# Module 6: Planning and implementing Azure Storage

# Lab A: Planning and implementing Azure Storage

### Scenario

The IT department at A. Datum Corporation uses an asset management application to track IT assets such as computer hardware and peripherals. The application stores images of asset types and invoices for asset purchases As part of A. Datum's evaluation of Azure, you need to test migration of these images and invoice documents to Azure storage. A. Datum also wants to evaluate Azure File storage for providing SMB 3.0 shared access to invoices. Currently, corporate file servers host this content.

### Objectives

After completing this lab, you will be able to:

* Creating and configuring Azure Storage.
* Use Azure file storage.

### Lab Setup

Estimated Time: 50 minutes

Virtual machine: **20533E-MIA-CL1**

* User name: **Student**
* Password: **Pa55w.rd**

Before starting this lab, ensure that you have performed the "Preparing the environment" demonstration tasks at the beginning of the first lesson in this module and that the setup script has completed.

## Exercise 1: Creating and configuring Azure Storage

### Scenario

A. Datum currently stores images for IT assets on the on-premises file servers. As part of your Azure evaluation, you want to test storing these images as blobs in Azure storage so that a new Azure-based version of the asset management application can easily access them.

The main tasks for this exercise are as follows:

1. Create a storage account
2. Install AzCopy
3. Use AzCopy to upload blobs

#### Task 1: Create a storage account

1. Ensure that you are signed in to the MIA-CL1 virtual machine as **Student** with the password **Pa55w.rd** and that the setup script that you ran in the "Preparing the environment" demonstration has completed.
2. Use Internet Explorer to sign in to the Azure portal by using the Microsoft account that is the Service Administrator or a Co-Administrator of your Azure subscription.
3. Create a new storage account with the following settings:

* Name: a valid, unique name consisting of between 3 and 24 lower case characters or digits
* Deployment model: **Resource Manager**
* Account kind: **Storage (general purpose v1)**
* Location: the same Azure region that you chose when running the provisioning script at the beginning of this module
* Replication: **Locally-redundant storage (LRS)**
* Performance: **Standard**
* Secure transfer required: **Disabled**
* Subscription: the name of your Azure subscription
* Resource group: ensure that **Create new** is selected and, in the textbox below, type **20533E0602-LabRG**.
* Configure virtual networks: **Disabled**
* Pin to dashboard: clear the check box

1. After the storage account creates, add a blob container named **asset-images** with private access.

#### Task 2: Install AzCopy

1. Download and install AzCopy from [**http://aka.ms/AzCopy**](http://aka.ms/AzCopy). Note that this page also includes documentation and examples for using AzCopy.
2. Start Windows PowerShell ISE as Administrator.
3. In the console pane of Windows PowerShell ISE, change the current directory by running:

Set-Location -Path 'C:\Program Files (x86)\Microsoft SDKs\Azure\AzCopy'

1. Test the installation by running the following command at a command prompt:

.\AzCopy /?

1. Keep the Windows PowerShell ISE window open for the next task.

#### Task 3: Use AzCopy to upload blobs

1. In the Windows PowerShell ISE window, type the following in the script pane:

.\AzCopy.exe /Dest:https://<storage-account-name>.blob.core.windows.net/asset-images /destkey:<access-key> /Source:F:\Labfiles\Lab06\Starter\asset-images

1. In the Azure portal, copy the name of the Storage account you created earlier in this exercise.
2. In the script pane of the Windows PowerShell ISE, replace the ***<storage-account-name>*** entry with the storage account name you copied from the Azure portal.
3. In the Azure portal, copy the first access key of the Storage account.
4. In the script pane of the Windows PowerShell ISE, replace the ***<access-key>*** entry with the storage account key you copied from the Azure portal.
5. Execute the command in the script pane and wait for the command to complete. Review the file transfer information.
6. In the Azure portal, navigate to the **asset-images** container blade and verify that the container contains six blobs.

**Result**: At the end of this exercise, you should have created a new Azure storage account with a container named **asset-images** and copied files from your local computer to that container by using the **AzCopy** utility.

