ASSIGNMENT ONE: MANAGE VIRTUAL MACHINES WRITEUP

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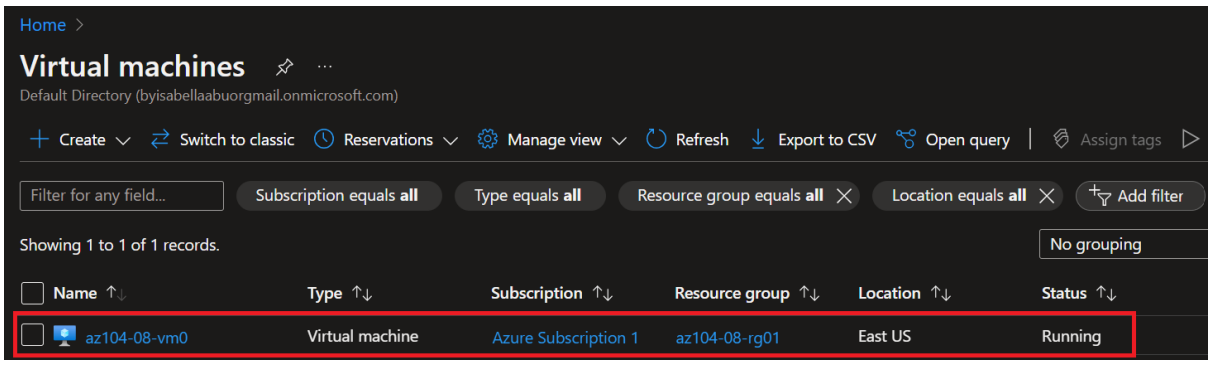
Introduction

In this assignment, it focused on deploying and configuring Azure virtual machines and scale sets. It was divided into 7 tasks in which the first 2 focused on how to deploy zone-resilient Azure virtual machines by using the Azure portal and an Azure Resource Manager template and how to configure Azure virtual machines by using virtual machine extensions. The rest of the tasks focused on how to Scale compute and storage for Azure virtual machines. The following is a detailed description of the tasks provided to manage virtual machines.

Task 1: Deploy zone-resilient Azure virtual machines by using the Azure portal and an Azure Resource Manager template

In this task, deployment of Azure virtual machines into different availability zones by using the Azure portal and an Azure Resource Manager template was done.

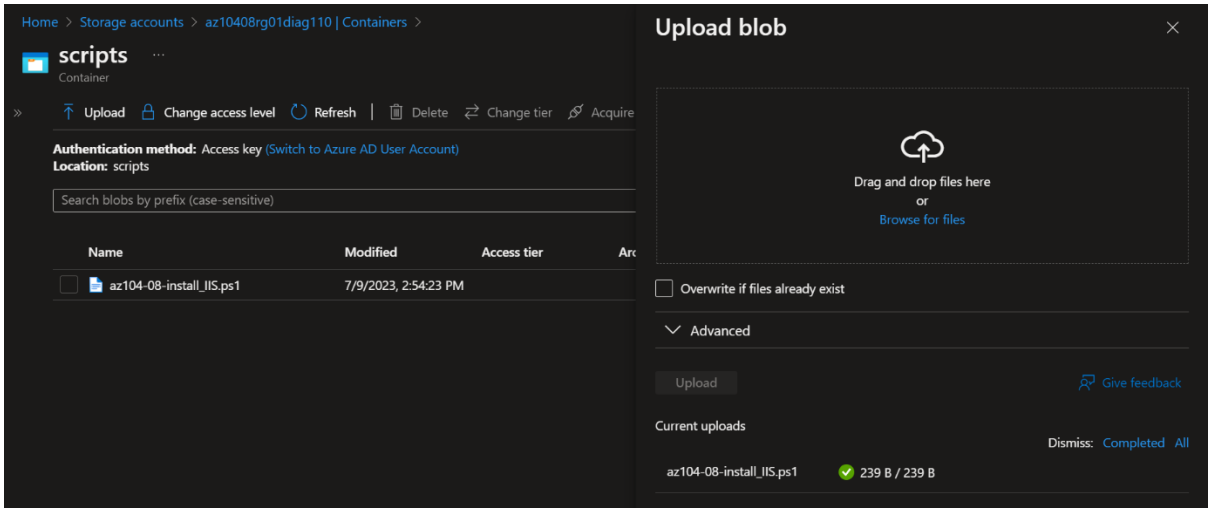
After signing into the azure portal and in the virtual machines blade and created a new Azure virtual machine with specific settings. The following diagram represents the created virtual machine.



Task 2: Configure Azure virtual machines by using virtual machine extensions

In this task, we installed the Windows Server Web Server role on the two Azure virtual machines you deployed in the previous task by using the Custom Script virtual machine extension. The following represents the step-by-step process used to complete the task.

