



**Azure Hands On Lab December 7th 2018**

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Azure Hybrid Scenario’s





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# Introduction

Azure is more than just another IaaS platform on which you host virtual machines. It strongly integrates with existing infrastructures, on different levels. For instance, it’s easy to create a backup of your on-premises machines to Azure or manage your on-premises system updates from Azure. With the recent release of Windows Admin Center and Windows Server 2019, the hybrid scenario’s are becoming even easier to implement. This lab introduces some hybrid functionality between on-premises machines and Azure services.

During the exercises you will be guided to deploy a couple of virtual machines, both on-premises and in Microsoft Azure. You will be deploying Windows Admin Center with several Azure integrations to show how easy this actually is. You’ll find you hardly need any experience in the Azure Portal. To end the lab, you will create a cloud tiered storage solution. By leveraging Azure File Sync, you can reach almost unlimited growth to existing on-premises fileserver and makes migration to another fileserver really easy.

Estimated time to complete this lab

120 minutes

Objectives

During this lab, you will learn how to get started with Azure to;

* Make your way through the Azure Portal
* Deploy a Virtual Machine both on Azure and Hyper-V
* Install Windows Admin Center on a local server
* Integrated Windows Admin Center with several Azure services
* Deploy a cloud-tiered storage solution

Prequisites

To complete this course, you will be needing;

* Laptop/computer with Windows 10, Hyper-V Manager role and WiFi connected
* Account with an Azure CSP Subscription

Materials

All student materials are available for download here:

<https://github.com/Copaco/handsonlab/>

# Activity 1 : Getting Started

Estimated time to complete this activity

45 minutes

Objectives

In this activity, you will configure the components necessary to perform this lab;

* Login to your Azure tenant
* Create a Resource Group
* Deploy Azure Active Directory Domain Services

## Exercise 1a : Login to the Azure Portal

|  |  |
| --- | --- |
| 1. Using your Work Account, you can sign in to the Azure Portal at:  <https://portal.azure.com> |  |
| 1. From the Azure Portal, select the Gear icon in the top right and select **English**. Apply the changes, so you follow the instructions below. |  |
| 1. From the navigation pane, select Resource Groups and then Add. |  |
| 1. Name the group: **RG-HoL-Hybrid**  Select the right subscription and region.  Create the Resource Group |  |

## Exercise 1b : Deploy a Azure Virtual Machine

|  |  |
| --- | --- |
| 1. From the Resource Group just created, select Add to create a new resource. |  |
| 1. Search for **Windows 2019** to create a new Virtual Machine based on Windows Server 2019 Datacenter |  |
| 1. You’ll be presented with a summary.  Create the Virtual Machine |  |
| 1. To create the machines, you need to specify some parameters.  Choose the Resource Group we create earlier  Name the VM **VM-FS-01**  For this lab, we’ll use a VM size of **B2s**  Specify an admin username and a valid password.  Also, make sure the **RDP** protocol is allowed for inbound access. |  |
| 1. From the Disks pane, select an OS disk with disk type: **Premium SSD** Now Create and attach a new disk |  |
| 1. To create the data disk, again select **Premium SSD**  For this lab, we’ll be fine with just **64GB** |  |
| 1. From the Networking pane, create a new Virtual Network |  |
| 1. Name the Virtual Network: **rg-HoL-Hybrid**  Adjust the address range: **10.1.0.0/23**  Define a subnet named **holsubnet** within the address range, for instance: **10.1.1.0/24** |  |
| 1. To prevent unnecessary costs from this lab, enable auto-shutdown on this VM. |  |
| 1. Review the parameters and Create the VM |  |
| 1. The deployment of the VM, Virtual Network and related resources will take place. You can watch the status from the Deployment Overview. |  |
|  | * Wait for at least the Virtual Network to finish deployment. Continue with the next exercise when it’s done. |

