**Module 1: Azure Government management tools**

**Lab B: Create a VM using Azure PowerShell**

**Module 1, Lab B**

**Task 1: Install the Azure PowerShell modules**

On **Windows Server 2016**, start with **Step #1-3**, then proceed to **Step #7.** If you receive errors related to **“Module not Insalled”** in **Step #7**, perform **Step #4-6.**

1. On the **Taskbar**, in the **Search** text box, type **PowerShell**.
2. In the **Best Match** list, right-click **Windows PowerShell** and then click **Run as administrator**.
3. In the **User Account Control** pop up, click **Yes**.
4. In the Windows PowerShell console, type the following and then press **Enter**:

Install-Module -Name AzureRM -AllowClobber

1. In the **NuGet provider** notice, type **Y** for Yes.
2. In the **Untrusted repository** notice, type **A** for All.
3. In the Windows PowerShell console, type the following and then press **Enter**:

Import-Module AzureRM

1. In the **Untrusted publisher** notice, type **A** for Always run
2. In the Windows PowerShell console, type the following and then press **Enter**:

Connect-AzureRmAccount -EnvironmentName AzureUSGovernment

1. Provide your credentials in the **Sign in** pop up and click **OK**.
2. In the Windows PowerShell console, type the following and then press **Enter**:

Get-AzureRmSubscription

1. A long list of subscriptions will be returned. Scroll through the list to find your subscription n name. Your subscription name will be of the format tpa01-XX, where XX is number (include the left zero, if applicable). In the Windows PowerShell console, type the following and then press Enter:

Select-AzureRmSubscription -SubscriptionName ‘*<SubscriptionName>*’

Note: Replace *SubscriptionName* with the subscription assigned to you, by your number, in step 11 above. Delete the <> symbols, but retain the single quotes.

1. Minimize the Windows PowerShell console.

**Task 2: Connect to your Azure subscription in PowerShell ISE**

1. On the host, in the **Taskbar**, right-click the Windows PowerShell icon and select **Run ISE as administrator**.
2. In the **User Account Control** pop up, click **Yes**.
3. In the **Administrator: Windows PowerShell ISE** **Command** window (dark blue area), list all the available Azure PowerShell modules by running the following cmdlet:

Get-Module -ListAvailable -Name Azure\*

Note: The output contains a list of a number of AzureRM.\* modules, the Azure PowerShell module, and the Azure.Storage module.

1. Sign in to your Azure subscription with the Microsoft account that is the Service Administrator of your Azure subscription by running the following Azure PowerShell cmdlet:

Add-AzureRmAccount -EnvironmentName AzureUSGovernment

Note: The cmdlet returns the list of subscriptions associated with your Microsoft account.

**Task 3: Use Azure PowerShell cmdlets**

1. Back in the **Administrator: Windows PowerShell ISE** window, in the console pane, retrieve the list of subscriptions associated with your Microsoft account by running the following cmdlet:

Get-AzureRmSubscription

1. Find your Azure subscription by running the following cmdlet, replacing *<Value of the SubscriptionId property>* with the value of the Subscription Id property returned by the Get-AzureRmSubscription cmdlet:

Select-AzureRmSubscription -SubscriptionId <Value of the SubscriptionId property>

Note: If you had multiple subscriptions, you would use the preceding cmdlet to specify the Azure subscription you want to work with in the current PowerShell session.

1. Retrieve the types of Azure Resource Manager resources you can create in your subscription by running the following cmdlet:

Get-AzureRmResourceProvider

Note: The cmdlet lists each **Azure Resource Provider**, its registration state (the provider must be registered before you can use it), and the list of resource types you can create by referencing it.

1. Identify the list of resources that are implemented by the **Microsoft.Compute** Azure Resource Manager resource provider (which includes Azure Virtual Machines) by running the following cmdlet:

Get-AzureRmResourceProvider -ProviderNamespace Microsoft.Compute

1. Identify the list of resources that are implemented by the **Microsoft.Compute** Azure Resource Manager resource provider in the **USGov Virginia** Azure region by running the following cmdlet:

Get-AzureRmResourceProvider -ProviderNamespace Microsoft.Compute -Location 'USGov Virginia'

**Task 4. Use PowerShell script to create VM**

1. In the ISE Command window, set the Execution Policy by running the following cmdlet:

Set-ExecutionPolicy -ExecutionPolicy Unrestricted

In the popup bar, click **Yes to All**.

Note: Setting the ExecutionPolicy to Unrestricted can be detrimental to overall security. This generally will not cause any issues in training, but avoid doing so in a production environment.

1. Get the **Mod1\_PS\_ArmVM.ps1** from the instructor and put it in **Documents\WindowsPowerShell\Scripts** (this might already be done).
2. In PowerShell ISE, in the **Menu**, select **Open**, and navigate to **Documents\WindowsPowerShell\Scripts**. Select **Mod1\_PS\_ArmVM.ps1**, and click **Open**.
3. In the script, replace *<SubscriptionName>* with the subscription name used in Task 1, Step 12 above.
4. Save the entire script by clicking the **Disk** icon in the upper icon menu, and then, run the script by clicking on the single green arrow (**Run** **Script**).
5. In the **Sign in to your account** window, provide your credentials and click **Sign in**.
6. It can take up to 10-15 minutes for the script to finish. You’ll know it is still running because the square icon (**Stop**) is lit red.
7. While the script is running, you may get a warning that states, or states something similar to:

WARNING: The output object type of this cmdlet will be modified in a future release.

WARNING: New-AzureRmVMConfig: A property of the output of this cmdlet will change in an upcoming breaking change release. The StorageAccountType property for a DataDisk will return Standard\_LRS and Premium\_LRS

**Note:** As we mentioned before, Azure is *always* changing. These warnings let us know that there are going to be new parameters or parameter values associated with a particular Azure PowerShell cmdlet. The script elements will still apply and provide valid actions until such time as the next release. At Wintellect, we intend to stay on top of these changes by editing the scripts monthly, but sometimes the changes can occur between revisions.

1. When the script finishes, sign into the **Azure Government portal** with your credentials. In the **Dashboard**, under **All resources**, look through your resources and you should see the **armvm2RG** resource group, the **armvm2** virtual machine and other newly created objects made by the script’s actions.
2. When you have verified the new items, stop the virtual machine by double-clicking the **armvm2** virtual machine in **All resources**, and then in the blade menu bar, select **Stop**. Verify the stop action, and then close all open windows.