Networking Lab1

Create a Virtual Network

Lab Overview

In this lab, we will learn how to get started with on Azure to deploy your IaaS resources. We will create a virtual network (vnet) in Azure. We will then add two subnets in the lab and add two virtual machines, one in each subnet.

It is expected you have access to Azure portal and have an account and subscription created on Azure.

Lab Diagram

A screenshot of a cell phone

Description automatically generated

Create a virtual network

1. To access the Azure portal, go to <http://portal.azure.com>
2. Click on **Create a resource** > **Networking** > **Virtual network**.
3. In **Create virtual network**, enter or select this information:

|  |  |
| --- | --- |
| **Setting** | **Value** |
| Subscription | Select your subscription |
| Resource group | Select **Create new**, enter *rg-lab*, then select **OK** |
| Name | Enter *vnet1* |
| Region | Select (US) **West US 2** |

1. Click **Next: IP Addresses>**.

|  |  |
| --- | --- |
| IPv4 address space | Enter *10.1.0.0/24* |

1. Click **+Add subnet**.

|  |  |
| --- | --- |
| Subnet-name | Enter *vnet1-subnet1* |
| Subnet - Address range | Enter *10.1.1.0/24* |

1. Click **Add**.
2. Repeat steps 4 and 5 to add one more subnet as below:

|  |  |
| --- | --- |
| Subnet-name | Enter *vnet1-subnet2* |
| Subnet - Address range | Enter *10.1.2.0/24* |

1. Leave the rest as default and select **Review+Create**. Review the values. Your output should look like this:
2. A screenshot of a cell phone

   Description automatically generated
3. Click **Create**.
4. Once the deployment is complete, go to the search bar at the top and type ‘Virtual Networks’. Select **Virtual Networks** in the search results. You should see vnet1 show up in the list.

A close up of a logo

Description automatically generated

Create virtual machines

Create a virtual machine in the virtual network:

Create the first VM

* 1. On the upper-left side of the screen, select **Create a resource** > **Compute** > **Virtual Machine**.
  2. In **Create a virtual machine - Basics**, enter or select this information:

|  |  |
| --- | --- |
| **Setting** | **Value** |
| **PROJECT DETAILS** |  |
| Subscription | Select your subscription. |
| Resource group | Select **rg-lab**. You created this in the previous section. |
| **INSTANCE DETAILS** |  |
| Virtual machine name | Enter *vnet1-vm-mgmt1.* |
| Region | Select **West US 2**. |
| Availability options | Leave the default **No infrastructure redundancy required**. |
| Image | Leave the default **Ubuntu Server 18.04 TLS**. |
| Size | Leave the default **Standard DS2 v3**. |
| **ADMINISTRATOR ACCOUNT** |  |
| Username | Enter a user name of your choosing. |
| Password | Enter a password of your choosing. The password must be at least 12 characters long and meet the [defined complexity requirements](https://docs.microsoft.com/en-us/azure/virtual-machines/windows/faq?toc=%2fazure%2fvirtual-network%2ftoc.json#what-are-the-password-requirements-when-creating-a-vm). |
| Confirm Password | Reenter password. |
| **INBOUND PORT RULES** |  |
| Public inbound ports | **None** |

* 1. Select **Next : Disks**.
  2. In **Create a virtual machine - Disks**, leave the defaults and select **Next : Networking**.
  3. In **Create a virtual machine - Networking**, select this information:

|  |  |
| --- | --- |
| **Setting** | **Value** |
| Virtual network | Leave the default **vnet1**. |
| Subnet | Leave the default **vnet1-subnet1 (10.1.1.0/24)**. |
| Public IP | Leave the default **(new) vnet1-vm-mgmt1-ip**. |
| Public inbound ports | Select **Allow selected ports**. |
| Select inbound ports | Select **HTTP** and **SSH**. |

* 1. Select **Review + create**. You're taken to the **Review + create** page where Azure validates your configuration.
  2. When you see the **Validation passed** message, select **Create**.
  3. Once the deployment is complete, click **Go to resource**. This will take you to the VM overview page. Verify the VM status shows as **Running**.

Create a second virtual machine

Repeat the above steps to spin up a second virtual machine with the following configuration:

Instance name: **vnet1-vm-web1**

Subnet: **vnet1**

Subnet: **vnet1-subnet2**

Public Inbound ports: **SSH, HTTP**

Keep the rest of the parameters default and create the virtual machine.

Install web server on virtual machine vnet1-vm-web1

Connect to the virtual machine.

1. Search virtual machines in the **Search** bar in the portal.
2. Select the virtual machine **vnet1-vm-web1**.
3. Go to the **Overview** page.
4. Copy the public IP address of the VM.
5. From your laptop terminal, run command:

**ssh <username>@<Public\_IP\_of\_the\_VM>**

1. Install apache2 on the server.

**sudo apt-get -y update  
sudo apt-get -y install apache2**

1. Verify the service is running on the server. You should see a status of active (running) in the output:

**sudo service apache2 status**

1. When done, type exit to leave the SSH session.

View the web server in action

Use a web browser of your choice to view the default welcome page. Type the public IP address of the VM as the web address. The public IP address can be found on the VM overview page or as part of the SSH connection string you used earlier.

Verify the web page loads successfully.

A screenshot of a social media post

Description automatically generated