## Exercise 1c ; Deploy a VPN Gateway Subnet

|  |  |
| --- | --- |
| 1. From the navigation pane, browse the Resource Group and then the Virtual Network we’ve created. |  |
| 1. Browse to Subnets and Add a new Gateway Subnet |  |
| 1. Choose an unused address range within the virtual network range to create the gateway subnet. |  |
| 1. Wait for the subnet to be created and show up in the virtual network subnets. |  |

## Exercise 1d : Create a Hyper-V Virtual Machine

|  |  |
| --- | --- |
| 1. Open Hyper-V manager from your local Windows installation. Create a new Virtual Machine. |  |
| 1. Name the machine **VM-FS-02** |  |
| 1. Select the Windows Server 2019 ISO as the instrallation medium.  Windows Server 2012R2 or 2016 can also be used. |  |
| 1. Follow the installation wizard. |  |
| 1. For this lab, we’ll be using a trial version. Skip the license key. |  |
| 1. Make sure you select an OS with Desktop Experience enabled for this lab. |  |
| 1. Wait for the installation to finish. |  |
| 1. Define a password for the default admin account. For ease of use during this lab, you can choose the same password as provided with the creation of VM-FS-01. |  |

# Activity 2 : Configure Windows Admin Center

Estimated time to complete this activity

60 minutes

Objectives

In this activity, you will configure the components necessary to perform this lab;

* Install Windows Admin Center
* Deploy a point-to-site VPN to Azure from the Windows Admin Center
* Enable Azure Backup
* Configure Update Management from Azure Automation

## Exercise 2a : Deploy Windows Admin Center

|  |  |
| --- | --- |
| 1. From VM-FS-02, make sure you **disable** IE Enhanced Security from the Server Manager to allow downloads. |  |
| 1. Using Internet Explorer, browse to:  <http://aka.ms/WACDownload>  And download the Windows Admin Center setup. |  |
| 1. When downloading is finished, run the installer and follow the wizard. |  |
| 1. Make sure you allow Windows Admin Center to make changes to the trusted host settings. |  |
| 1. Leave the port settings default. |  |
| 1. Wait for the installation to finish. Open the URL provided from the VM itself. You’ll probably find out that IE is incompatible. |  |
| 1. Please download and install **Google Chrome** |  |
| 1. From Start Menu, browse to Setting > Apps > Default Apps and make sure **Google Chrome** is your Default Web Browser. |  |
| 1. Try opening the Windows Admin Center URL from Google Chrome. You can safely ignore the certificate warning for this lab.  You’ll be presented a small welcome wizard. |  |

## Exercise 2b : Connect to Azure Virtual Network

|  |  |
| --- | --- |
| 1. From the All Connections overview, select **VM-FS-02** |  |
| 1. From the navigation pane, browse to Network and select Add Azure Network Adapter.  Please note that this was a Preview feature when this lab was created. |  |
| 1. Windows Admin Center needs to be registered within the Azure tenant to continue.  Go ahead and Register. |  |
| 1. To register the device, you’ll receive a code from Windows Admin Center. Please copy and paste the code when asked for. |  |
| 1. The device will be registered in Azure, wait for the notification to show. |  |
| 1. Open the link, this will open a new browser tab to the Enterprise Applications in Azure Active Directory. |  |
| 1. Grant Permissions for the Windows Admin Center application in Azure Active Directory. |  |
| 1. After granting permission, the Azure Integration is completed. The Directory D and Application ID are displayed. |  |
| 1. Go back to the Windows Admin Center dashboard. Open VM-FS-02 from there. |  |
| 1. Again, browse to Network and Add Azure Network Adapter. |  |
| 1. If the link doesn’t work, make sure the pop-up is allowed for this site. |  |
| 1. Select the correct regio and choose the **RG-HoL-Hybrid** Virtual Network.  The gateway subnet should be prefilled with the subnet created before.  For this lab, select the **VpnGw1** as Gateway SKU. |  |
| 1. The Virtual Network Gateway will be deployed in the Azure tenant. This will take approximately 30 minutes. |  |
| 1. When the deployment is successful, the connection shows up in the Network overview in Windows Admin Center. You now have a working P2S VPN from your on-premises VM to the Azure Virtual Network. |  |
| 1. To validate, browse to the Resource Group and open the Virtual Network Gateway that was deployed in Azure. |  |
| 1. From the Point-to-Site Configuration, the number of Connections should display **1** active connection. |  |
| 1. From both VM-FS-01 and VM-FS-02, make sure you **disable** the Windows Defender Firewall  This is only needed in this lab to validate the connection by using ping. In a production environment you should keep the firewall enabled. |  |
| 1. From VM-FS-02, run a Command Prompt or PowerShell. Try to ping the IP of VM-FS-01.  As there’s no shared DNS server in this lab, pinging the hostname won’t be possible. |  |
| 1. From the Windows Admin Center dashboard, Add another server. |  |
| 1. Fill in the **IP of VM-FS-01** as the Server Name and credentials of the local admin account you specified before. Submit with Credentials.  Again, resolving the hostname won’t be possible in this lab. Please check the mark, so you can connect using the IP instead. |  |
| 1. After the agent installation has finished, the Azure VM will show up in the on-premises Windows Admin Center. |  |

