

### Case 1 This case is divided into the following 3 main Steps A, B, C

A. [Storage account](#)---→ B. [Azure SQL DB](#)---→ C. [Power Bi Desktop](#).

In step **A** we will create a Storage account and configure it with data lake gen 2 then create a container and upload a bacpac file in it.

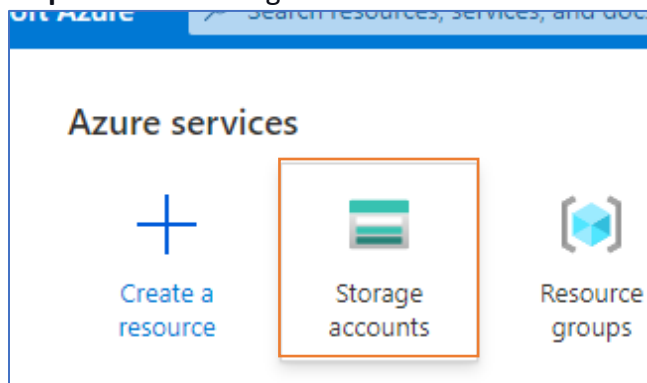
In Step **B** we will create an Azure SQL Server using Azure portal and connect that to MSSM and Restore bacpac file in Azure SQL Server.

In Step **C** we will connect the Azure SQL Database to Power BI Desktop.

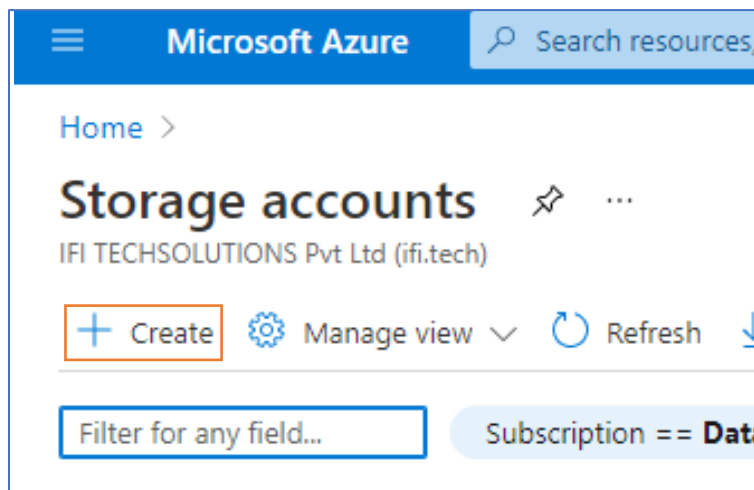
#### **A. Storage account Gen2 and Upload a bacpac file in a Container.**

In the following steps, we will Create - Storage Account Data Lake Gen2 > Container > Upload “sample. bacpac”.

**Step1** Select a Storage Account. Note: <Create using Azure Portal>.



**Step2** Click on the “+ Create” Button.



**Step3** Enter data as shown below and click the “**Next: Advanced**” Button.

**Subscription:** <Your azure Subscription select from Drop-Down>

**Resource group:** <Select from Drop-Down / Create a new one>

**Storage account name:** <Give any Name for Storage account>

Home > Storage accounts >

## Create a storage account ...

Basics Advanced Networking Data protection Tags Review + create

Select the subscription in which to create the new storage account. Choose a new or existing resource group to manage your storage account together with other resources.

Subscription \*

Data - Deepak & Ashfaq

Resource group \*

TaskRG

Create new

### Instance details

If you need to create a legacy storage account type, please click [here](#).

Storage account name ⓘ \*

The value must not be empty.

Region ⓘ \*

(US) East US

Review + create

< Previous

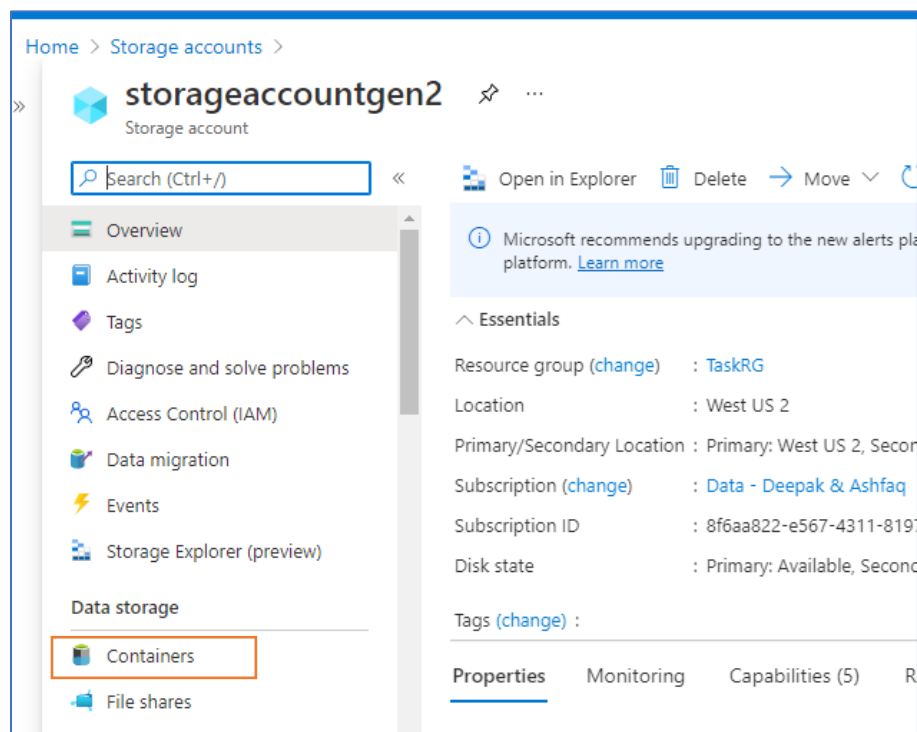
Next : Advanced >

**Step4** Click on “Enable Hierarchical namespace” Check box < Note: This will Configure this storage account as “Data Lake Gen 2”> click on the “Review + Create” Button.

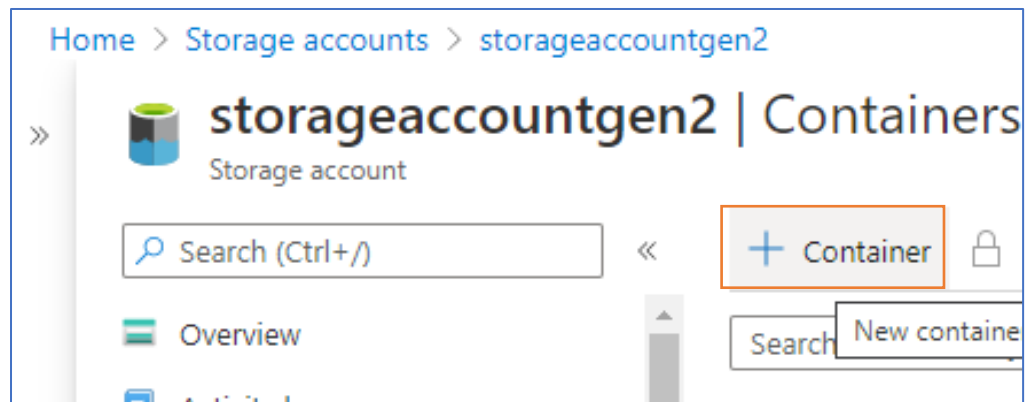
The screenshot shows the 'Create a storage account' wizard in the Azure portal, specifically the 'Advanced' tab. The 'Minimum TLS version' is set to 'Version 1.2'. Under the 'Data Lake Storage Gen2' section, the 'Enable hierarchical namespace' checkbox is checked and highlighted with an orange box. Below this, the 'Blob storage' section shows 'Enable network file share v3' as unchecked and 'Access tier' set to 'Hot: Frequently accessed data and day-to-day usage'. At the bottom, the 'Review + create' button is highlighted with an orange box, along with navigation buttons for '< Previous' and 'Next : Networking >'.

**Step5** Upload “Sample.bacpac” in your Storage Account.

Step 5.1 open Storage account Click on “Containers”.



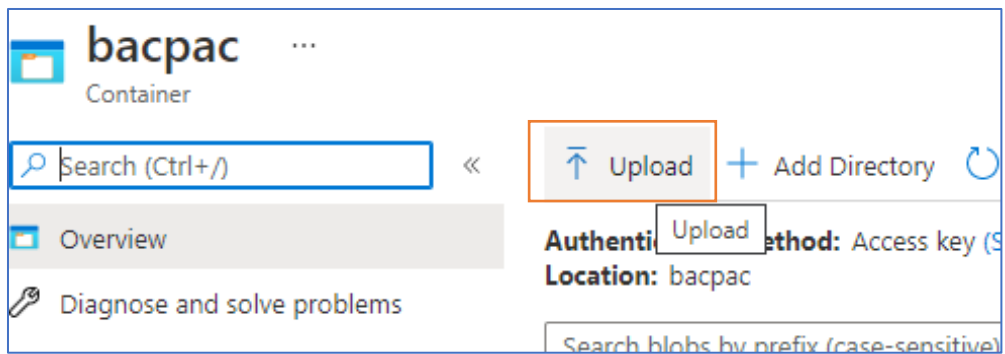
**Step 5.2** Click on “+ Container” to create a New Container.



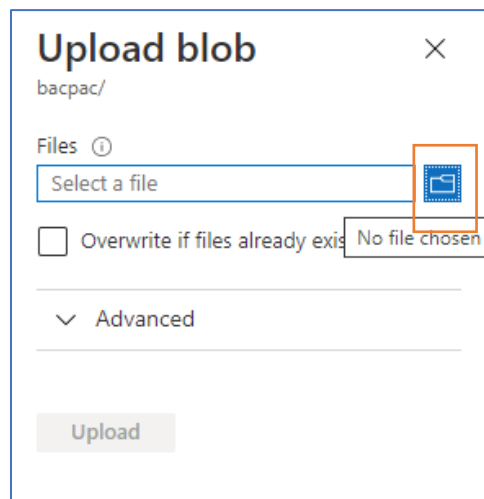
**Step 5.3** Enter a name <bacpac> of a Container and click on “Create” Button

A screenshot of the 'New container' dialog box in the Azure portal. The dialog has a title bar with 'New container' and a close button. Inside, there is a 'Name' field with a red asterisk, containing the text 'bacpac' and a green checkmark. Below it is a 'Public access level' dropdown menu with an information icon, currently set to 'Private (no anonymous access)'. There is an 'Advanced' section with a downward arrow. At the bottom, there are two buttons: 'Create' (highlighted with an orange box) and 'Discard'.

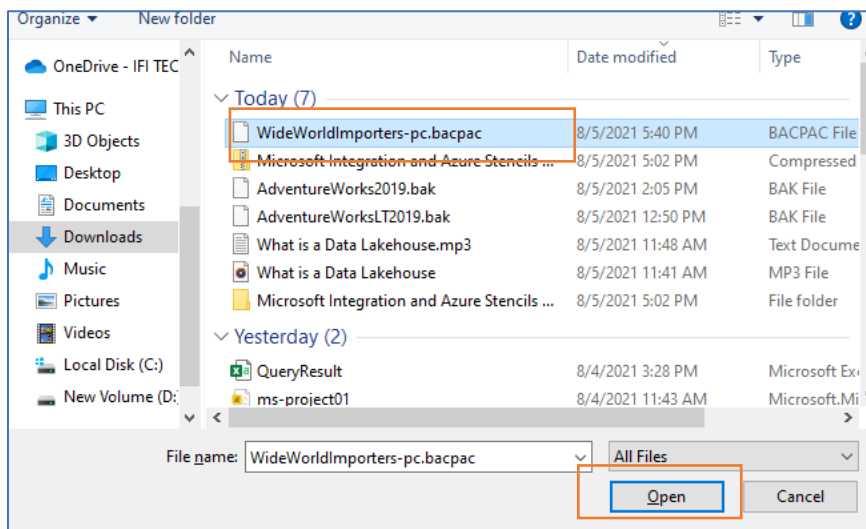
**Step5.4** Open “bacpac Container” Click on “upload” Button.



