55335A – SQL Server Machine Learning Services using Python, R and Java PowerShell Setup Guide

(Microsoft Azure)

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Introduction

PowerShell can be used to automate the setup of the 55335 class in Microsoft Azure. The setup will require Windows Server 2022 and SQL Server 2022 or later. The Developer or Enterprise editions are recommended. The system should have a minimum of 8GB RAM and a 100 GB SSD drive. Make a note of the following features of this PowerShell setup process:

1. The setup can be completed in less than one hour.
2. The class setup can be easily customized for blended & bootcamp deliveries.
3. An "emergency setup" for a student or for testing is much faster & easier than earlier solutions.
4. This configuration supports both online and on-premises lab configurations.

The deployment machine must be using a minimum of PowerShell 3.0 on Windows Server 2012 or Windows 8 to use this guide. Experience using and editing PowerShell scripts will be helpful. There is a free PowerShell tutorial included with the course (PowerShell For Technology Professionals) that may be helpful if customizing delivery / labs is necessary.

Licensing

The training center or any organization hosting the lab computers for this class are fully responsible for the licensing of all software used in the course and labs. We strongly recommend that you use Microsoft Azure VMs for the deployment to automate and simplify this tasks.

Microsoft Azure PowerShell Setup

A Microsoft Azure subscription is required to do the setup. The **55335AzureSetup.ps1** setup script is used to configure a Windows Server 2022 system. It will create a stand-alone server with the name **55335-MIA-SQL**.

The files and folders in the 55335A class archive file (55335A-ENU_PowerShellSetup.zip should be copied to your C:\Labfiles.55335 folder. The setup script (C:\Labfiles.55335\55335AzureSetup.ps1) is used to run the install from your deployment machine.

The script is mostly automated and may ask for your Azure subscription credentials at the beginning of the process. The VM normally takes less than an hour to provision. Here are a few recommendations to keep in mind when working with Microsoft Azure virtual machines:

1. Regularly check your subscription balance on the Azure Portal to ensure that costs are staying within expected limits.
2. Store unrelated objects in separate Resource Groups.
3. Make sure that Storage Account names are in lower case.
4. Delete resources as soon as you are finished working with them.
5. To include additional files on the VM hard-drive, add them to the C:\Labfiles.55335\Tools folder.

Create 55335A Virtual Machine on Azure

First, verify that the **55335A-ENU_PowerShellSetup.zip** archive is copied to the **C:\Labfiles.55335** folder. Next, extract all files and folders in the archive to the same folder. Then perform all the following steps with administrator credentials:

1. From an "Administrator: Windows PowerShell" console, move to the **C:\Labfiles.55335** folder and execute the script **55335AzureSetup.ps1**. You will be asked to provided Azure credentials for the subscription that will host the VMs. The script should not be interrupted. Do not proceed until the script is finished. This will typically take less than 60 minutes.

2. When the previous step is complete, connect to the Windows Server using Remote Desktop Connection or a Microsoft Azure tool. Connect using the **Student** account with a password of **Pa$$w0rd**. If there was an error during the setup, you should be able to connect using the **Adminz** account with a password of **Pa$$w0rdPa$$w0rd**.

Verifying the Setup

To make sure that the system is ready for classroom exercises and demonstrations, perform the following steps:

1. Login using the **Student** user account with a password of **Pa$$w0rd**.
2. Verify that the **Student** user account is a member of the local administrators group.
3. Verify that the **C:\Classfiles** folder has the same files and folders as **C:\Labfiles.55335**.
4. Verify that SQL Server Management Studio (SSMS) is installed, and you can connect to the local database engine using Windows Credentials.
5. Verify that PowerShell scripting is enabled. (e.g., **Get-ExecutionPolicy**).
6. Verify that you have permissions to create a database. Use the **adventureworks_install.ps1** script in the **C:\Classfiles** folder for this task. This will also verify that setup files are in the right folder.
7. Verify Internet connectivity in a web browser since some of the exercises will require it.

Customizing the Setup

The lab setup can be customized for modular/blended deliveries of 55335A. The 55335AzureSetup.ps1 script is the primary file for making any changes. It is in the root folder of the course materials archive file, **55335A-ENU_PowerShellSetup.zip**. Review the documentation in the file before making any changes. Lab files in the Labfiles folder and demonstration files in the Demofiles folder can also be updated in the archive file. All setup tasks performed after the initial configuration of the system can be found in the SRV folder in the archive. Any additional resources to be used for customized classes should be placed in the Tools folder in the archive file.

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
Demofiles	File folder					
Labfiles	File folder					
PSHelp	File folder					
SRV	File folder					
Tools	File folder					
55335AzureSetup.ps1	Windows PowerShell Script	4 KB	No	12 KB	72%	7/28/2024 4:35 PM
55335customscriptextension.ps1	Windows PowerShell Script	3 KB	No	9 KB	74%	7/28/2024 4:33 PM
55335customscriptextension.tmp	TMP File	2 KB	No	3 KB	60%	7/28/2024 4:31 PM
ADS_Setup.ps1	Windows PowerShell Script	1 KB	No	1 KB	43%	7/28/2024 7:21 PM
adventureworks_download.ps1	Windows PowerShell Script	1 KB	No	1 KB	46%	7/28/2024 11:00 PM
adventureworks_install.ps1	Windows PowerShell Script	1 KB	No	1 KB	61%	7/28/2024 10:58 PM
adventureworks_install.sql	SQL File	1 KB	No	1 KB	50%	7/31/2024 10:18 PM
adventureworksdw_download.ps1	Windows PowerShell Script	1 KB	No	1 KB	46%	7/28/2024 10:59 PM
adventureworksdw_install.ps1	Windows PowerShell Script	1 KB	No	1 KB	61%	7/28/2024 10:59 PM
adventureworksdw_install.sql	SQL File	1 KB	No	1 KB	52%	7/31/2024 10:17 PM
customers.csv	Microsoft Excel Comma S...	4,494 KB	No	9,298 KB	52%	4/14/2022 7:36 PM
DesktopConfig.cmd	Windows Command Script	1 KB	No	1 KB	4%	4/16/2022 2:10 PM
DesktopConfig.ps1	Windows PowerShell Script	1 KB	No	3 KB	68%	7/28/2024 5:49 PM
edge_installer.ps1	Windows PowerShell Script	1 KB	No	1 KB	28%	5/1/2022 4:30 PM
exclude.txt	Text Document	1 KB	No	1 KB	0%	10/13/2011 5:40 PM
HostMemory.reg.txt	Text Document	1 KB	No	1 KB	39%	12/23/2012 9:47 PM
labfiles.ps1	Windows PowerShell Script	1 KB	No	2 KB	70%	3/22/2022 4:06 PM
LabfilesHD2A.txt	Text Document	1 KB	No	1 KB	31%	9/10/2022 12:10 PM

Contents of 55335A-ENU_PowerShellSetup.zip