

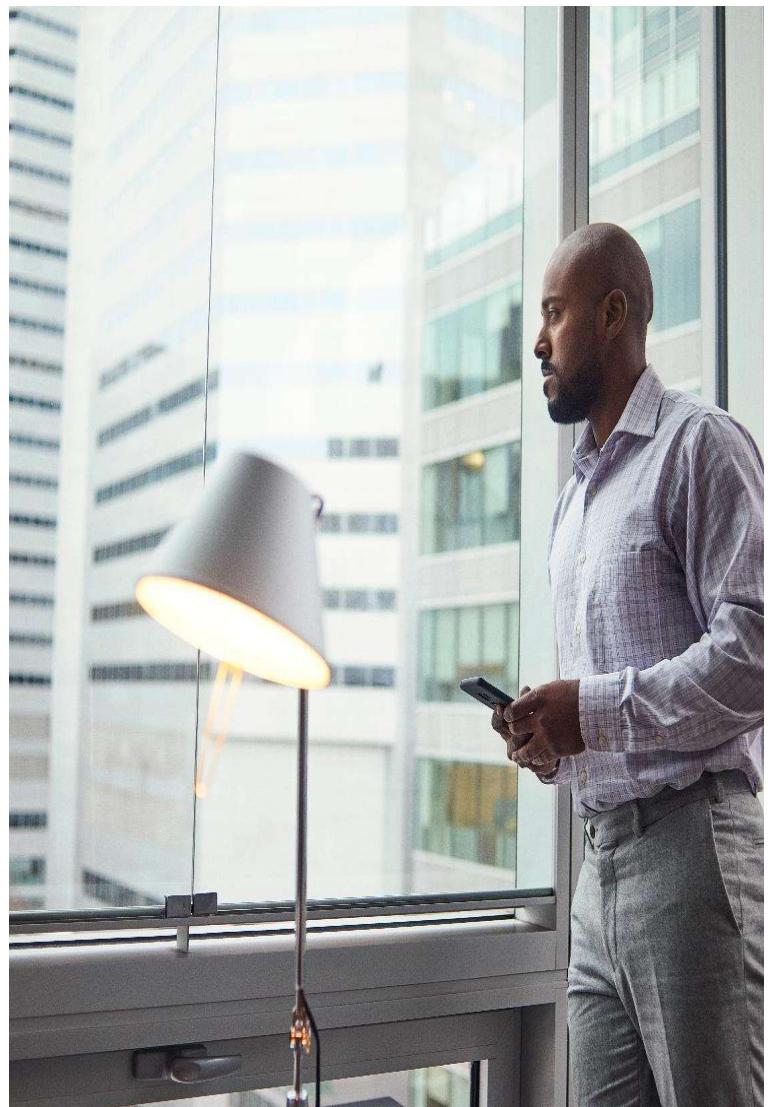
CSU Migration Factory (CMF):

Database Migration Service (DMS 2.0)

Automation User Guide

For Script:

CMF_DMS_SQLandSKUAssessmentsCombo_v1.2



Document Summary

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Document Description	This document provides automation details of how to automate the assessment of SQL Servers using DMS.

Revision History

This section represents the change history of the document. Revisions of the document must be tracked by identifying a new version number, the date it was modified, the person making the change, and the reason for the change.

Date	Version	Change Description	Author	Reviewer
06-Sep-2023	1.0	Initial Version	Chethan, Mukesh, Lekshmy, Arun	Rackimuthu Kandaswamy
23-Jul-2024	1.1	Second Version	Arun, Lekshmy, Chethan	Rackimuthu Kandaswamy

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1. Executive Summary

1.1 Objective

This document is to provide detailed procedure/step to use the **Database Migration Service (DMS)** automation script (CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2) to detect/assess the following issues in on-premises SQL Servers:

- Migration blocking issues:
 - To discover compatibility issues that block migrating on-premises SQL Server database(s) to **Azure SQL Database**
 - To discover the compatibility issues that block migrating on-premises SQL Server database(s) to **Azure SQL Managed Instance**
 - To discover the compatibility issues that block migrating on-premises SQL Server database(s) to **SQL Server on Azure Virtual Machines**
- And to initiate & terminate the **data-collection** process for the **target** SKU assessment.

1.2 Approach

This was devised to list the process to perform the SQL Server bulk assessment using DMS automation script which includes leveraging Microsoft Assessment and Planning Toolkit's database discovery report along with additional SQL Server Connection parameters.

1.3 Recommendations

Key recommendations are as follows:

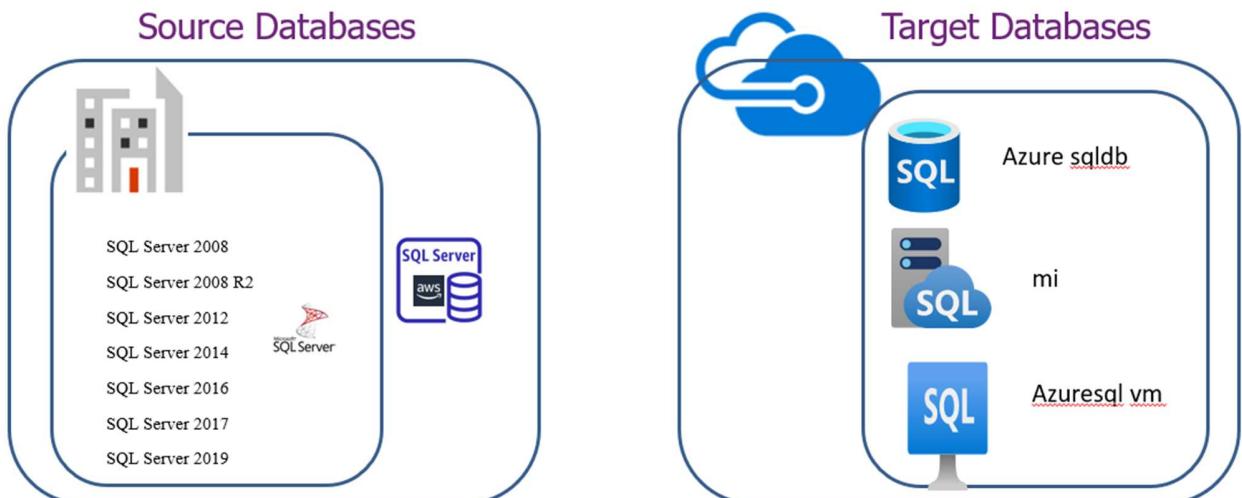
- 1) Run the script on Non-Mission-Critical systems ONLY (i.e. **NOT** on any production server)
- 2) Operating System supported: System Windows Server 2019 & above, Windows Server 2016, Windows 10, Windows Server 2012, Windows Server 2008/2008 R2, Windows 7, Windows 8, Windows 8.1, Windows 7 64-bit and above
- 3) Ensure Connectivity exists to SQL Server for which the assessments are to be performed

Note: The values present in the Screenshots are demo values. Please change the values as Appropriate.

2 Assessment Database Overview

2.1 DMS Assessments to migrate to Azure SQL Database(s)

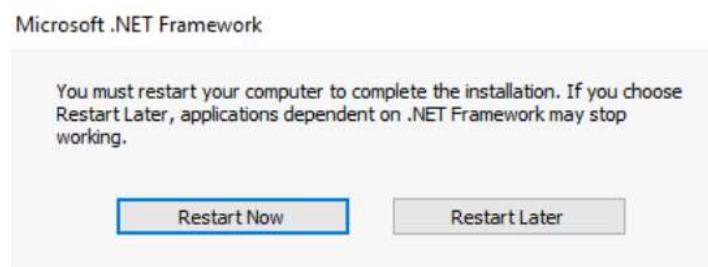
Database Migration Service (DMS) Assessment Automation



3 Prerequisites for DMS Assessment - Execution

3.1 Non-Mission-Critical system

- **Don't install and run the Database Migration Service directly on the SQL Server host machine or any mission-critical production server**
- **System will have been rebooted for the pre-requisites (like .NET Framework) as shown below**

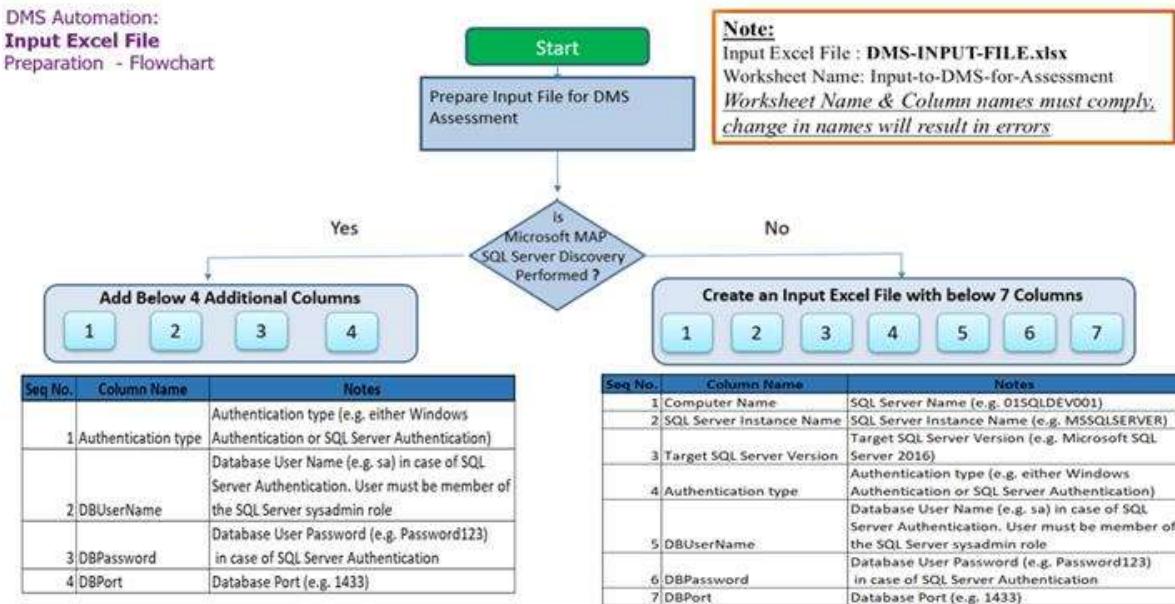


3.2 Operating System Requirements

- Supported Operating System

Windows Server 2019, Windows Server 2016, Windows 10, Windows Server 2012,
Windows Server 2008/2008 R2, Windows 7, Windows 8, Windows 8.1
Windows 7 64-bit and above

