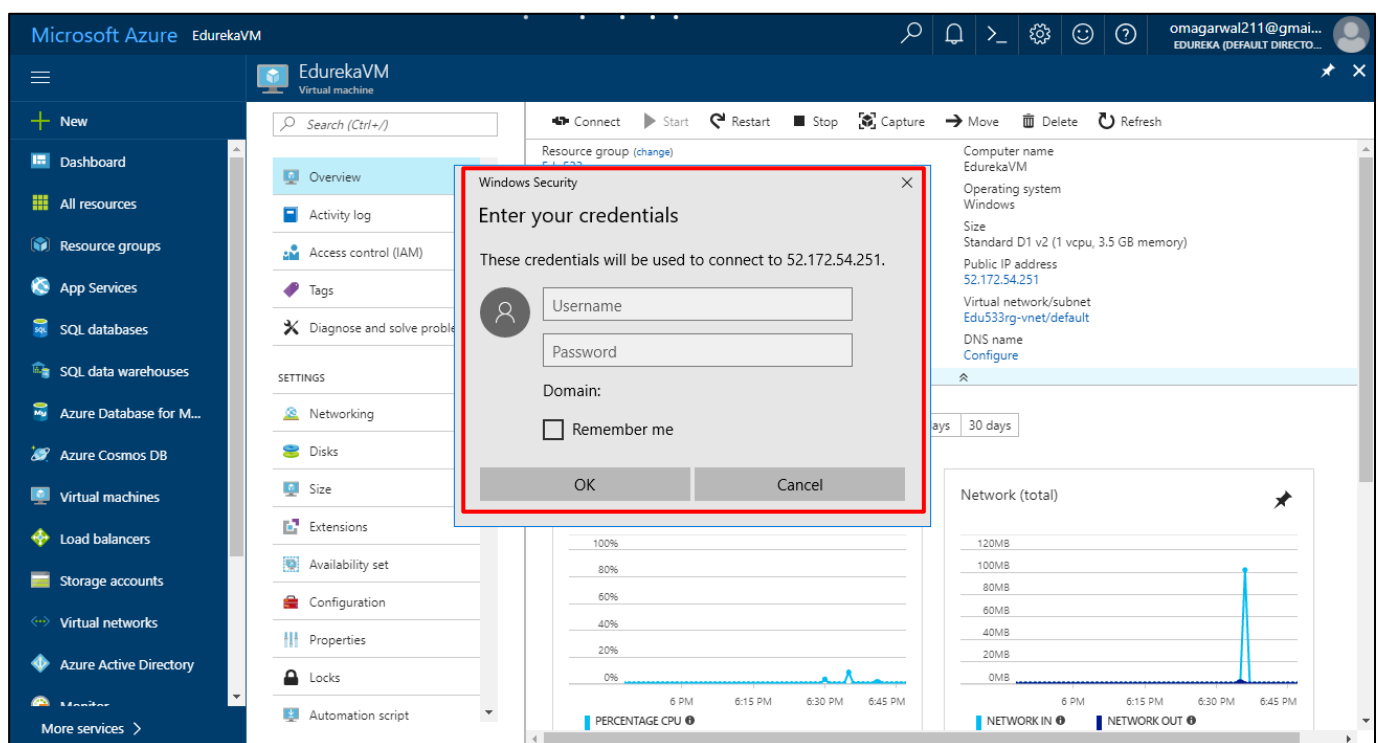


## ➤ Connecting to a Windows VM

**Step 1:** In the VM **Overview** window, Click on the **Connect** option on the top to download the **RDP file**:

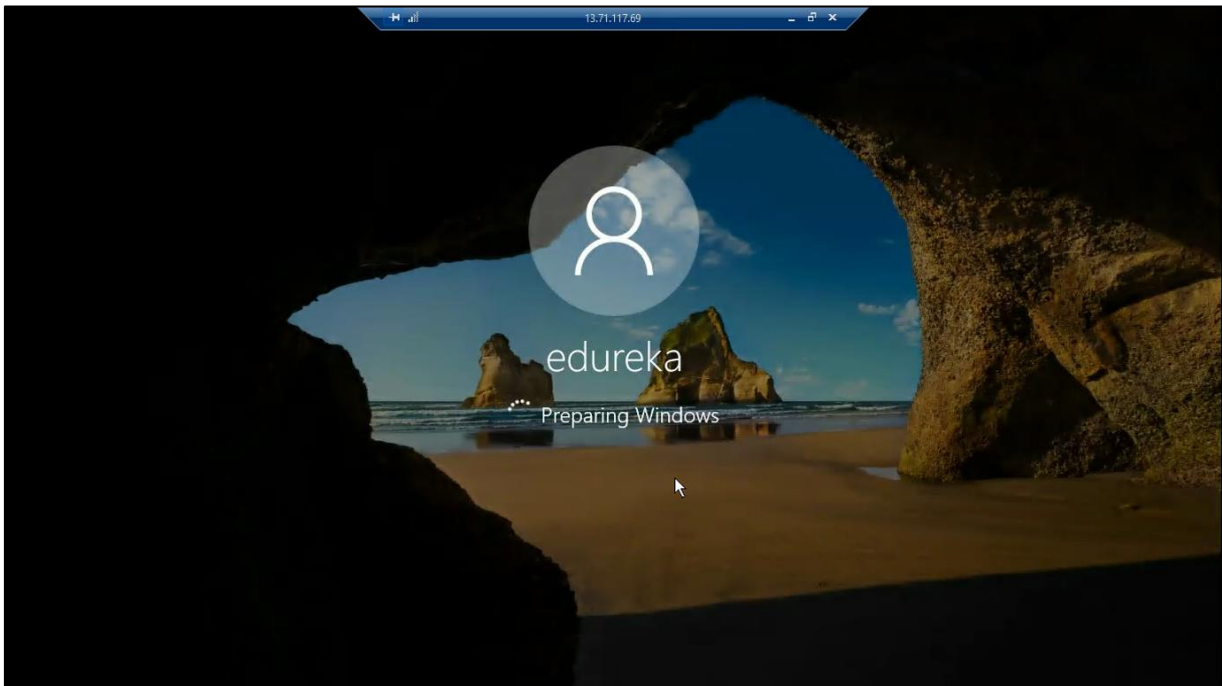


**Step 2:** Once downloaded, **Open the RDP file** > **Allow Connection** > **Enter the login Credentials**:

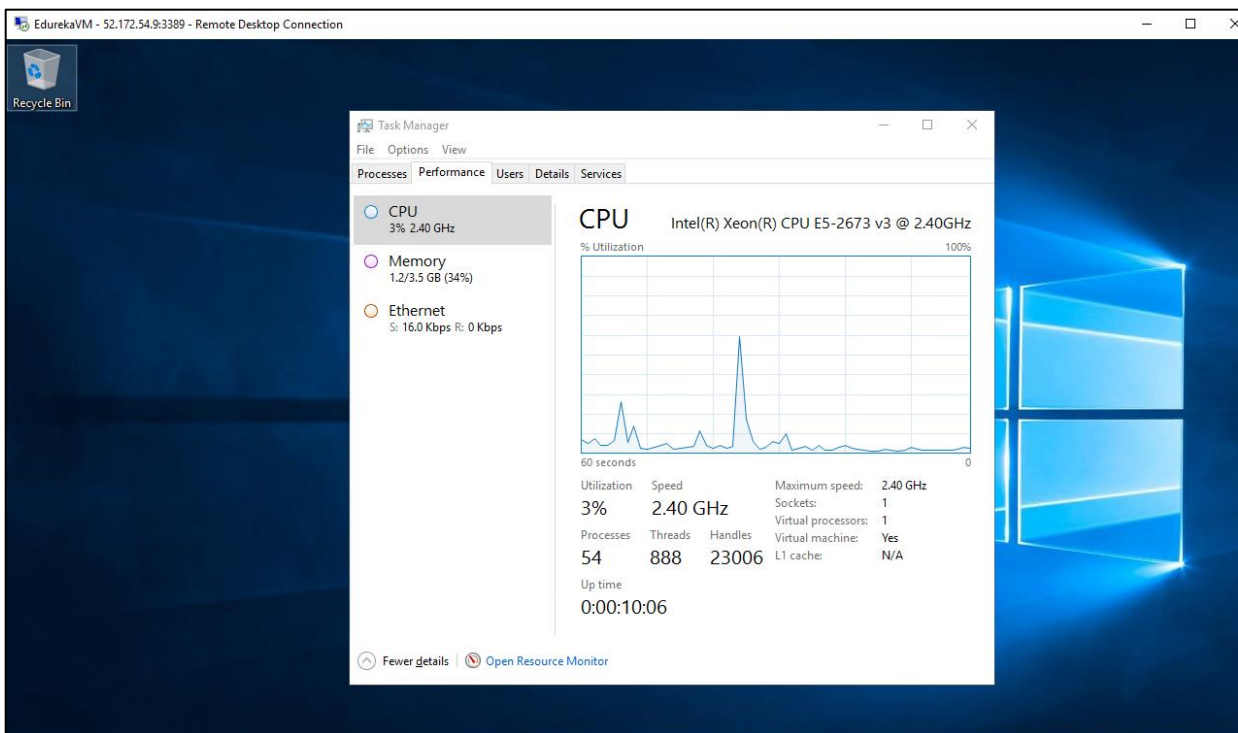




