IaaS Lab Guide

**Module 1 – Portals**

Service deployment – Classic – manage.windowsazure.com

Service deployment – Resource Manager – portal.azure.com

Enterprise Administration – ea.azure.com

Account Setup and Subscription Creation – account.windowsazure.com

**Module 2 – Powershell, Marketplace and Github deployments**

**Part 1 - Marketplace**

Login to portal.azure.com

Click the + sign, type in any product name. Eventually look for server 2016 and deploy, following the blades and prompts.

**Part 2 – Github**

Navigate to github.com and create and account or login.

Search for “Azure quickstart templates”

Create a repo, and copy the readme.md from Sleepyreaper (Brad’s repo) to create “Deploy to Azure” button.

Copy a JSON template to your repo, and edit/deploy to Azure.

**Part 3 – Powershell**

Install the latest powershell tools from azure.microsoft.com

Launch powershell and login to your azure account – login-azurermaccount, list your subscription and select the correct one.

Get-AzureRmSubscription | sort SubscriptionName | Select SubscriptionName

Select-AzureRmSubscription -SubscriptionName "<subscription name>"

$image\_name = (**Get-AzureRMVMImage** | **Where** { $\_.ImageFamily -eq $ImageFamily } | **sort** PublishedDate *-Descending* | **Select-Object** *-First* 1).ImageName

$stName = "<chosen storage account name>"

$locName = "<chosen Azure location name>"

$rgName = "TestRG"

New-AzureRmResourceGroup -Name $rgName -Location $locName

$storageAcc = New-AzureRmStorageAccount -ResourceGroupName $rgName -Name $stName -Type "Standard\_GRS" -Location $locName

$singleSubnet = New-AzureRmVirtualNetworkSubnetConfig -Name singleSubnet -AddressPrefix 10.0.0.0/24

$vnet = New-AzureRmVirtualNetwork -Name TestNet -ResourceGroupName $rgName -Location $locName -AddressPrefix 10.0.0.0/16 -Subnet $singleSubnet

$pip = New-AzureRmPublicIpAddress -Name TestPIP -ResourceGroupName $rgName -Location $locName -AllocationMethod Dynamic

$nic = New-AzureRmNetworkInterface -Name TestNIC -ResourceGroupName $rgName -Location $locName -SubnetId $vnet.Subnets[0].Id -PublicIpAddressId $pip.Id

$cred = Get-Credential -Message "Type the name and password of the local administrator account."

$vm = New-AzureRmVMConfig -VMName WindowsVM -VMSize "Standard\_A1"

$vm = Set-AzureRmVMOperatingSystem -VM $vm -Windows -ComputerName MyWindowsVM -Credential $cred -ProvisionVMAgent -EnableAutoUpdate

$vm = Set-AzureRmVMSourceImage -VM $vm -PublisherName MicrosoftWindowsServer -Offer WindowsServer -Skus 2012-R2-Datacenter -Version "latest"

$vm = Add-AzureRmVMNetworkInterface -VM $vm -Id $nic.Id

$osDiskUri = $storageAcc.PrimaryEndpoints.Blob.ToString() + "vhds/WindowsVMosDisk.vhd"

$vm = Set-AzureRmVMOSDisk -VM $vm -Name "windowsvmosdisk" -VhdUri $osDiskUri -CreateOption fromImage

New-AzureRmVM -ResourceGroupName $rgName -Location $locName -VM $vm

<https://docs.microsoft.com/en-us/azure/virtual-machines/virtual-machines-windows-capture-image?toc=%2fazure%2fvirtual-machines%2fwindows%2ftoc.json>

<https://docs.microsoft.com/en-us/azure/virtual-machines/virtual-machines-windows-create-vm-generalized?toc=%2fazure%2fvirtual-machines%2fwindows%2ftoc.json>