In the first step, In the Azure portal, we searched for and selected the entry representing the diagnostics storage account you created in the task one. We then created a new container named scripts and clicked on the container created and uploaded az104-08-install_IIS.ps1 as shown in the diagram below:

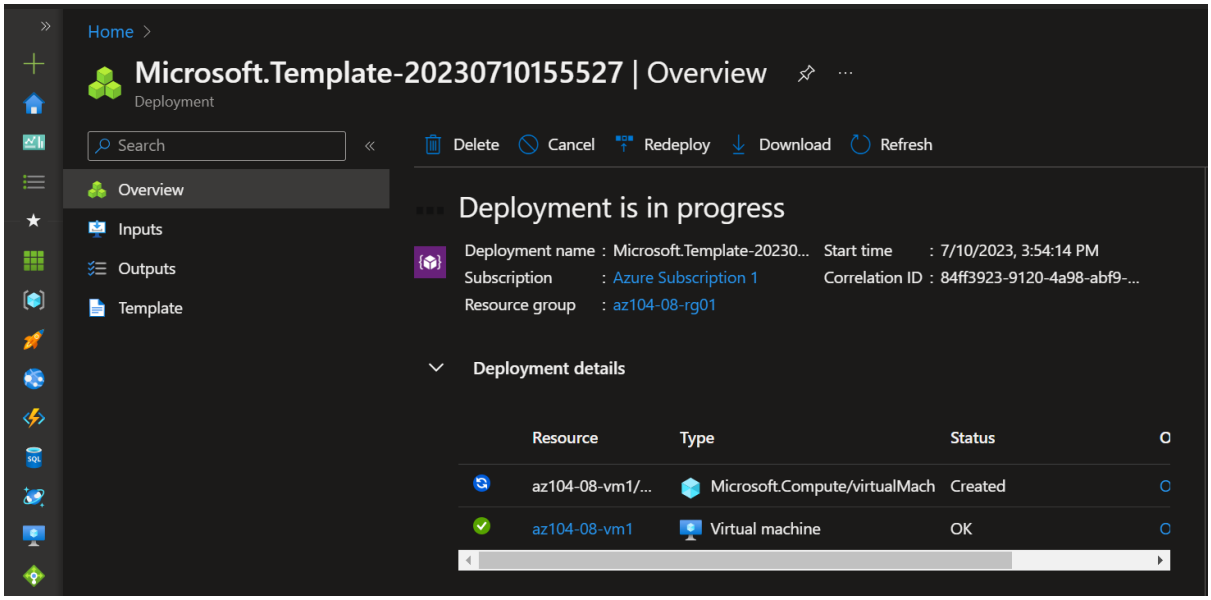


In the next step we created a custom script extension and configured it adding the az104-08-install_IIS.ps1 file on the first virtual machine we created (az104-08-vm0)

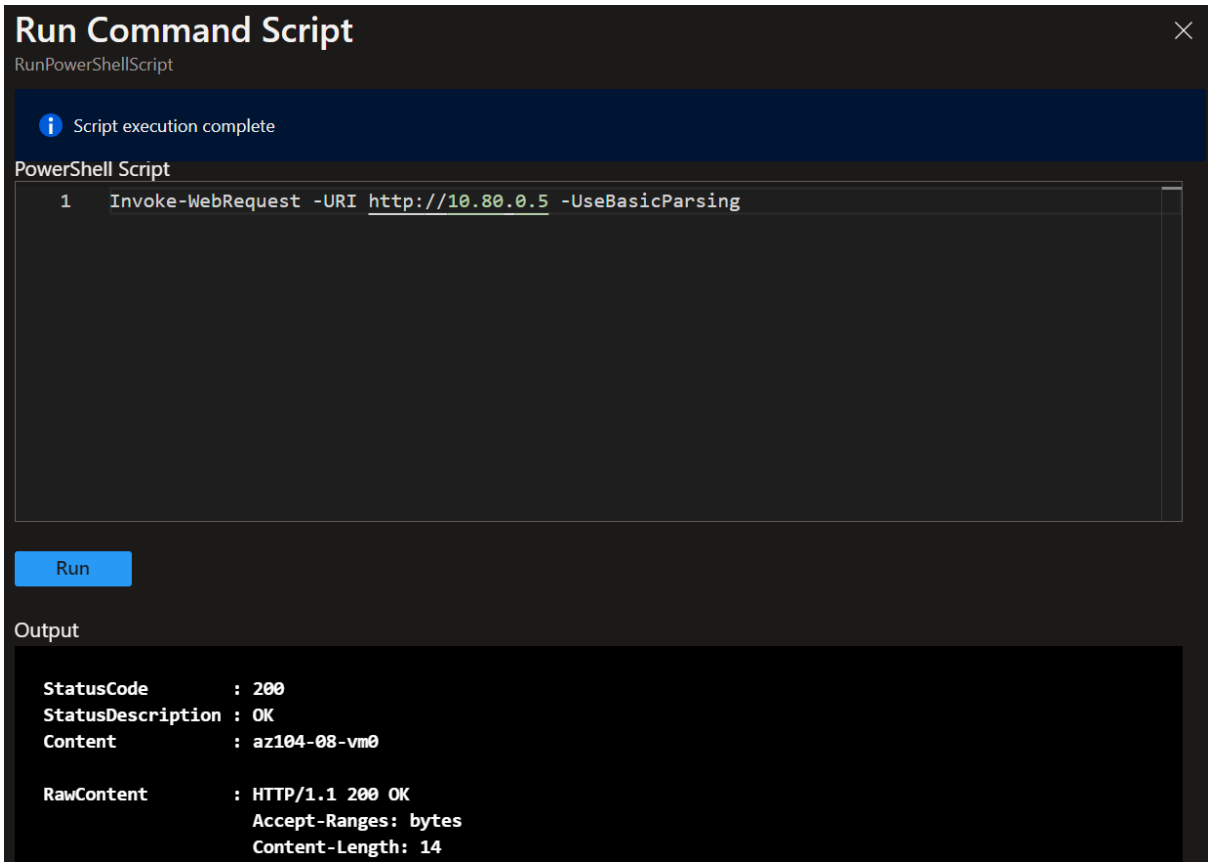
We then edited the template on vm1 virtual machine adding the following code on line 20 and deployed it.

Code Copy

```
{
    "type": "Microsoft.Compute/virtualMachines/extensions",
    "name": "az104-08-vm1/customScriptExtension",
    "apiVersion": "2018-06-01",
    "location": "[resourceGroup().location]",
    "dependsOn": [
        "az104-08-vm1"
    ],
    "properties": {
        "publisher": "Microsoft.Compute",
        "type": "CustomScriptExtension",
        "typeHandlerVersion": "1.7",
        "autoUpgradeMinorVersion": true,
        "settings": {
            "commandToExecute": "powershell.exe Install-WindowsFeature -name Web-Server
-IncludeManagementTools && powershell.exe remove-item 'C:\\inetpub\\wwwroot\\iisstart.htm'
&& powershell.exe Add-Content -Path 'C:\\inetpub\\wwwroot\\iisstart.htm' -Value $('Hello
World from ' + $env:computername)"
        }
    }
},
```



Finally, to verify that the Custom Script extension-based configuration was successful, on the az104-08-vm1 blade, in the Operations section, we clicked on RunPowerShellScript command on the Run command section as shown in the diagram below:

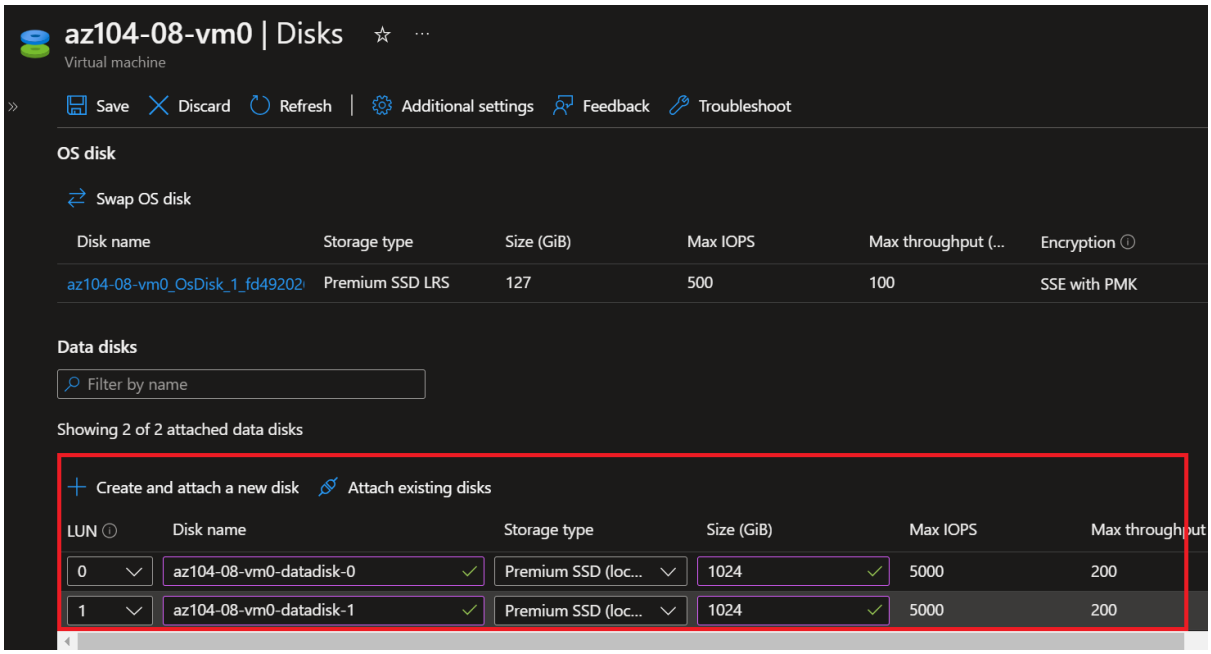


Task 3: Scale compute and storage for Azure virtual machines

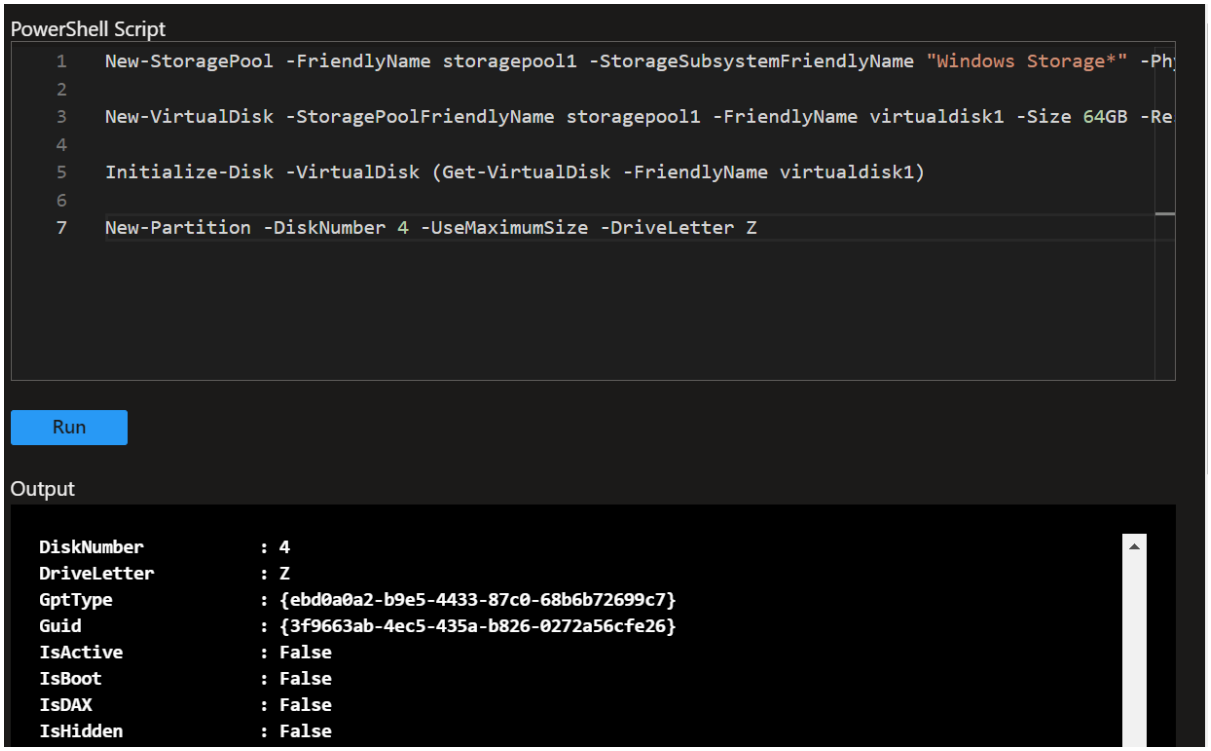
In this task, we scaled compute for Azure virtual machines by changing their size and scale their storage by attaching and configuring their data disks.

In the first step, in the size section on the virtual machine(**az104-08-vm0**) we resized the machine from DS2_v3 to **Standard DS1_v2** as shown below.

