Module 3 - Configuring and Managing Virtual Networks

Lab 1 - Create a virtual network

A virtual network enables Azure resources, such as virtual machines (VM), to communicate privately with each other, and with the internet. In this practice, you learn how to create a virtual network. After creating a virtual network, you deploy two VMs into the virtual network. You then connect to one VM from the internet, and communicate privately between the two VMs.

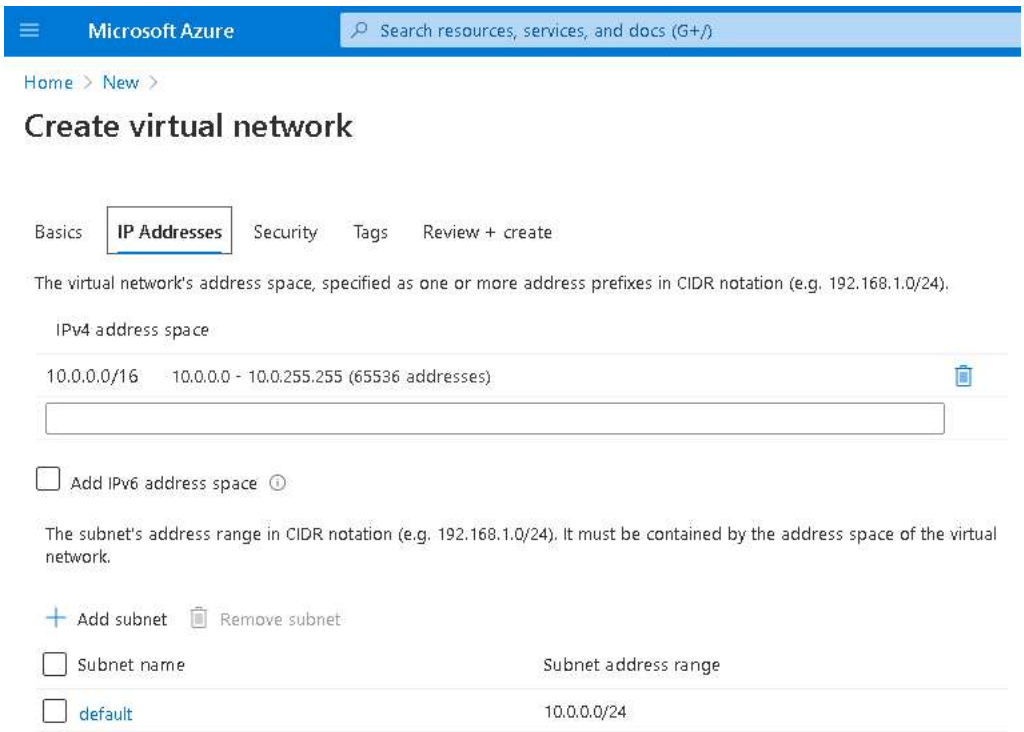
Task 1: Create a virtual network using the Azure portal

- [ ] 1. Open a web browser and navigate to https://portal.azure.com.
- [ ] 2. Log in to the Azure portal using sheikhnasirL3U1W@gdcs0.com and the password eG2J7ORCwedaXSYM.
- [ ] 3. Search for and select **Virtual Networks** from the search box.
- [ ] 4. On the **Virtual Networks** page, select **+ Create**.
- [ ] 5. On the **Basics** blade enterthe following information and then click **Next : IP Addresses >**:

Setting	Value
Subscription	**CS-SUB-0317**
Resource group	**myResourceGroup**
Location	Select **East US**
Name	myVirtualNetwork

- [ ] 6. On the **IP Addresses** blade, enter the following information.

Setting	Value
Address space	10.0.0.0/16
Subnet name	default
Address Space	10.0.0.0/24



- [ ] 7. Click **Review + create** then select **Create**.