**Module 3 – Deploying Azure Networks**

**The following procedure lists the high-level steps for creating a VNet-to-VNet VPN connection:**

**1.Connect to your Azure subscription.**

**2.Create the first virtual network.**

**3.Request a public IP address, and create the gateway configuration.**

**4.Create the gateway.**

**5.Create the second virtual network and its gateway.**

**6.Connect the gateways.**

**Some important points to keep in mind before you start creating a VNet-to-VNet VPN connection:**

**•You must complete almost identical steps at both ends of the VPN because the configuration is symmetrical.**

**•IP address space for the virtual networks connected by a VPM Gateway must not overlap.**

**•Once you create both VPN gateways, you must return to configure the actual IP address of the opposite end of the connection.**

**•There is no on-premises network in a VNet-to-VNet connection. For each virtual network, the local network IP address range refers to the private IP addresses in the opposite virtual network.**

**Connect to Your subscription from Azure PowerShell:**

**Create a new resource group:**

**New-AzureRmResourceGroup –Name AdatumRG –Location centralus**

**2.Create a new VNet named AdatumVnet, assign an address space (in this example 192.168.0.0/16), and store a reference to the new virtual network in the $vnet variable:**

**$vnet = New-AzureRmVirtualNetwork –ResourceGroupName AdatumRG –Name AdatumVnet –AddressPrefix 192.168.0.0/16 –Location centralus**

**3.Add a front-end subnet to the new virtual network:**

**Add-AzureRmVirtualNetworkSubnetConfig -Name FrontEnd -VirtualNetwork $vnet -AddressPrefix 192.168.1.0/24**

**4.Add a gateway subnet to the new virtual network:**

**Add-AzureRmVirtualNetworkSubnetConfig -Name GatewaySubnet -VirtualNetwork $vnet -AddressPrefix 192.168.2.0/26**

**5.Update the configuration of the virtual network:**

**Set-AzureRmVirtualNetwork –VirtualNetwork $vnet**

**Request a public IP address for the Azure VPN gateway, and configure the IP addressing configuration:**

**1.Request a dynamically assigned IP address:**

**$pip = New-AzureRmPublicIPAddress –Name AdatumPIP –ResourceGroupName AdatumRG –Location centralus –AllocationMethod Dynamic**

**2.Set a variable for the gateway subnet of the virtual network:**

**$subnet= Get-AzureRmVirtualNetworkSubnetConfig –Name “GatewaySubnet” –virtualnetwork $vnet**

**3.Provide the IP configuration required for the VPN gateway:**

**$ipconfig= New-AzureRmVirtualNetworkGatewayIPConfig –Name GWIPConfig –SubnetId $subnet.Id –PublicIPAddressId $pip.Id**

**Create a virtual gateway:**

**•Create a virtual gateway that will be used for site-to-site VPN connection and store the value in the variable $vnetgw1. You need to specify:**

**oGatewayType: Define the gateway type as VPN.**

**oVpnType: Configure RouteBased VPN type.**

**$vnetgw1 = New-AzureRmVirtualNetworkGateway -Name AdatumGateway -ResourceGroupName AdatumRG -Location centralus -IpConfigurations $ipconfig -GatewayType Vpn -VpnType RouteBased**

**Create a second virtual network:**

**Follow the same procedure as described above, to create a second virtual network and its VPN gateway (which we will refer to here as $vnetgw2)**

**Connect the VPN gateways:**

**Create connections to enable communications from both networks, by using the same shared key:**

**New-AzureRmVirtualNetworkGatewayConnection -Name conn1 -ResourceGroupName AdatumRG -VirtualNetworkGateway1 $vnetgw1 -VirtualNetworkGateway2 $vnetgw2 -Location centralus -ConnectionType Vnet2Vnet -SharedKey 'abc123'**

**New-AzureRmVirtualNetworkGatewayConnection -Name conn2 -ResourceGroupName AdatumRG -VirtualNetworkGateway1 $vnetgw2 -VirtualNetworkGateway2 $vnetgw1 -Location westus -ConnectionType Vnet2Vnet -SharedKey 'abc123'**