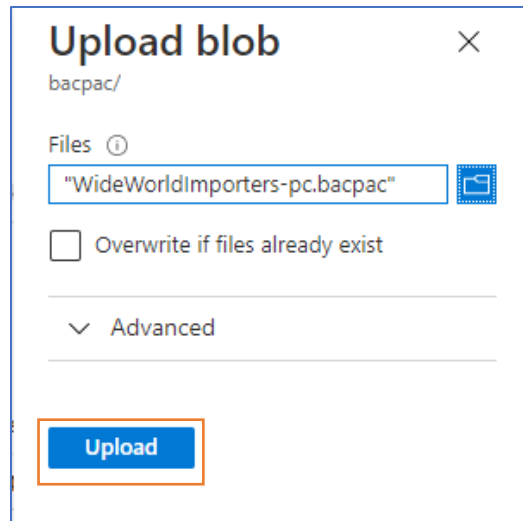
**Step5.5** Click on file Icon .



**Step5.6** Select a “datafile. bacpac” file from Local System and Click on Open Button.



**Step5.7** Click on “Uplode” Button.



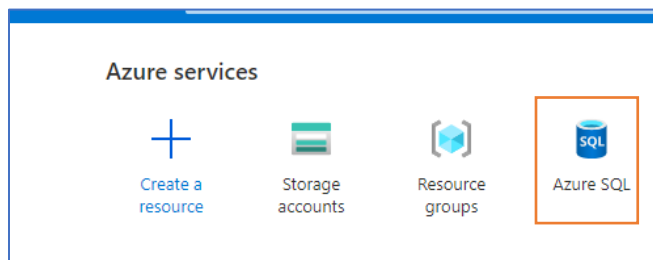
**Step5.8** Check The “Lease State” is Available.

↑ Upload	+ Add Directory	↻ Refresh	↵ Rename	🗑 Delete	↔ Change tier	🔒 Acquire lease	🔓 Break lease
<b>Authentication method:</b> Access key ( <a href="#">Switch to Azure AD User Account</a> )							
<b>Location:</b> bacpac							
Search blobs by prefix (case-sensitive)							
Name		Modified	Access tier	Blob type	Size	Lease state	
<input type="checkbox"/>	WideWorldImporters-Standard.bacpac	8/5/2021, 5:42:27 PM	Hot (Inferred)	Block blob	58.46 MiB	Available	

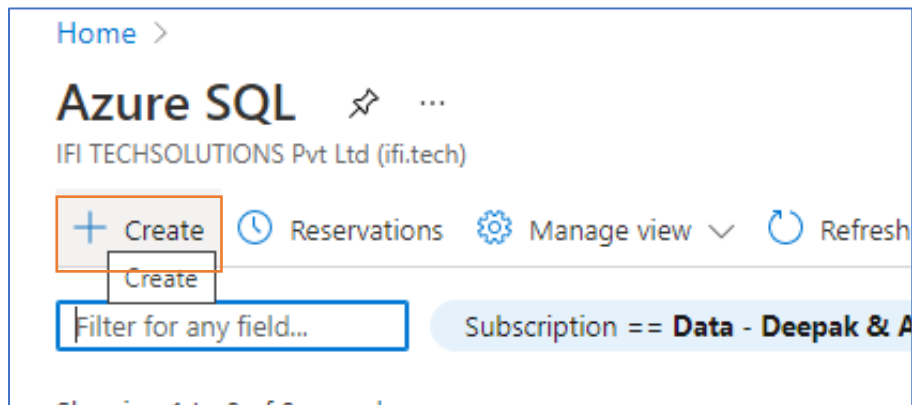
## B. Create an Azure SQL DB Using Azure Portal and Restore bacpac file In It.

In the following Steps we will Create – **Azure SQL DB**, and we will see How to restore bacpac file. In **Azure SQL** using **MSSM**.

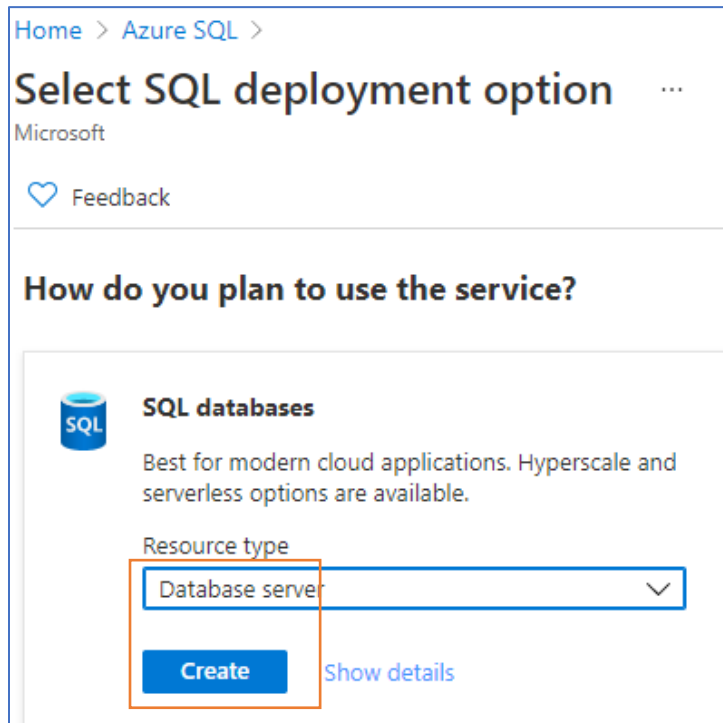
**Step1** Select **Azure SQL** from **Azure Portal**.



**Step2** Click on **+ Create** Button.



**Step3** Select **Database Server** and click on **Create** button.



**Step4** Enter data as given below.

**Server name:** <Give a server name eg: serverxyz>

**Server admin login:** <User id eg: test123>

**Password:** <Enter password eg:@1234xyz>

**Confirm password:** <same as password>

**Create SQL Database Server** ...

Microsoft

Resource group \* ⓘ TaskRG  
[Create new](#)

**Server details**

Enter required settings for this server, including providing a name and location.

Server name \* serverb

Location \* (US) East US

**Administrator account**

Server admin login \* test123

Password \* .....

Confirm password \* .....

[Review + create](#) [Next : Networking >](#)

**Step5** **“Allow Azure services and resources to access this server”** Select Yes\_ and click on **“Review + Create”** Button.

**Create SQL Database Server** ...

Microsoft

Basics Networking Additional settings Tags Review + create

Configure networking access for your server.

**Firewall rules**

Allow Azure services and resources to access this server ⓘ

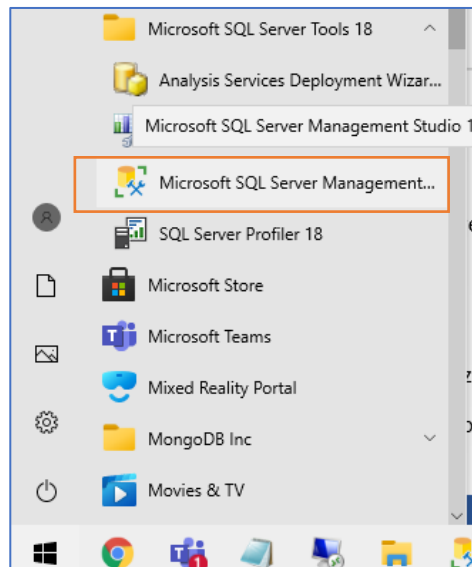
☒ Yes ☐ No

[Review + create](#) [< Previous](#) [Next : Additional settings >](#)

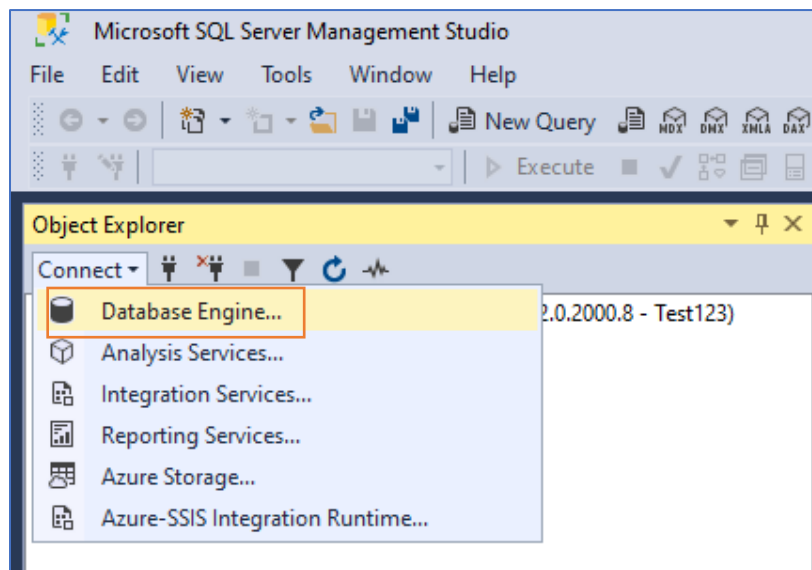


**Step6** Restore bacpac using MSSM.

**Step6.1** From your system open **“Microsoft SQL Server Management Studio”**.



**Step6.2** Click on “Connect” Select “Database Engine..”.

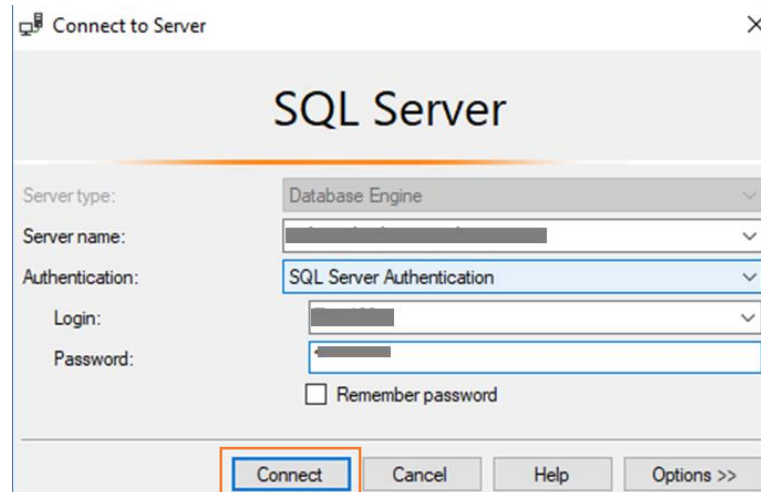


**Step6.3** Enter data as given below.

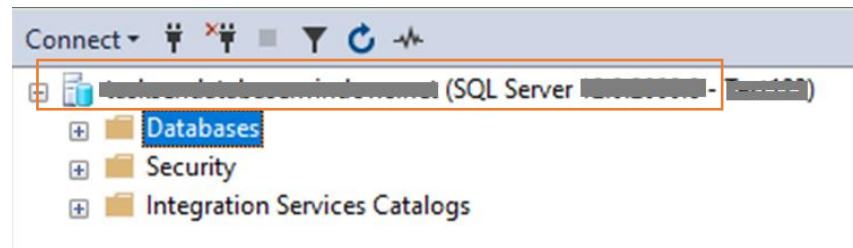
**Server name:** <server-name>.database.windows.net

