Azure Virtual Machines with Visual Studio Ultimate 2013

This HOL will walk you thru the steps necessary to provision a Windows Azure VM from an image that is available in the Windows Azure VM Gallery. During this HOL you will use Visual Studio 2013 Update 3 to connect an Azure Subscription and create a virtual machine based on Windows Server 2012 R2.

This scenario can support many common development activities were a developer would need to deploy code to an environment and be able to test it. An example scenario would be the development of a proof of concept (PoC) in an isolated environment and that required you to quickly provision one or more servers to validate the PoC code.

Another possible scenario that this would support is quickly testing compatibility of an updated external library. Easily take an existing code base make the necessary changes to use the new library and deploy the software to the self-provisioned Windows Azure VM.

Prerequisites

In order to complete this lab you will need Visual Studio 2103 Premium or Ultimate, Azure SDK 2.4 RTM Release, and a Windows Azure Subscription.

Visual Studio 2013 Update 3 - http://www.visualstudio.com/en-us/downloads/download-visual-studio-vs#d-visual-studio-2013-update

Windows Azure SDK 2.4 RTM Release - http://go.microsoft.com/fwlink/?LinkId=404332

Windows Azure Free Trial Subscription - http://azure.microsoft.com/en-us/pricing/free-trial

Exercises

This hands-on lab includes the following exercises:

Create Cloud Service

Configure Azure Virtual Network

Connecting Visual Studio Server Explorer to Azure Subscription

Configure Azure Storage Account

Creating a VM from Azure Gallery

Connect to VM with Remote Desktop.

Expected duration: 60 minutes

Exercise 1: Create Cloud Service

In this exercise, you will configure an Azure Cloud Service to uniquely identify all associated Azure Accounts, Virtual Networks, and Virtual Machines that will be created during in this HOL. A unique URL identifies a Cloud Service in which you supply a unique host name that is prefixed to the domain "cloudapp.net".

1. Launch **Internet Explorer** and navigate to the **Azure Management Portal**. The URL to the portal is https://manage.windowsazure.com. If prompted enter the **Microsoft account credentials** used to access your **Azure Subscription** and **click** on **Sign In**.

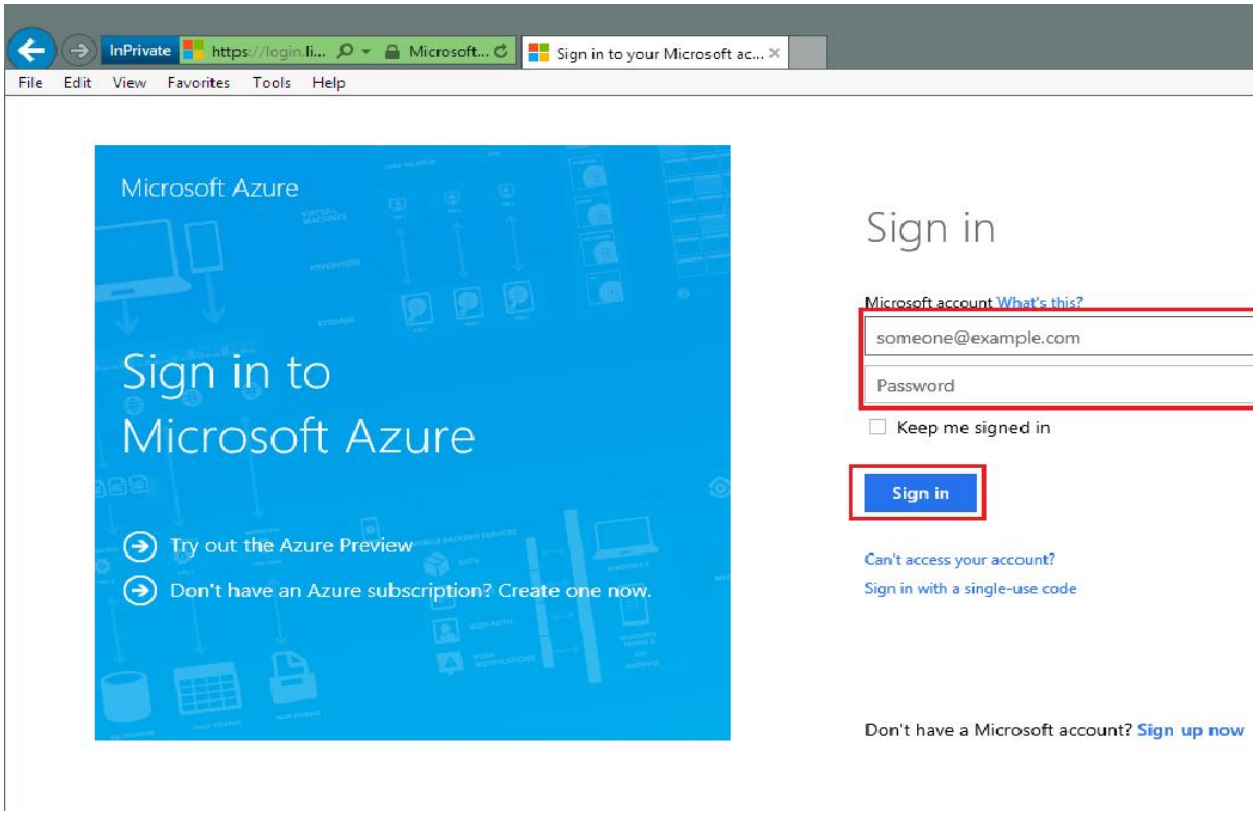

***Figure 1**: Azure Management Portal Sign In*

2. Now you will need to add a new Cloud Services configuration, this new Cloud Service will provide the unique URL in which you will use to access the Azure VM. Start by c**licking** on the **Cloud Services** Hub in the Azure Management Portal to view and manage all the Cloud Services configured for your subscription.

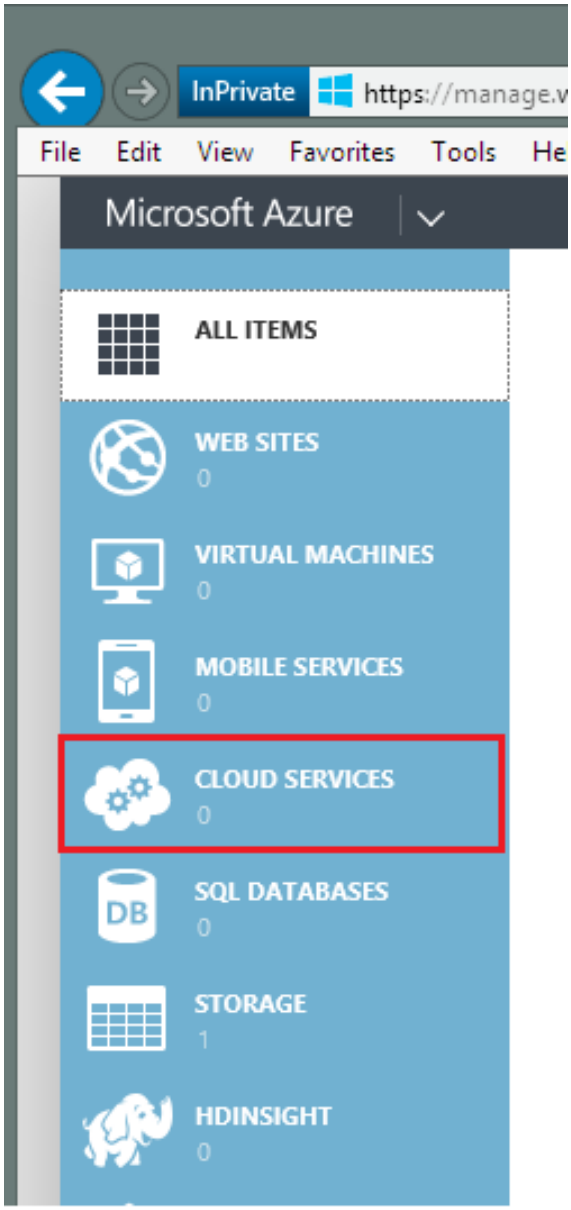

***Figure 2** : Viewing Cloud Services*

3. At the **bottom** of the browser window of the Azure Management Portal **click** on the **New** button to begin the creation of a new Azure cloud service.

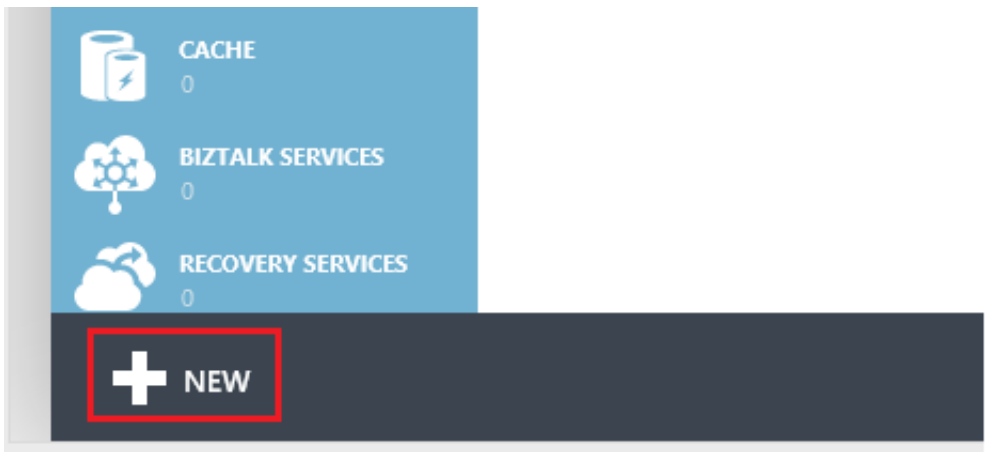

Figure 3 : Selecting New to create a new Cloud Service

4. In the New window **click** on the **COMPUTE** button located in the first column, then in the second column **click** on the **CLOUD SERVICE** button and then finally in the third column **click** on the **CUSTOM CREATE** button.

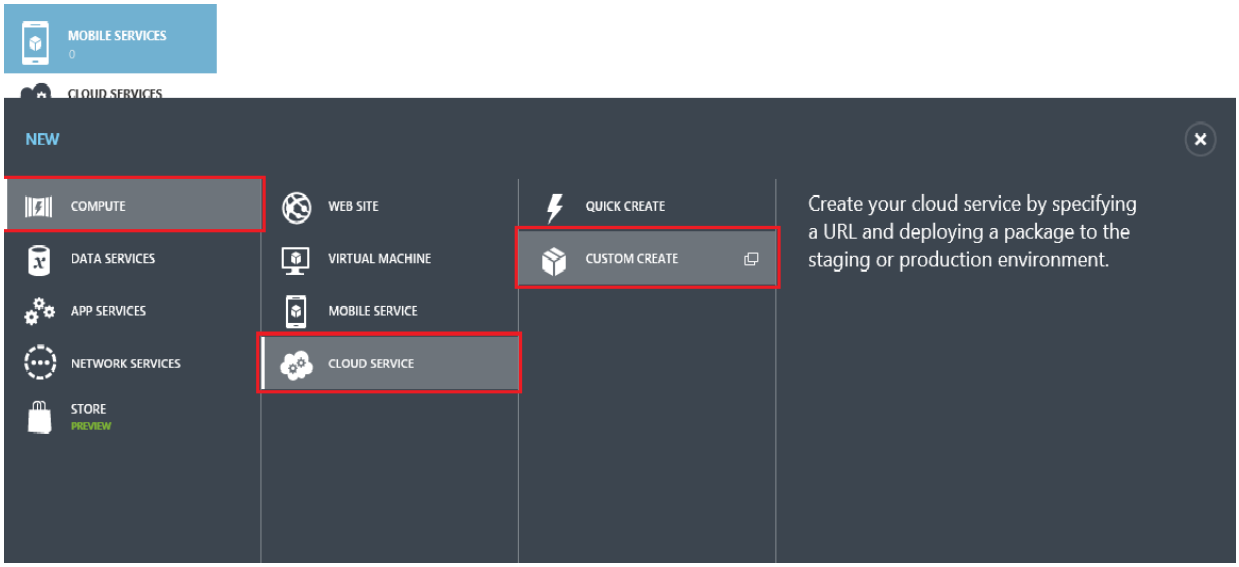

Figure 4: Create new Cloud Service

5. In the New Cloud Service dialog **enter** a unique host name in the URL text box that you would like to use to identify this cloud service. For the purpose of the exercise it is recommended to use the **first letter** of your **first name**, **middle name**, and **last name** then followed by a **dash** and ending with **CS-HOL**. *For example **DAP-CS-HOL**.*
6. If the name is unique and has the correct characters there will be a green check mark icon will be displayed.