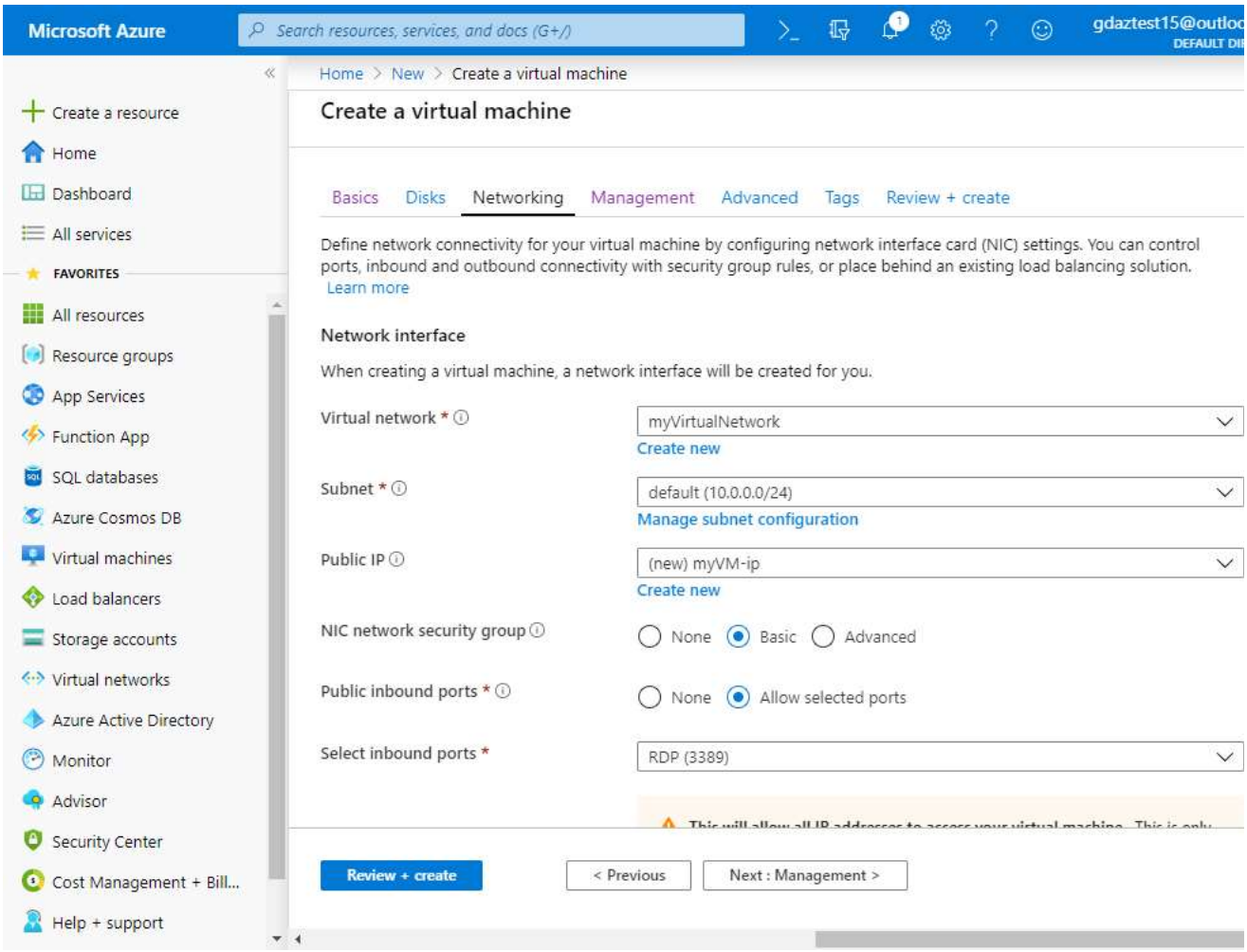
Task 2: Create a VM

- [ ] 1. In the search bar, search for and select **Virtual Machines**.

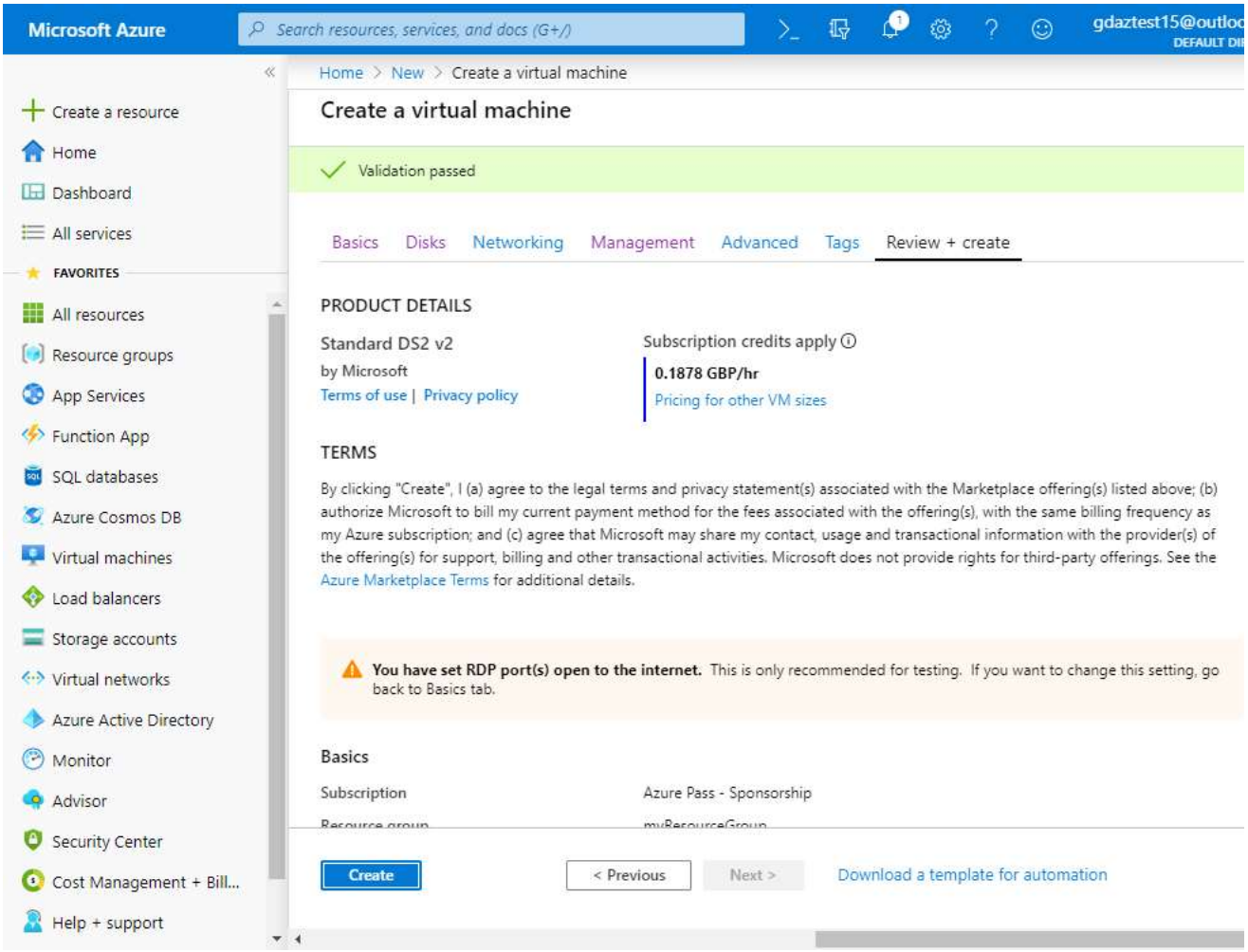
- [ ] 2. On the **Virtual Machines** page, select **+ Create** and then select **+ Virtual Machine**.
- [ ] 3. On the basics tab, enter the following information:

Setting	Value
Subscription	**CS-SUB-0317**
Resource group	Select **myResourceGroup**
Virutal machine Name	myVM1
Location	Select **East US**
Image	**Windows Server 2019 Datacenter - Gen 2**
Size	**Standard_D2s_v3**
User name	localadmin
Password	eG2J7ORCwedaXSYM
Public inbound ports	Select **RDP (3389)**

- [ ] 4. Click on the **Management** tab and next to **Boot diagnostics** select **Disable**.
- [ ] 5. On the **Networking Tab**, notice your Virtual network has already been selected based on the Resource Gruop you selected.



- [ ] 6. Click **Review + create** and then on the validation page click **Create** to start VM deployment. The VM takes a few minutes to deploy.