3.3 Input Excel File



- Important Notes:**
- This script is based on the worksheet named 'input-to-DMS-for-assessment' and following columns in worksheet of the Input Excel file:
- Worksheet name in the INPUT EXCEL FILE must be **input-to-DMS-for-assessment**
- Column Name must be kept as shown below, change in names will result in errors**
- Values in the column must be correct, incorrect values will also result in errors**
- If there is only one server-instance to be assessed using the script, please add a duplicate line with same server information to avoid an input related issue

Column Name	Note
Computer Name	SQL Server Name (e.g. 01SQLDEV001)
SQL Server Instance Name	SQL Server Instance Name (e.g. MSSQLSERVER)
Target SQL Server Version	Target SQL Server Version (e.g. Microsoft SQL Server 2016)
Authentication type	Authentication type (e.g. either Windows Authentication or SQL Server Authentication)

DBUserName	Database User Name (e.g. sa) in case of SQL Server Authentication. User must be member of the SQL Server sysadmin role
DBPassword	Database User Password in case of SQL Server Authentication
DBPort	Database Port (e.g. 1433)
KeyVaultSubscriptionId	Subscription ID to be entered
KeyVaultName	KeyVaultName to be entered
KeyVaultSecretName	KeyVaultSecretName to be entered

Note: If SQL Server is running on a cluster, "**Computer Name**" Column value should be updated with SQL Cluster name.

"**SQL Server Instance Name**" Column value should be updated with "**MSSQLSERVER**" for default SQL Instances

Seq.No	File	Note
1	 DMS-INPUT-FILE.xlsx	Sample: DMS-INPUT-FILE
2		Sample: MAP (SQL Server) Discovery report where Database Instances Worksheet will have the SQL Server details. This may be used with additional four columns for the DMS assessment automation.

3.4 Windows User credentials

Windows user must have privileges to install the following software & PowerShell module:

- .NET Core 6.0.21
- .NET Framework 4.8
- ImportExcel Powershell Module
- Az.DataMigration and Az.Accounts Powershell Modules

3.5 Storage Space & Folder read write permission

Windows user must have a privilege to create folder and write the assessment results to that folder

Minimum disk free space required is 200MB

3.6 SQL User Credentials

SQL User must be member of the SQL Server **sysadmin** role in case of SQL Server Authentication

3.7 Internet access to the below URLs:

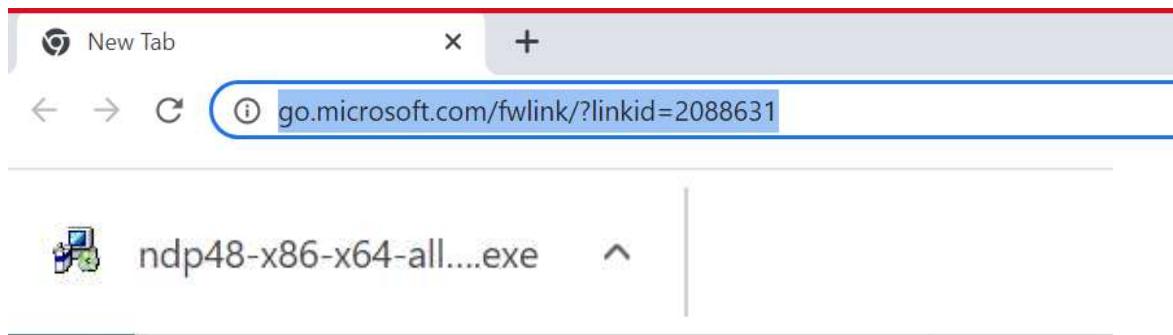
URL	Note
https://go.microsoft.com/fwlink/?linkid=2088631	.NET Framework 4.8
https://download.visualstudio.microsoft.com/download/pr/31949bf4-c9ef-4e57-9da2-d798ab8b8bbf/fb7a481d9381bb740223629422a006e0/dotnet-runtime-6.0.21-win-x64.exe	.NET Core runtime 6.0.21
https://go.microsoft.com/fwlink/?linkid=2242848	Azure Data Studio v1.45.1 (Optional step)

3.8 Without Internet access to the URLs

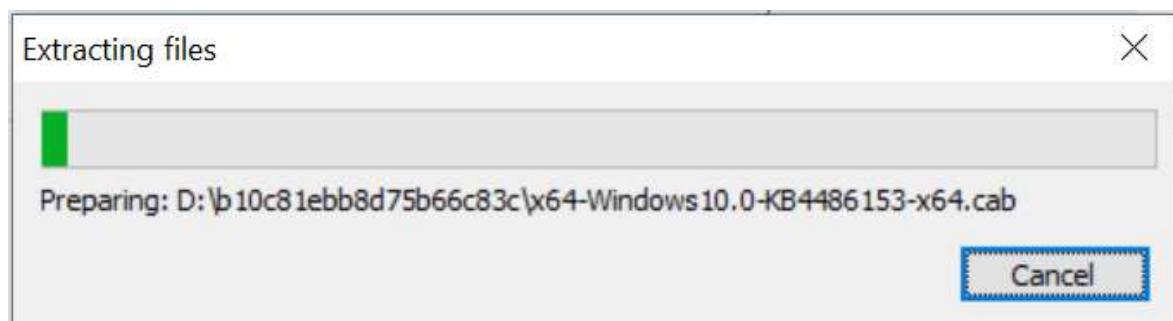
Note: Follow the instructions below to download all the software manually to a server where internet connectivity is enabled. Once all the software is downloaded, move all of them to the server where DMS automation script will be executed and install all of them one by one.

3.8.1 Installing .NET Framework 4.8

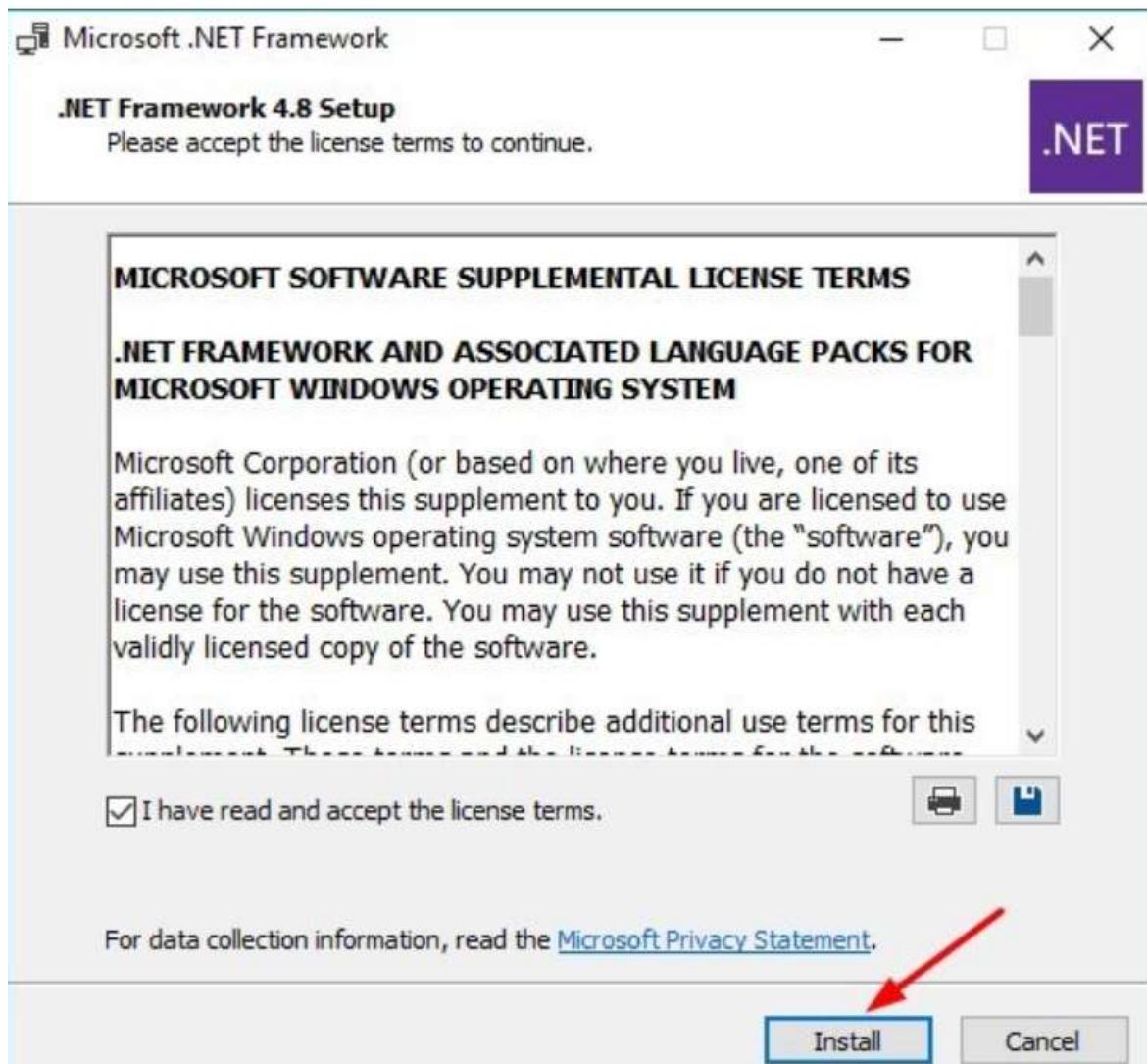
1. Paste the download link in web - <https://go.microsoft.com/fwlink/?linkid=2088631>



2. Launch the downloaded offline installer **ndp48-x86-x64-allos-enu.exe**,



3. Read and accept the license terms.
4. Click on Install.



5. Once the installation is complete, restart the computer.

Microsoft .NET Framework

You must restart your computer to complete the installation. If you choose Restart Later, applications dependent on .NET Framework may stop working.