> **Note** This field can contain only letters, numbers, and hyphens. The first and last character in the field must be a letter or number. Trademarks, reserved words, and offensive words are not allowed.

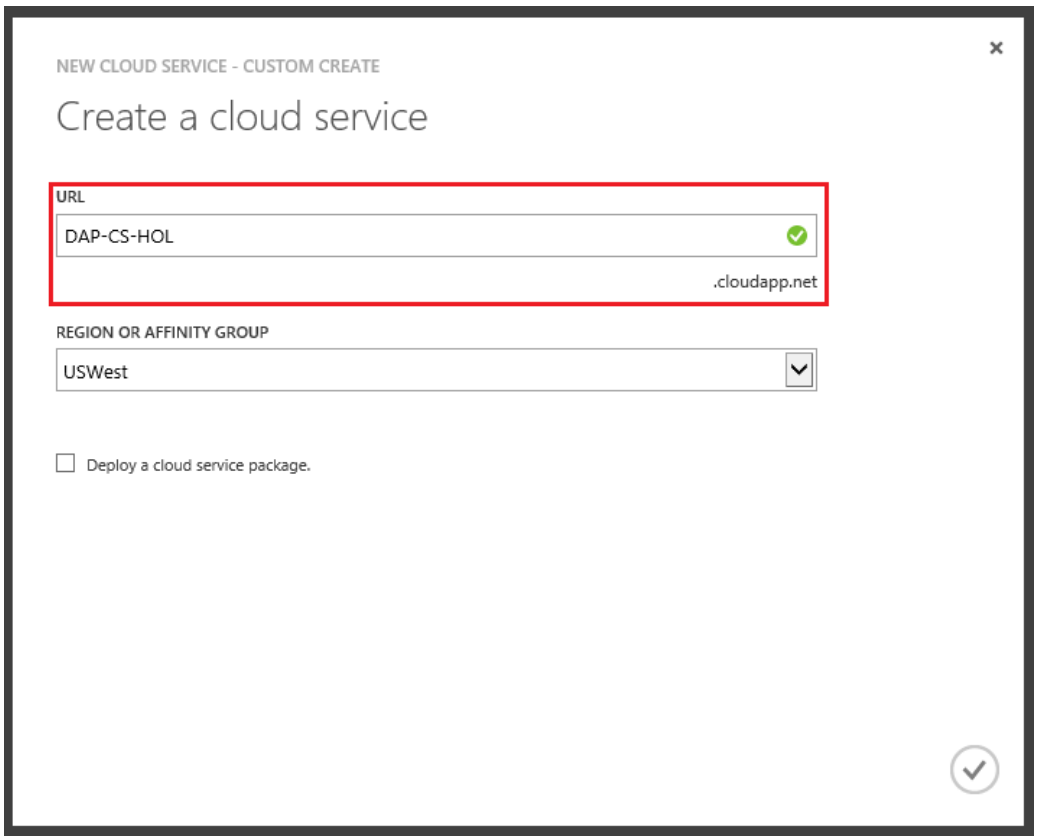

***Figure 5**: Cloud Service Host Name*

7. In the New Cloud Service dialog **select** the **West US** region from the **Region of Affinity Group** selection menu. Then click on the complete check box in the lower right corner of the dialog

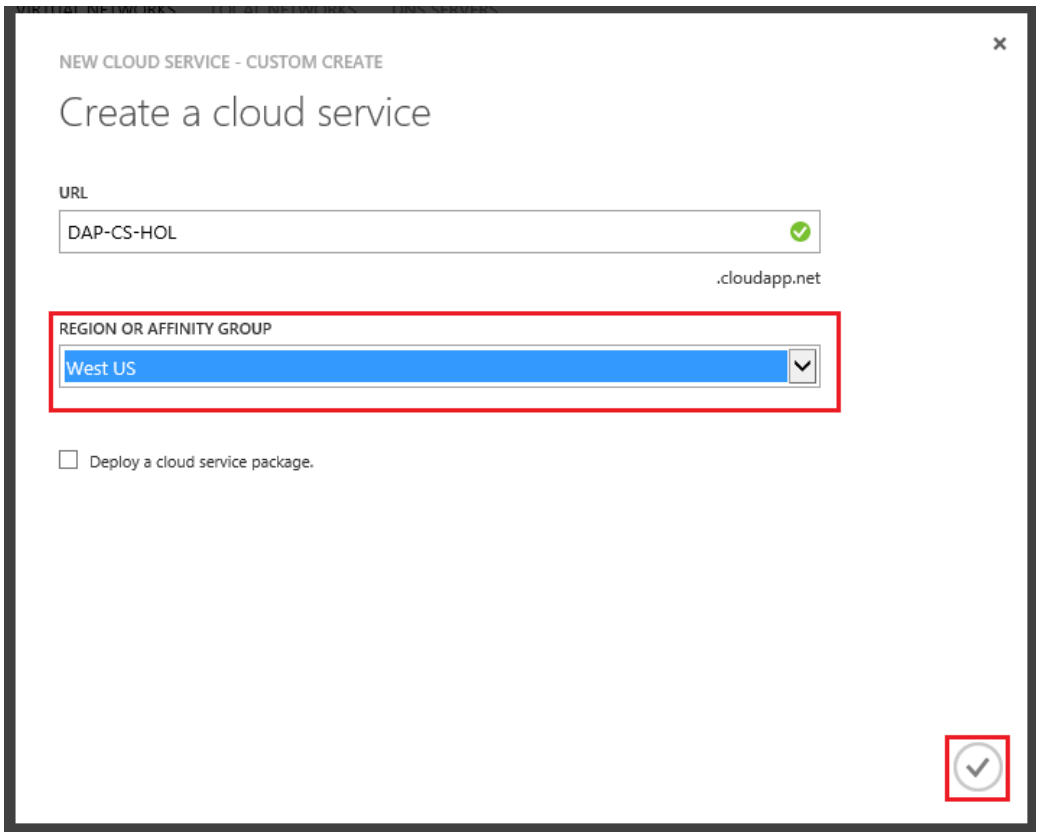

Figure 6: Select Cloud Service Region

The dialog will close and the Azure Management **Portal** will now show that your new cloud service is being created, which usually takes **10** to **60** seconds **to finish**. Once completed the **Cloud Services hub** will show display the new **name** , **status**, **URL** and other additional details of the service.

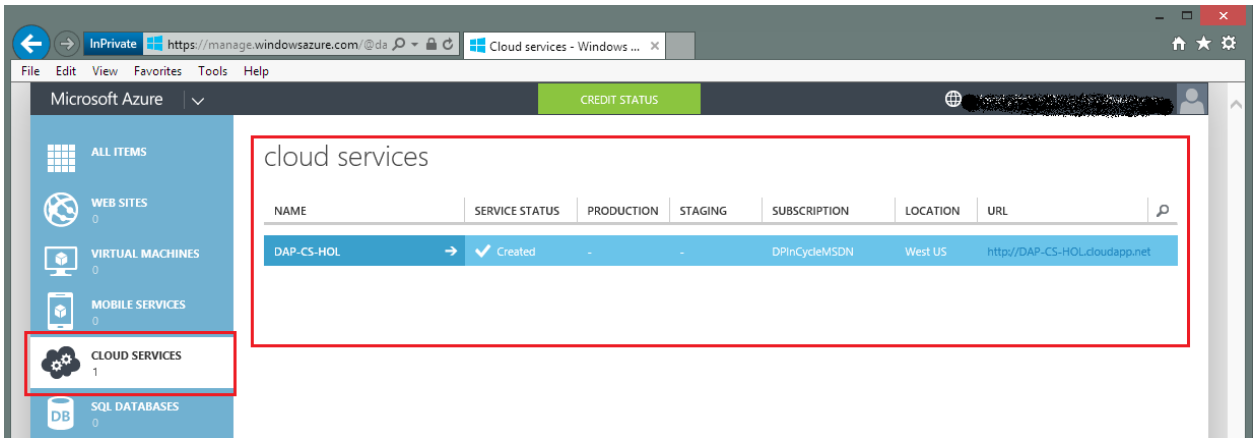

Figure 7: Completed Cloud Service

8. You should have now successfully configured an Azure Cloud Service that will be used for the other remaining exercises.

Exercise 2: Create Azure Virtual Network

In this exercise, you will learn to create an Azure Virtual Network that will enable virtual machines to communicate with each other. Azure Virtual Networks are created using non publicly addressable IP addresses. This virtual network will also allow you to later create a Point-to-Site VPN connection.

1. In the Azure Management Portal **scroll** down the left column until the **Networks** button is visible and then **click** on the **Networks** button. This will show a view that allows you to view and manage available Azure networks.

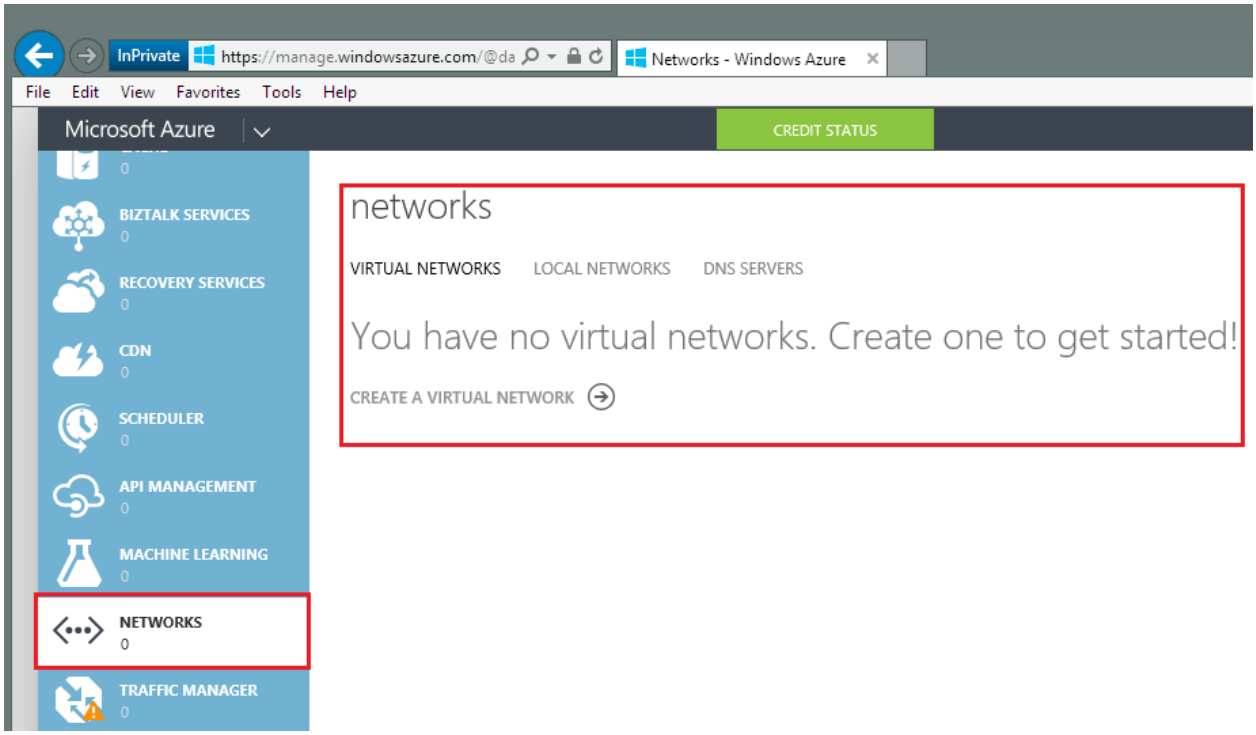

***Figure 8**: View Azure Networks*

2. At the **bottom** of the browser window of the Azure Management Portal **click** on the **New** button to begin the creation of a new Azure network.

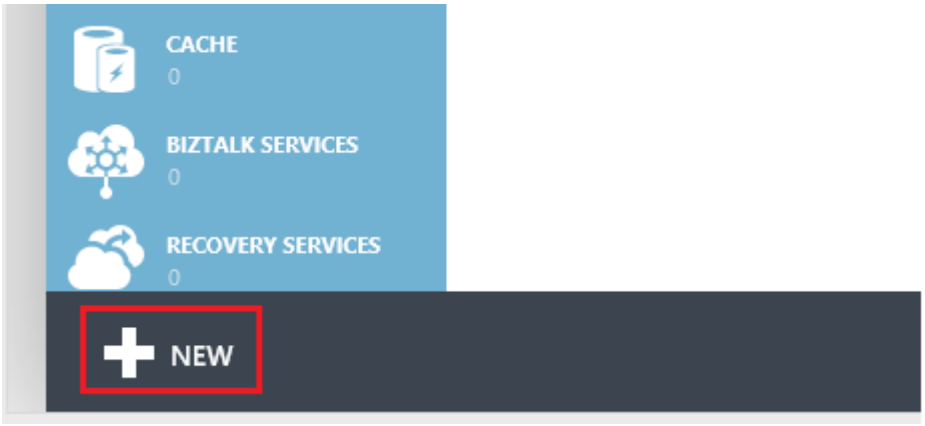

***Figure 9**: Selecting New to create a new Azure Network*

3. In the New window **click** on the **NETWORK SERVICES** button located in the first column, then in the second column **click** on the **VIRTUAL NETWORK** button and then finally in the third column **click** on the **CUSTOM CREATE** button.