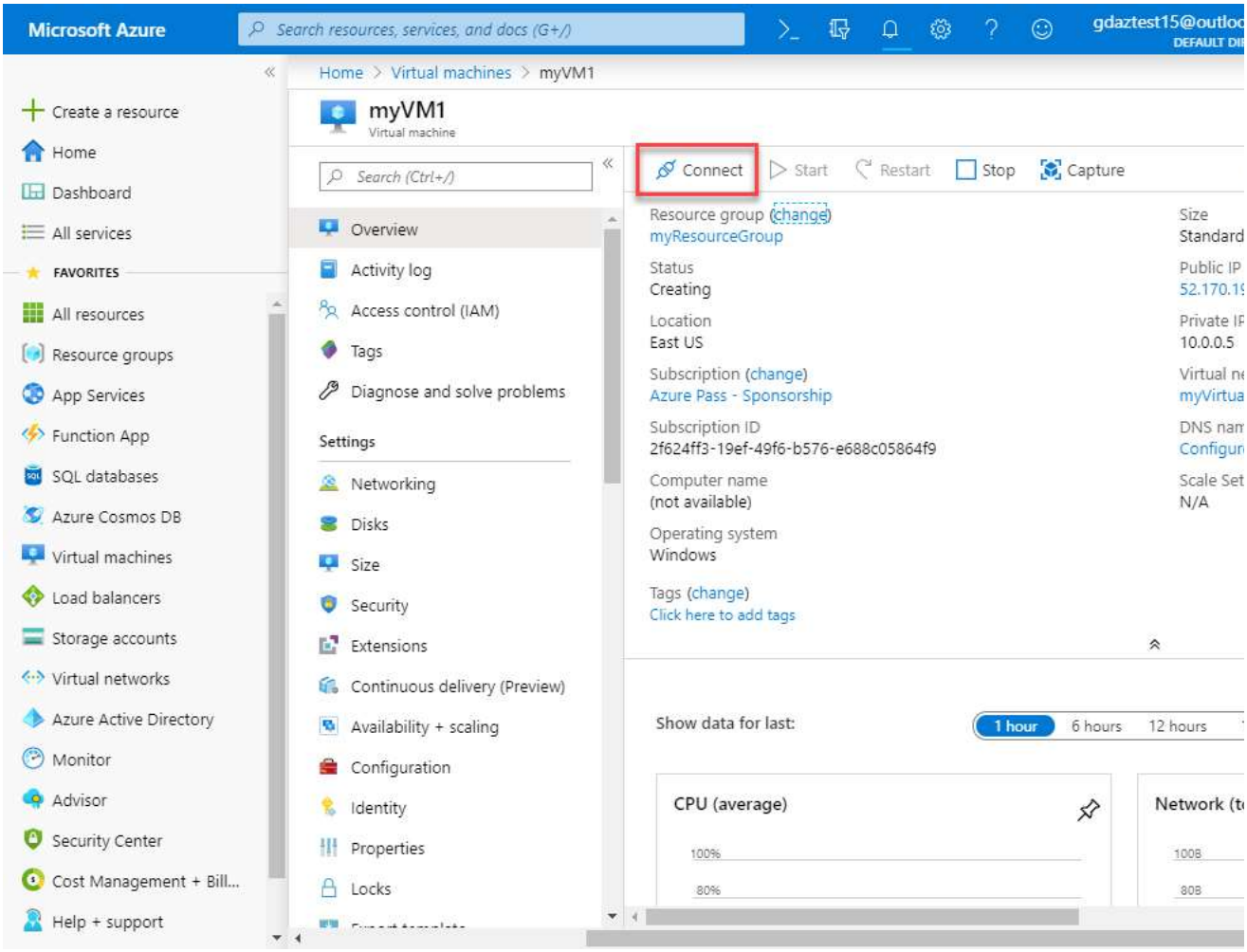
Task 3: Create the second VM

- [ ] 1. Complete steps 1-6 again, but in step 3, name the VM *myVM2*.

> **Note**: You do not need to wait for the firt VM to deploy before deploying the second VM

Task 4: Connect to a VM from the internet

- [ ] 1. After *myVm1* and *myVm2* are created, connect to it. At the top of the Azure portal, enter *myVm1*. When **myVm1** appears in the search results, select it. Select the **Connect** button.



- [ ] 2. After selecting the **Connect** button, a Remote Desktop Protocol (.rdp) file is created and downloaded to your computer.
- [ ] 3. Open the downloaded rdp file. If prompted, select **Connect**. Enter the user name and password you specified when creating the VM. You may need to select **More choices**, then **Use a different account**, to specify the credentials you entered when you created the VM.
- [ ] 4. Select **OK**.
- [ ] 5. You may receive a certificate warning during the sign-in process. If you receive the warning, select **Yes** or **Continue**, to proceed with the connection.

Task 5: Communicate between VMs

- [ ] 1. From PowerShell, enter

```
ping myvm2
```

- [ ] 2. Close the remote desktop connection to *myVm1*.
- [ ] 3. Complete the steps in **Task 4** again, but connect to *myVm2*. From a command prompt, enter