**Login:** <Server user id>

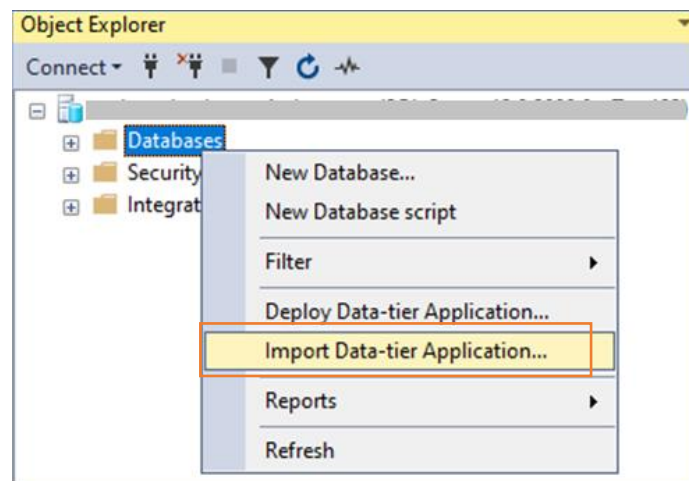
**Password:** <Server password>



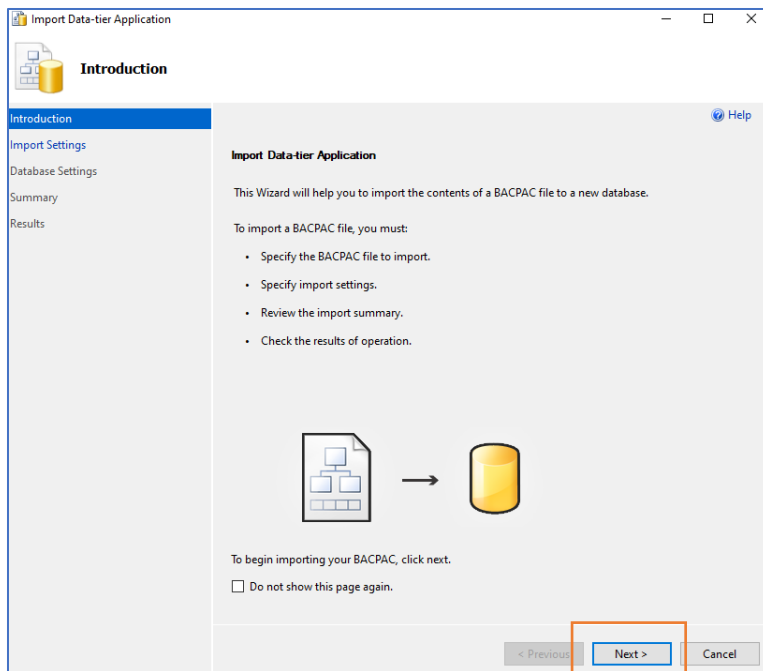
**Step6.4** Server is Connected.



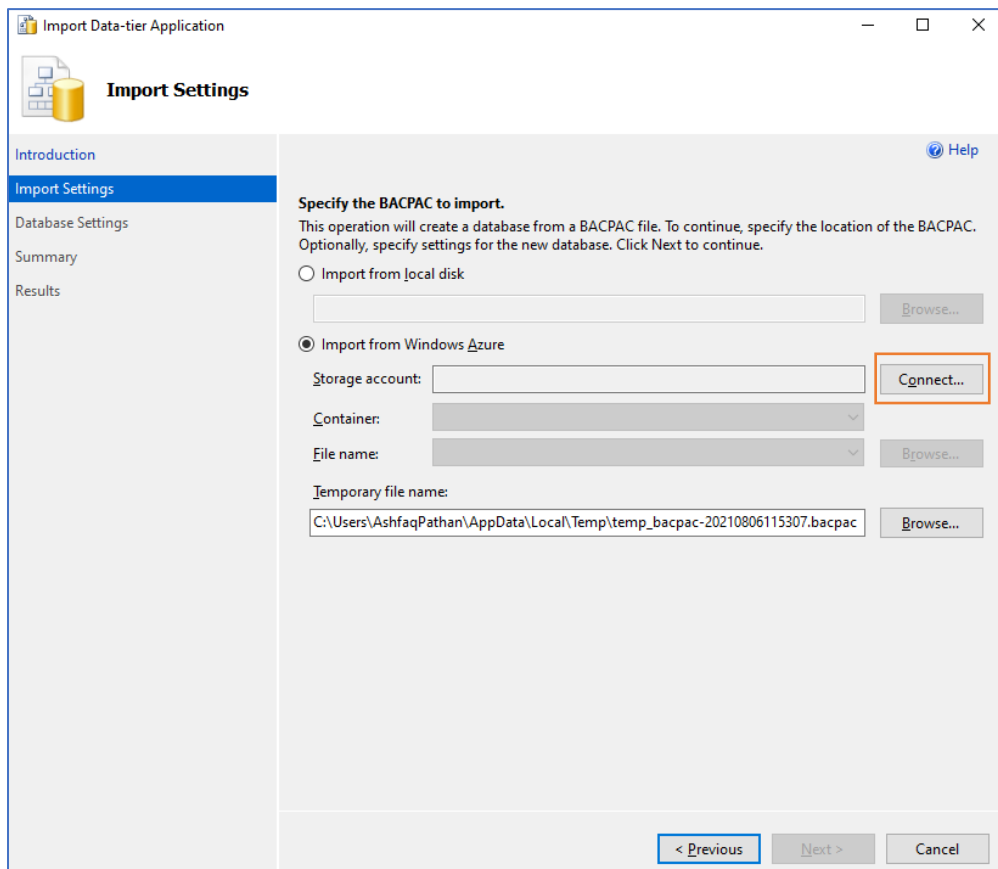
**Step6.5** Right Click on Database Folder and select **“Import Data-tier Application...”** .



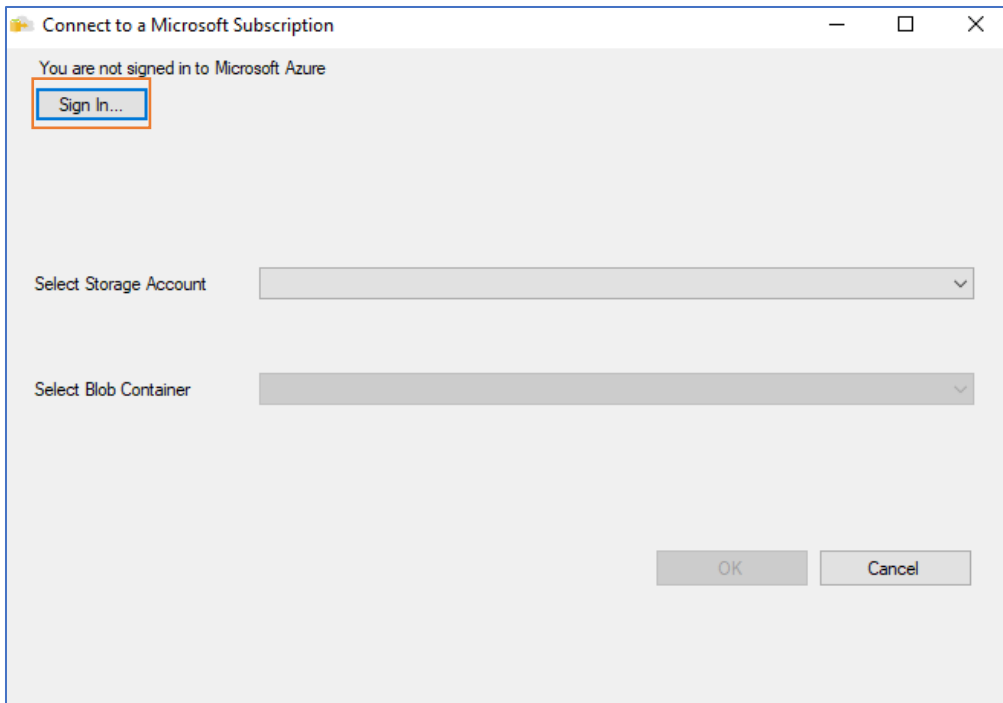
### Step6.6 Click on “Next” Button.



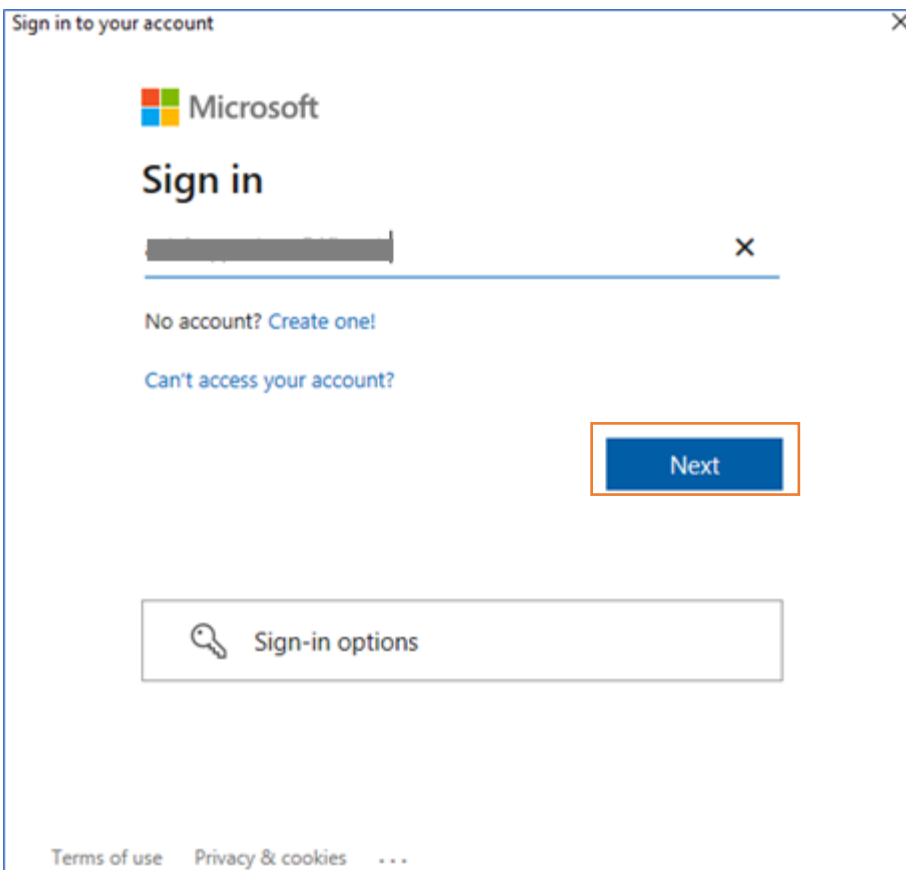
### Step6.7 Click on “Connect” Button.