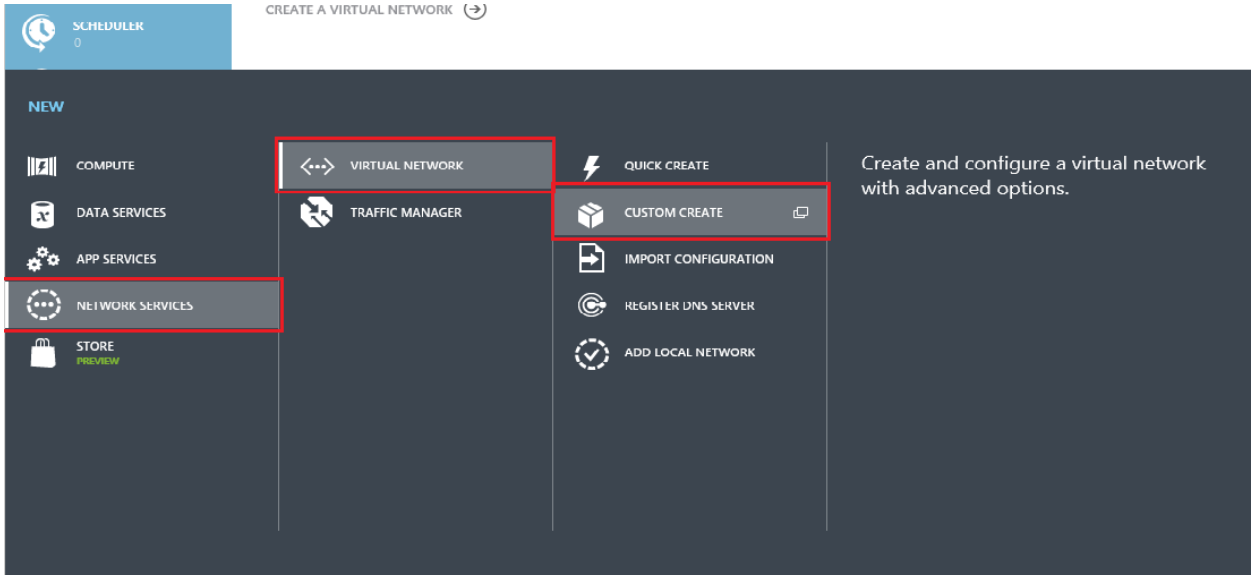

***Figure 10**: Create new Virtual Network*

4. In the Virtual Network Details window, enter a name that will be used to identify the new virtual network. This name must be unique within an Azure subscription. For the purpose of the exercise it is recommended to use the **first letter** of your **first name**, **middle name**, and **last name** then followed by a **dash** and ending with **VNET-HOL**. *For example **DAP-VNET-HOL**.*

> ***Note**: Names must start with a letter or number, and must contain only letters, numbers, or dashes. Spaces are not allowed.*

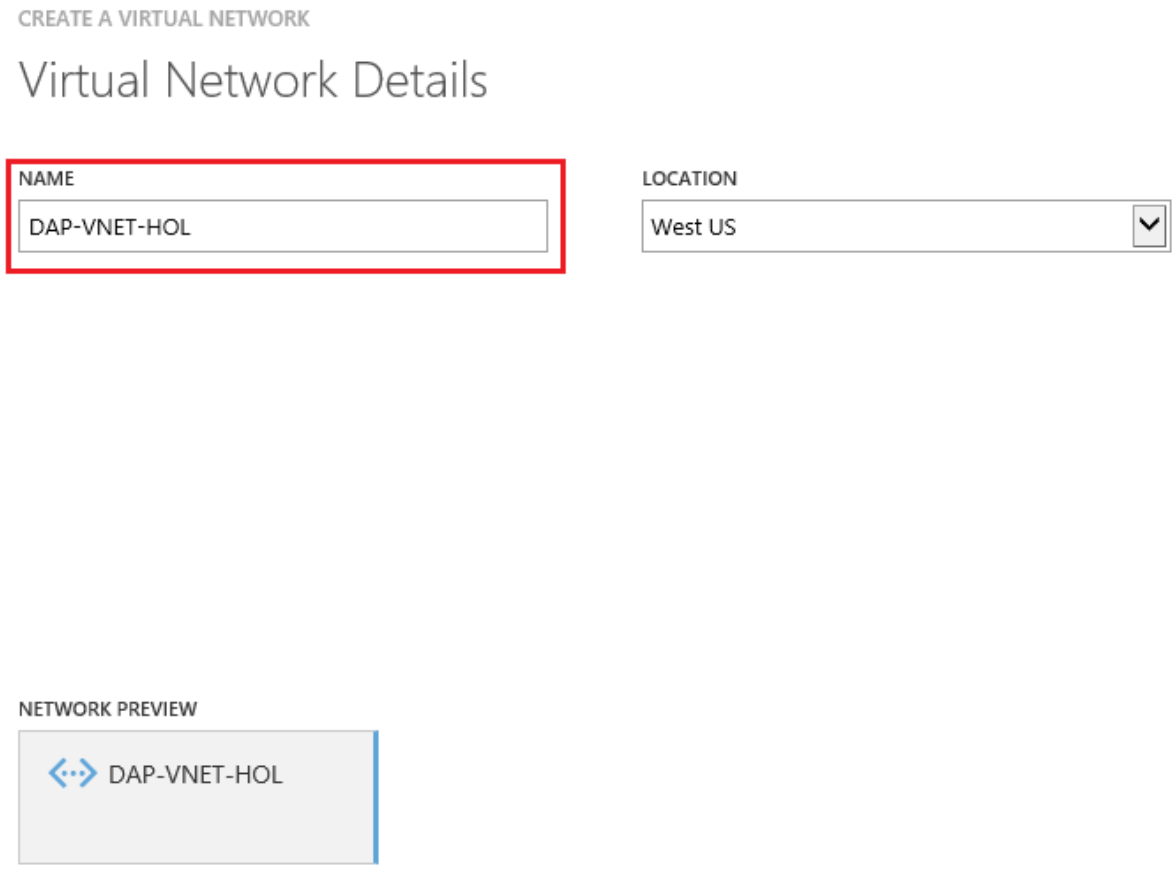

Figure 11: *Enter Virtual Network Name*

5. In the Virtual Network Details window, **select** the same location that you did for the cloud service, this will be **West US**, from the **Location** selection menu. You want to configure your network to be consistent with the datacenter used for your service and all the VM that are part of that network. Finally **click** on the **next** button indicated by an **icon** with an **arrow point to the right enclosed in a circle**.

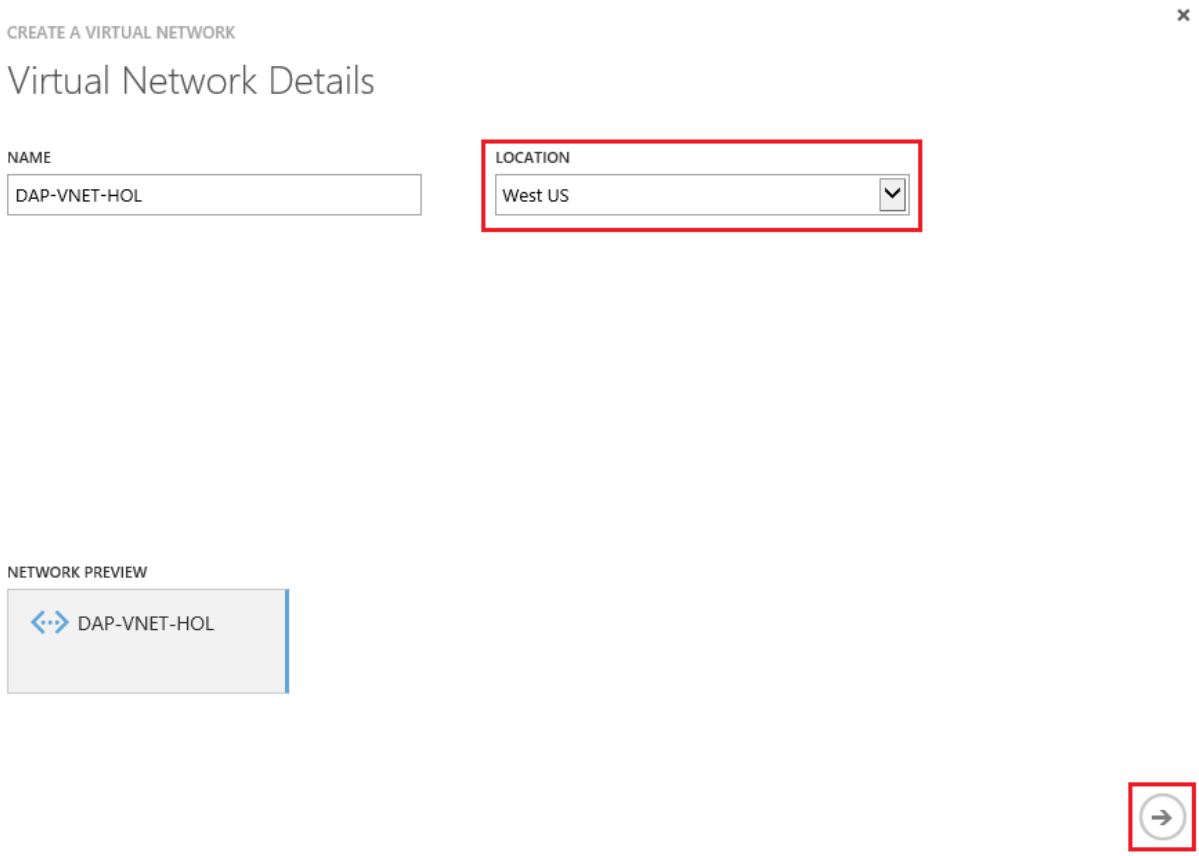

Figure 12: *Virtual Network Location*

6. Click the **next** button again to **skip** past step **two** and move forward to step **three**.

In Virtual Network Address Spaces window, you will define the available IP addresses and subnets that are available for assignment to virtual machines. **Click** on the text box that has a subnet name of **Subnet-1** and **change** the value **to VM-HOL-SNet**, **change** the **STARTING IP** address to a value of **10.0.1.0**, and **select** a **CIDR ADDRESS** value of **/24 (256)**. Finally **click** the **finish** button, the **icon** represented by a **check mark** enclosed by a circle.