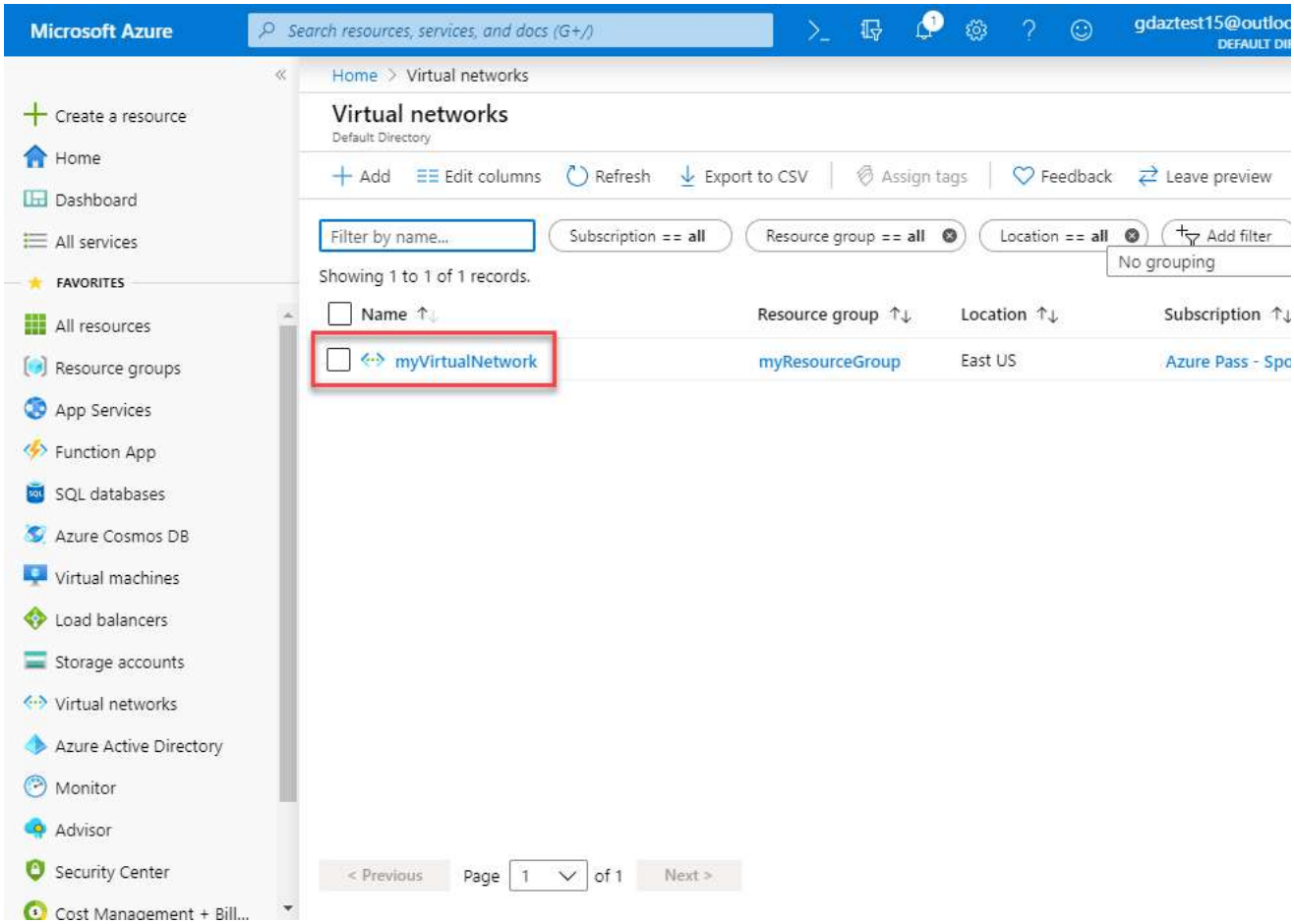
```
ping myvm1
```

You receive replies from *myVm1*

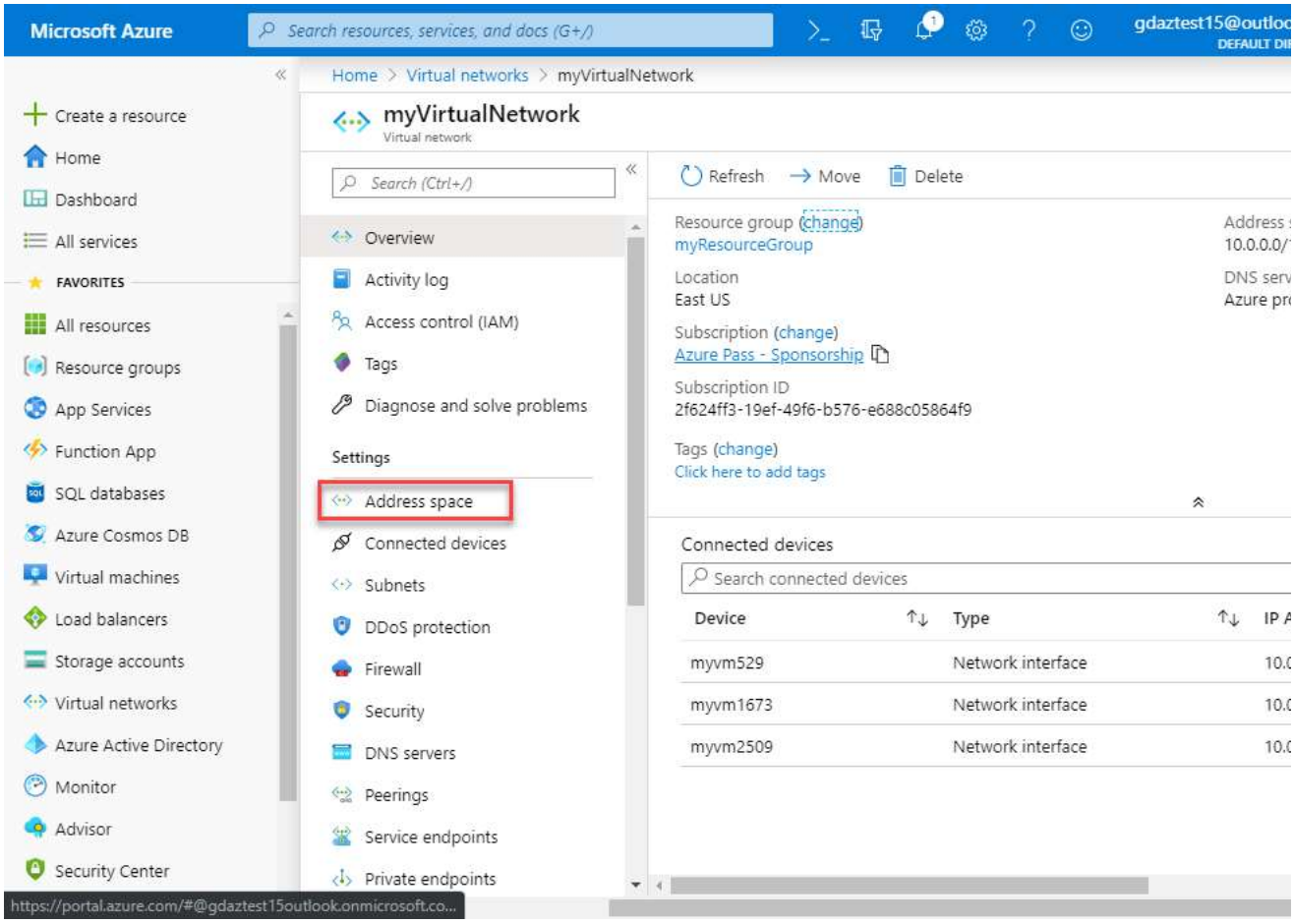
- [ ] 4. Close the remote desktop connection to *myVm2*.