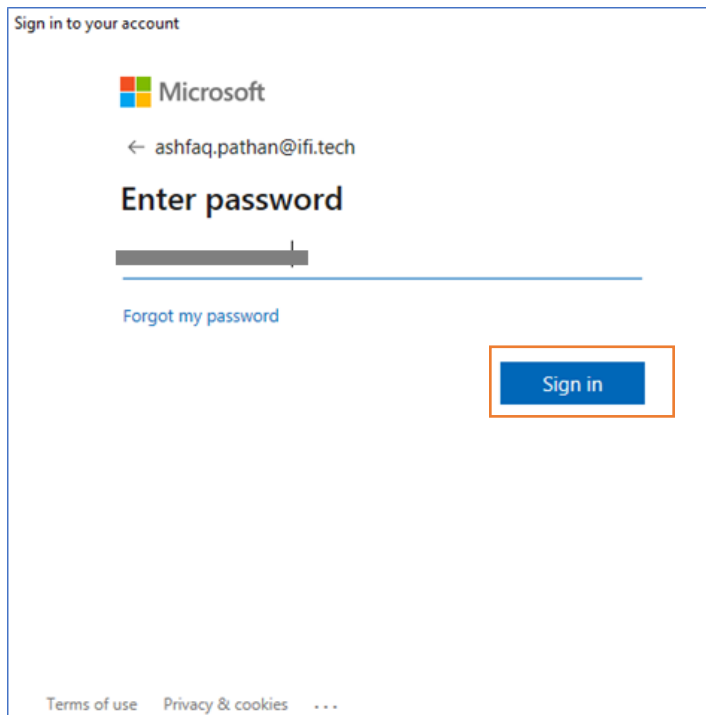
**Step6.8** Click on “Sign in” Button



**Step6.9** Enter your Email Address same as used in Azure Portal



**Step6.10** Enter password and click on “Sign in” Button.



Sign in to your account

Microsoft

← ashfaq.pathan@ifi.tech

**Enter password**

\_\_\_\_\_

[Forgot my password](#)

**Sign in**

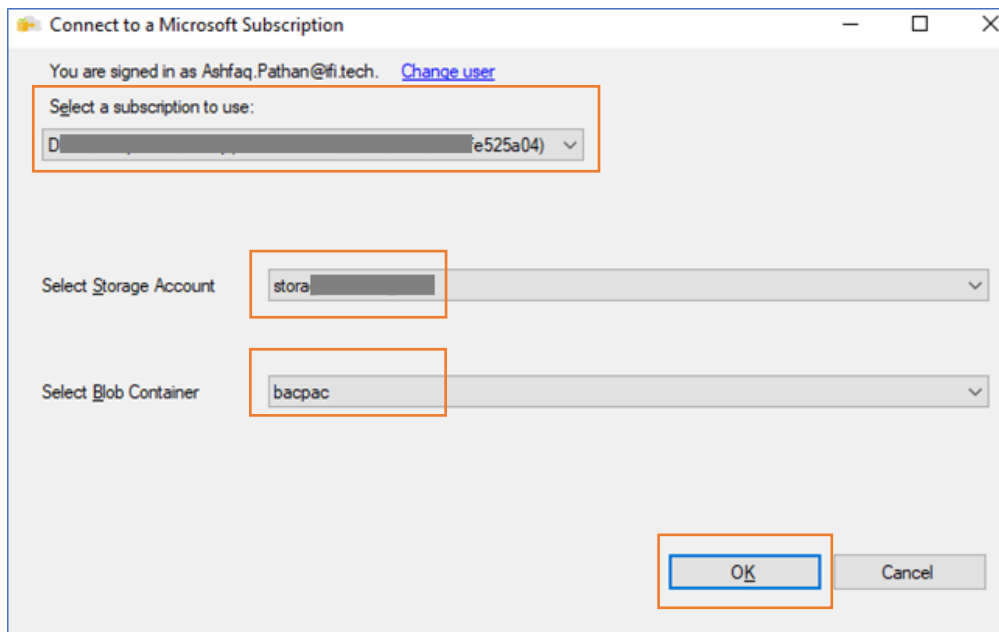
[Terms of use](#) [Privacy & cookies](#) ...

**Step6.11** Select below Drop-Down and click on “OK” Button.

**Select a Subscription to use:** <Select in which you have your Storage account>

**Select Storage Account:**<Select Storage account from drop-down>

**Select Blob Container:**<Select Container from drop-down >



Connect to a Microsoft Subscription

You are signed in as Ashfaq.Pathan@ifi.tech. [Change user](#)

Select a subscription to use:

D: \_\_\_\_\_ e525a04) ▾

Select Storage Account: **stora** \_\_\_\_\_ ▾

Select Blob Container: **bacpac** \_\_\_\_\_ ▾

**OK** Cancel

**Step6.11** Click on “**Next**” Button.

Import Data-tier Application

**Import Settings**

Introduction  
**Import Settings**  
Database Settings  
Summary  
Results

Specify the BACPAC to import.  
This operation will create a database from a BACPAC file. To continue, specify the location of the BACPAC. Optionally, specify settings for the new database. Click Next to continue.

☐ Import from local disk

☒ Import from Windows Azure

Storage account: storageaccountgen2 Connect...

Container: bacpac

File name: AdventureWorks.bacpac Browse...

Temporary file name: C:\Users\AshfaqPathan\AppData\Local\Temp\temp\_bacpac-20210806115307.bacpac Browse...

< Previous **Next >** Cancel

**Step6.12** < **Note**: Based on Your Requirement Configure the “**Microsoft Azure SQL Database Settings**” >

And click on “**Next**” Button.

Import Data-tier Application

**Database Settings**

Introduction  
Import Settings  
**Database Settings**  
Summary  
Results

Specify settings for the new Microsoft Azure SQL Database.  
This operation will create a Microsoft Azure SQL Database from a BACPAC file. To continue, specify the settings for the new database and click Next.

taskser (Test123) Connect...

New database name: AdventureWorksMS

Microsoft Azure SQL Database settings

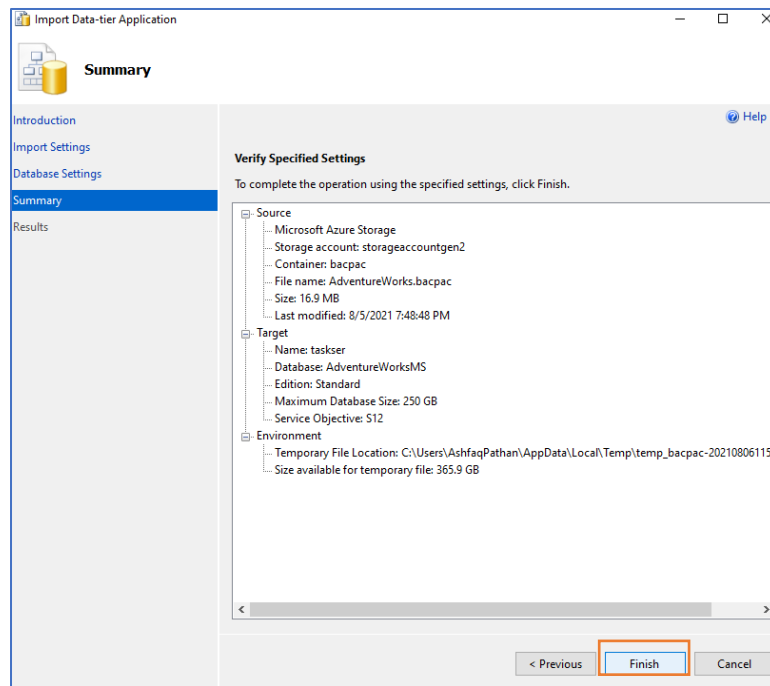
Edition of Microsoft Azure SQL Database: Standard

Maximum database size (GB): 250

Service Objective: S12

< Previous **Next >** Cancel

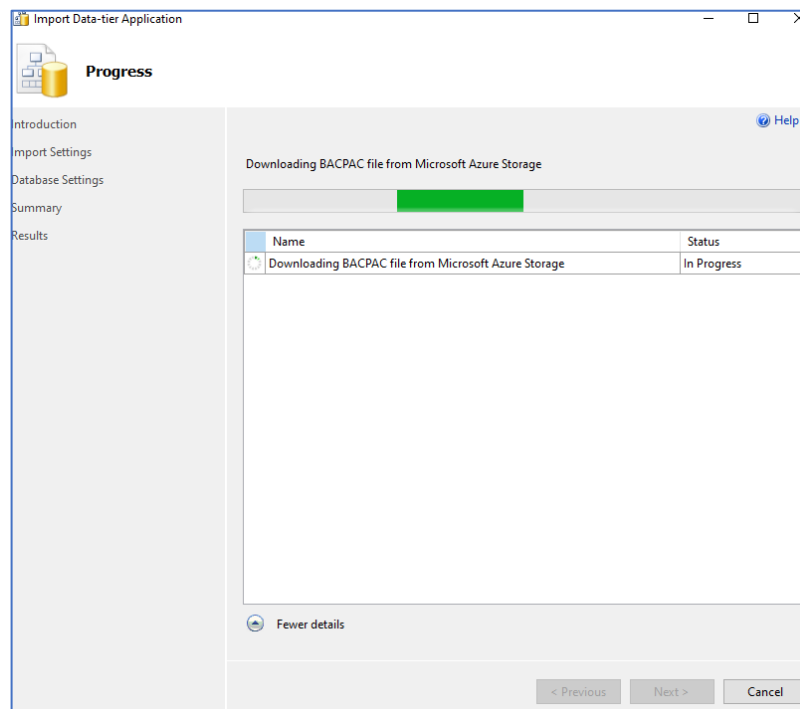
**Step6.13** Click on “**Finish**” Button.



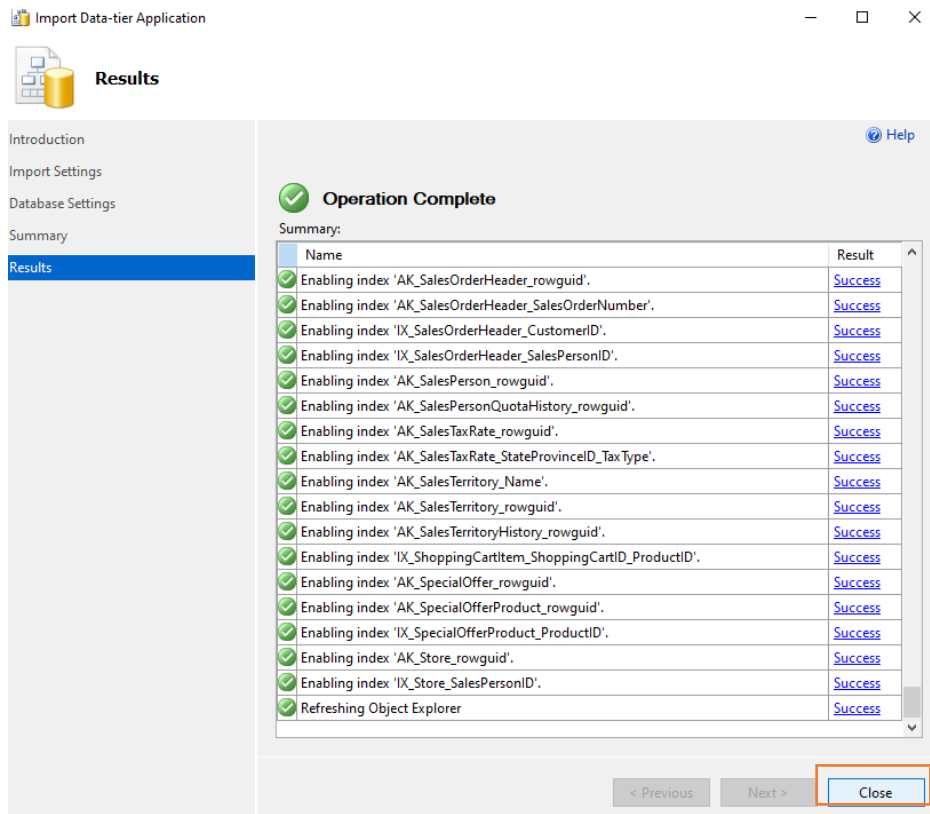
**Step6.14** On this wizard you will see all the Import progress.