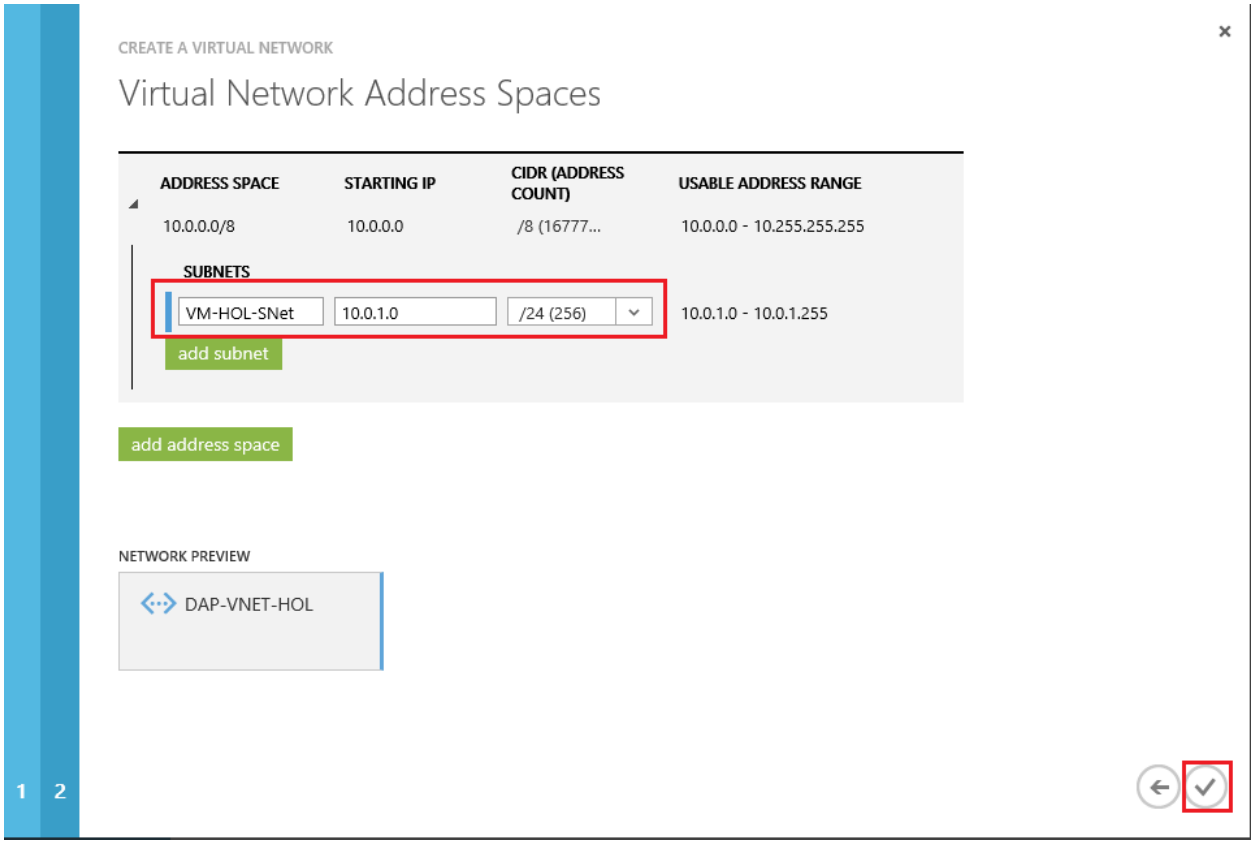

Figure 13: *Configure Virtual Network Address Range*

7. When the dialog closed you will be back to the Networks view and the Azure Management Portal will show updated status of creating the virtual network you have just defined. It may take several minutes for the network creation to complete, wait till the status turns to completed.

Figure 14: Creating Virtual Network

Figure 15: *Virtual Network Create*

Exercise 3: Connecting Visual Studio Server Explorer to Azure Subscription

In this exercise, you will configure Visual Studio 2013 Update 3 to connect to your Azure Subscription and enable browsing of your Azure resources using the Azure Server Explorer that is integrated as part of the Visual Studio IDE.

1. Launch Visual Studio 2013.
2. On the Visual Studio menu bar **click** on View -> Server Explorer to **open** the **Server Explorer** window.

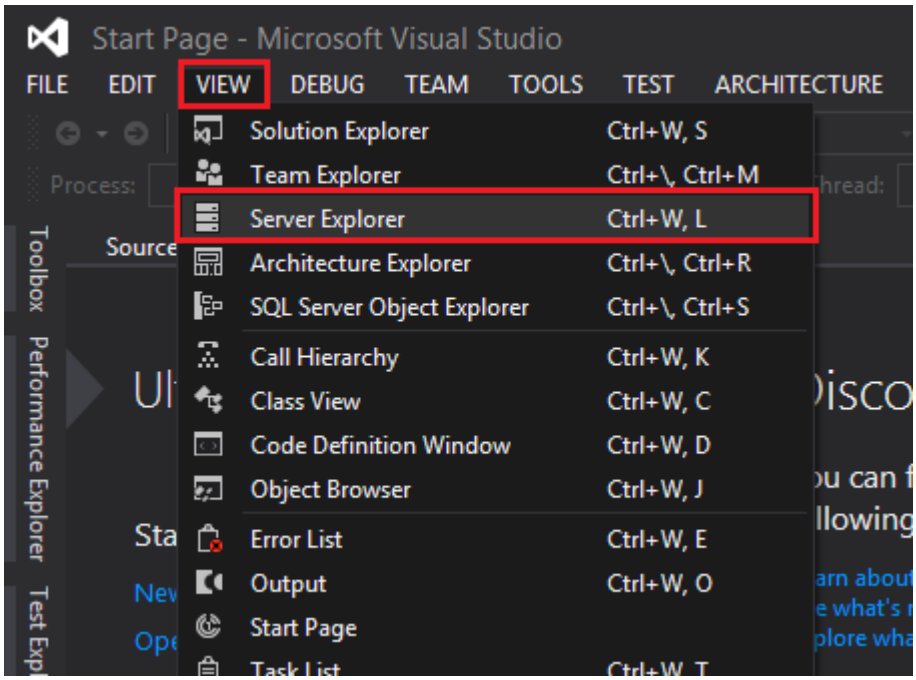

Figure 16: *Open Server Explorer Window*

3. In the Server Explorer window **right-click** on the Azure node and then **click** on **Connect to Microsoft Azure**.

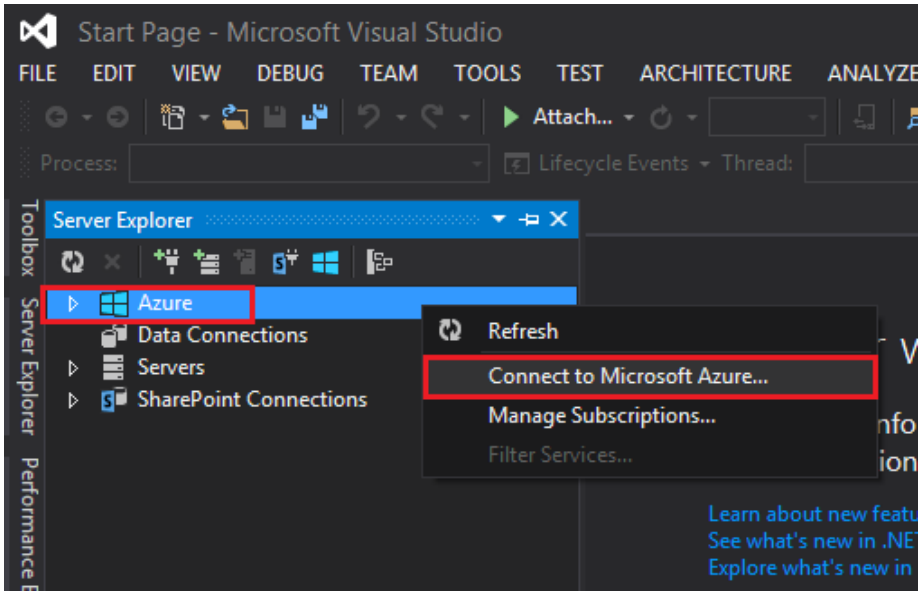

Figure 17: Connect to Microsoft Azure

4. In the Sign in to Microsoft Azure dialog **enter** your **email address** of the Microsoft address that is registered with your Azure Subscription and then **click** the **Continue** button.

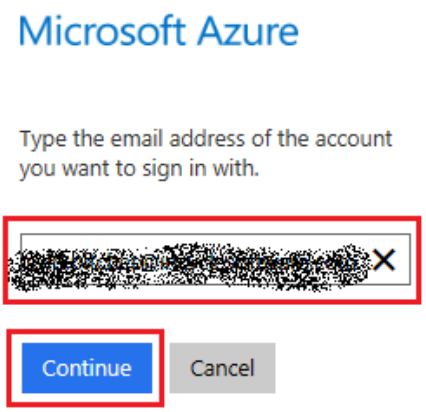

Figure 18: Login in to Azure Subscription

5. When prompted **enter** your **password** for your Microsoft Account and then **click** the **Sign In** button.

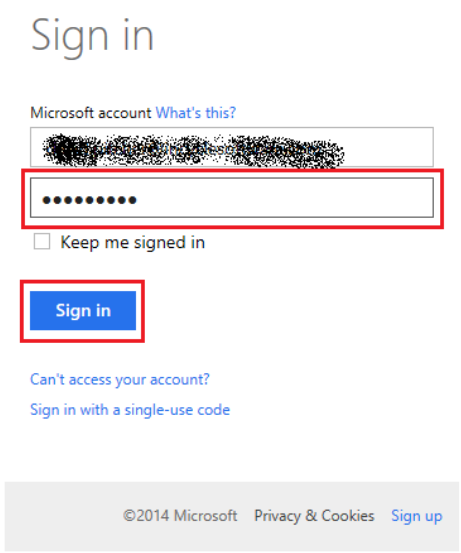

Figure 19: Enter Microsoft Account Password

6. **Click** on the **arrow** next to the Azure node in the Server Explorer window to **expand** the tree and display a list of available Azure objects.

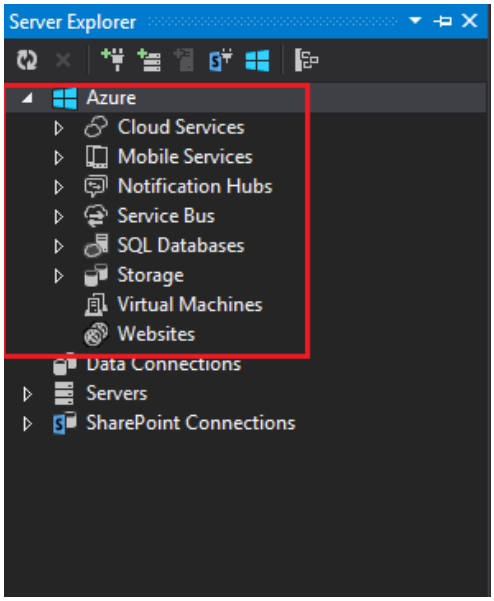

Figure 20: *Connected to Azure*

7. Click on the arrow next to the Cloud Services node and verify the cloud service you created in exercise 1 is displayed. If not, right-click on Cloud Services and then click on Refresh.

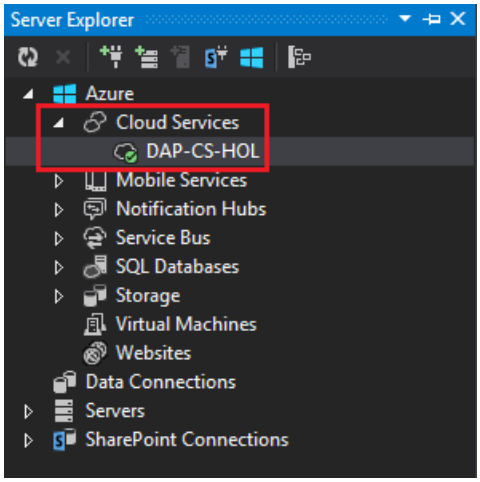

Figure 21: *Cloud Services from Exercise 1*

Exercise 4: Configure Azure Storage Account

In this exercise, you will create a new Azure Cloud Storage account and container, which will be used to store the virtual disk(s) for the virtual machine you will create in the next exercise.

1. In the Server Explorer window **right-click** on the **Storage** node and then **click** on **Create Storage Account…** to start the creation process.

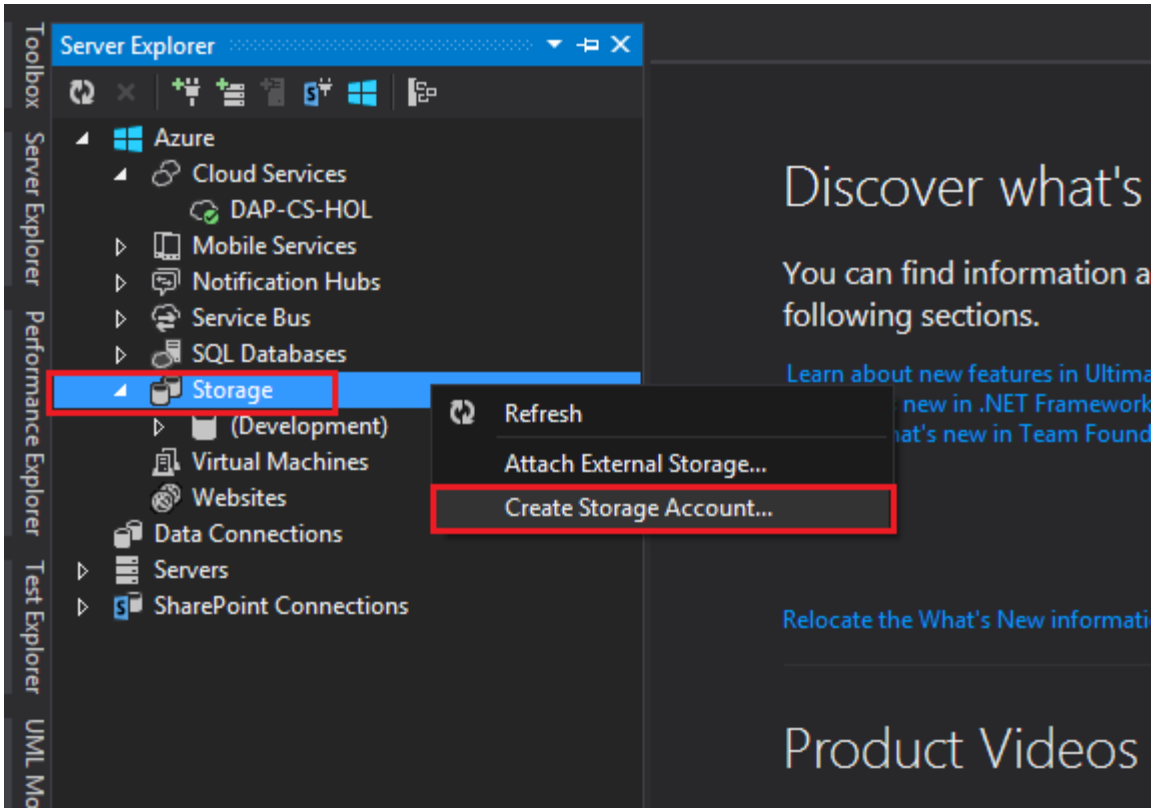

***Figure 22**: Adding Azure Storage Account*

2. For the purpose of the exercise, it is recommended to use the **first letter** of your **first name**, **middle name**, and **last name** then followed by **0vmstore** for a storage account name. In the Create Storage Account dialog window, **enter** the value of **your storage account** in the Name text box. **Select** the region **West US** from the **Region of Affinity Group** selection menu. **Select** the value of **Locally Redundant** from the **Replication** selection menu. Finally **click** on the **Create** button.