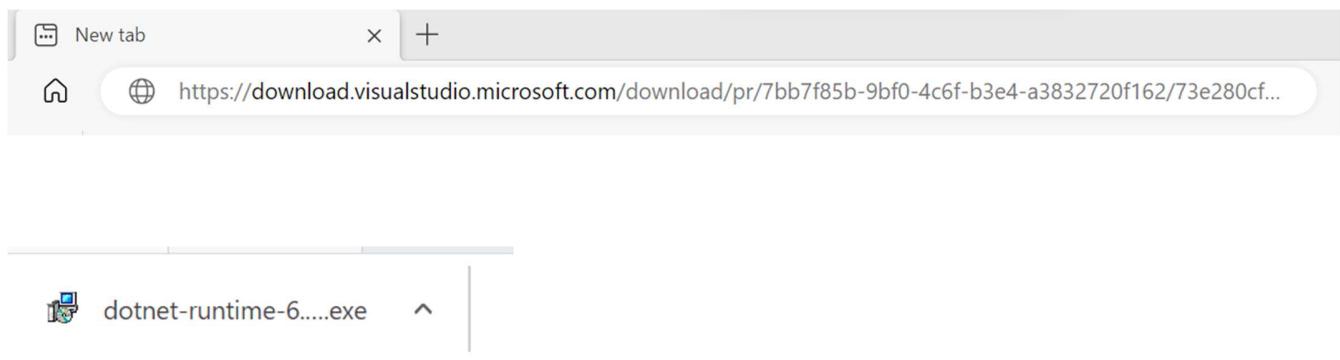
[Restart Now](#)

[Restart Later](#)

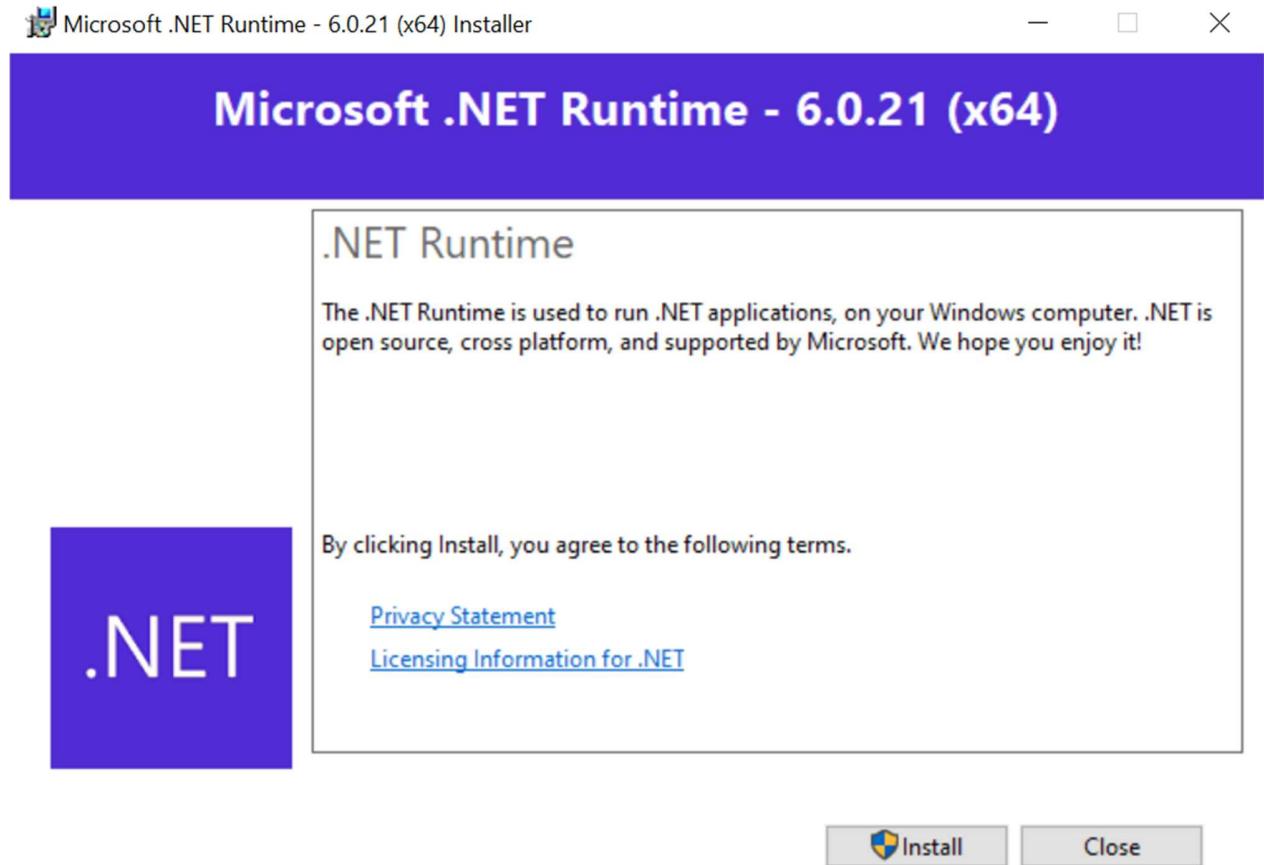
3.8.2 Installing .NET Core runtime 6.0.21

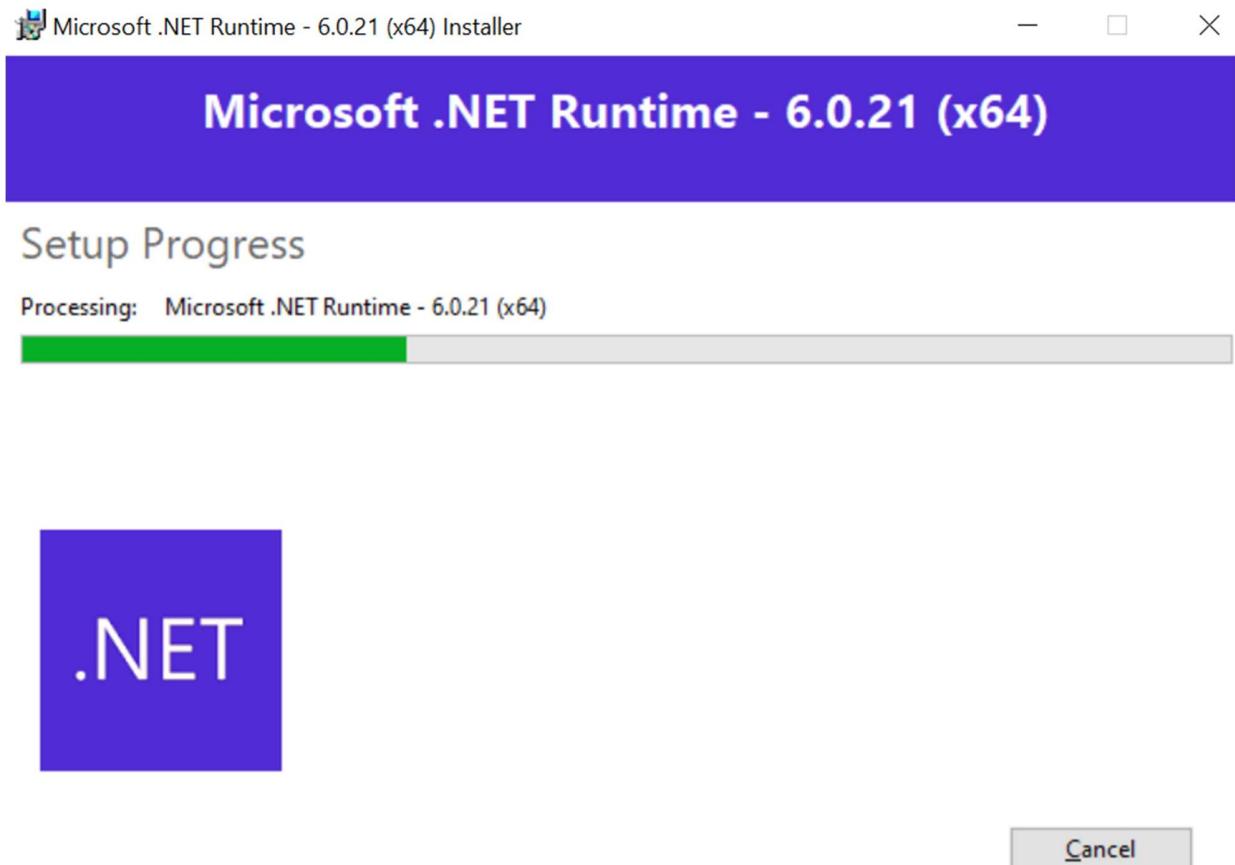
1. Paste the download link in web -

<https://download.visualstudio.microsoft.com/download/pr/31949bf4-c9ef-4e57-9da2-d798ab8b8bbf/fb7a481d9381bb740223629422a006e0/dotnet-runtime-6.0.21-win-x64.exe>