**Note:** This step will take some time base on your Bacpac file size + The Pricing Tire you have configured in **Step6.12**.

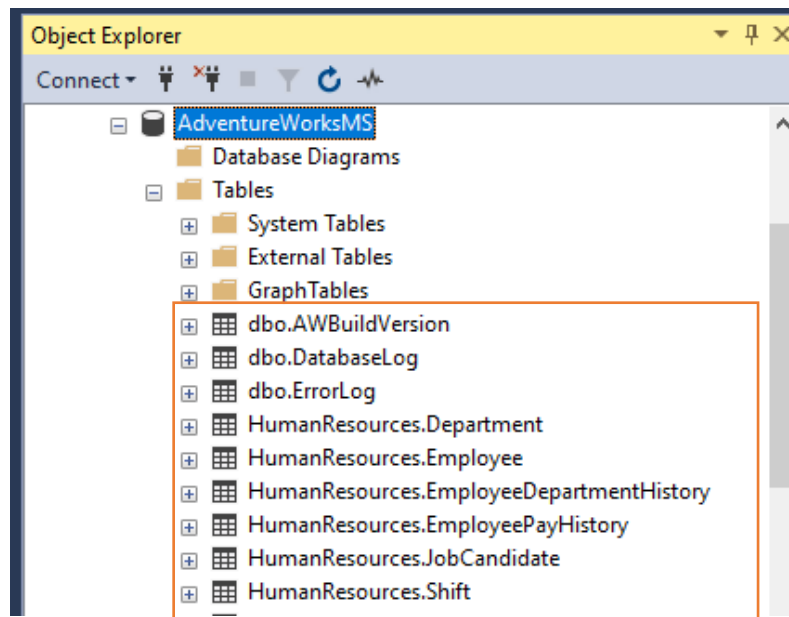
For e.g.: It took 50 min approx. to import 53mb file size with Standard S0 Tire Configuration



**Step6.15** Click on “Close” Button.



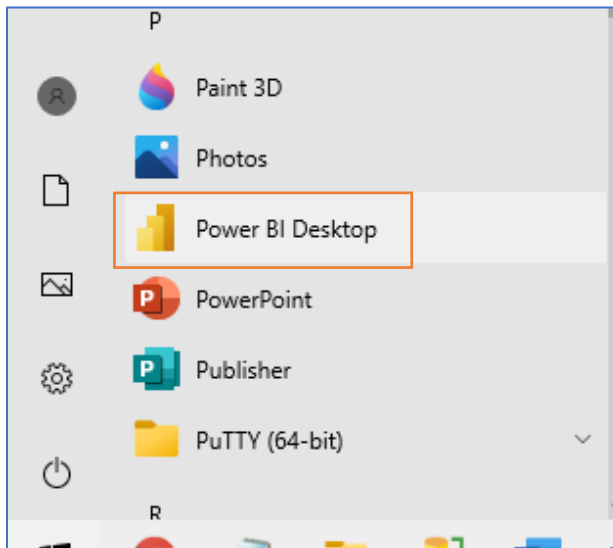
**Step6.16** Check the Database bacpac restore is completed.



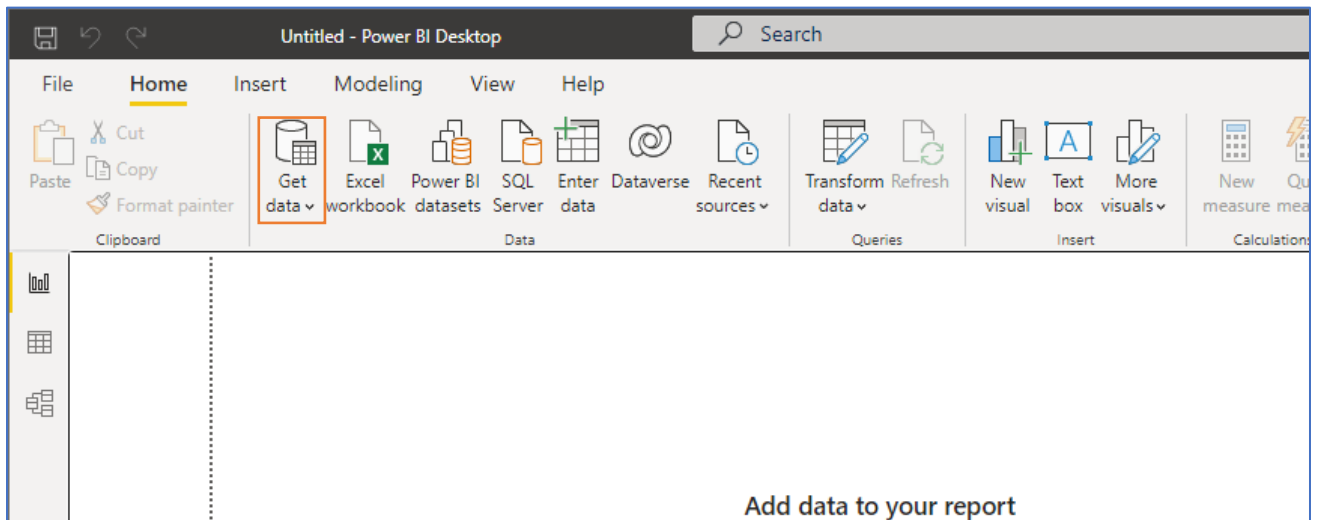


## C. Connect Azure SQL Database to Power BI Desktop App.

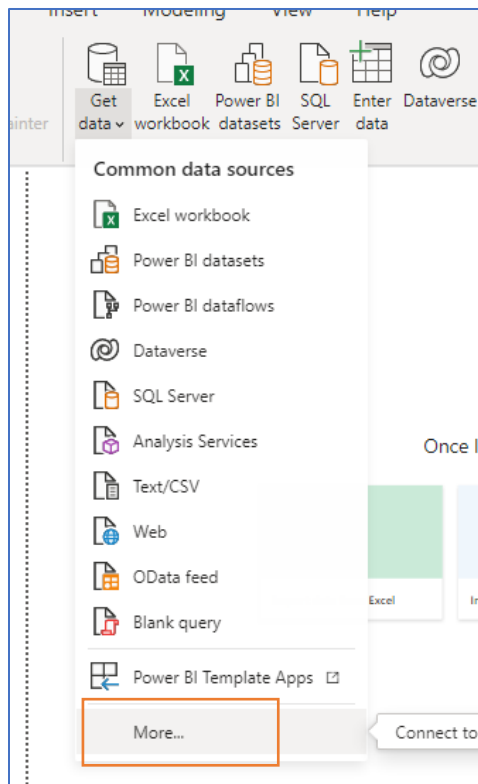
**Step1** Open Power BI Desktop.



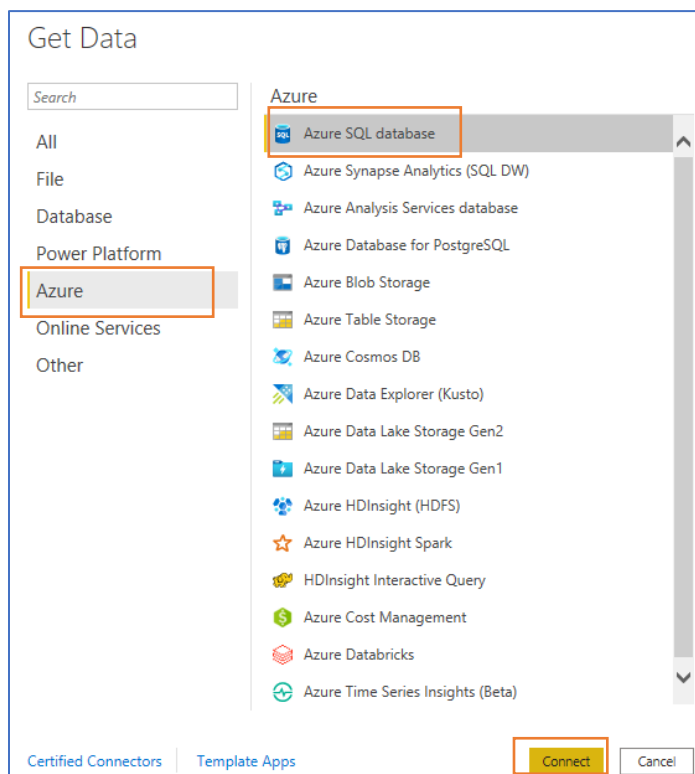
**Step2** Click on “Get data” from “Home” Tab.



**Step3** Click on “More” Options.

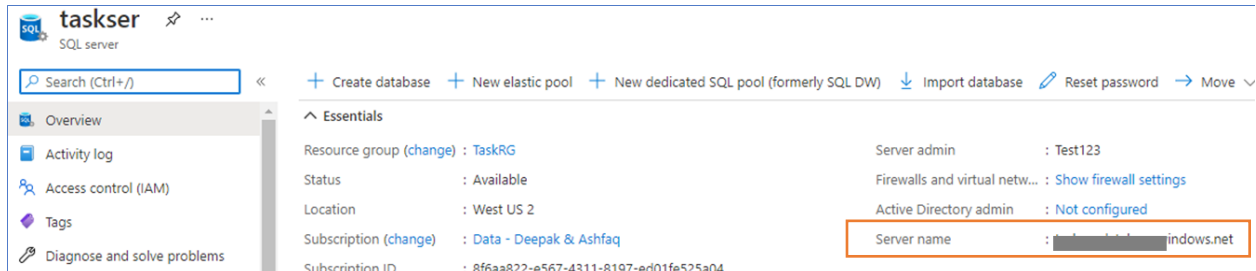


**Step4** Select “Azure” > “Azure SQL Database” and click on “connect” Button.

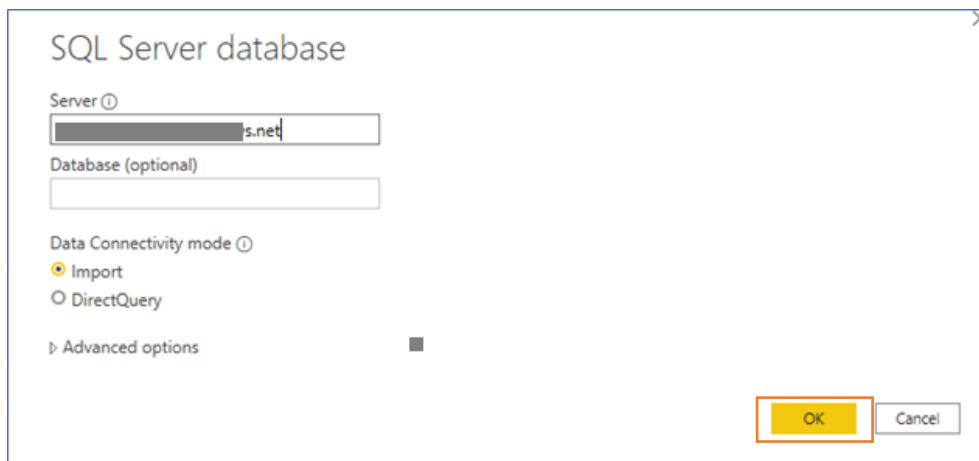


**Step5** Get Server name from Azure Portal and enter in Power BI.

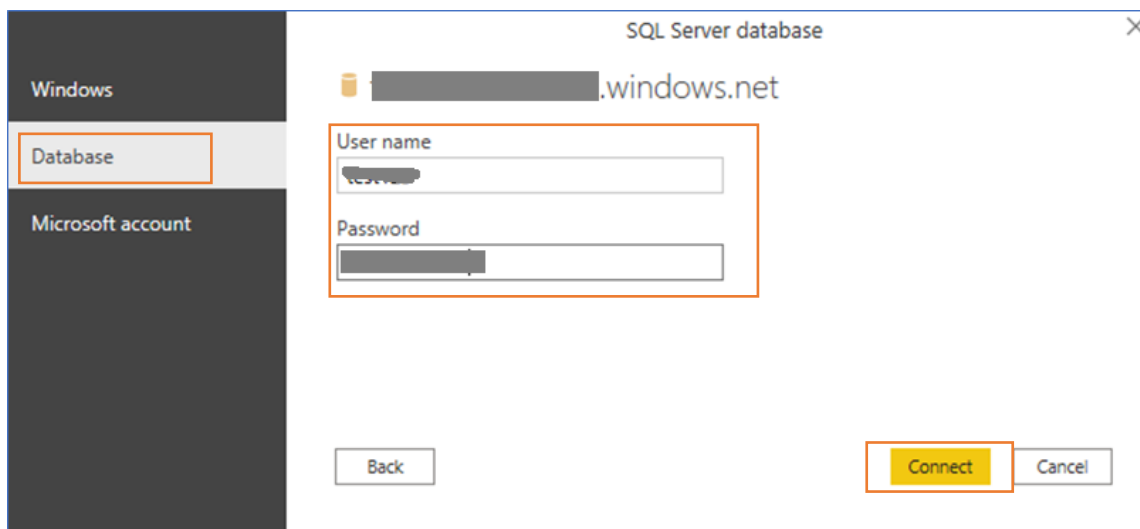
**Step5.1** You will get the **Server name** from **Azure Portal > Azure SQL server > Overview > Server name >**



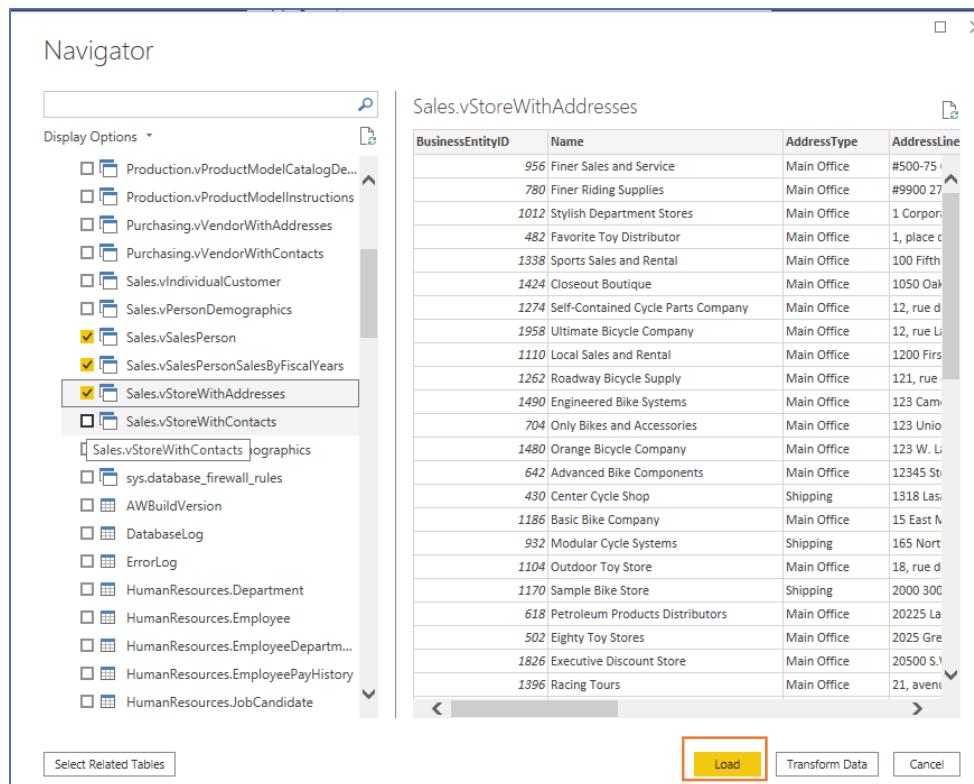
**Step5.2** Enter Server name click on **“OK”** Button.



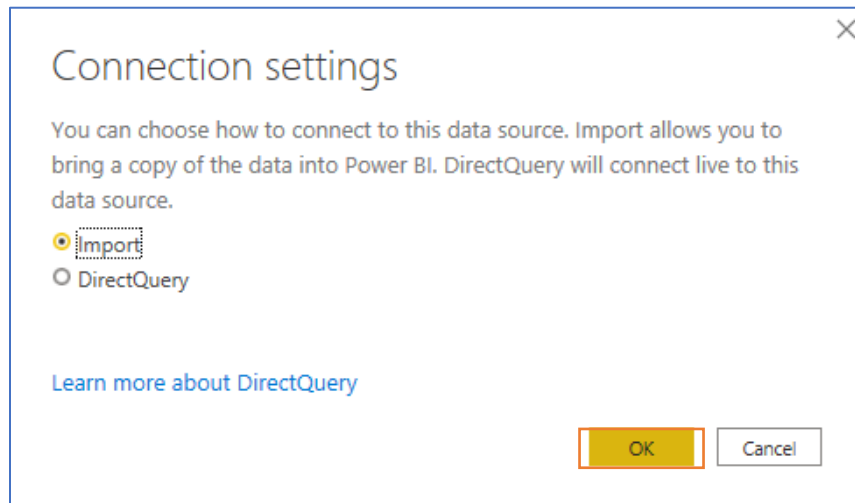
**Step6** Select **“Database”** option and add Azure SQL Server **User name,Password**. Click on **“Connect”** Button.



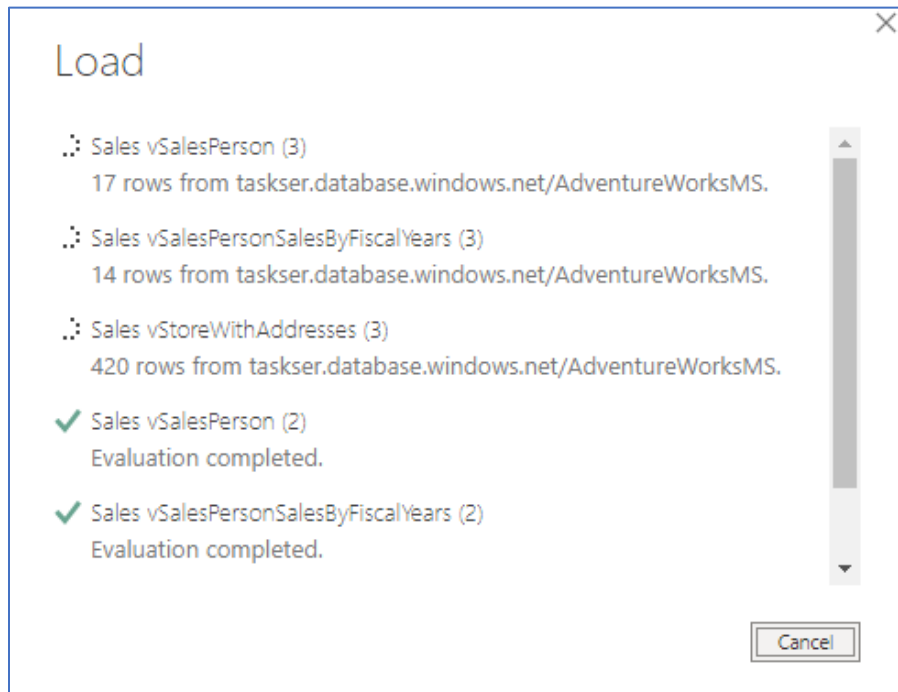
**Step7** Select **Database** > Select **table** in it and click on “**Load**” Button.



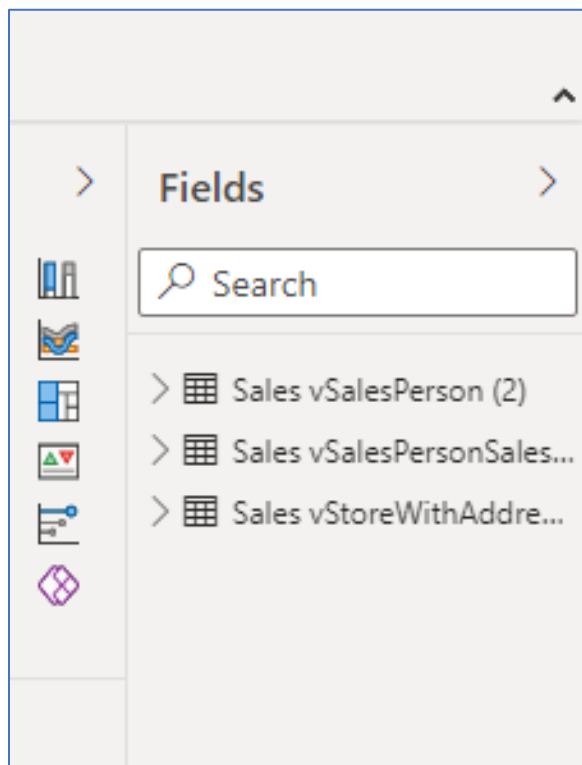
**Step8** Select Import Click on “**OK**” Button.



**Step9** This Will Load dataset in Power BI.



**Step10** You will See table in “Fields” tab In Power BI.



## Case 2 This Case is divided in to Following 3 main Steps E,F,G

E [Storage account](#) -----> F. [Azure SQLVM](#)-----> G. [Power Bi Desktop](#).

In step **E** we will create a [Storage account](#) and configure it with **data lake gen 2** then create a container and upload a **.bak** file in it.

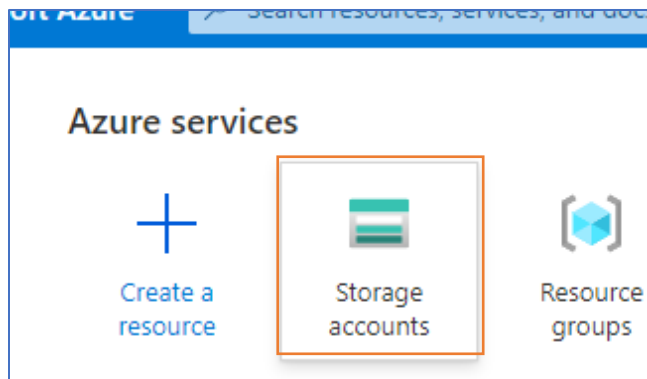
In Step **F** we will create an [Azure SQL-VM](#) using azure portal and connect that to **MSSM** and Restore bak file in Azure SQL-VM .

In Step **G** we will connect the Azure SQL-VM to [Power BI Desktop](#).

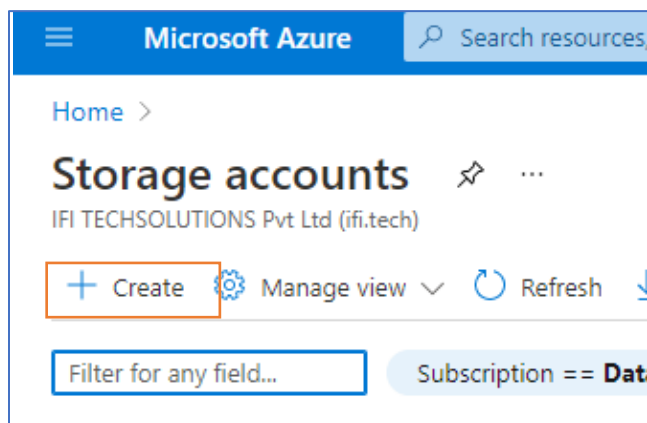
### **E. Storage account Gen2 and Upload a .bak file in a Container.**

In the following Steps we will Create - Storage Account **Data Lake Gen2** > **Container** > **Upload** "sample. bak".

**Step1** Select a Storage Account. Note: <Create using Azure Portal>.



**Step2** Click on **" + Create "**Button.



**Step3** Enter data as shown below and click “**Next: Advanced**” Button.

**Subscription:** <Your azure Subscription select from Drop-Down>

**Resource group:** <Select from Drop-Down / Create a new one>

**Storage account name:** <Give any Name for Storage account>

[Home](#) > [Storage accounts](#) >

## Create a storage account ...

[Basics](#) [Advanced](#) [Networking](#) [Data protection](#) [Tags](#) [Review + create](#)

Select the subscription in which to create the new storage account. Choose a new or existing resource group to manage your storage account together with other resources.

Subscription \*

Data - Deepak & Ashfaq

Resource group \*

TaskRG

[Create new](#)

### Instance details

If you need to create a legacy storage account type, please click [here](#).

Storage account name ⓘ \*

The value must not be empty.

Region ⓘ \*

(US) East US

[Review + create](#)

[< Previous](#)

[Next : Advanced >](#)

**Step4** Click on “**Enable Hierarchical namespace**” Check box < Note: This will Configure this storage account as “Data Lake Gen 2”> Click on “**Review + Create**” Button.

## Create a storage account

BasicsAdvancedNetworkingData protectionTagsReview + create

Minimum TLS version ⓘVersion 1.2

### Data Lake Storage Gen2

The Data Lake Storage Gen2 hierarchical namespace accelerates big data analytics workloads and enables control lists (ACLs). [Learn more](#)

Enable hierarchical namespace ☒

### Blob storage

Enable network file share v3 ⓘ☐

Access tier ⓘ☒ Hot: Frequently accessed data and day-to-day usage

Review + create

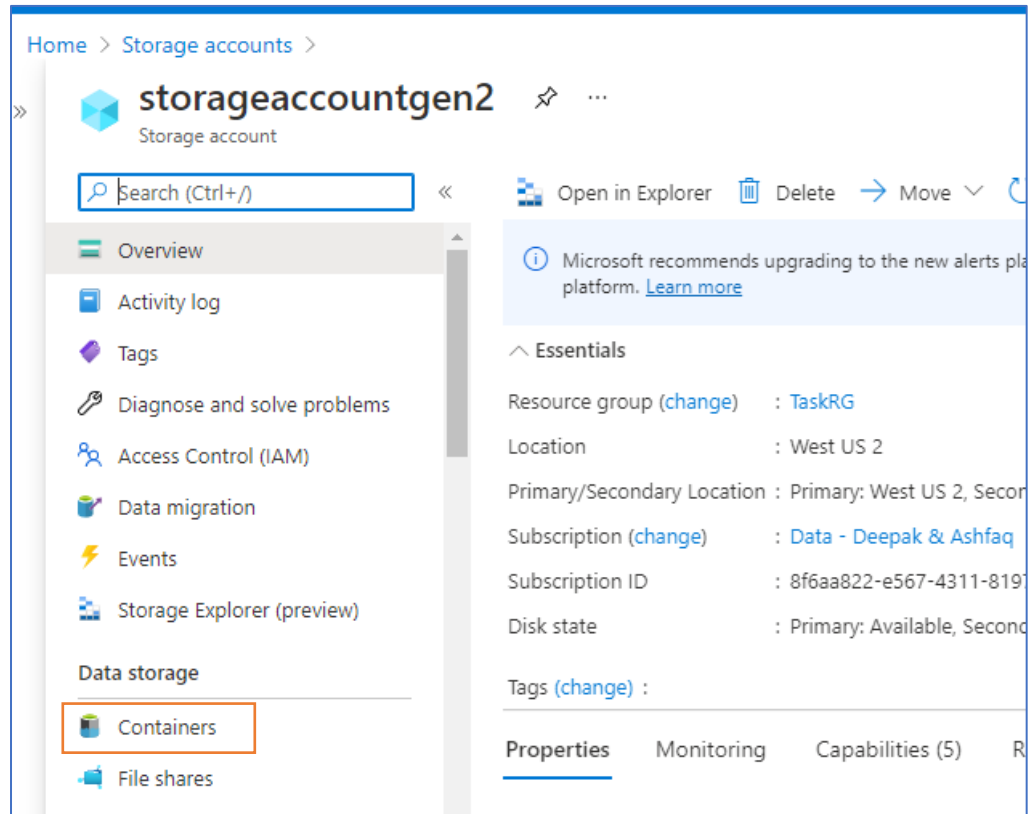
< Previous

Next : Networking >

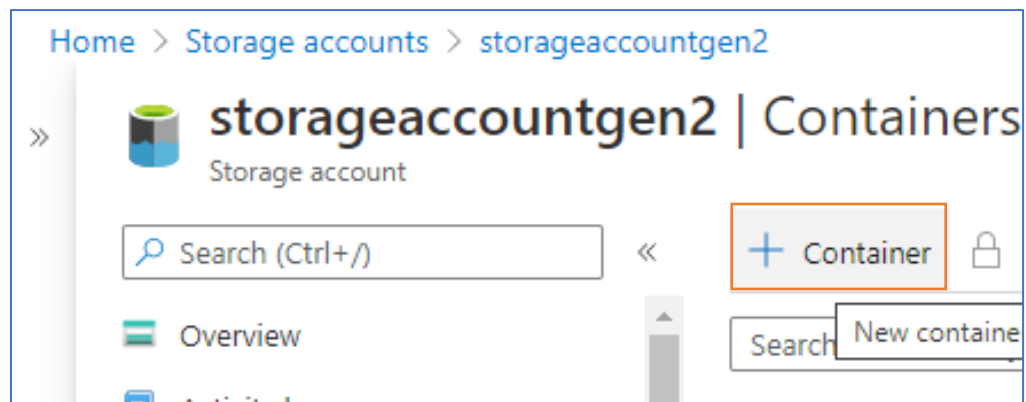


**Step5** Upload “**Sample.bak**” in your Storage Account.

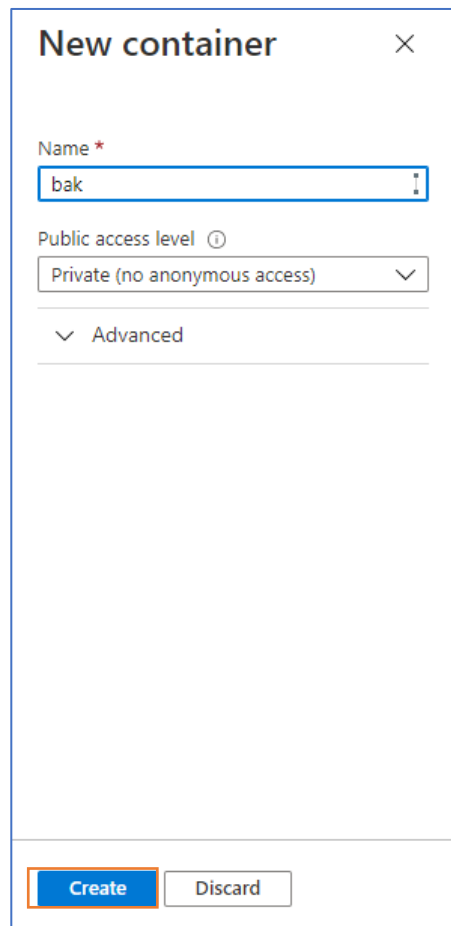
**Step5.1** open Storage account Click on “**Containers**”



**Step5.2** Click on “**+ Container**” to create a New Container.



**Step5.3** Enter a name <bak> of a Container and click on “Create” button



New container

Name \*

bak

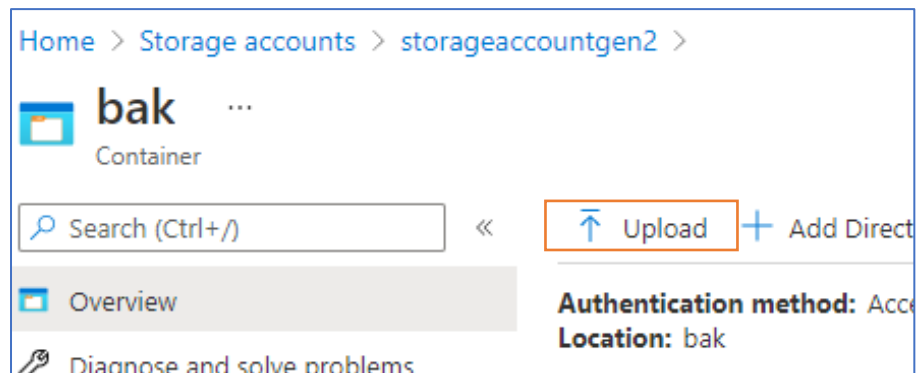
Public access level ⓘ

Private (no anonymous access)