> ***Note**: Storage Account name must only contain lowercase letters or numbers. They also must be unique across all Azure accounts. The Storage Account name is part of a unique URL used to make the storage account http addressable.

3.

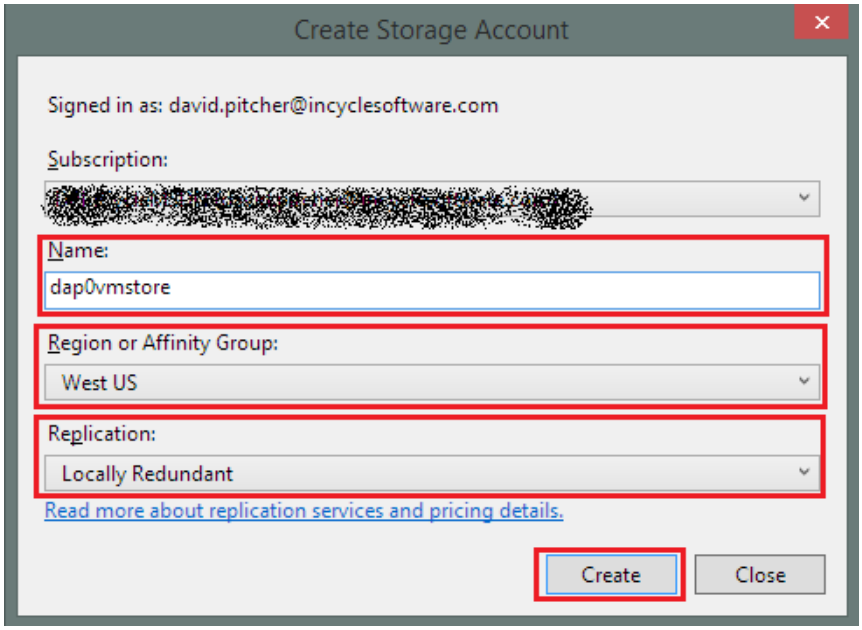

Figure 23: *Create Azure Storage Account*

4. Once the Azure Storage Account has been created, the dialog will close and the new storage account will be displayed under the Storage node of the Server Explorer window.

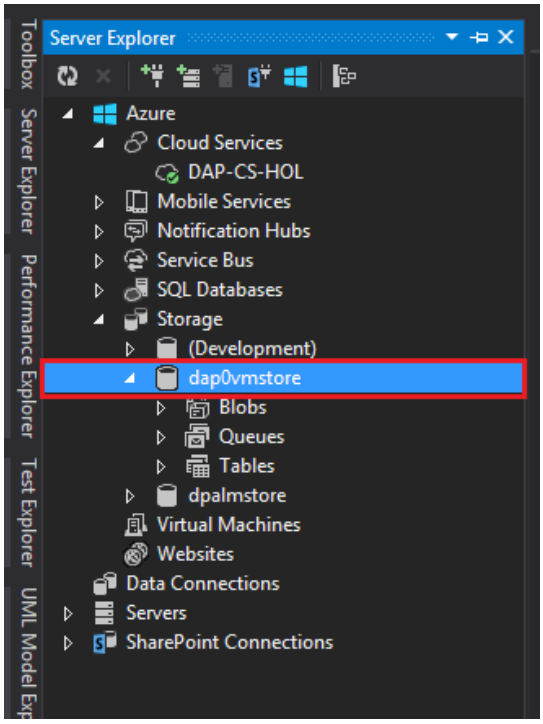

Figure 24: *Verify Store Account Creation*

5. In the Server Explorer window, **right click** on the new storage account and select refresh so that the Server Explorer updates itself with the latest metadata and properties regarding the storage account. Before proceeding make sure the storage account is visible in the Storage account explorer.

6. Take a few minutes to explore the storage account that you create in step 3. First start by **clicking** on the **right arrow** icon next to the storage account name and expand that tree node. Explore the **Blobs**, **Queues**, and **Tables** nodes. Finally **right click** on the storage account and **click** on the **Properties** menu item, which will display the properties dialog for that storage account.

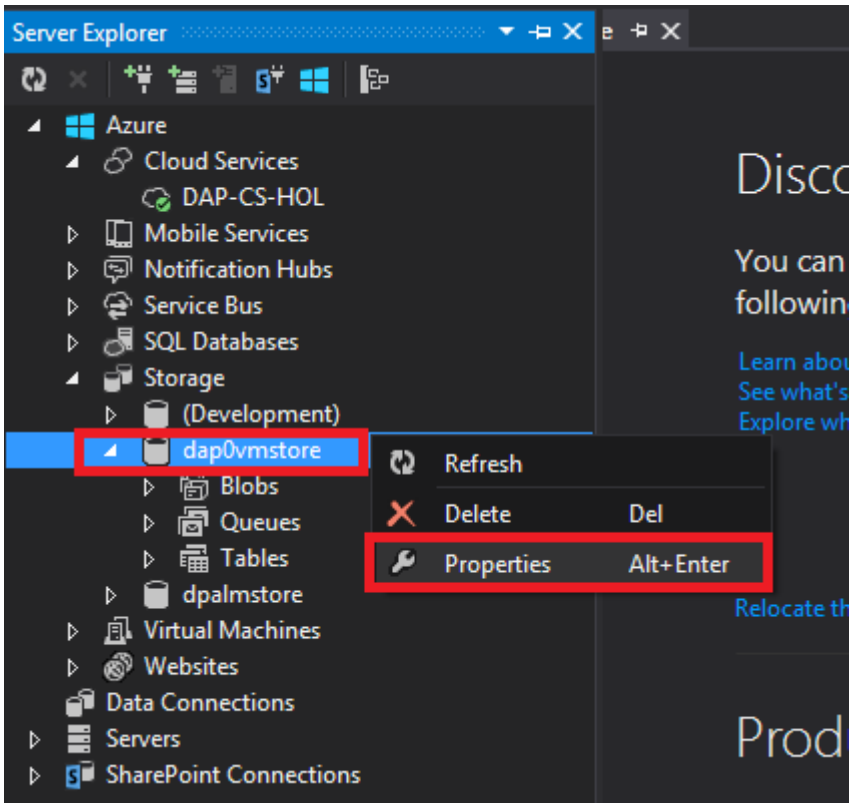

Figure 25: *Storage Account Properties*

7. Take a few minutes and review the properties displayed for the storage account. Two areas of particular interest is the Storage Account Keys property and the Connection String property.

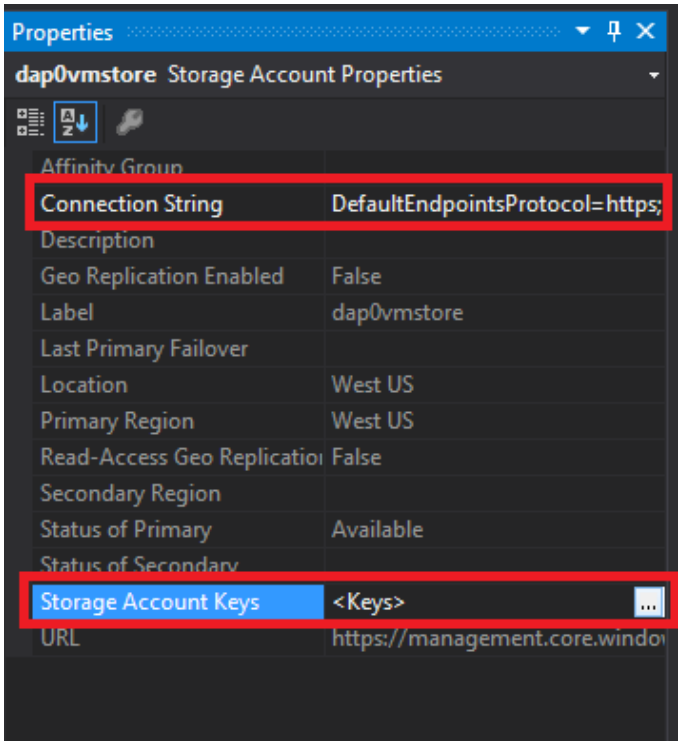

Figure 26: *Storage Account Keys and Connection String*

8. In the Server Explorer window click on the storage account created in the previous step and then right-click on the Blobs node and then click on the Create Blob Container… menu item.

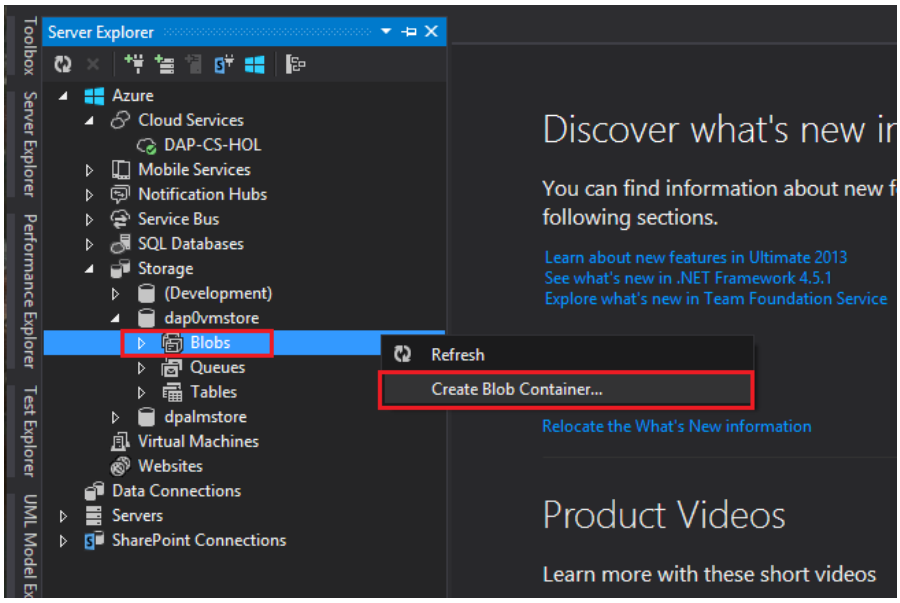

Figure 27*: Create Blob Container*

9. In the Create Blob Container dialog enter the value of **vm-vdhs** and then **click** the **OK** button. This container will be used to store the VHD disk for the VM you will be creating.

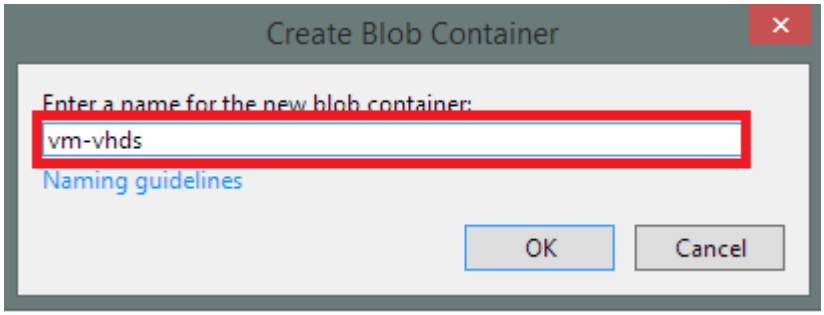

Figure 28: *Create Blob Container*

Exercise 5: Creating a VM from Azure Gallery

In this exercise, you will create a new VM using the Azure Windows VM Gallery. During the VM creation process you will assign a specific network and subnet the VM will be part of for network communication. You will also specify the blob container that will be used to store the VHD disk.

10. Open the **Server Explorer** view and **right click** on Virtual Machines, then **click** on Create Virtual Machine menu item.

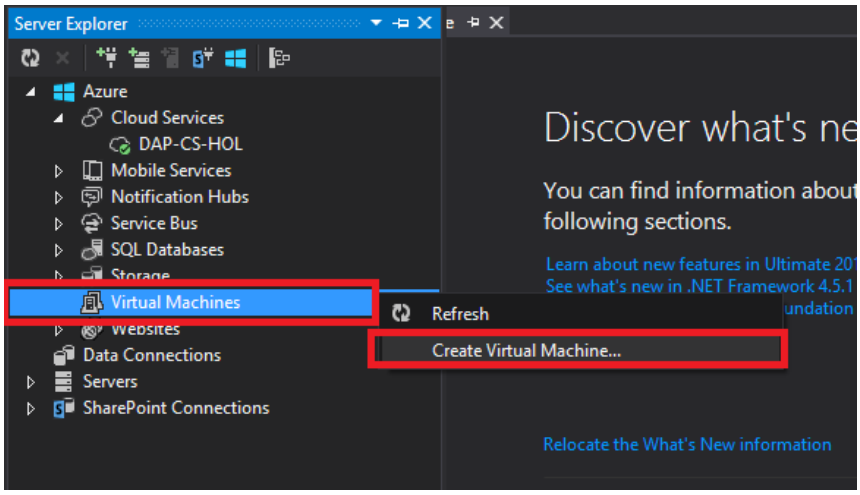

Figure 29: *Create new Virtual Machine*

11. In the Create New Virtual Machine window, validate that your correct Azure subscription is selected and then **click** on the **Next** Button.

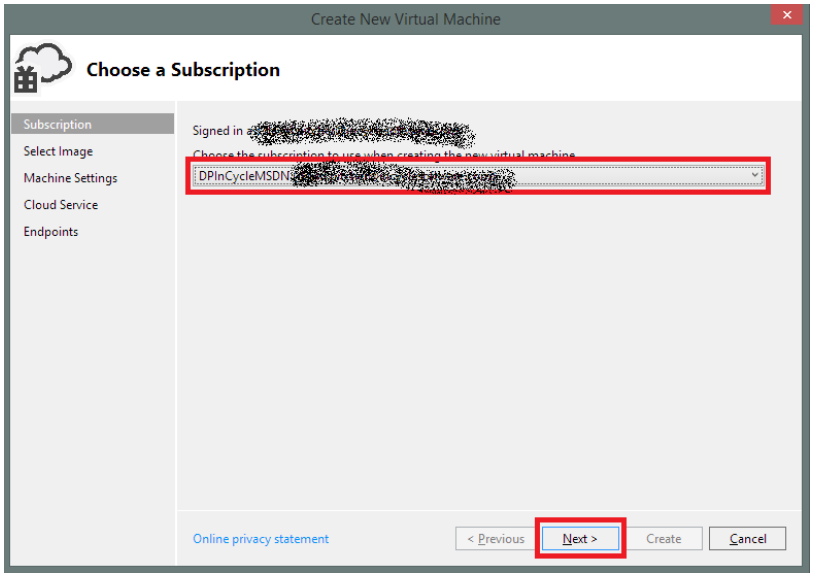

Figure 30: *Select Azure Subscription*

12. In the Create New Virtual Machine window, **select Windows Server** from the **Image Type** select box. Next, **select the Windows Server 2008 R2 SP1, July 2014** from the **Image Label** list box. **Click** on the **Next** button to proceed to the next step of the VM creation process.

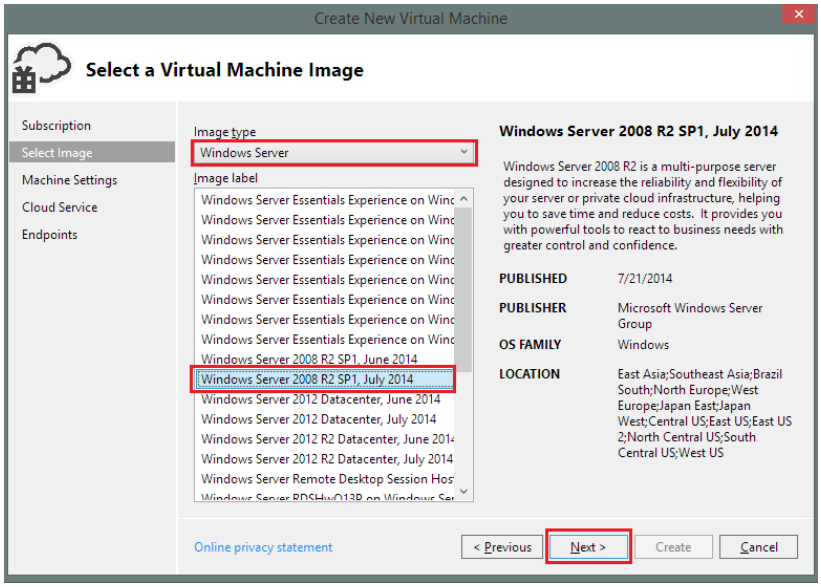

Figure 31: *Select Windows Server 2008 R1 SP1*

13. In the Create New Virtual Machine window, **enter** the following configuration values for the new VM. **Click** the **Next** button once you enter the configuration values below.
14. Virtual machine name: the **first letter** of your **first name**, **middle name**, and **last name** then followed by **–hol-vm**.
15. Size: Small (1 cores, 1792 MB)
16. User name: **vmAdmin**
17. Password: P2ssw0rd
18. Confirm: P2ssw0rd

***Note**: User name and Password fields define the local administrator account for the new VM.

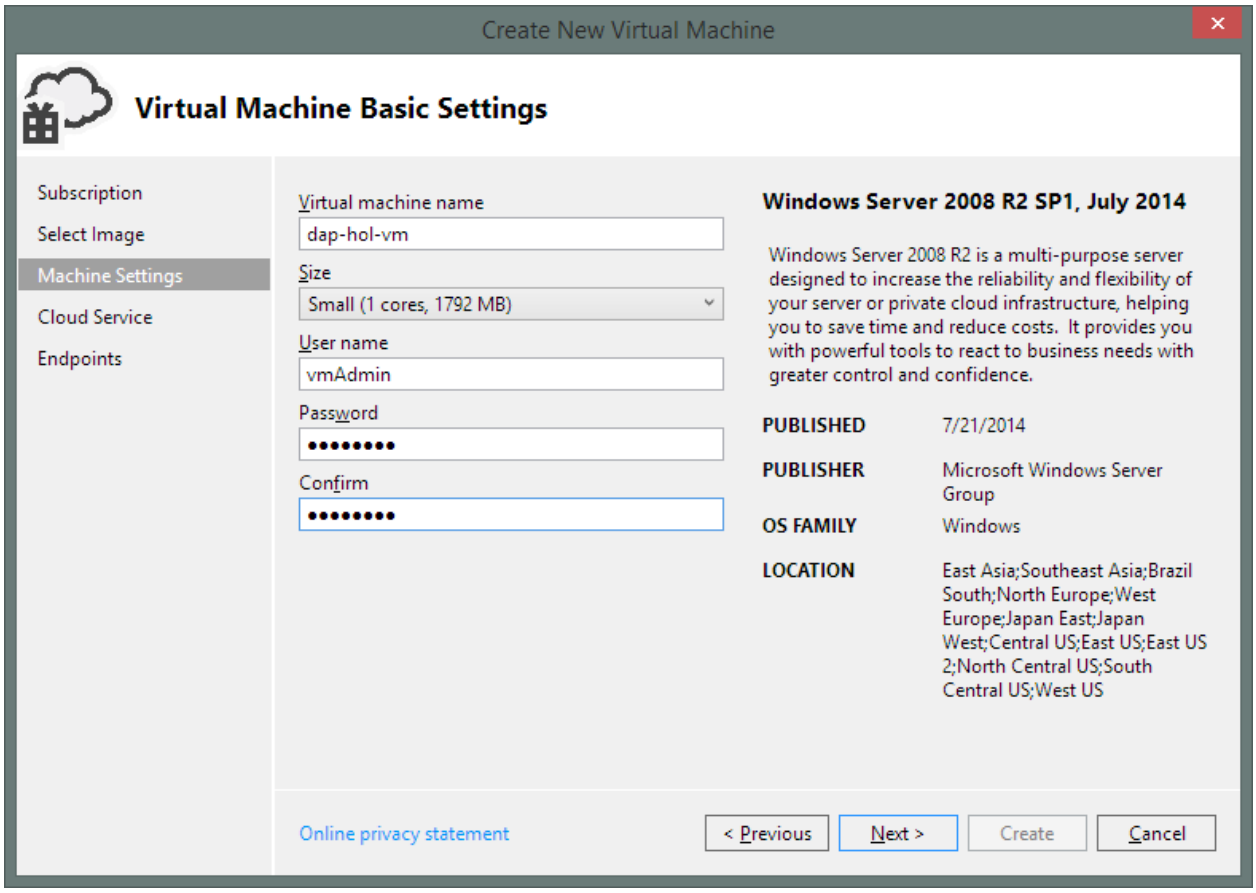

Figure 32: *VM Configuration values*

19. In the Create New Virtual Machine window, **enter** the following Cloud Service configuration values for the new VM. **Click** the **Next** button once you enter the configuration values below.
20. Cloud service: Use the **value** of the name of the cloud service that you created in **Exercise 1**. This should be in the format of the **first letter** of your **first name**, **middle name**, and **last name** then followed by **–CS-HOL**.
21. Virtual Network: Use the **value** of the name of the **virtual network** that you created in **Exercise 2**. This should be in the format of the **first letter** of your **first name**, **middle name**, and **last name** then followed by **–VNET-HOL.**
22. Subnet: Use the **value** of the name of the virtual network **subnet** that you created in Exercise 2. The **value** should be **VM-HOL-SNet**.
23. Storage account: Use the **value** of the name of the **storage account** that you created in **Exercise 3**. This should be in the format of the **first letter** of your **first name**, **middle name**, and **last name** then followed by **0vmstore.**

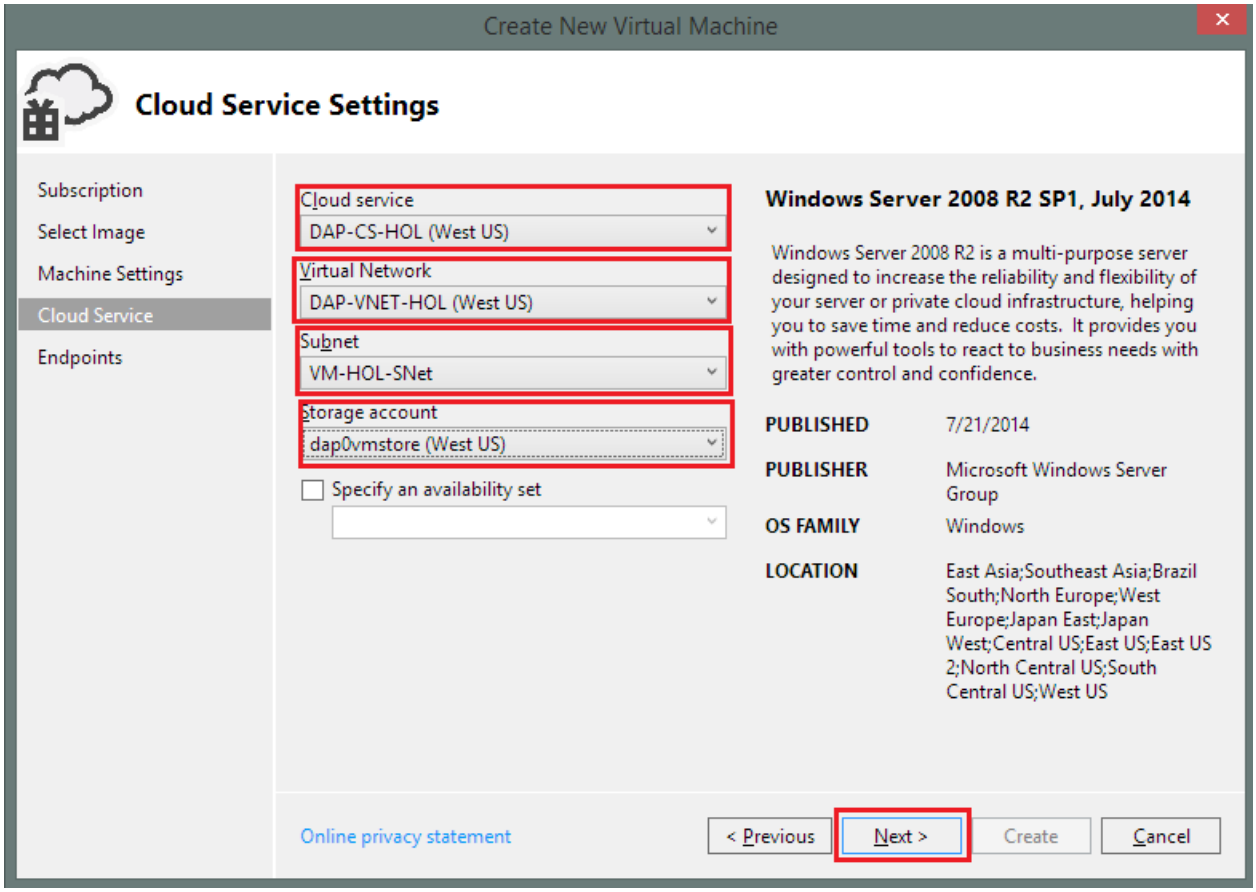

***Figure 33**: VM Cloud Service Configuration*

24. In the Create New Virtual Machine window, take note of the configured **Endpoints**, network ports and protocols, that will be enabled for this VM. More specifically review the **Remote Desktop** configuration as this will be used to RDP and manage the VM once created.
25. Click the Create button to finish the VM creation process.

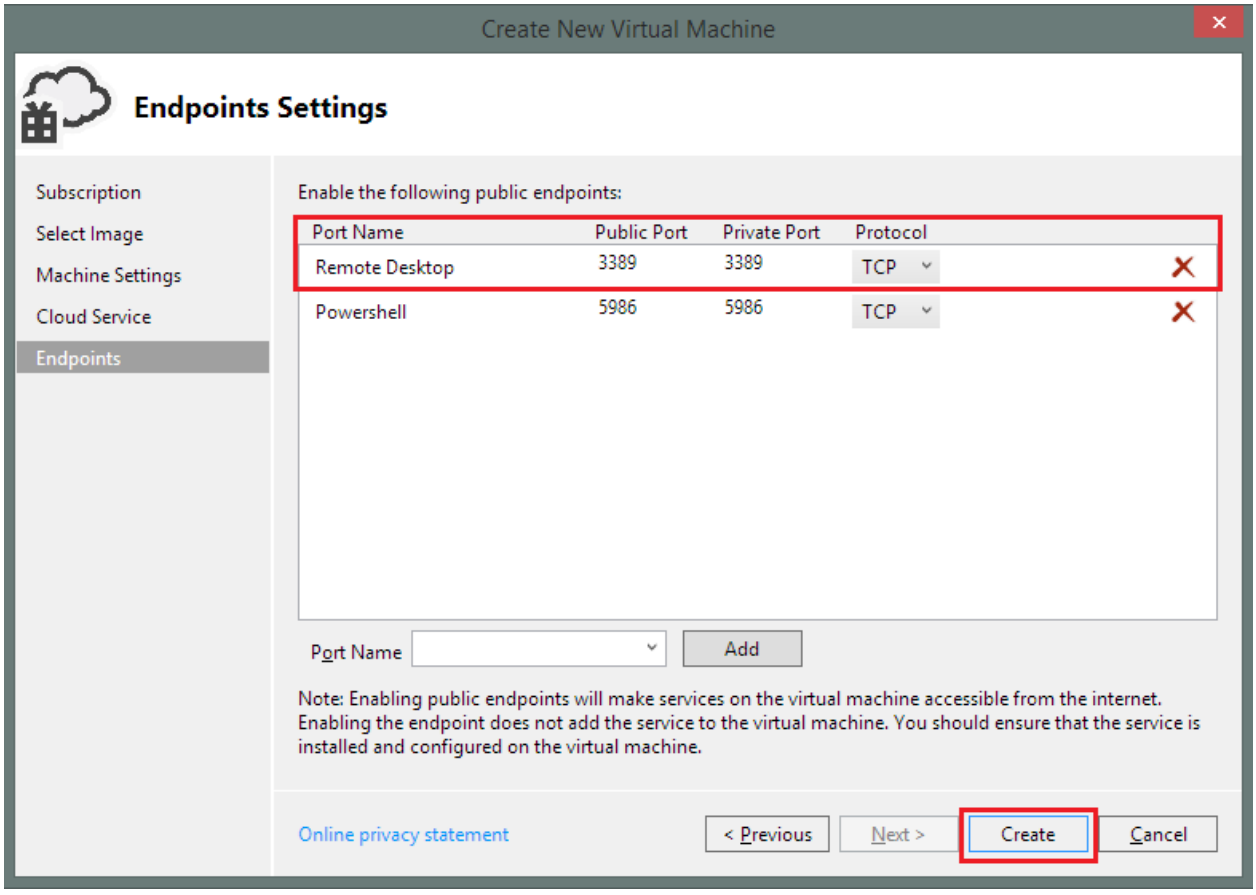

***Figure 34**: Create VM*

26. At the **bottom** of the Visual Studio IDE the **Microsoft Azure Activity Log** window will be activated and show the **status** of the VM as it is being created. **Monitor** the window until the **Status** column value shows **Completed**. Before moving on to the next step make sure the VM creation is completed.

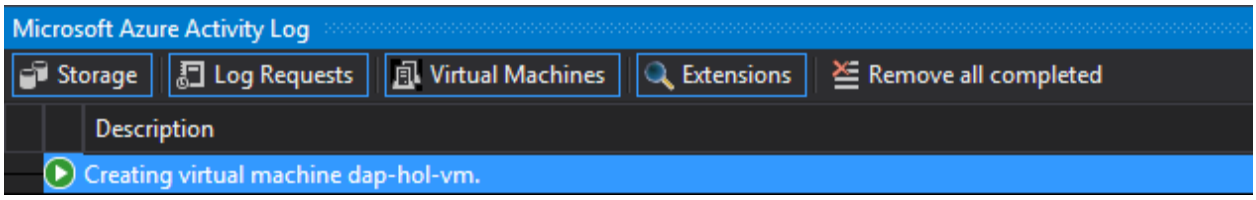

***Figure 35:** VM Creation in progress*

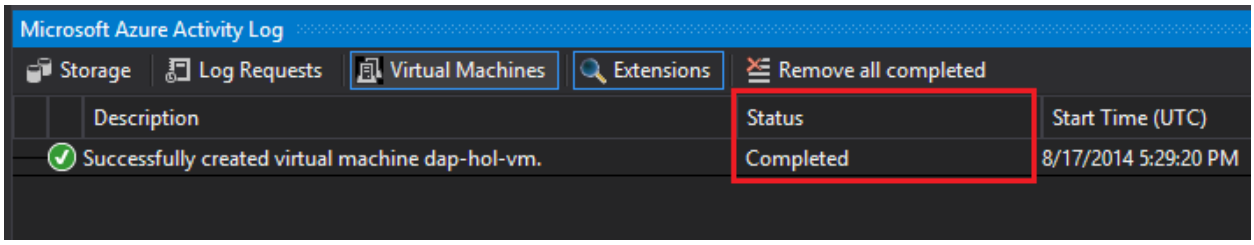

***Figure 36:** VM Creation completed*

Exercise 6: Connect to VM with Remote Desktop

In this exercise, you will establish an RDP connection to the VM created in the previous exercise.

1. Navigate back to the Server Explorer view, **expand** the Virtual Machines tree node to display a list of VMs available. **Right click** on the **VM** you created in **exercise 5** then **click** on the **Connect Using Remote Desktop** menu item.

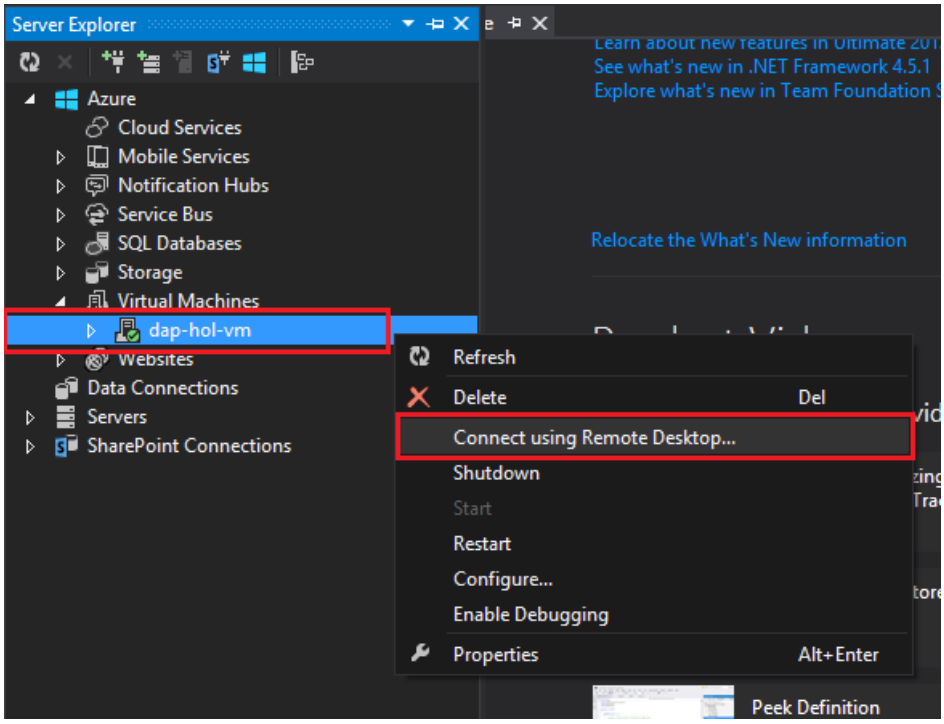

Figure 37: *Connect with Remote Desktop*

2. Click on the OK button to proceed with the RDP connection when the Server Explorer warning dialog appears.

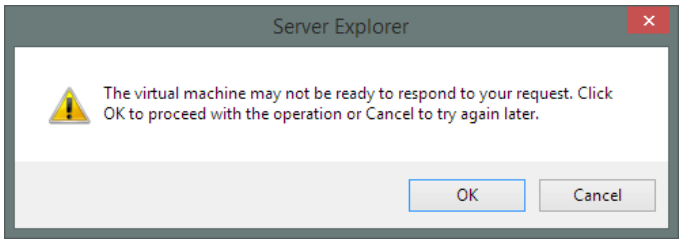

Figure 38*: Server Explorer Warning Message*

3. On the Windows taskbar click on the flashing Remote Desktop Connection to open the RDP window.In the Remote Desktop Connection window, **enter** the value of **vmAdmin** in the **User name** text box and **click** on the **Connect** button.

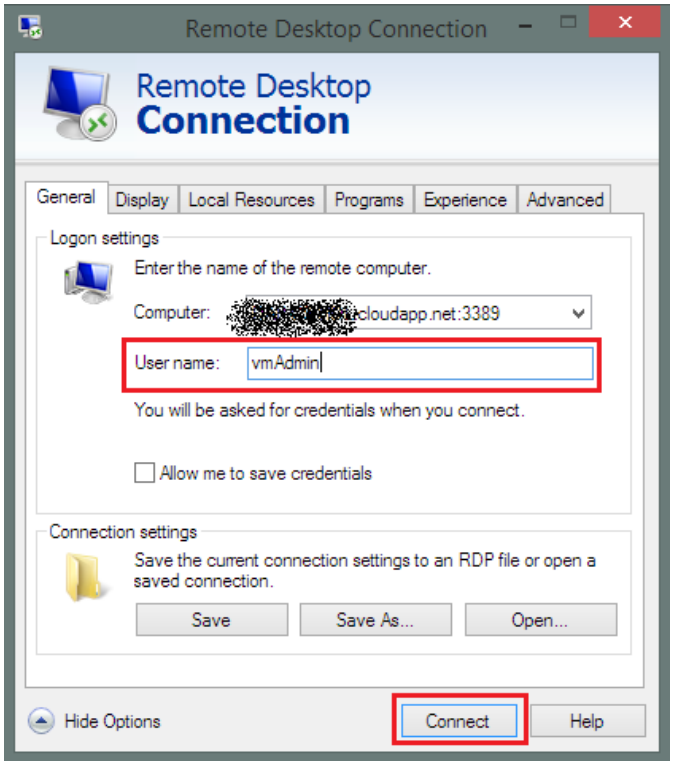

Figure 39: *RDP to Cloud VM*

4. Click the Connect button on the Remote Desktop Connection warning.

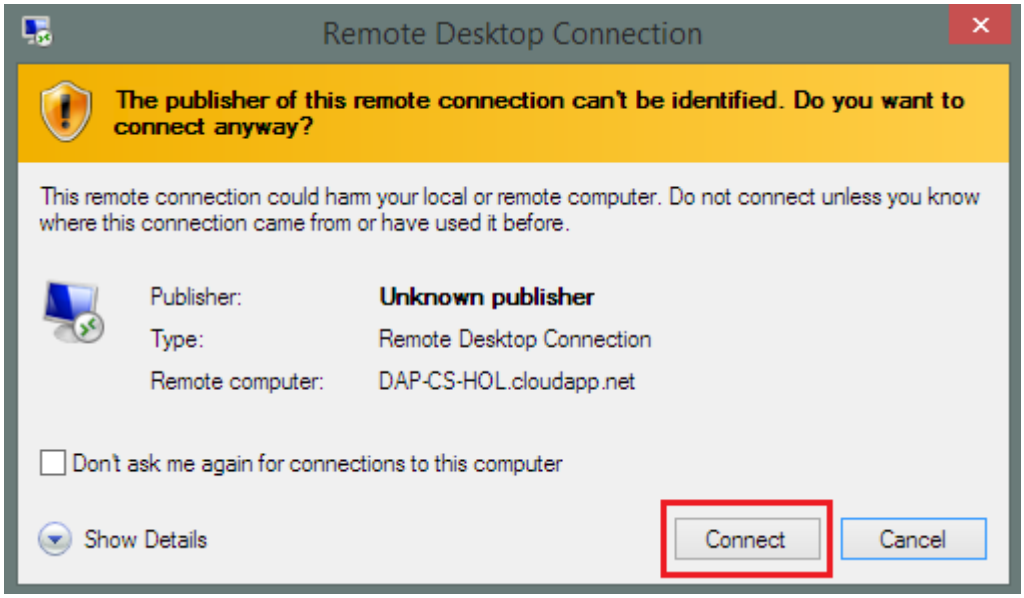

Figure 40: *Ignore RDP Warning*

In the Windows Security window, enter the value of P2ssw0rd in the password field for the vmAdmin account. Click on **your folder** and then click **OK** to continue.