Task 6: Create an additional address space and subnet

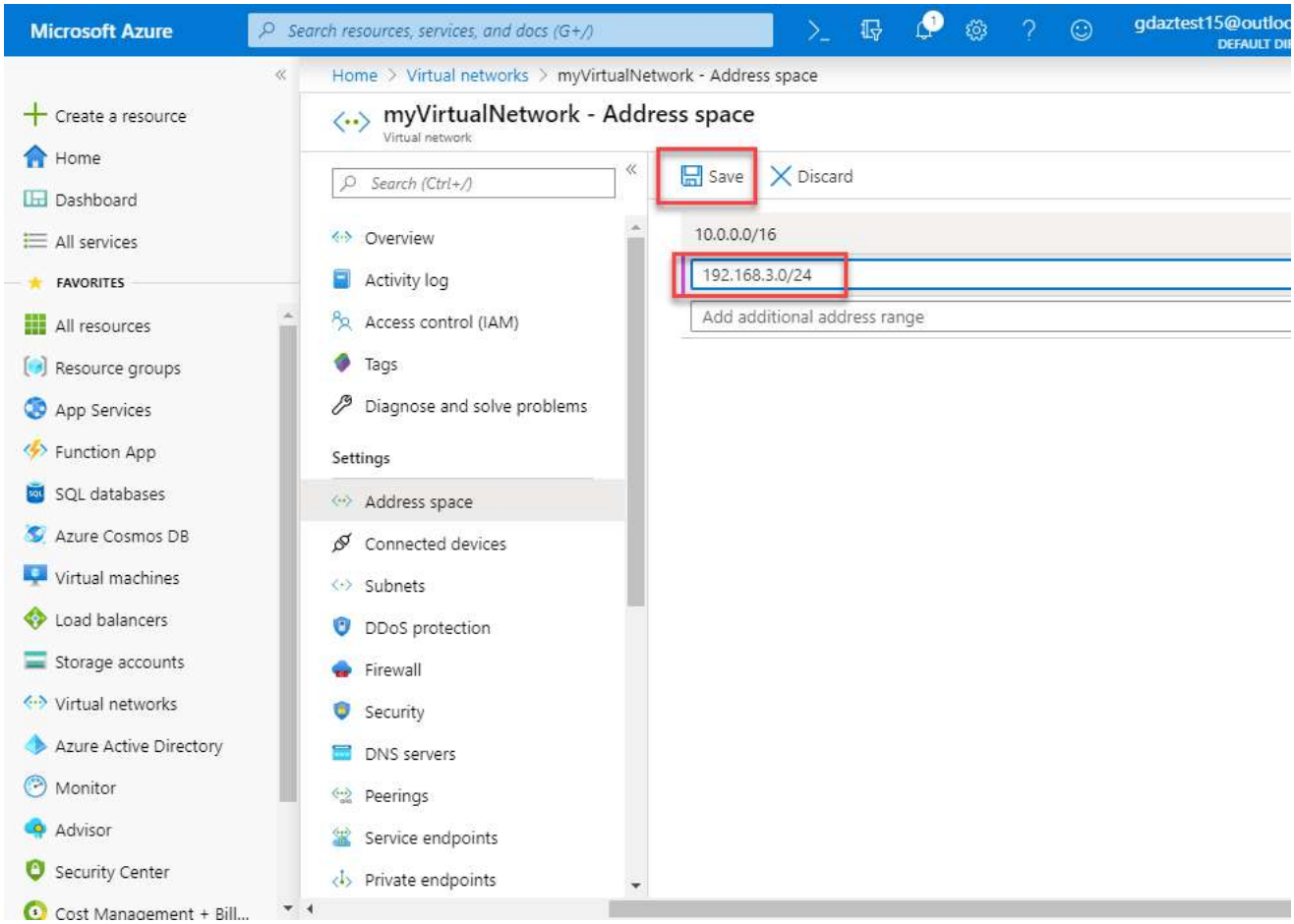
- [ ] 1. In the Azure Portal click **Virtual Networks** and click **myVirtualNetwork**.



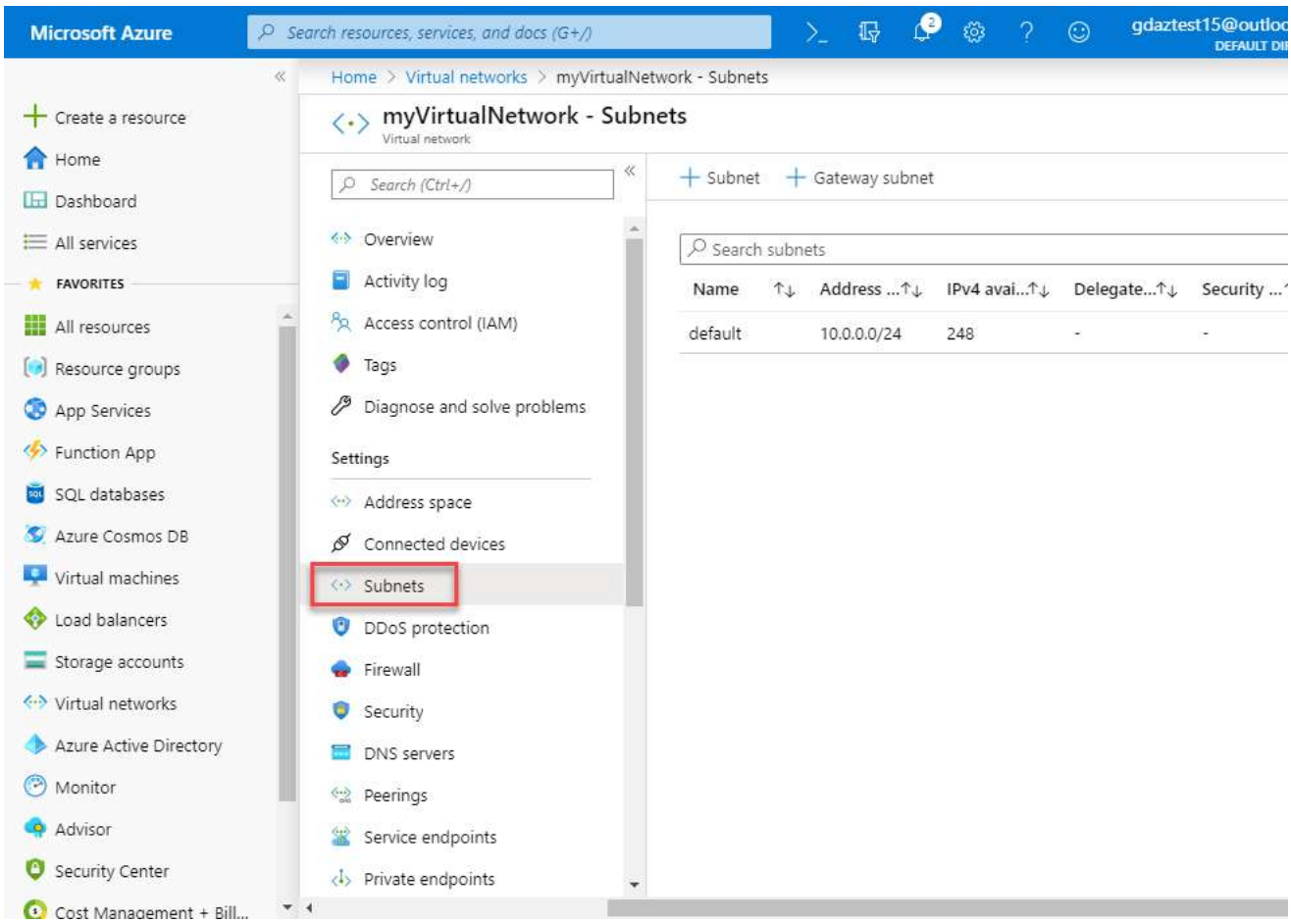
☐ 2. Click **Address Space**.