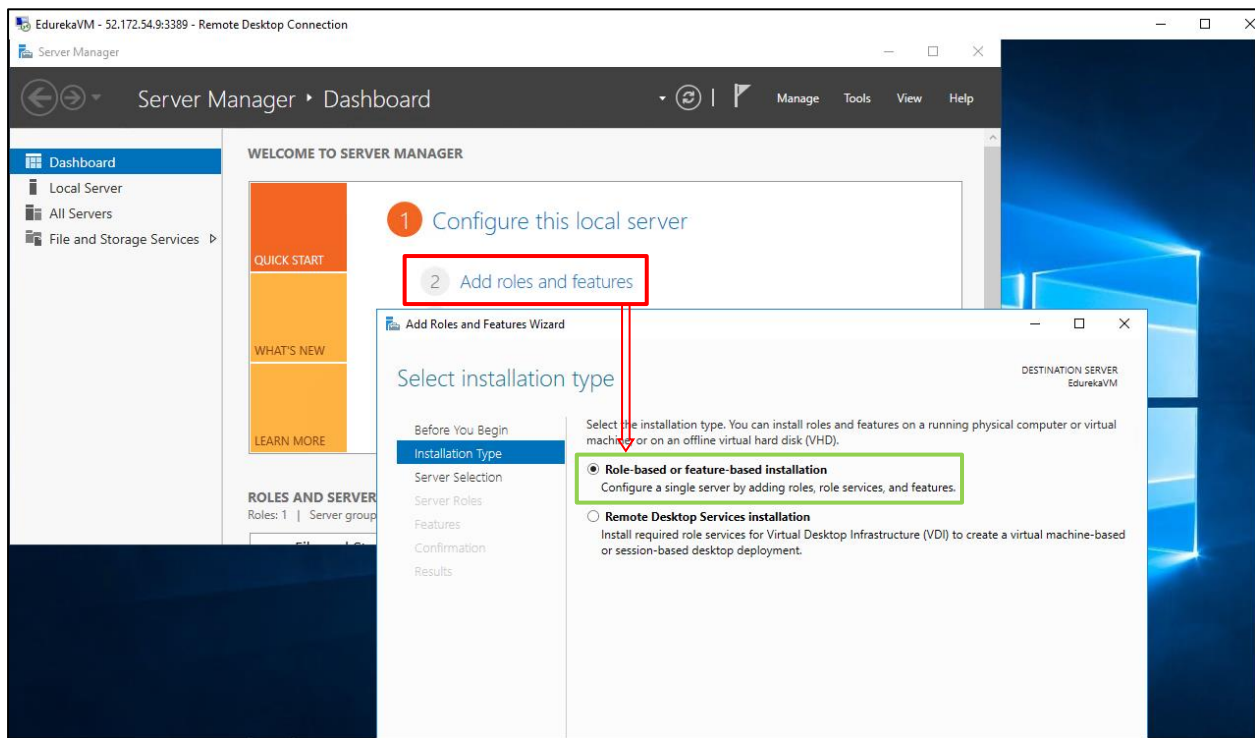
**Step 3:** Once you login with the Credentials, the Remote Desktop Connection to the Virtual Machine is successfully established:



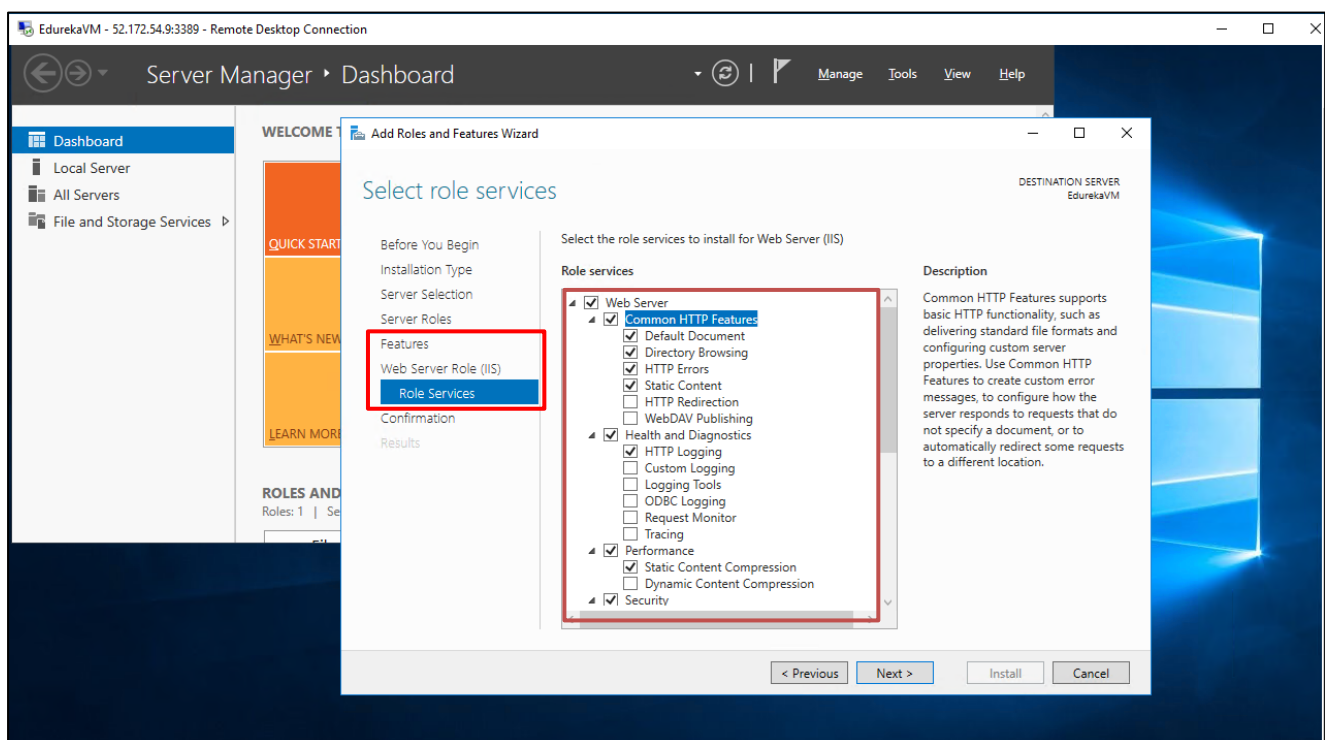
**Step 4:** In the New VM, Goto: **Start Menu** > Find **Task Manager** > Performance > Check **Utilization** and **Throughput**:



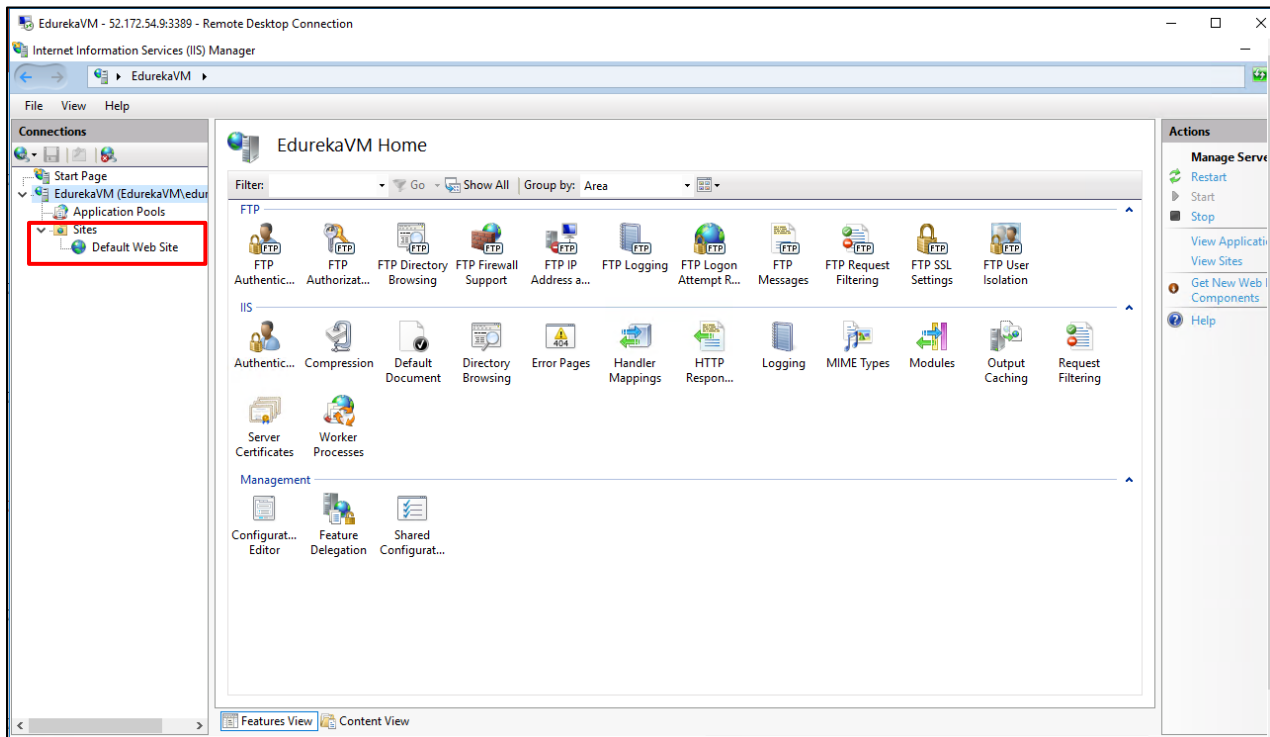
**Step 5:** Open the **Task Manager** from the Start Menu > Select **Add Roles** > Click Next > Select the desired Type:



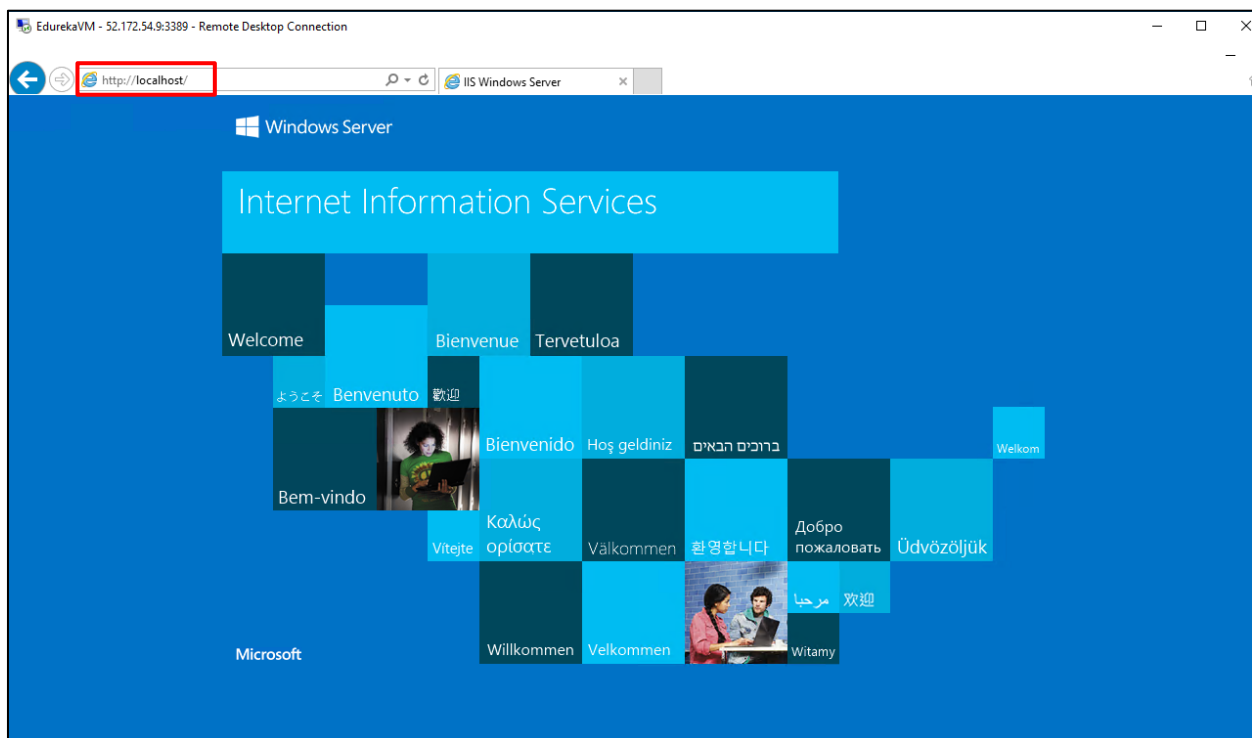
**Step 6:** After selecting installation type, Select the desired Server (**IIS Web**) > Select the **Role Services** > Next > **Install**:



**Step 7:** Once the Installation is complete, Goto Start Menu > Open **IIS Manager** > Under your VM, Check the website:



**Step 8:** Open a browser > Enter “**localhost**” in the URL address to connect to IIS website internally:



**Step 9:** To connect to the IIS from any other devices, Enter the **Public IP Address** of the VM in the Browser:

