**Module 1**

**Lab C: Deploying an Azure VM by using Azure CLI**

**Task 1: Deploy an Azure VM by using Azure CLI**

1. On your host computer, open the browser, and in the URL bar, type in the following: <https://docs.microsoft.com/en-us/cli/azure/install-azure-cli-windows?view=azure-cli-latest>
2. In the **Install Azure CLI 2.0 on Windows** page, note the **Download the MSI installer** button. Click the button and **Save** the installer.
3. When it is finished downloading, click **Run**.
4. In the **Microsoft CLI 2.0 for Azure Setup** window, check the **I accept the terms in the License Agreement**, and then click **Install**.
5. In the **User Account Control** pop up, click the "**Yes**" box.
6. In the **Microsoft CLI 2.0 for Azure Setup** window, when it says **Completed**, click **Finish**.
7. Restart the host system.
8. On the task bar in the Search text box, type **Command Prompt** and in the Best Match list, right-click **Command Prompt**, and then, in the right-click menu, click **Run as administrator**. Say **Yes** to the User Account Control pop up.
9. From **Administrator: Command Prompt**, type the following 2 commands and then press Enter after each:

az cloud set --name AzureUSGovernment

az login

1. You will be redirected to a web page with the message instructing you to sign in.

Note: In the recent past, you were directed to open a browser at the page <https://aka.ms/devicelogin> and provide the code included in the message to authenticate. On

1. In the sign-in windows that appears, sign in by using the Microsoft account that is the Service Administrator of your Azure subscription.
2. Note the message stating that you have signed in to the **Microsoft Azure Cross-platform Command Line Interface application on your device**. Close the window.

**Task 2: Deploy an Azure VM by using Azure CLI**

1. If you have multiple subscriptions associated with your Microsoft account, to identify the subscription in which you are going to create a new Azure VM, type the following command, and then press Enter:

az account show

1. Note the value of the name property for each subscription in the output of the previous command. To specify the subscription in which you are going to create a virtual machine, type the following command and then press **Enter** (replace *<subscription\_name>* with the value of the name property of that subscription):

az account set --subscription "*<subscription\_name>*"

1. To identify the Azure region to which you deployed the Azure VMs in the previous exercise, type the following command, and then press **Enter**:

az vm list --query "[?contains(name,'armvm2')].location" --output tsv

1. To identify the size of the Azure VMs you deployed in the previous exercises, type the following command, and then press **Enter**:

az vm list --query "[?contains(name,'armvm2')].hardwareProfile.vmSize" --output tsv

**Note:** Make a note of the name returned. You will use this information in a subsequent command.

1. Create a **new resource group** in the same Azure region by typing the following and pressing **Enter** (*replace XX with your student number, and replace <location> with the name of the Azure region you identified in step 9*):

az group create --name mod1lcXX-LabRG --location *<location>*

1. Create a **virtual network** in the same location as the resource group by typing the following and pressing **Enter**:

az network vnet create --resource-group mod1lcXX-LabRG --name mod1lcXX-LabRG-vnet --address-prefix 10.1.0.0/20 --subnet-name default --subnet-prefix 10.1.0.0/24

1. Create a **network security group** that will contain a rule allowing RDP connectivity by typing the following and pressing Enter:

az network nsg create --resource-group mod1lcXX-LabRG --name mod1lcXX-vm3-nsg

1. Create an **RDP allow rule** in the newly created network security group by typing the following and pressing **Enter**:

az network nsg rule create --resource-group mod1lcXX-LabRG -–nsg-name mod1lcXX-vm3-nsg --name default-allow-rdp --protocol tcp --priority 1000 --destination-port-range 3389 --access allow

1. Create a **public IP address** by typing the following and pressing **Enter**:

az network public-ip create --resource-group mod1lcXX-LabRG --name mod1lcXX-vm3-ip

1. Create a **network interface card** by typing the following and pressing **Enter**:

az network nic create --resource-group mod1lcXX-LabRG --name mod1lcXX-vm3-nic --vnet-name mod1lcXX-LabRG-vnet --subnet default --public-ip-address mod1lcXX-vm3-ip --network-security-group mod1lcXX-vm3-nsg

1. Create a new **Azure VM** by typing the following and pressing **Enter** (make sure to replace *<location>* and *<vmsize>* with the Azure region and VM size you identified in step 9 and 10, respectively):

az vm create --resource-group mod1lcXX-LabRG --name mod1lcXX-vm3 --location *<location>* --nics mod1lcXX-vm3-nic --image win2016datacenter --size *<vmsize>* --admin-username Student --admin-password Pa55w.rd1234

**Task 3: Verify Azure VM Deployment, sign into VM, stop VM**

1. The vm creation will take 10-15 minutes. When finished, open the **Azure Government portal**.
2. In the **Hub Menu**, click on **Virtual Machines**. In the **Virtual machines** blade, you should see the **mod1lcXX-vm3** running. Click the VM.
3. The **mod1lcXX-vm3** blade opens. In the top menu bar, click **Connect**.
4. In the **Connect to virtual machine** blade, click the **Download RDP file**. In the taskbar pop up, click **Open**.
5. In the **Remote Desktop Connection** pop up, click **Connect**.
6. In the Enter your credentials, sign in with the credentials you used when you created the vm using Azure CLI. If the **Windows Security** pop-up has the wrong credentials, click the **More choices** hyperlink, and then **Use a different account**. For the account name, use **.\Student**.
7. In the **Remote Desktop Connection** pop up, click **Yes**.
8. After the VM loads, in the **Server Manager** console tree, select **Local Server**, and verify its name and operating system. In the blue **Remote Desktop Connect** bar that has the IP address of the remote connection, click the **X** to close the connection.
9. In the **Your remote session will be disconnected** pop up, click **OK**.
10. In the **mod1lcXX-vm3** blade, in the upper menu, click **Stop**, and click **Yes** to the verification pop up.

**Result**: After you completed this exercise, you should have successfully deployed an Azure VM by using Azure CLI.