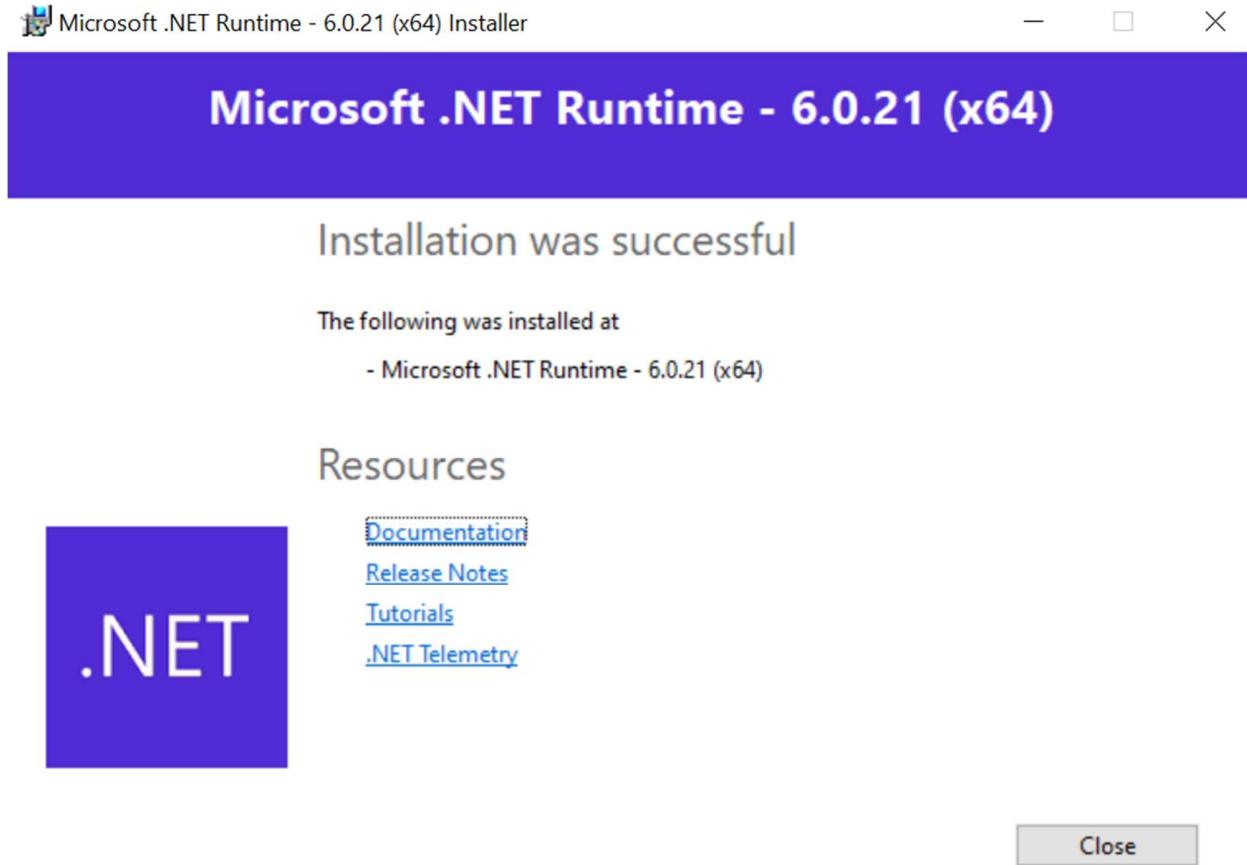


1. Launch the downloaded offline installer **dotnet-runtime-6.0.21-win-x64**
2. Click on Install.





3. Once the installation is complete, click on close.



3.8.3 Installing Excel Import Module

1. Open Browser and navigate to the link
<https://www.powershellgallery.com/packages/ImportExcel/7.4.1>
2. Click On Manual Download

ImportExcel 7.4.1

PowerShell module to import/export Excel spreadsheets, without Excel.

Check out the How To Videos https://www.youtube.com/watch?v=U3Ne_yX4tYo&list=PL5uoqS92stXioZw-uze_NtvSo0k0K0kq

Installation Options

[Install Module](#)[Azure Automation](#)[Manual Download](#)

Manually download the .nupkg file to your system's default download location. Note that the file won't be unpacked, and won't include any dependencies. [Learn More](#)

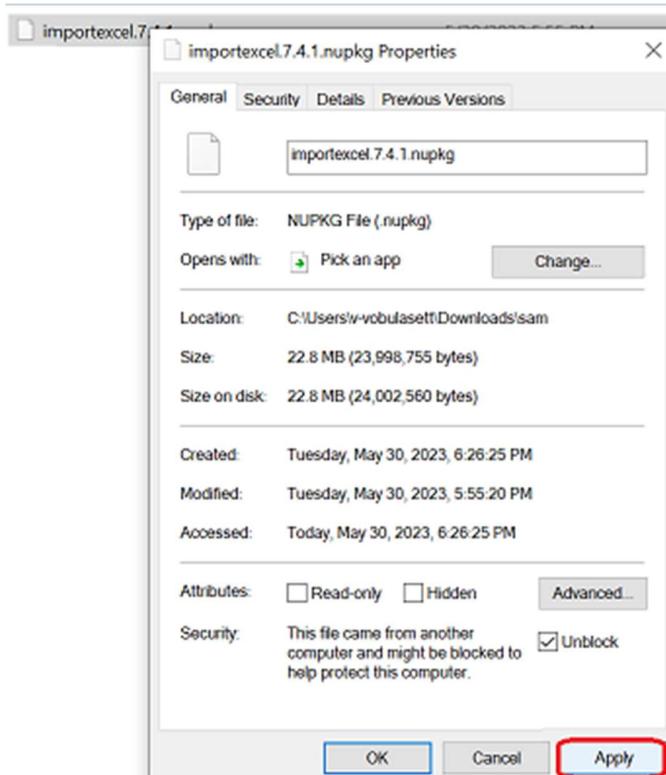
[Download the raw nupkg file](#)

Author(s)

3. Now Click on Download the raw nupkg file.
4. The file will be downloaded to Downloads folder

Name	Date modified	Type	Size
▼ Today (1)			
 importexcel.7.4.1.nupkg	5/30/2023 5:55 PM	NUPKG File	23,437 KB

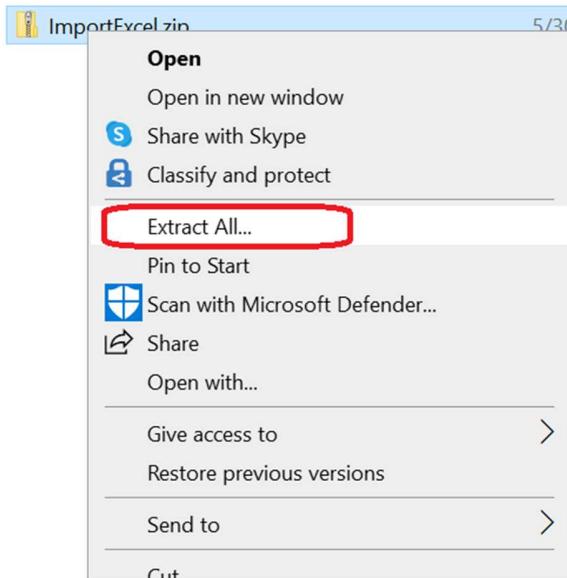
5. Right Click Properties-> and unblock the file -> Apply.



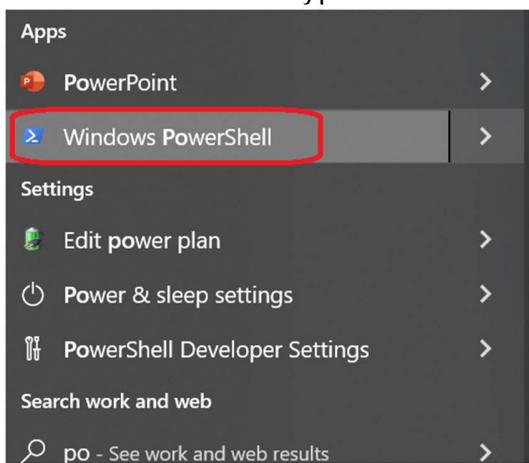
6. Rename the file as ImportExcel.zip.

 ImportExcel.zip	5/30/2023 5:55 PM	NUPKG File	23,437 KB
---	-------------------	------------	-----------

7. Extract the zip RightClick-> Extract All



8. Goto Run Button -> Type Powershell and click on -> Windows PowerShell



9. Run the command. \$env:PSModulePath which will list all the Environment variable paths for PowerShell Module

```
PS C:\Users\v-vobulasett> $env:PSModulePath
C:\Users\v-vobulasett\Documents\WindowsPowerShell\Modules;C:\Program Files\WindowsPowerShell\Modules;C:\windows\system32\WindowsPowerShell\v1.0\Modules;C:\Program Files (x86)\Microsoft Azure Information Protection\Powershell
```

10. Navigate to the path which reflects with Program Files or ProgramFiles(X86) to the Respective modules Folder via FileExplorer and paste the extracted file (i.e. Step7)

This PC > OSDisk (C:) > Program Files > WindowsPowerShell > Modules				
	Name	Date modified	Type	Size
s	ImportExcel	5/30/2023 6:41 PM	File folder	
s	Microsoft.PowerShell.Operation.Validation	12/7/2019 3:01 PM	File folder	
s	PackageManagement	12/7/2019 3:01 PM	File folder	
s	Pester	12/7/2019 3:01 PM	File folder	
sd	PowerShellGet	12/7/2019 3:01 PM	File folder	
SQLServer	PSReadline	12/7/2019 3:01 PM	File folder	
e	SQLite	4/27/2023 1:00 PM	File folder	

Execute the below command from windows PowerShell as Administrator.