## Exercise 2: Using Azure File storage

### Scenario

A. Datum currently stores invoices for IT assets on the on-premises file servers. As part of your evaluation of Azure, you want to test an upload of these files to a file share in your Azure storage account.

The main tasks for this exercise are as follows:

1. Create a file share and upload files
2. Access a file share from a VM

#### Task 1: Create a file share and upload files

1. Switch to the Windows PowerShell ISE window and run the **Add-AzureRmAccount** cmdlet. When prompted, sign in by using the Microsoft account that is the Service Administrator of your Microsoft Azure subscription.
2. From the Windows PowerShell ISE, open **F:\Labfiles\Lab06\Starter\New-20533E06FileShare.ps1**.
3. In the script pane, in the **$storageAccountName** variable declaration at the beginning, replace the ***<storage-account-name>*** value with the name of the Azure storage account that you created in the previous exercise.
4. Review the script, noting that it:

* Sets the values of variables named **directoryName** for the file share and the directory to create in the Azure Storage account
* Uses the **Get-AzureRmStorageAccountKey** cmdlet to retrieve the access key for your storage account.
* Uses the **New-AzureStorageContext** cmdlet to create a security context for connections to the target storage account based on the key you retrieved
* Uses the **New-AzureStorageShare** cmdlet to create an Azure Storage account file share
* Uses the **New-AzureStorageDirectory** cmdlet to create a directory in the share
* Sets the location of the folder hosting source files to be copied to the Azure Storage file share directory
* Loops through the files in the source folder and uses the **Set-AzureStorageFileContent** cmdlet to copy each of them the folder in the Azure file share.

1. Run the script to upload the files.
2. Observe the script as it runs, and then view the output. When you finish, close Windows PowerShell ISE.

#### Task 2: Access a file share from a VM

1. Connect to the 20533E0601-vm1 VM in your Azure subscription via Remote Desktop by using the following credentials:

* User name: **Student**
* Password: **Pa55w.rd1234**

1. Once connected, on 20533E0601-vm1, turn off **IE Enhanced Security Configuration** for administrators.
2. Use Internet Explorer to navigate to the Azure portal and, when prompted, sign in by using the Microsoft account that is the Service Administrator of your Azure subscription.
3. In the Azure portal, navigate to the **assets** file service blade of the storage account that you created in the previous exercise, click **Connect** and copy the Windows PowerShell script from the **Connecting from Windows** section that needs to be run in order to connect to the **assets** file share from a Windows computer.
4. In the Remote Desktop session, start Windows PowerShell ISE and paste the script into the script window.
5. In Windows PowerShell ISE, execute the command and verify it completed successfully and created a **Z:** drive mapping.
6. In the Command Prompt window, enter the following command to view the contents of the invoices folder in drive Z:, which is now mapped to the assets file share that you created in the previous task:

Get-ChildItem -Path 'Z:\invoices'

1. Verify that invoices are listed.
2. Sign out of the 20533E0601-vm1 VM to end the remote desktop session.

#### Task 3: Remove the lab environment

1. On MIA-CL1, close all open windows without saving any files.
2. Start **Windows PowerShell** as Administrator and, from the **Administrator: Windows PowerShell** window, run **Remove-20533EEnvironment**.
3. When prompted, sign in by using the Microsoft account that is the Service Administrator of your Azure subscription.
4. If you have multiple Azure subscriptions, select the one you want the script to target.
5. If prompted, specify the current lab number.
6. When prompted for confirmation, type **y**.
7. Start Microsoft Edge, browse to the Azure portal, and sign in by using the Microsoft account that is the Service Administrator of your Azure subscription.
8. In the Azure portal, reset the dashboard to the default state.
9. Close all open windows.

**Result**: At the end of this exercise, you should have created an Azure storage account file share named **assets** that contains a folder named **invoices** with copies of invoice documents. You should have also mapped a drive from an Azure VM to the Azure storage account file share.

**Question** The asset management application stores images of hardware components as blobs and invoices as files. If the application also needed to search the location of each asset by using an asset type, a unique asset number, and a text description of the location, what storage options should you consider?

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