## Exercise 2c : Backup the local VM to Azure

|  |  |
| --- | --- |
| 1. Open **VM-FS-02** from the Windows Admin Center and browse for Backup. Choose to Setup Azure Backup. |  |
| 1. Select Login |  |
| 1. Specify the correct Subscription, Resource Group and Location. We will create a **new** Vault, as this is our first backup. |  |
| 1. We will create a full backup, so include both the **System State** and **drives**.  For the schedule of Files and Folders, choose **Daily with 1 year retention**.  For System State, select **Daily with a retention of 14 days**.  Please note that in this lab we won’t perform an actual backup. Feel free to select any schedule you like. |  |
| 1. Specify an Encryption passphrase, so your data will be encrypted. |  |
| 1. Explore the Azure Backup dashboard in Windows Admin Center. As no actual job has been ran, only few statistics are shown. |  |

## Exercise 2d : Update Management

|  |  |
| --- | --- |
| 1. Browse to the Update pane of VM-FS-02 in Windows Admin Center . Choose Set up now to get started with Update Management. |  |
| 1. Select the correct Subscription and Resource Group. |  |
| 1. As we don’t have Update Management running yet, create a new Log Analytics workspace and Automation Account.  Name the workspace **hybrid-law**  Name the Automation Account **hybrid-auto**  Deployment will take approximately 15 minutes. |  |
| 1. When finished, the Windows Update pane for VM-FS-02 in Windows Admin Center shows it’s managed by Azure Update Management. |  |
| 1. From the Azure Portal, browse to the hybrid-auto Automation Account you just created. |  |
| 1. From Update Management in the navigation pane, notice that VM-FS-02 is being shown.  Please note that the final results of the assessment can take up to 24 hours to show. |  |

# Activity 3 : Deploy Azure Files Sync

Estimated time to complete this activity

30 minutes

Objectives

In this activity, you will configure the components necessary to perform this lab;

* Create an Azure File share
* Deploy the Azure Files Sync agent
* Configure the sync by leveraging the cloud tiering option

## Exercise 3a : Deploy a Storage Account with Azure Files

|  |  |
| --- | --- |
| 1. From the Azure Portal, browse to Storage Account and Add |  |
| 1. Select the correct Resource Group and name the Storage Account **holhybrid**  Make sure to create a **v2** Storage Account with only **Local Redundant Storage** as this is a lab. |  |
| 1. Review the parameters and create the Storage Account. |  |
| 1. Wait for the Storage Account to finish deploying and Go to the resource. |  |
| 1. From the Storage Account, browse to Files and create a new File Share. |  |
| 1. Name the new share holhybridshare  Select a quota of **100 GB** |  |
| 1. From the Azure Marketplace, search for **Azure Files** and create the Azure File Sync resource |  |
| 1. Name the Storage Sync **HOL-Hybrid**  Select the correct subscription and resource group. |  |
| 1. Wait for the deployment to finish and Go to the Storage Sync resource |  |
| 1. Create a new Sync Group |  |
| 1. Name the Sync Group **holhybridsync**  Select the Storage Account and Azure File Share you create earlier. |  |
| 1. Wait for the new Sync Group to give a healthy status. |  |

## Exercise 3b : Deploy Azure Files Sync Agent

|  |  |
| --- | --- |
| 1. From the Storage Sync Service, browse to Registered Servers.  Notice there are no servers present. Get the URL from the Azure File Sync Agent |  |
| 1. From VM-FS-01, open the URL and download the correct **Azure File Sync agent version.** |  |
| 1. Wait for the download to complete and run the installer. |  |
| 1. Install using default settings. The agent will be updated if needed during installation. |  |
| 1. Install the necessary prerequisites by following the instructions provided. |  |
| 1. Select the correct Subscription, Resource Group and Storage Sync Service. |  |
| 1. Authenticate using you tenant credentials and wait for the registration to complete. |  |
| 1. Repeat steps 13 to 19 on server VM-FS-02 |  |
| 1. From the Resource Group, open the Storage Sync Service. |  |
| 1. Verify that both agents are Online |  |

## Exercise 3c : Configure sync using cloud tiering

|  |  |
| --- | --- |
| 1. Open the Sync Group you created before. |  |
| 1. Add server endpoint |  |
| 1. Select VM-FS-01 from the dropdown list. Type in the path on the local server to use.  **Enable** Cloud Tiering with a reservation of **20%** of free space.  Please note you need a separate data disk on the VM to use the Cloud Tiering feature. Add the disk if needed. |  |
| 1. Repeat steps 1-3 for  VM-FS-02 |  |
| 1. Wait for the sync to complete, this can take up to 15 minutes even on a empty share. |  |
| 1. Validate the sync by copying some random files in one of the server shares. |  |
| 1. From the Azure Portal, open to the Storage Account |  |
| 1. Use the Storage Explorer to browse the Azure File Share |  |
| 1. Notice the files you copied are now also present in the Azure File Share. |  |
| 1. From VM-FS-02, validate that the folder is also being replicated.  Please note that for the Hyper-V Virtual Machines, the sync speed depends largely on the connection bandwidth available. |  |
|  | You’ve reached the end of this lab! Feel free to explore even further or remove all the resources created during this lab. |

# Remove resources in Azure tenant

Pleas make sure you shut down any Virtual Machines in Azure If you don’t need them, so they won’t be charged for their compute resources. Also, if you finished the lab, you can safely delete all resources created in this lab. This way no more consumption will take place.

To do so, open the Resource Group you created during this lab. Select the Delete Resource Group button in the top bar and confirm the deletion. Wait for some time and all resource will be deleted.

# Additional resources

## Windows Admin Center

Windows Admin Center Documentation  
<https://docs.microsoft.com/en-us/windows-server/manage/windows-admin-center/understand/windows-admin-center>

Extensions  
<https://docs.microsoft.com/en-us/windows-server/manage/windows-admin-center/extend/extensibility-overview>

## Azure Files

Azure Files Documentation  
<https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction>

Azure File Sync Release Notes  
<https://docs.microsoft.com/en-us/azure/storage/files/storage-files-release-notes>

Azure File Sync Agent download  
<https://www.microsoft.com/en-us/download/details.aspx?id=57159>

## Microsoft Ignite Sessions

Ignite - Windows Server management reimagined with Windows Admin Center  
<https://www.youtube.com/watch?v=ZQeXhfD5WrY>

Ignite – Establishing hybrid connectivity with Windows Server 2019 and Microsoft Azure  
<https://www.youtube.com/watch?v=BMSD3o3huiU>

Ignite - From Hyper-V to hyper-converged infrastructure with Windows Admin Center  
<https://www.youtube.com/watch?v=dCDX142KgVc>