- **Import-Module ImportExcel**

```
PS C:\Windows\system32> Import-Module ImportExcel  
PS C:\Windows\system32>
```

3.8.4 Installing Az.DataMigration and Az.Accounts Modules

11. Open Browser and navigate to the link

[PowerShell Gallery | Az.DataMigration 0.14.1](#)

[PowerShell Gallery | Az.Accounts 1.1.0](#)

12. Click On Manual Download

Az.DataMigration 0.14.1

Microsoft Azure PowerShell - Database Migration Service cmdlets for Azure Sql in Windows PowerShell and PowerShell Core.

For more information on Database Migration Service, please visit the following:
<https://learn.microsoft.com/azure/dms/dms-overview>

Minimum PowerShell version
5.1

✓ Installation Options

[Install Module](#) [Azure Automation](#) [Manual Download](#)

Manually download the .nupkg file to your system's default download location. Note that the file won't be unpacked, and won't include any dependencies. [Learn More](#)

[Download the raw nupkg file](#)

13. Now Click on Download the raw nupkg file.

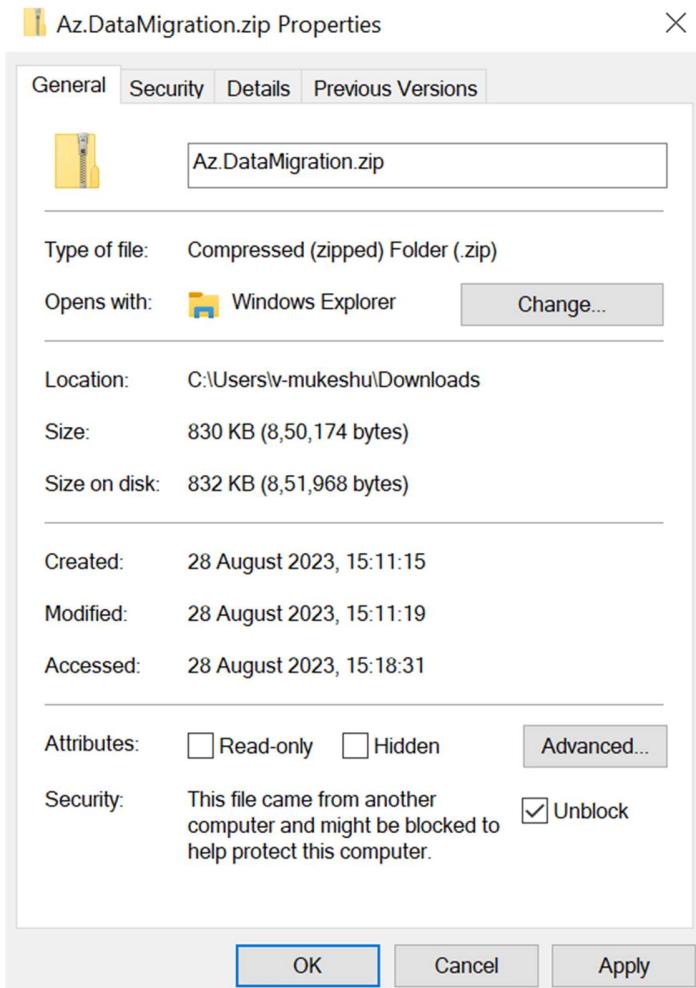
14. The file will be downloaded to Downloads folder

Name	Date modified	Type	Size
▼ Today (1)			
 az.datamigration.0.14.1.nupkg	28-08-2023 15:11	NUPKG File	831 KB

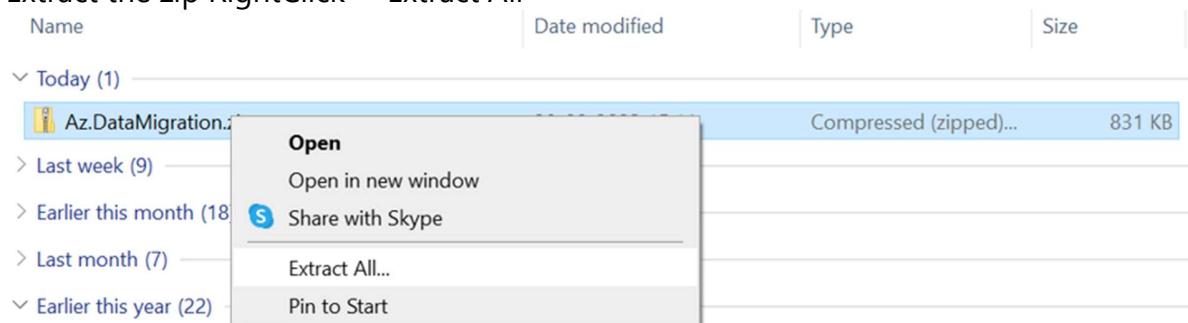
15. Rename the file as Az.DataMigration.zip

Name	Date modified	Type	Size
▼ Today (1)			
 Az.DataMigration.zip	28-08-2023 15:11	NUPKG File	831 KB

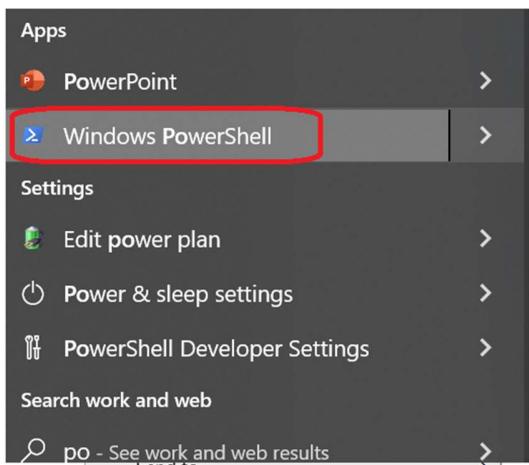
16. Right Click Properties-> and unblock the file -> Apply.



17. Extract the zip RightClick-> Extract All



18. Goto Run Button -> Type Powershell and click on -> Windows PowerShell



19. Run the command. `$env:PSModulePath` which will list all the Environment variable paths for PowerShell Module

```
PS C:\Users\v-vobulasett> $env:PSModulePath
C:\Users\v-vobulasett\Documents\WindowsPowerShell\Modules;C:\Program Files\WindowsPowerShell\Modules;C:\windows\system32\WindowsPowerShell\v1.0\Modules;C:\Program Files (x86)\Microsoft Azure Information Protection\PowerShell
```

20. Navigate to the path which reflects with Program Files or ProgramFiles(X86) to the Respective modules Folder via FileExplorer and paste the extracted file (i.e. Step7)

This PC > Windows (C:) > Program Files > WindowsPowerShell > Modules

Name	Date modified	Type	Size
Az.Accounts	24-08-2023 12:41	File folder	
Az.DataMigration	28-08-2023 15:07	File folder	
ImportExcel	20-04-2023 14:41	File folder	

21. Similarly, follow the same steps for installing the Az.Accounts Module

Execute the below command from windows PowerShell as Administrator.

- **Import-Module Az.DataMigration**

```
PS C:\WINDOWS\system32> Import-Module Az.DataMigration
PS C:\WINDOWS\system32>
```

- **Import-Module Az.Accounts**

```
PS C:\Windows\System32> Import-Module Az.Accounts
PS C:\Windows\System32>
```

3.9 PowerShell Version, Modules & Execution policy

Execute the below commands from windows PowerShell as Administrator.

1. To find the PowerShell Version

- Get-Host

```
PS C:\Windows\system32> Get-Host

Name          : Windows PowerShell ISE Host
Version       : 5.1.19041.1682
InstanceId    : e6ad4612-a773-4d6a-91ae-07d472bb3f42
UI            : System.Management.Automation.Internal.Host.InternalHostUserInterface
CurrentCulture : en-IN
CurrentUICulture : en-US
PrivateData   : Microsoft.PowerShell.Host.ISE.ISEOptions
DebuggerEnabled : True
IsRunspacePushed : False
Runspace      : System.Management.Automation.Runspaces.LocalRunspace
```

2. Set the PowerShell execution policy

- **Set-ExecutionPolicy Unrestricted -Scope CurrentUser**

```
PS C:\Windows\system32> Set-ExecutionPolicy Unrestricted -Scope CurrentUser
```

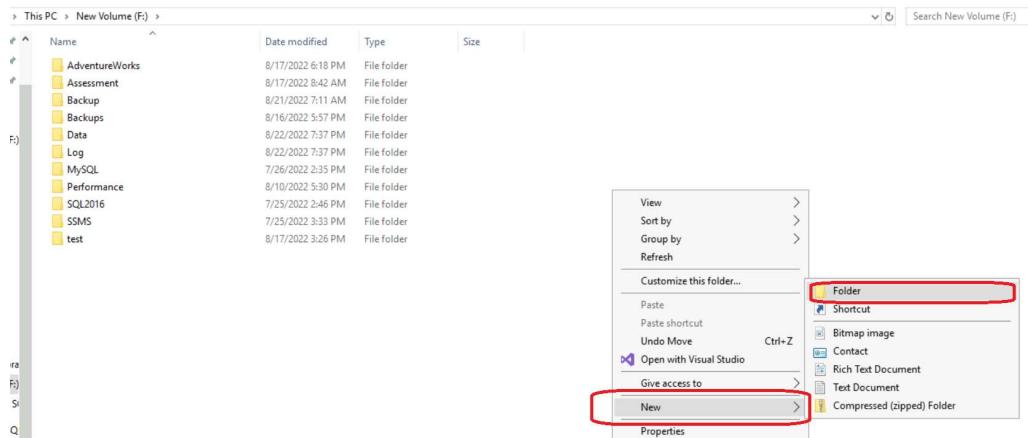
3.10 Connectivity

Connectivity must exist between the SYSTEM which runs the DMS assessment and SQL Servers which are to be assessed.