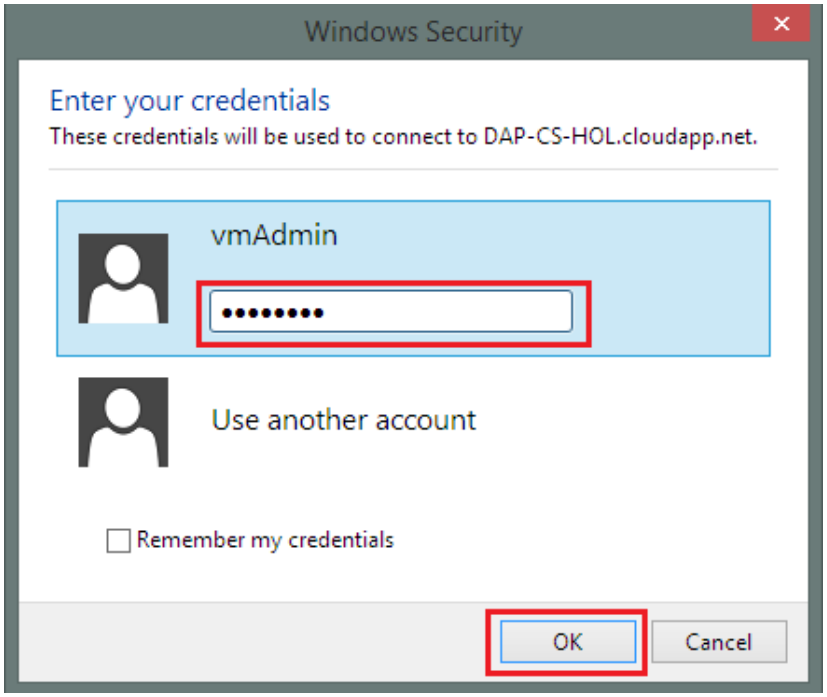

Figure 41: *Enter RDP Connection password*

5. Click the Yes button on the Remote Desktop Connection warning. You are ignoring that a trusted certificate authority does not sign the certificate used for the RDP connection.

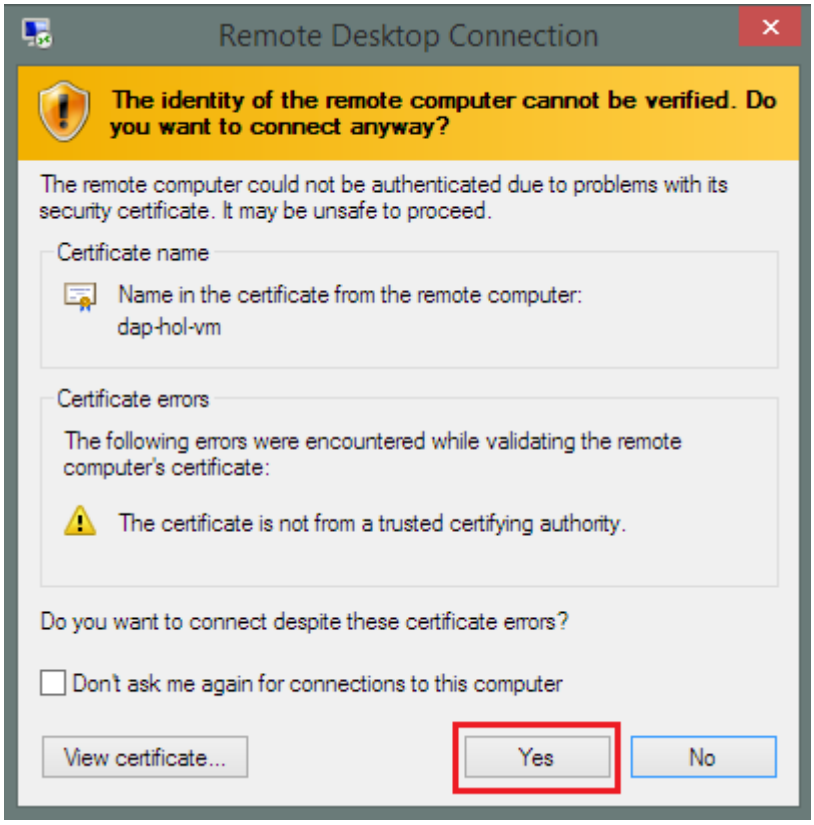

Figure 42: *Accept Certificate Warning*

6. Once the RDP connection is completed, take time to explore the VM. When done exploring **click** on the VM **Start** menu and then **Logoff** to disconnect and close the RDP session.
7. To conclude this exercise and lab you will need to shutdown the VM. In the Server Explorer view, **right click** on the **VM** and then **click** on the **Shutdown** menu item.

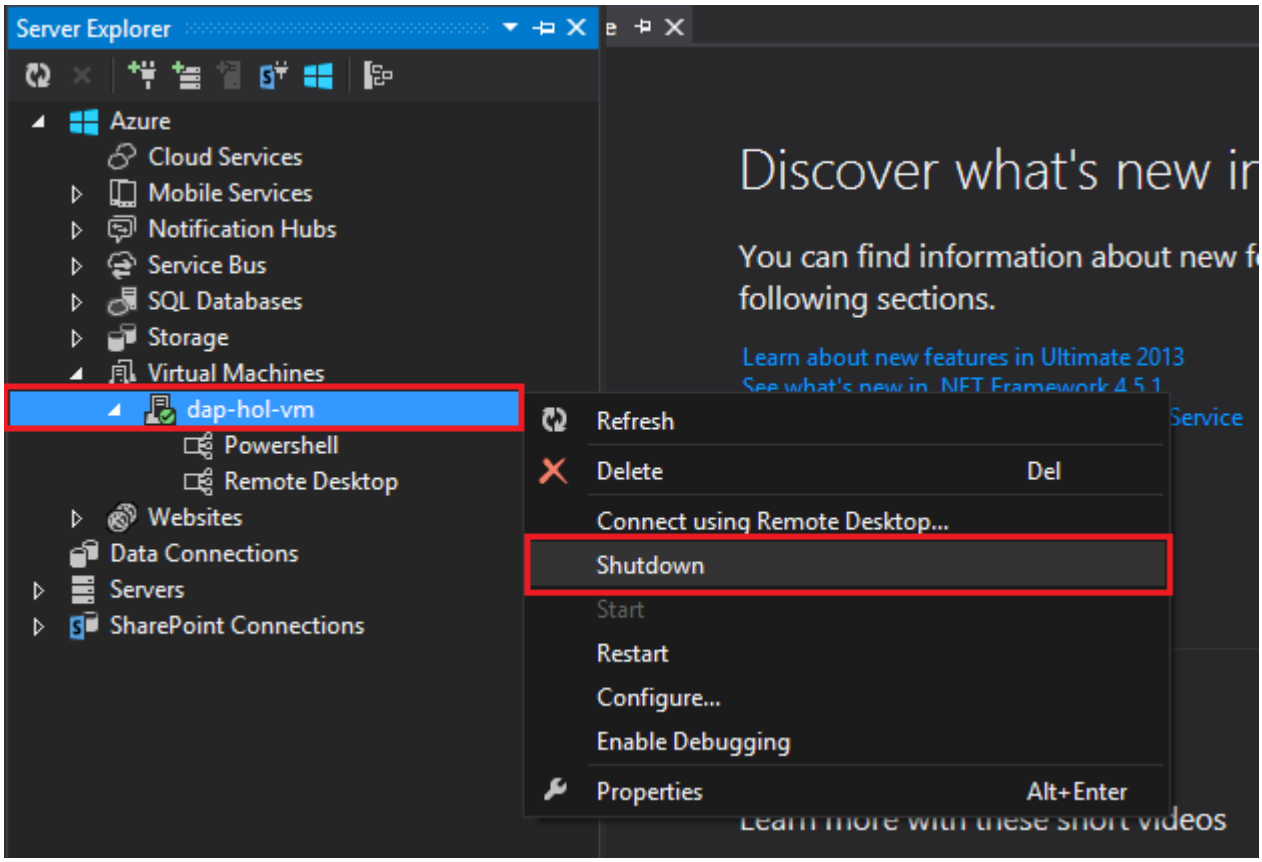

Figure 43: *Shutdown VM*

8. **Click** the **Yes** button to acknowledge the warning and to continue with the VM shutdown process.

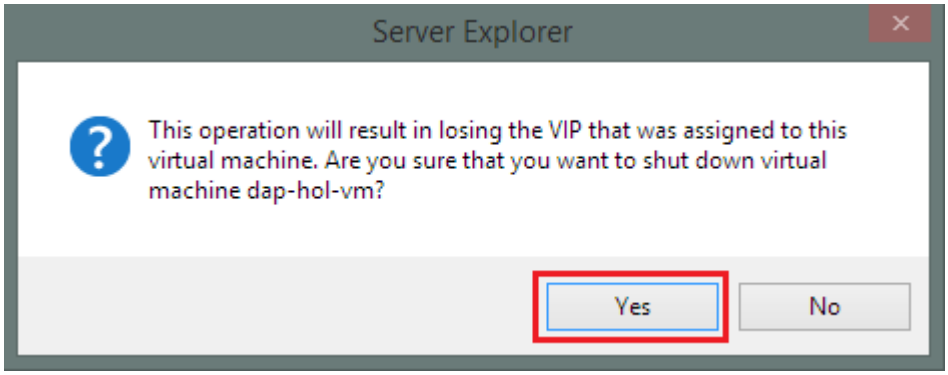

Figure 44: *Acknowledge VM shutdown warningAt the **bottom** of the Visual Studio IDE the **Microsoft Azure Activity Log** window will be activated and show the **status** of the VM as it is being shut down. **Monitor** the window until the **Status** column value shows **Completed**.*

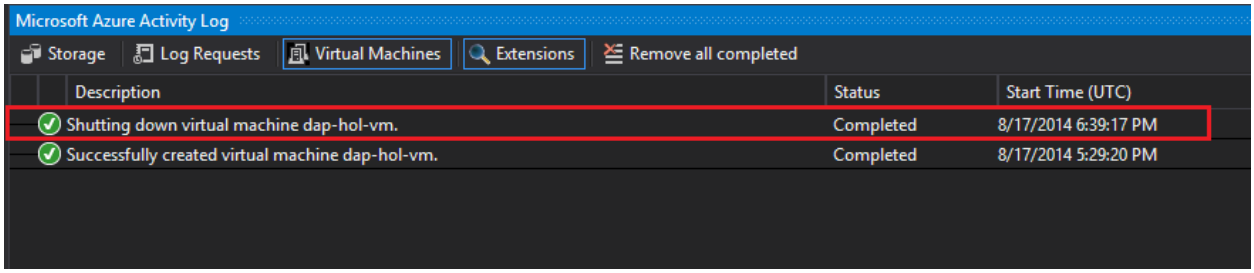

Figure 45: *VM Shutdown completed*