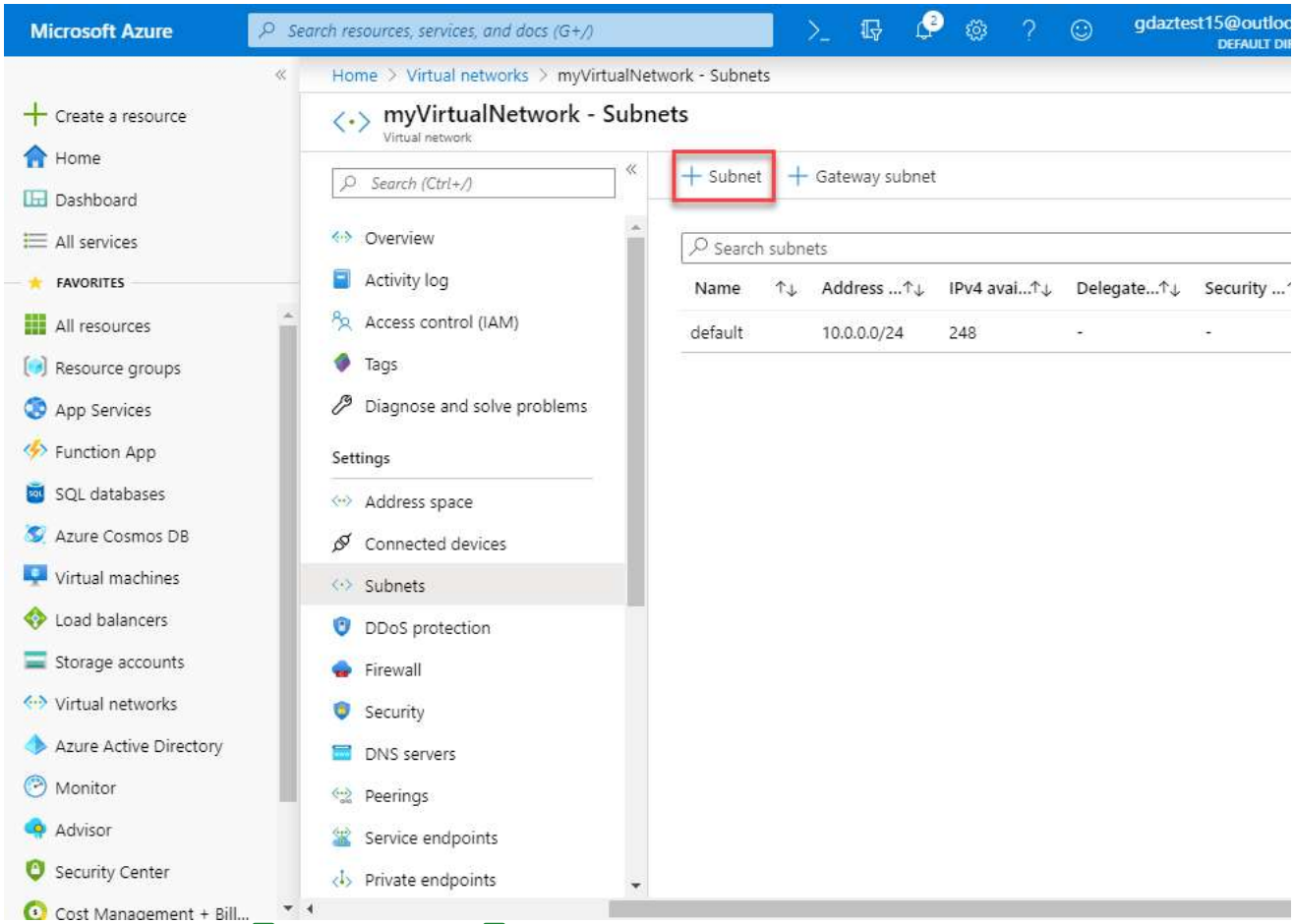
☐ 3. Enter the following IP Range (CIDR) - 192.168.3.0/24 and click **Save**.