4 Copying Script

4.1 Folder Name

- Login into a Non-Mission-Critical system (i.e. **NOT** on any production server) from where the DMS assessment is to be run
- Create a folder C:\DMS(you may choose any available drive)



 DMS	23-07-2024 20:54	File folder
 Intel	12-07-2024 10:47	File folder
 Logs	17-10-2023 12:37	File folder

4.2 Script and Input file

- Copy the folder named **Validation_Scripts** under the folder created in the previous step.
For example: If DMS was the folder created in the previous step, then copy the Validation_Scripts under the DMS Folder.

- Copy the content to a file named **CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1** under the folder created in the previous step. For example: If DMS was the folder created in the previous step, then copy the file named **CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1** under the DMS Folder.



- Copy the content to a file named **Terminate.ps1** under the folder created in the previous step.



```
23-07-2024 20:01          13,995 DMS-INPUT-FILE.xlsx
23-07-2024 20:53      <DIR>          Logs
19-07-2024 19:13          469 Terminate.ps1
```

5 Preparing the INPUT EXCEL file

In Order to support the assessment process, INPUT EXCEL FILE has been driven from the Microsoft Assessment and Planning Toolkit Discover report.

Each column will represent a SQL server instance to be assessed

Computer Name	SQL Server Instance Name	Target SQL Server Version	Authentication type	DBUserName	DBPassword	DBPort	KeyVaultSubscriptionId	KeyVaultName	KeyVaultSecret Name
---------------	--------------------------	---------------------------	---------------------	------------	------------	--------	------------------------	--------------	---------------------

- Ensure the Computer Names are correct, and connectivity exists between the SYSTEM which runs the DMS assessment and Computer Name provided in the column
- Ensure the SQL SERVER Product Name is one of the below given values:
 - Microsoft SQL Server 2022
 - Microsoft SQL Server 2019
 - Microsoft SQL Server 2017
 - Microsoft SQL Server 2016
 - Microsoft SQL Server 2014
 - Microsoft SQL Server 2012
 - Microsoft SQL Server 2008 R2
 - Microsoft SQL Server 2008

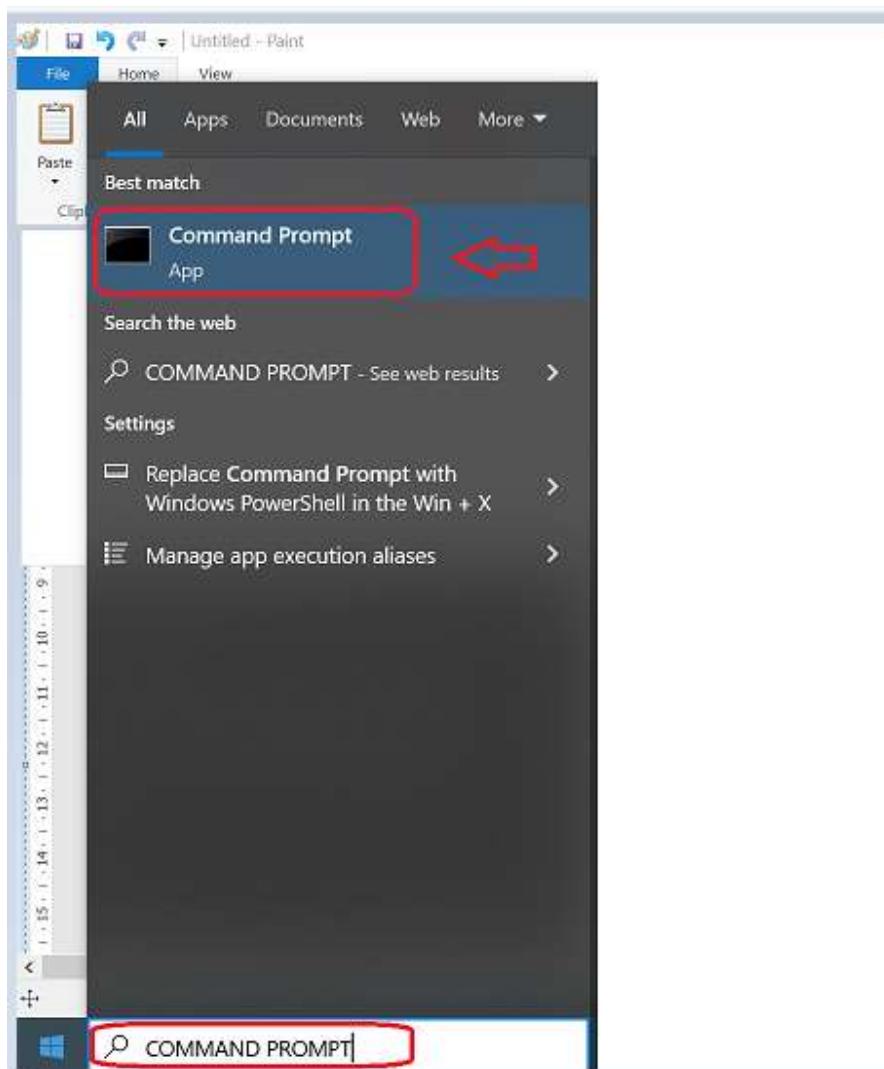
Other values will result in incorrect assessment results

- Ensure that Authentication type is either **Windows Authentication** or **SQL Server Authentication** other values will result in errors
- Ensure that Database Username is correct and can connect to SQL Server instance to be assessed in case of SQL Server Authentication
- Ensure Database User Password is correct and can connect to SQL Server instance to be assessed in case of SQL Server Authentication
- Ensure Database ports are correct and can connect to SQL Server instance with this port
- Once the input file is prepared Copy the file (DMS-INPUT-FILE.xlsx) under the folder created in the previous step (C:\DMS)

6 Executing the Script

6.1 DMS assessment execution

- Open windows Command prompt as **Administrator**



- Change the working directory/folder to the folder where you created/copied the script **CMF_DMS_SQLandSKUAssessmentsCombo_v1.2ps1**) in previous step

```
Directory of C:\DMS

23-07-2024  20:54    <DIR>      .
19-07-2024  19:13          88,064 ADS-INPUT-FILE.xlsx
23-07-2024  19:53      58,431 CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1
23-07-2024  20:01      13,995 DMS-INPUT-FILE.xlsx
23-07-2024  20:53    <DIR>      Logs
19-07-2024  19:13          469 Terminate.ps1
23-07-2024  20:53    <DIR>      Validation_Scripts
                  4 File(s)       160,959 bytes
                  3 Dir(s)   339,950,395,392 bytes free
```

Note: The file size may change based on the current policies and bug fixes

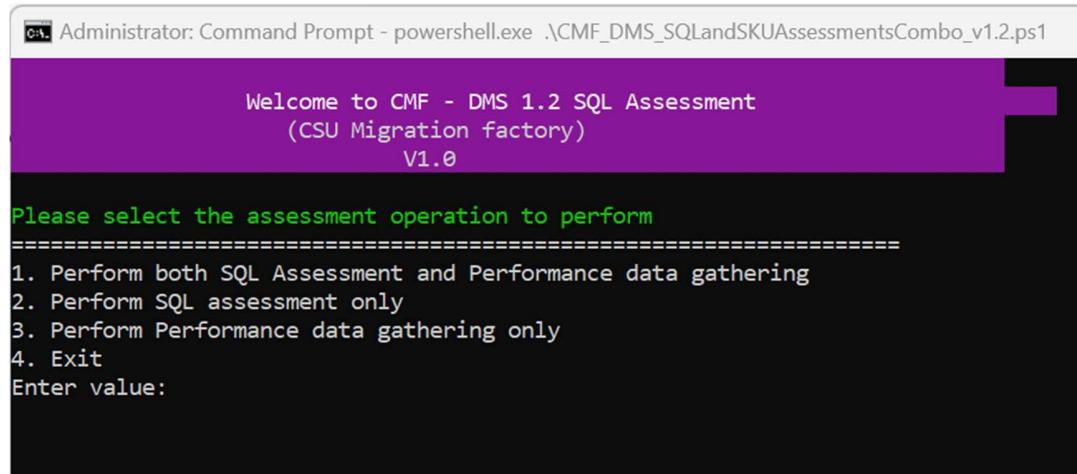
- Enter the following command at the windows command prompt

Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1

```
C:\DMS>Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1
```

- ➔ Enter assessment operation to perform by choosing values between 1 and 4
- "1. Perform both SQL assessment and Performance data gathering"
 - "2. Perform SQL assessment only"
 - "3. Perform Performance data gathering only"
 - "4. Exit"

- ➔ If SQL Server Installation is detected, then the below screen will appear



```
=====
1. Perform both SQL Assessment and Performance data gathering
2. Perform SQL assessment only
3. Perform Performance data gathering only
4. Exit
Enter value: 1
=====
Reviewing Installed Softwares on this machine...
=====
SQL Server product installed/detected on this server...
SQL Server 2017 Database Engine Shared
SQL Server 2017 Database Engine Services
SQL Server 2017 Database Engine Shared
SQL Server 2017 Database Engine Services
It is recommended to use a separate non-critical server to perform assessment.
Input Section
=====
Enter 'Y' to continue or any other key to abort: Y
```

- After triggering the automation all the support folders (Archive , Output , Download etc.) will be created automatically by the automation script in the C:\DMS folder

```
Mode           LastWriteTime      Length Name
----           -----          -----
d----  06-09-2023  21:36          Downloads
-C:\DMS 2.0\Downloads\ folder created...
d----  06-09-2023  21:36          Logs
-C:\DMS 2.0\Logs\ folder created...
d----  06-09-2023  21:36          Config
-C:\DMS 2.0\Config\ folder created...
-Sub-directories created...
-.Net Core is not available to perform SQL Assessment...

      ==> Enter 'Y' or 'N' to continue: : Y
-Downloading...
-Installing .Net Core ...
=====
.Net core installation complete.
Server reboot is mandatory post .Net Core installation. Kindly re-run the script post reboot
=====
-Fetching .Net Framework Version installed...
4.8.09032
-.Net 4.8 available
-Ending Execution
```

- Enter **Y** to download & install the .net core

Ensure the internet connectivity exists to the blow URL and you have the permission to install:

<https://dotnet.microsoft.com/en-us/download/dotnet/thank-you/runtime-6.0.21-windows-x64-installer>

It will download and install **.NET core Runtime 6.0.21**

Note: After Installation of .Net core Runtime, system needs a restart.