We then created and attached a new disk on the disk section under the Data disks and changed the disks storage size to 1024 as shown below:



Then on the **Operations** section, clicked the **Run command**, and, in the list of commands, click **RunPowerShellScript** and prompted the command to create a drive Z consisting of the two newly attached disks as shown below:

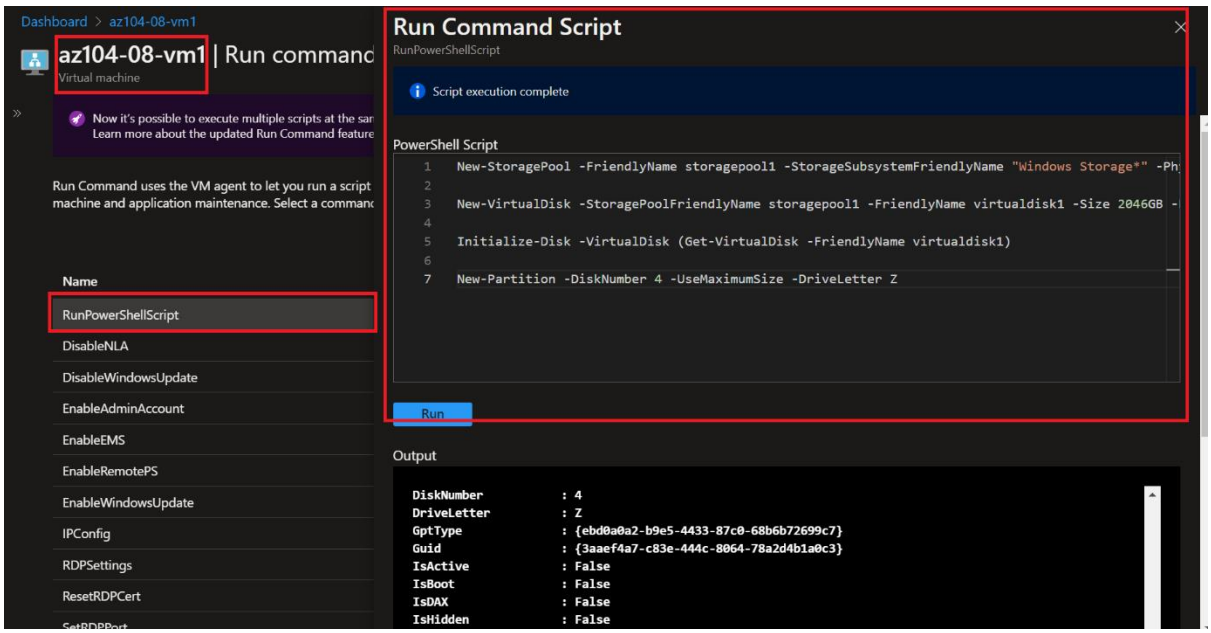


On other virtual machine that we created **az104-08-vm1** in the **Automation** section, we edited the templete in line 30 to add the following code:

```
"vmSize": "Standard_DS1_v2"
```

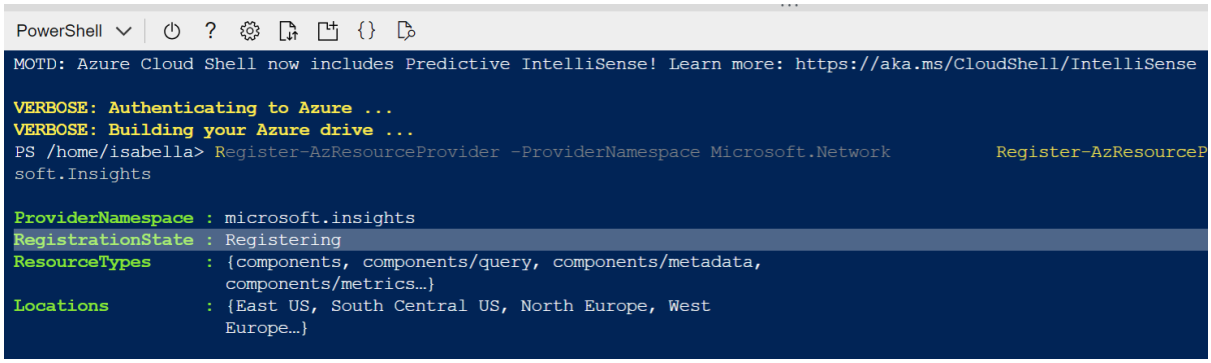
And on line 50 on the datadisks line added the two created data disks.

To verify that the disks were added, on the **az104-08-vm1** blade, in the **Operations** section, we clicked on **Run command section**, and, in the list of commands, click **RunPowerShellScript** and prompted the following code:



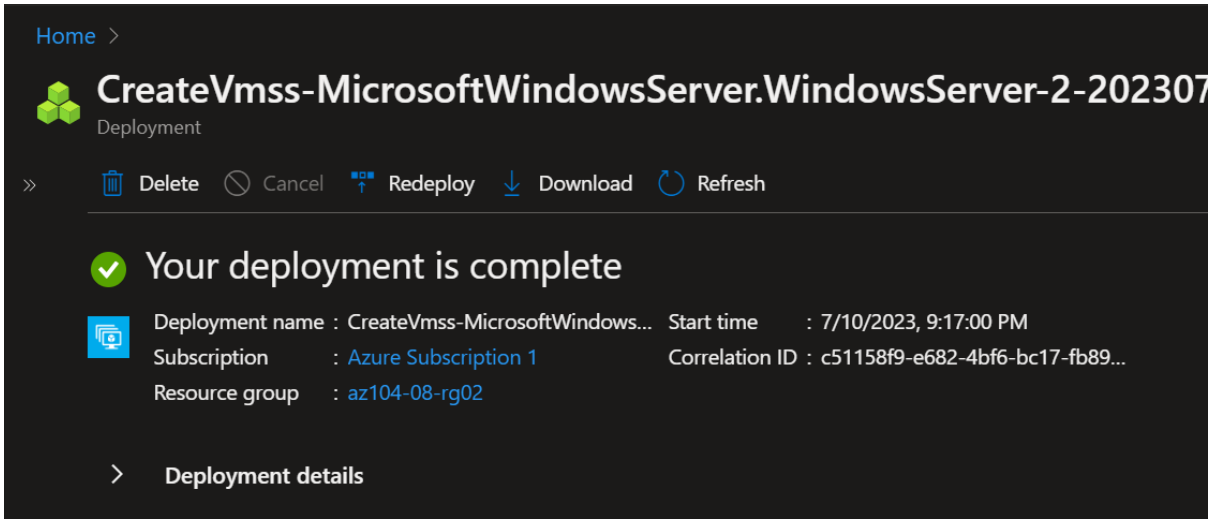
Task 4: Register the Microsoft.Insights and Microsoft.AlertsManagement resource providers

In this we registered the Microsoft.Insights and Microsoft.AlertsManagement resource providers in the **Azure Cloud Shell in powershell** by run the following code to register the Microsoft.Insights and Microsoft.AlertsManagement resource providers.



Task 5: Deploy zone-resilient Azure virtual machine scale sets by using the Azure portal

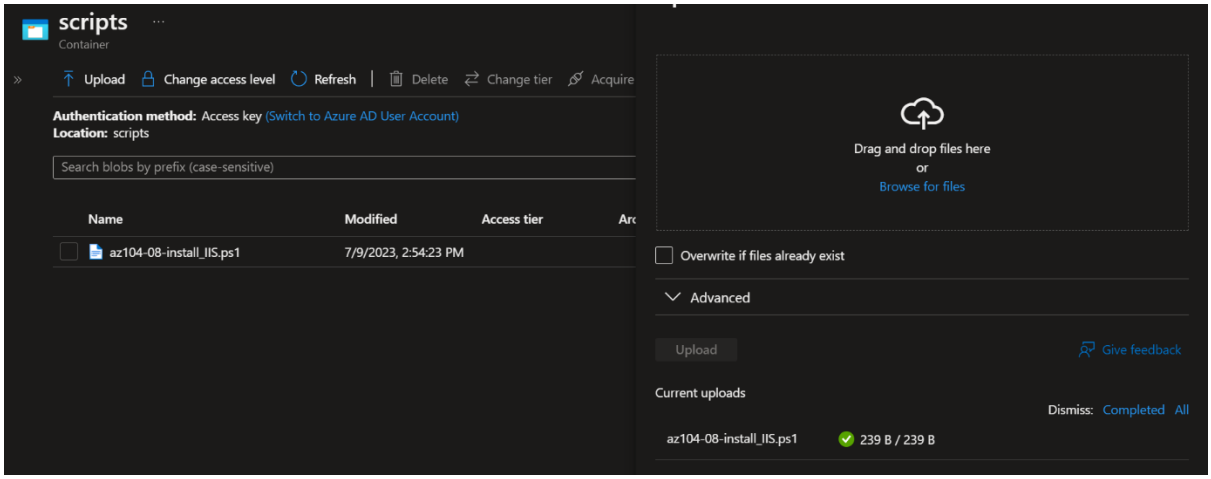
In this task, we deployed Azure virtual machine scale set across availability zones by selecting Virtual machine scale sets on the azure portal and creating or adding the virtual machine scale set, the on the Virtual machine scale sets blade we specified the settings like selecting the name, size, availability zone, orchestration mode, configuring network security group by adding inbound rules, scaling options and many more. We then finally deployed the virtual machine scale set as shown the diagram below:



Task 6: Configure Azure virtual machine scale sets by using virtual machine extensions

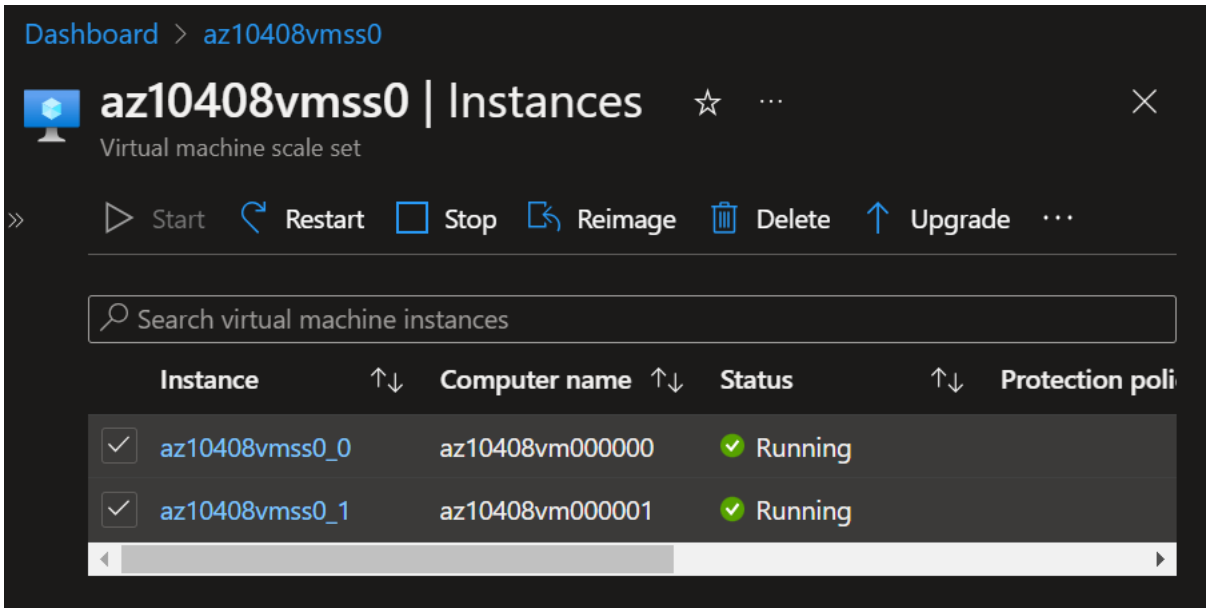
In this task, we installed Windows Server Web Server role on the instances of the Azure virtual machine scale set you deployed in the previous task by using the Custom Script virtual machine extension.

In the first step, In the Azure portal, we searched for and selected the entry representing the diagnostics storage account you created in the task five. We then created a new container named scripts and clicked on the container created and uploaded az104-08-install_IIS.ps1 as shown in the diagram below:



On the Virtual machine scale sets blade on the az10408vmss we added the file that was uploaded on the scripts container in the above step.

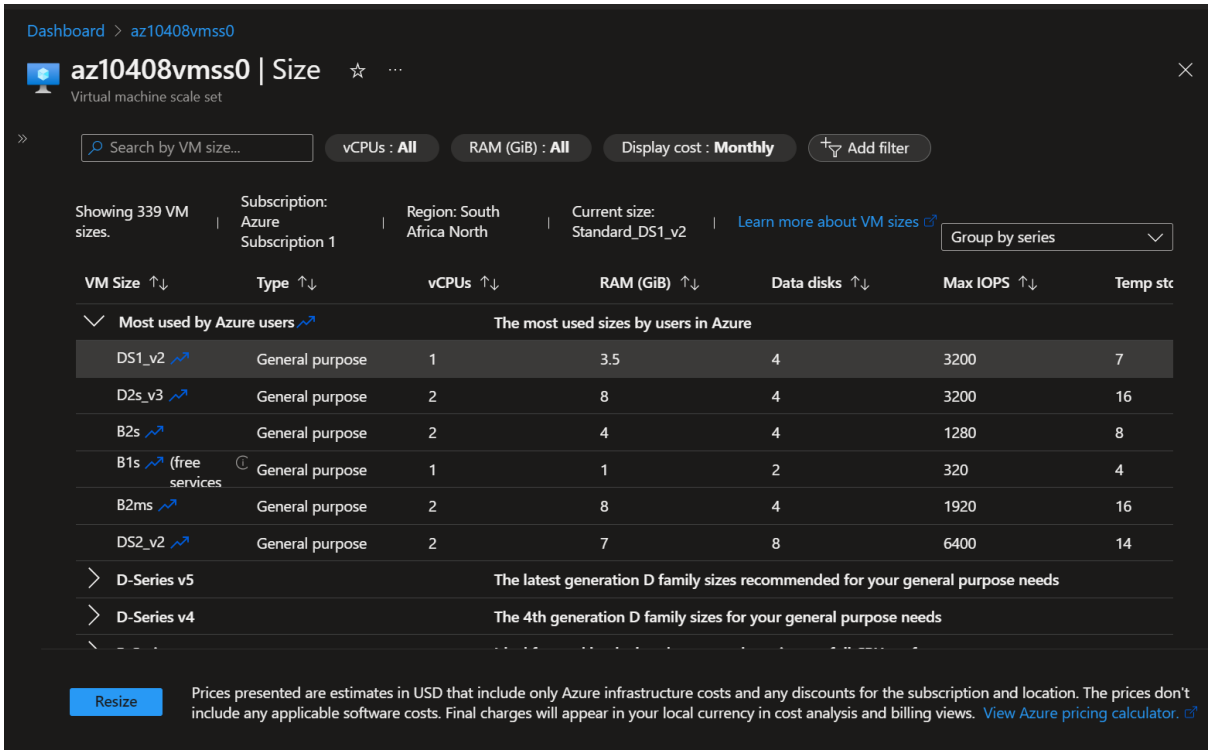
Then in the settings section of the az10408vmss0 blade, we clicked Instances, and selected the checkboxes next to the two instances of the virtual machine scale set and clicked Upgrade, and then, when prompted for confirmation, click Yes as shown below:



Task 7: Scale compute and storage for Azure virtual machine scale sets

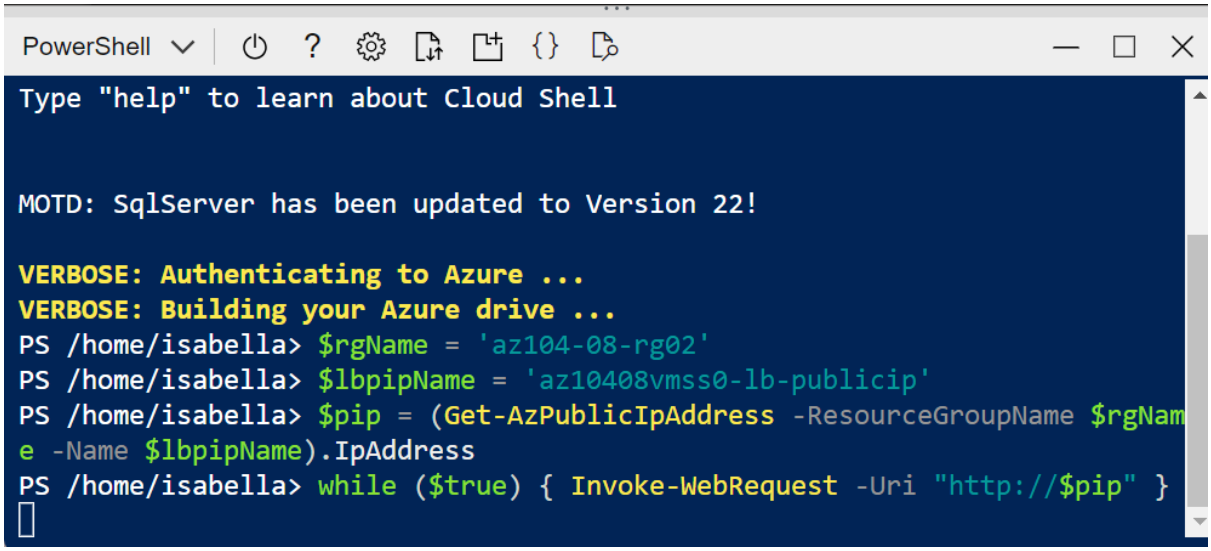
In this task, you will change the size of virtual machine scale set instances, configure their autoscaling settings, and attach disks to them.

To change the size, we navigated to the Virtual machine scale sets and selected the az10408vmss0 scale set and then on the settings section selected size to change the size to Standard DS1_v2 and clicked Resize as shown in the diagram below:



To scale we navigated to the az10408vmss0 - Instances blade, and in the Settings section, clicked Scaling in the Custom autoscale option and configure autoscale with the specific settings adding a rule.

The on the Azure Cloud Shell on powershell we prompted the following to identify the public IP address of the load balancer in front of the Azure virtual machine scale set az10408vmss0 as shown below:



A third instance will be formed after in the instances section.

We then created and attached a new disk on the az10408vmss0 with specific settings. After that, in the Settings section of the az10408vmss0 blade, we unistalled on CustomScriptExtension on the Extensions and applications section.

Conclusion

In conclusion, this lab assignment has provided you with a comprehensive hands-on experience in deploying and configuring Azure virtual machines and scale sets. Completing this assignment took longer than the expected 50 minutes but with the help team members and other writeup enable me to complete the lab assignment. The insights gained from this lab assignment were highly valuable as I continue to work with Azure and cloud environments. Understanding the concepts of zone resilience, resource providers, virtual machine scale sets, and their associated features and benefits empowered me to be confident in working cloud environment in the future.