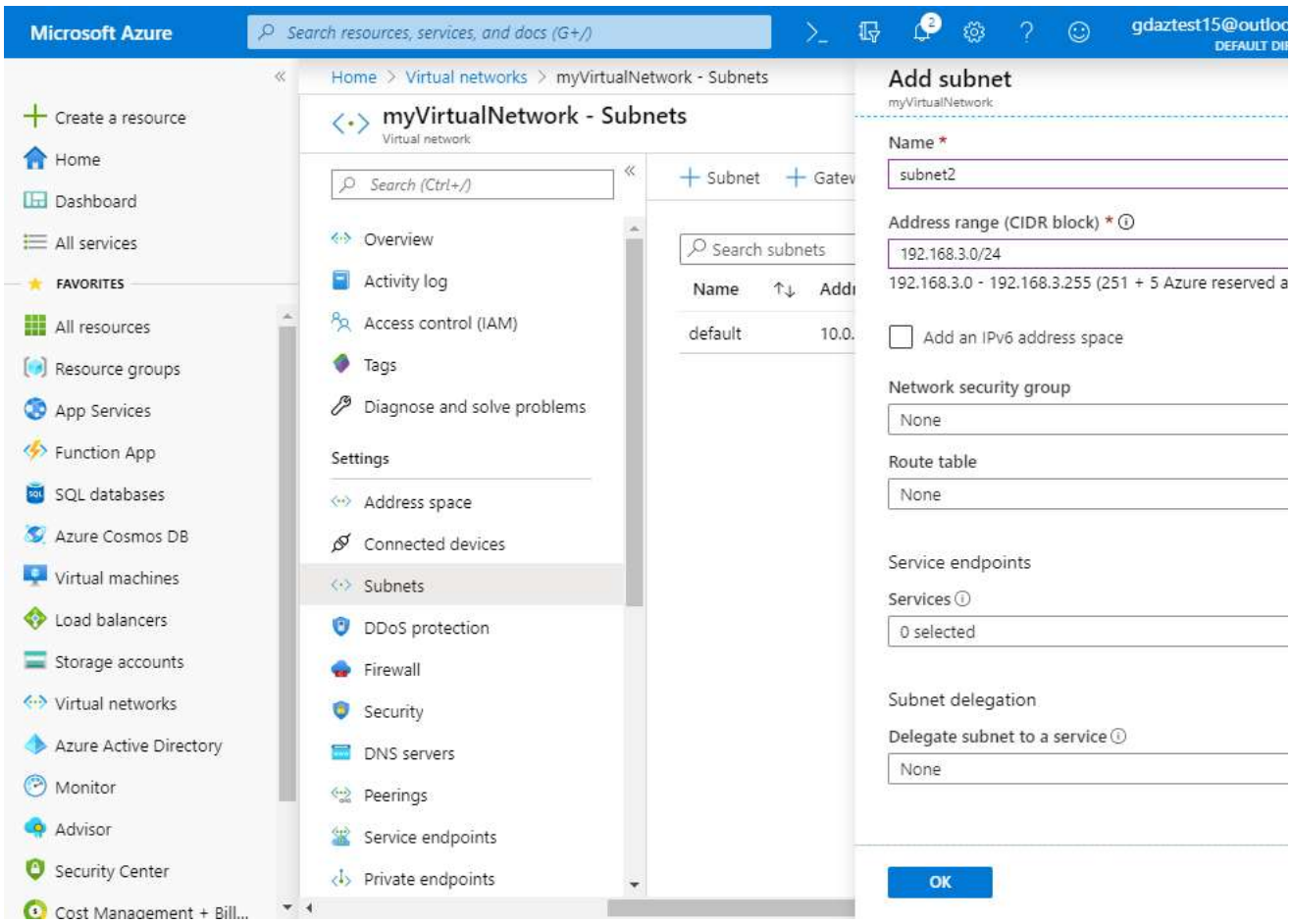
☐ 4. Click **Subnets**.



☐ 5. Click **+ Subnet**.



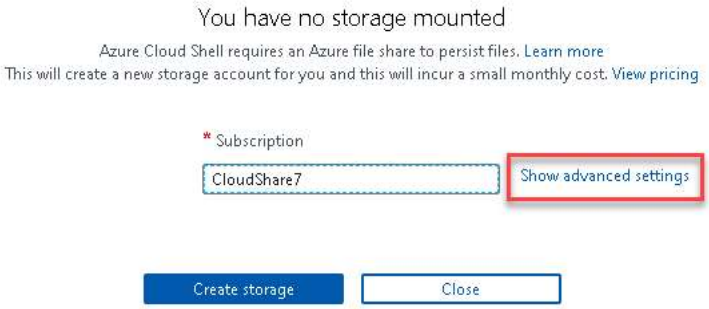
- [ ] 6. In the Add subnet blade enter subnet2 as the name and 192.168.3.0/24 as the Address Range and click **Save**.



Task 7: Create a virtual network using PowerShell

- [ ] 1. In the Azure portal, start a PowerShell session within the **Cloud Shell** pane by selecting on the toolbar icon directly to the right of the search textbox.

2. Click **Show advanced settings**.



3. Select the **East US** region. Select **Use existing** Resource group and select the pre-provisioned resource group for the lab.

4. Enter a name for the storage account (this must be unique) and type **clouldshell** as the name of the File share then click **Create Storage.**

Your Cloud Shell will now launch.

5. Enter the following PowerShell commands to create a Virtual Network.

Create a virtual network with New-AzureRmVirtualNetwork. The following command creates a default virtual network named myVirtualNetwork-PS in the EastUS location:

```
$virtualNetwork = New-AzVirtualNetwork -ResourceGroupName myResourceGroup -Location EastUS -Name myVirtualNetwork-PS -AddressPrefix 10.
```

Azure resources are deployed to a subnet within a virtual network, so you need to create a subnet. Create a subnet configuration with New-AzureRmVirtualNetworkSubnetConfig.

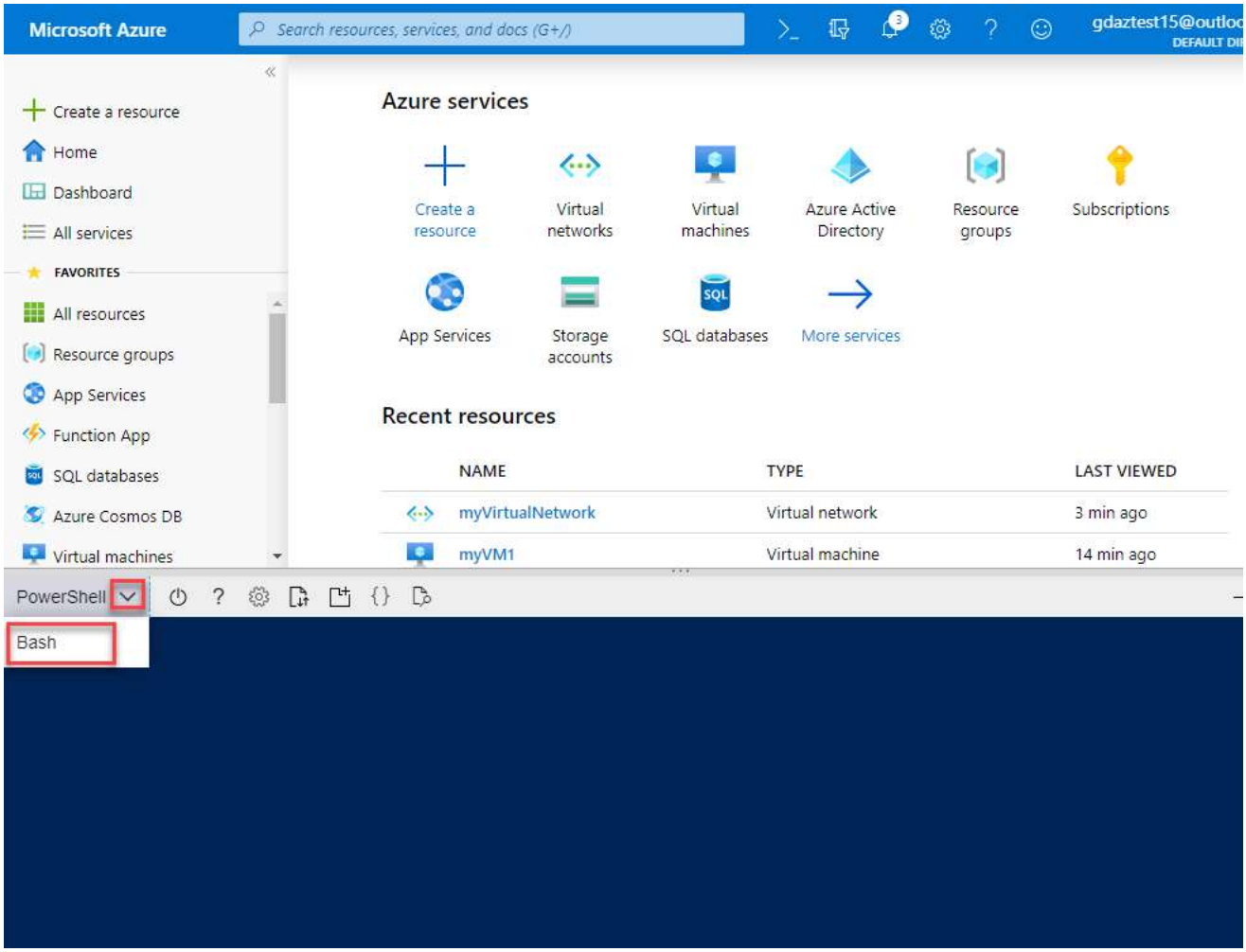
```
$subnetConfig = Add-AzVirtualNetworkSubnetConfig -Name default -AddressPrefix 10.0.0.0/24 -VirtualNetwork $virtualNetwork
```