- Pre-requisites Check for .Net Framework 4.8

Ensure the internet connectivity exists to the blow URL and you have the permission to install:

<https://go.microsoft.com/fwlink/?linkid=2088631>

It will download and install **.NET Framework 4.8**

- **Re-start the system**
- Enter the following command again to restart the DMS assessment process from the folder where the script is available

Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1

```
C:\DMS>Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLAndSKUAssessmentsCombo_v1.2.ps1
```

- Pre-requisites Check for PowerShell ImportExcel Module
Checks if ImportExcel Module is present, if not script automatically downloads.

```
Administrator: Command Prompt - Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLandSKUAssessmentsCombo_v1.ps1

Mode          LastWriteTime      Length Name
----          -----          ---- 
d----  06-09-2023    21:32           Compressed
-C:\DMS 2.0\output\Compressed\ folder created...

Directory: C:\DMS 2.0

Mode          LastWriteTime      Length Name
----          -----          ---- 
d----  06-09-2023    21:32           Downloads
-C:\DMS 2.0\Downloads\ folder created...
d----  06-09-2023    21:32           Logs
-C:\DMS 2.0\Logs\ folder created...
d----  06-09-2023    21:32           Config
-C:\DMS 2.0\Config\ folder created...
-Sub-directories created...
-C:\Program Files\dotnet Folder Exists... checking .net Core version installed
-Fetching .Net Framework Version installed...
4.8.09032
-.Net 4.8 available
=====
Checking for ImportExcel Module
Excel PS module not found..
=====
Do you want to continue download and install Excel PS Module? 'Y' or 'N' : : Y
```

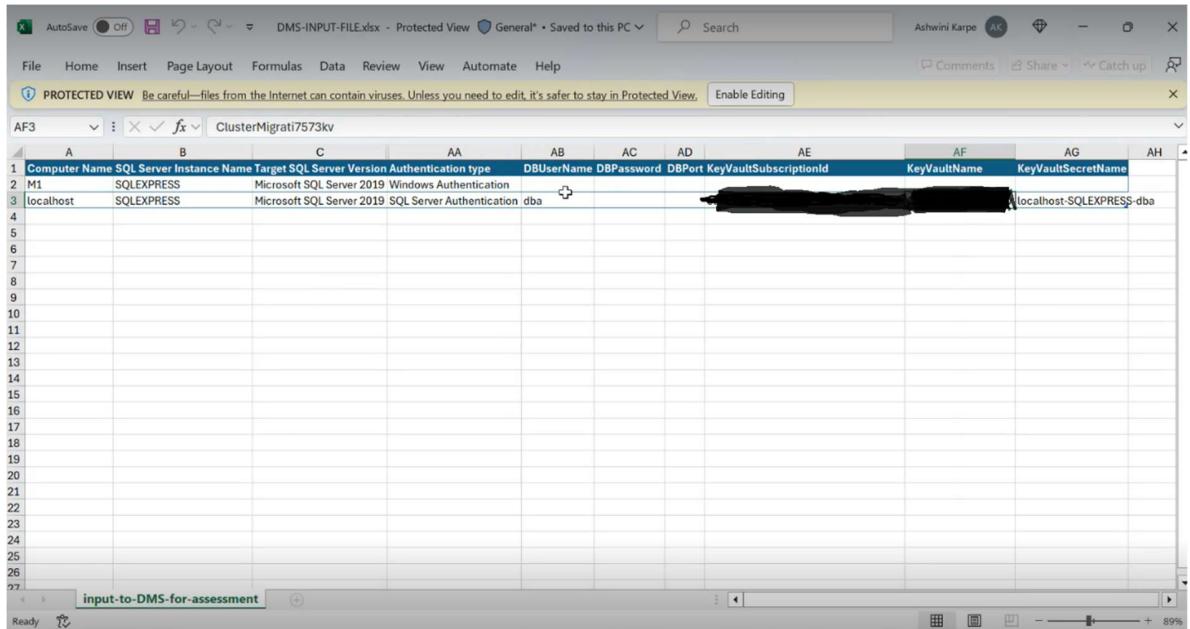
- Pre-requisites Check for Az.DataMigration module

Checks if Az.DataMigration Module is present, if not script automatically downloads and also Az.Accounts Module along with it

```
=====
Do you want to continue download and install Excel PS Module? 'Y' or 'N' : : Y
Downloading ImportExcel PS Module...
Downloaded.
=====

Checking for Az.DataMigration Module
Az.DataMigration module not found..
=====
Do you want to continue download and install Az.DataMigration Module? 'Y' or 'N' : : Y
```

In the Input file "DMS-INPUT-FILE.xlsx", we have to fill in the necessary details like, "Hostname", "SQL Server Instance Name", "Target SQL Server Version", "Authentication Type", "DBUsername", "DBPassword", "DBPort", "KeyVaultSubscriptionID", "KeyVaultName" and "KeyVaultSecretName" like below:

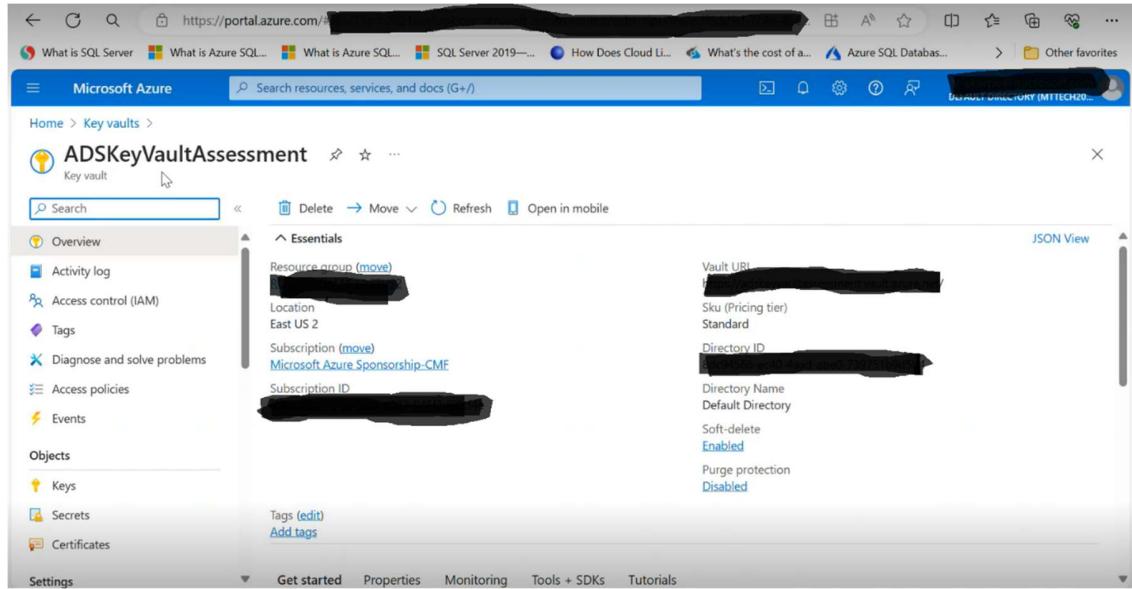


A	B	C	AA	AB	AC	AD	AE	AF	AG	AH
Computer Name	SQL Server Instance Name	Target SQL Server Version	Authentication type	DBUserName	DBPassword	DBPort	KeyVaultSubscriptionId	KeyVaultName	KeyVaultSecretName	
M1	SQLEXPRESS	Microsoft SQL Server 2019	Windows Authentication							
localhost	SQLEXPRESS	Microsoft SQL Server 2019	SQL Server Authentication	dba						
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										

In the above input file, if we are providing the Keyvault details, we don't need to provide the credentials and vice versa.

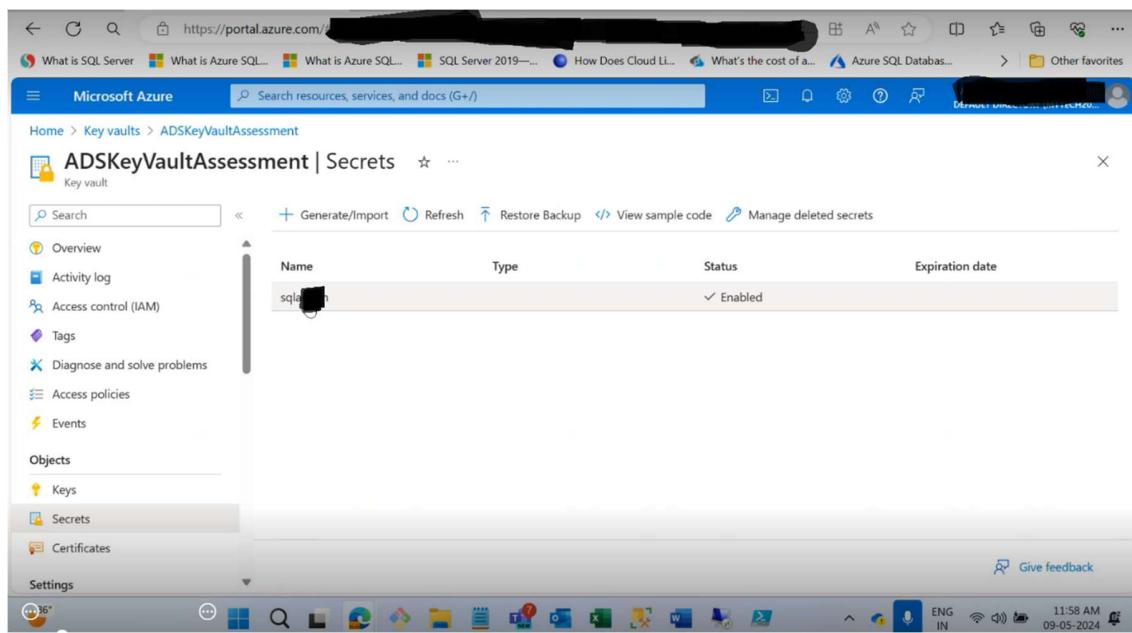
Using the following method, we can get the Keyvault details (KeyVaultSubscriptionId, KeyVaultName, KeyVaultSecretName)

1. Login to Azure Portal
2. Search the KeyVaultName in the top search bar and click on the KeyVaultName



The screenshot shows the Azure Key Vault Overview page for the 'ADSKeyVaultAssessment' vault. The left sidebar includes 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Access policies', and 'Events'. The main pane displays 'Essentials' information such as Resource group (move), Location (East US 2), Subscription (move) (Microsoft Azure Sponsorship-CMF), and Subscription ID. On the right, there is a 'Vault URL' field and a 'JSON View' button.

3. Click on the Secrets on the left side pane and find the KeyvaultSecretName



The screenshot shows the Azure Key Vault Secrets page for the 'ADSKeyVaultAssessment' vault. The left sidebar includes 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Access policies', and 'Events'. The main pane lists a single secret named 'sqlagent'. A 'Give feedback' button is located on the right side of the page.

Execution of the DMS Assessment continues

```
06-09-2023 22:07:17 12523 13.68.215.133_MSSQLSERVER_2023-09-06-220717..  
DMS Assessment Successful  
SQL Assessment Completed.....: Wednesday 09-06-2023 22:07:17 +05:30  
  
ServerName :  
InstanceName :  
Status :  
  
=====  
Assessment data stored compressed at C:\DMS 2.0\output\Compressed  
=====  
Transcript stopped, output file is C:\DMS 2.0\Logs\DMS_Assessment_Transcript.txt  
=====
```

6.2 DMS SKU assessment execution

```
Event and Error Logs Folder Path: C:\Users\v-chethanv\AppData\Local\Microsoft\SqlAssessment\Logs  
SqlAssessmentReport-20230906.json  
-a---- 06-09-2023 22:07 12523 13.68.215.133_MSSQLSERVER_2023-09-06-220717.json  
DMS Assessment Successful  
SQL Assessment Completed.....: Wednesday 09-06-2023 22:07:17 +05:30  
  
ServerName :  
InstanceName :  
Status :  
  
=====  
Assessment data stored compressed at C:\DMS 2.0\output\Compressed  
=====  
Transcript stopped, output file is C:\DMS 2.0\Logs\DMS_Assessment_Transcript.txt  
=====  
Continue Performance Data Collection ?  
=====  
Enter 'Y' to continue or any other key to abort: -
```

Upon pressing "Y" the console will ask for two additional parameters (Please Provide the Data Collection duration in Day/s) –

Here , please put any value between 0 to 15 .

Note : There might the situation user may want to run this below 24 hours , in that situation user should put 0 .

In the below example we put the day range as 2

```
=====
Continue Performance Data Collection ?
=====
Enter 'Y' to continue or any other key to abort: Y
Please Provide the Data Collection duration in Day/s
=====
Valid Inputs for Date Range is 0 to 15
If you want to run the data collections below one day please enter 0
Enter Day value: 2
```

Next the console will ask Hour value (Please Provide the Data Collection duration Hours) –

Here, please put any value between 0 to 23 . and press enter .

Note : If you put the Day value (as per 7.1) as 0 , please do not put the Hour value as 0 (It should be anything between 1-23)

```
=====
Continue Performance Data Collection ?
=====
Enter 'Y' to continue or any other key to abort: Y
Please Provide the Data Collection duration in Day/s
=====
Valid Inputs for Date Range is 0 to 15
If you want to run the data collections below one day please enter 0
Enter Day value: 2
Please Provide the Data Collection duration Hours
=====
Valid Inputs for Hour Range is 1 to 23
If you do not want to add Hours please enter 0
Enter Hour value: 1
```

After that the process will be initiated.

```
Administrator: Command Prompt - Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLAndSKUAssessmentsCo
JobStateInfo : Running
Finished : System.Threading.ManualResetEvent
InstanceId : 319ee0be-5169-4c9a-92a9-e40c92413e1a
Id : 1
Name : Job1
ChildJobs : {Job2}
PSBeginTime : 06-09-2023 22:09:07
PSEndTime :
PSJobTypeName : BackgroundJob
Output : {}
Error : {}
Progress : {}
Verbose : {}
Debug : {}
Warning : {}
Information : {}
State : Running

Connecting to the SQL server(s)...
Starting data collection...
Press the Enter key to stop the data collection at any time...

UTC 2023-09-06 16:39:15, Server cmfautodemo:
    Performance data query iteration: 1 of 20, collected 10 data points.
UTC 2023-09-06 16:39:22, Server cmfautodemo:
    Collected static configuration data, and saved to C:\DMS 2.0\output\PerfData.
```

7 Terminating/Stopping the Script SKU Execution

The process will continue to run as per the time range provided by the user in the last step and terminate automatically (Note – User also can terminate the process by pressing enter key.)

This will allow the performance data to be collected to select the best Azure SQL Database, SQL Managed Instance, or SQL Server on Azure VM **target** and SKU for your database. Database Migration Service (DMS) helps address these questions and make your database migration experience easier by providing these SKU recommendations. It is recommended that the performance data gathering is run for minimum four hours during the peak SQL Server workloads.

After running for a specific period, the process will stop executing on its own as per the Day/Hour values provided by the user, otherwise Press **Enter Key** in the window where the script is running.

```
Administrator: Command Prompt - Powershell.exe -ExecutionPolicy RemoteSigned -File .\CMF_DMS_SQLandSKUAssessmentsCombo_v1.0.ps1

Warning      : {}
Information   : {}
State        : Running

Connecting to the SQL server(s)...
Starting data collection...
Press the Enter key to stop the data collection at any time...

UTC 2023-09-06 16:39:15, Server cmfautodemo:
    Performance data query iteration: 1 of 20, collected 10 data points.
UTC 2023-09-06 16:39:22, Server cmfautodemo:
    Collected static configuration data, and saved to C:\DMS 2.0\output\PerfData.
UTC 2023-09-06 16:39:27, Server cmfsqlautodemo:
    Performance data query iteration: 1 of 20, collected 11 data points.
UTC 2023-09-06 16:39:33, Server cmfsqlautodemo:
    Collected static configuration data, and saved to C:\DMS 2.0\output\PerfData.
UTC 2023-09-06 16:39:42, Server cmfautodemo:
    Performance data query iteration: 2 of 20, collected 10 data points.
UTC 2023-09-06 16:39:56, Server cmfsqlautodemo:
    Performance data query iteration: 2 of 20, collected 11 data points.
UTC 2023-09-06 16:40:10, Server cmfautodemo:
    Performance data query iteration: 3 of 20, collected 10 data points.
UTC 2023-09-06 16:40:25, Server cmfsqlautodemo:
    Performance data query iteration: 3 of 20, collected 11 data points.
UTC 2023-09-06 16:40:40, Server cmfautodemo:
    Performance data query iteration: 4 of 20, collected 10 data points.
    UTC 2023-09-06 16:40:54, Server cmfsqlautodemo:
        Performance data query iteration: 4 of 20, collected 11 data points.
```

Zip files will be created for the assessment & SKU processed, inside the Compressed folder. Share these files with CMF team to take it further for migrating on-premises databases to Azure cloud.

Press **Enter Key** to stop the execution

```
C:\ Administrator: Command Prompt
UTC 2023-09-06 16:39:27, Server cmfsqlautodemo:
    Performance data query iteration: 1 of 20, collected 11 data points.
UTC 2023-09-06 16:39:33, Server cmfsqlautodemo:
    Collected static configuration data, and saved to C:\DMS 2.0\output\PerfData.
UTC 2023-09-06 16:39:42, Server cmfautodemo:
    Performance data query iteration: 2 of 20, collected 10 data points.
UTC 2023-09-06 16:39:56, Server cmfsqlautodemo:
    Performance data query iteration: 2 of 20, collected 11 data points.
UTC 2023-09-06 16:40:10, Server cmfautodemo:
    Performance data query iteration: 3 of 20, collected 10 data points.
UTC 2023-09-06 16:40:25, Server cmfsqlautodemo:
    Performance data query iteration: 3 of 20, collected 11 data points.
UTC 2023-09-06 16:40:40, Server cmfautodemo:
    Performance data query iteration: 4 of 20, collected 10 data points.
        UTC 2023-09-06 16:40:54, Server cmfsqlautodemo:
            Performance data query iteration: 4 of 20, collected 11 data points.
UTC 2023-09-06 16:41:11, Server cmfautodemo:
    Performance data query iteration: 5 of 20, collected 10 data points.

UTC 2023-09-06 16:41:22, Server cmfautodemo:
    Aggregated 50 raw data points to 7 performance counters, and saved to C:\DMS 2.0\output\PerfData.
UTC 2023-09-06 16:41:23, Server cmfsqlautodemo:
    Aggregated 44 raw data points to 8 performance counters, and saved to C:\DMS 2.0\output\PerfData.
Event and Error Logs Folder Path: C:\Users\v-chethanv\AppData\Local\Microsoft\SqlAssessment\Logs
=====
Performance data stored compressed at C:\DMS 2.0\output\Compressed
=====
-Ending Execution

C:\DMS 2.0>
```

8 Azure Data Studio v1.45.1 manual installation (Optional step)

File	Link	Note
 Azure Data Studio Installation.docx	https://go.microsoft.com/fwlink/?linkid=2242848	Azure Data Studio v1.45.1 (Optional step)