Write the subnet configuration to the virtual network with Set-AzureRmVirtualNetwork, which creates the subnet within the virtual network:

```
$virtualNetwork | Set-AzVirtualNetwork
```

Task 8: Create a virtual network using the Azure CLI

1. Switch the **Cloud Shell** to Bash.



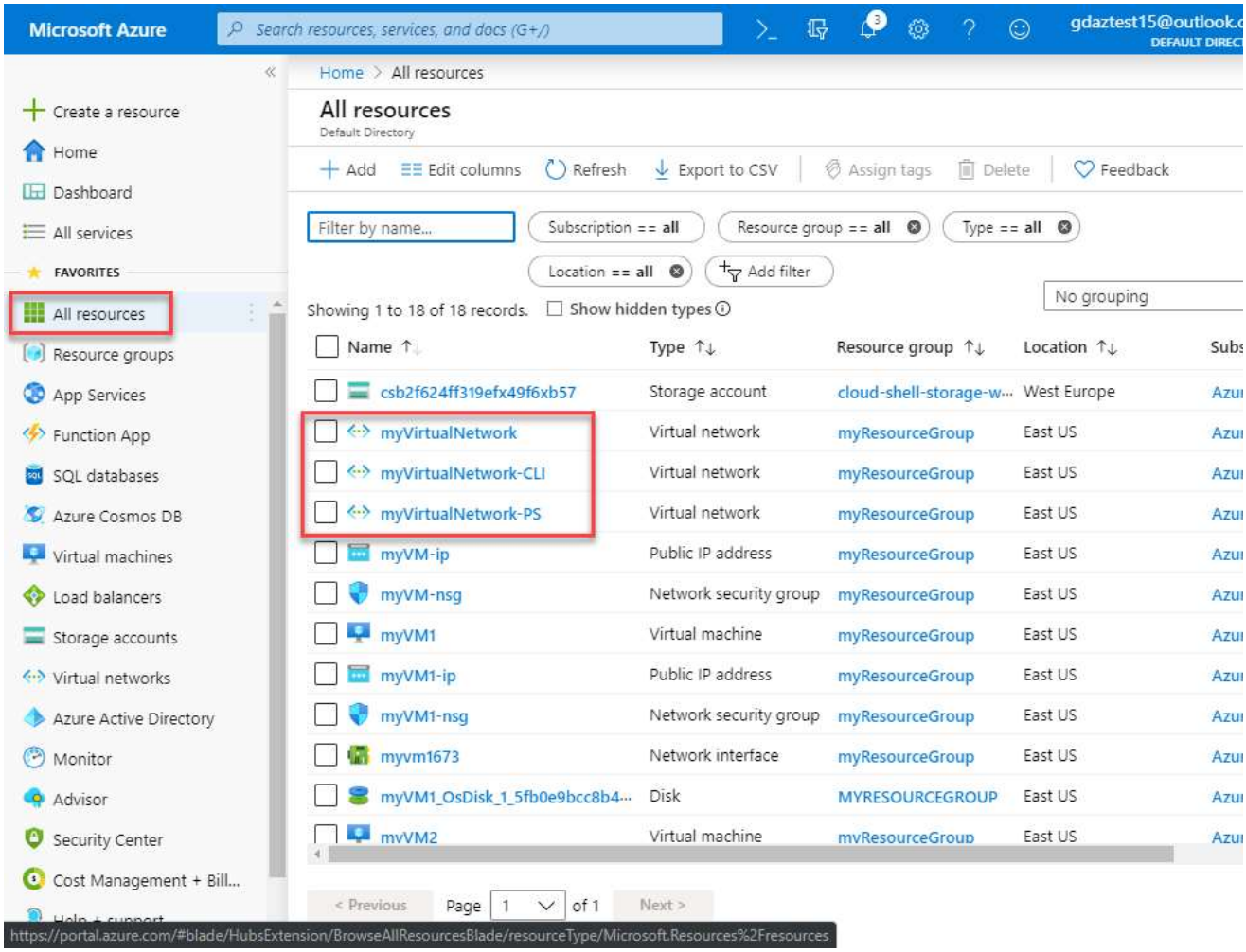
- [ ] 2. Enter the following CLI commands to create a Virtual Network.

  Create a virtual network with az network vnet create. The following command creates a default virtual network named myVirtualNetwork-CLI with one subnet called default::

  ```
  az network vnet create --name myVirtualNetwork-CLI --resource-group myResourceGroup --address-prefix 10.0.0.0/16 --subnet-name default -
  ```

- [ ] 3. Close the **Cloud Shell** when the command is complete.

- [ ] 4. In the Azure Portal, click **All Resources**. Note the 2 new Virtual Networks (VNets).



✓ **Results**: You have now completed this Lab.

You can now continue with your next lab by clicking the drop down menu at the top of the lab guide.