Advanced

Create Discard

**Step5.4** Open “bacpac Container” Click on “upload” Button.



Home > Storage accounts > storageaccountgen2 >

 **bak** ...

Container

Search (Ctrl+ /) << Upload + Add Directories

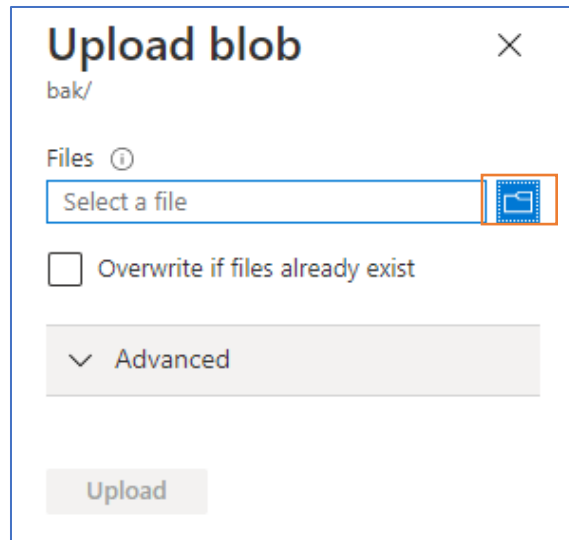
Overview

Diagnose and solve problems

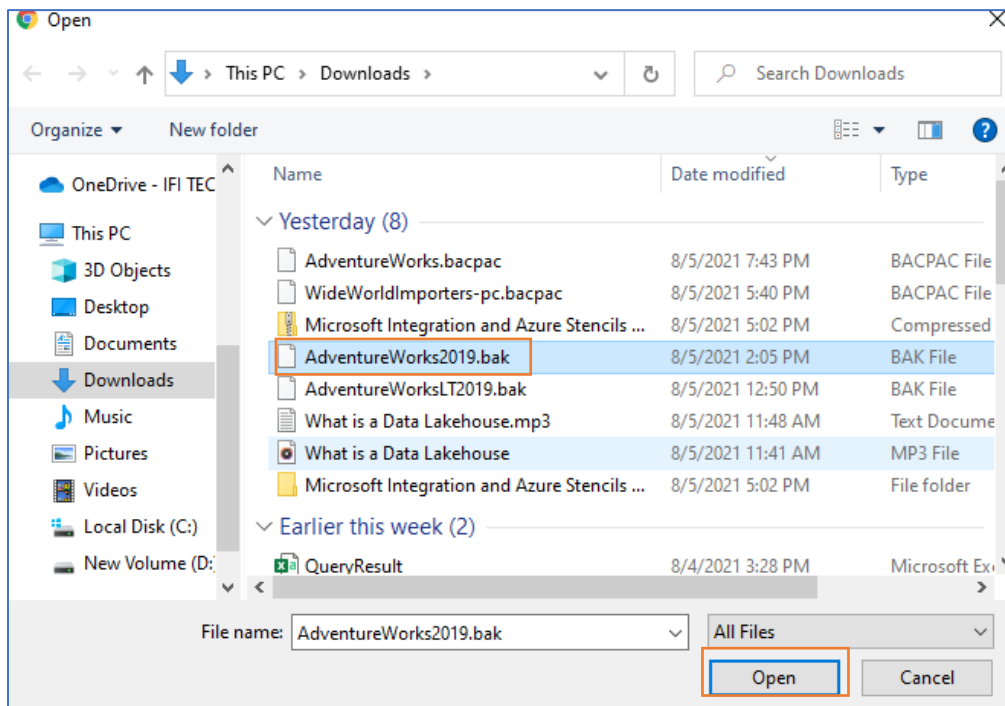
Authentication method: Account key

Location: bak

**Step5.5** Click on File icon .



**Step5.6** Select a **“datafile.bak”** file from Local System and Click on **“Open”** Button.




**Step5.7** Click on “Uplode” Button.

## Upload blob

bak/

Files ⓘ

"AdventureWorks2019.bak" 


☐ Overwrite if files already exist

▼ Advanced

Upload


**Step5.8** Check The “**Lease State**” is Available.


Home > Storage accounts > storageaccountgen2 >


 bak ...


Container


«


 Upload


 Add Directory


 Refresh

 Rename

 Delete

 Change tier

 Acquire lease

 Break lease

Overview

Diagnose and solve problems


Access Control (IAM)

Settings

Shared access tokens

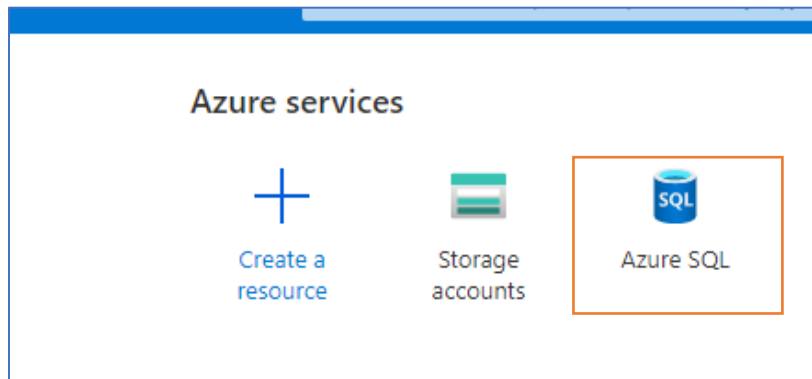
Authentication method: Access key [\(Switch to Azure AD User Account\)](#)

Location: bak

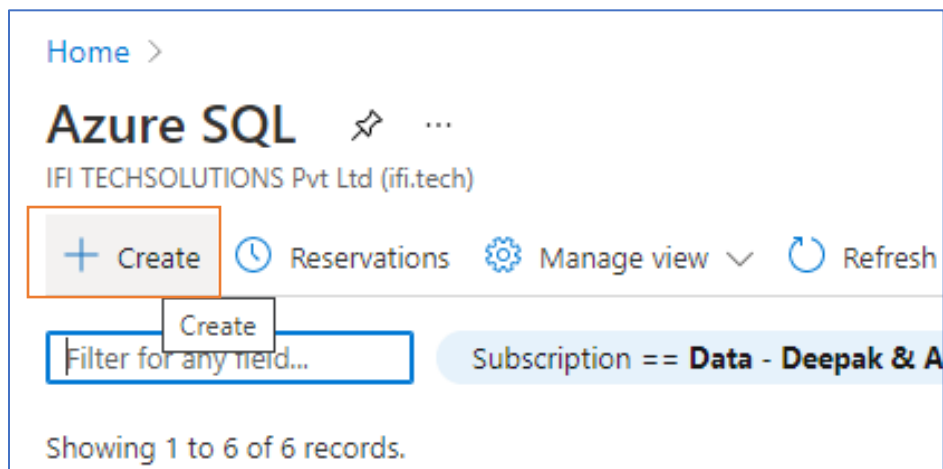
	Name	Modified	Access tier	Blob type	Size	Lease state
<input type="checkbox"/>	 AdventureWorks2019.bak	8/5/2021, 2:16:23 PM	Hot (Inferred)	Block blob	207.12 MiB	Available

**F. Create an [Azure SQL-VM](#) using azure portal and connect that to MSSM and Restore bak file in Azure SQL-VM.**

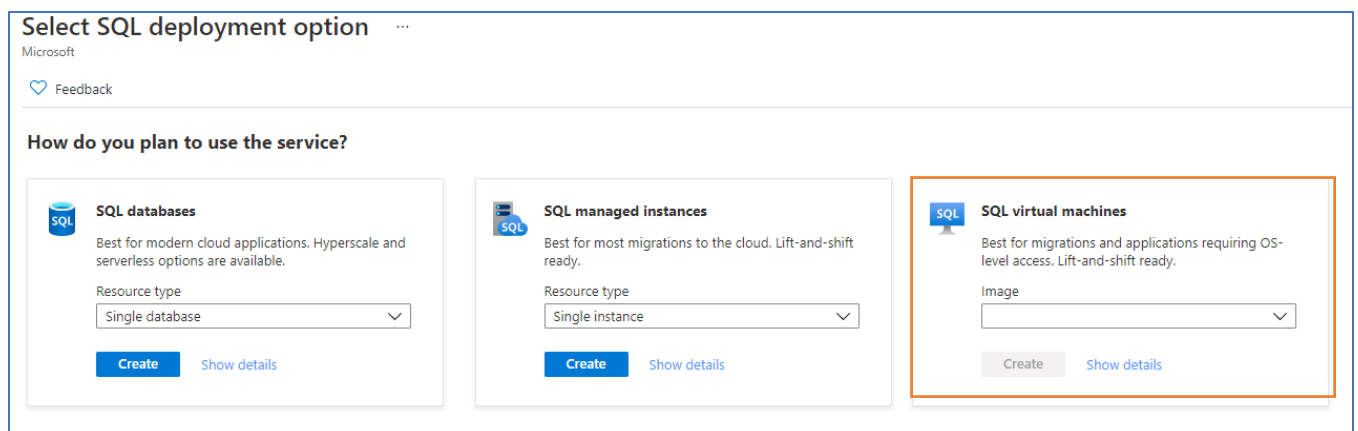
**Step1** Open azure Portal and select **Azure SQL** to create Azure SQL-VM.



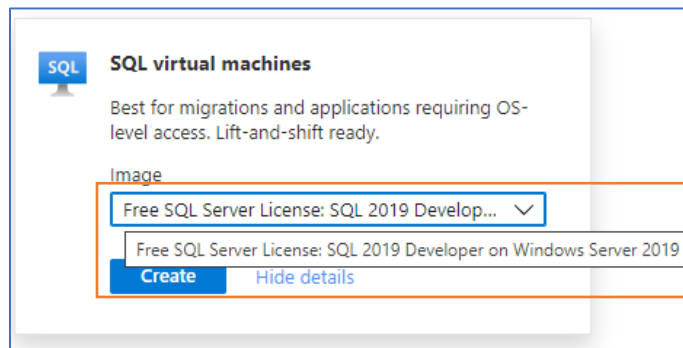
**Step2** Click on “+ Create” Button.



**Step3** Select “SQL Virtual machines”.



**Step4** Select Image from Drop-down “SQL 2019 Developer”. And Click on “Create” Button.



## Step5 Configure VM

**Step5.1** Enter Below data and click on **“SQL Server Settings”** tab.

**Virtual machine name:** <Give VM name >

**Image:** <Select 2019 Developer>

**Size:** <Select VM Size based on your requirement>

**Username:** <Give VM User Log in name e.g.: “test123”>

**Password :**<password>

**Confirm password:**<same as entered in password>

Home > Azure SQL > Select SQL deployment option >

### Create a virtual machine

Basics Disks Networking Management Advanced **SQL Server settings** Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

#### Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \* ⓘ Data - Deepak & Ashfaq

Resource group \* ⓘ TaskRG  
[Create new](#)

#### Instance details

Virtual machine name \* ⓘ taskvm ✓

Region \* ⓘ (US) West US 2

Availability options ⓘ No infrastructure redundancy required

Image \* ⓘ Free SQL Server License: SQL 2019 Developer on Windows Server 2019 - Gen1  
[See all images](#)

Azure Spot instance ⓘ ☐

Size \* ⓘ Standard\_B4ms - 4 vcpus, 16 GiB memory (₹8,730.44/month)  
[See all sizes](#)

#### Administrator account

Username \* ⓘ test123 ✓

Password \* ⓘ ..... ✓

Confirm password \* ⓘ ..... ✓

#### Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular

[Review + create](#) < Previous Next : Disks >

**Step 5.2** Select option same as given below.

The screenshot shows the 'Create a virtual machine' wizard with the 'SQL Server settings' tab selected. The 'Security & Networking' section has 'SQL connectivity' set to 'Private (within Virtual Network)'. The 'Port' is 1433. In the 'SQL Authentication' section, 'SQL Authentication' is set to 'Enable'. The 'Login name' is 'test123' and the 'Password' is masked with dots. 'Azure Key Vault integration' is set to 'Disable'. The 'Storage configuration' section is visible below. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next : Tags >'.

**Create a virtual machine**

Basics Disks Networking Management Advanced **SQL Server settings** Tags Review + create

**Security & Networking**

SQL connectivity \* Private (within Virtual Network)

Port \* 1433

**SQL Authentication**

SQL Authentication ① Disable **Enable**

Login name \* ① test123 ✓

Password \* ① ..... ✓

Azure Key Vault integration ① Disable Enable

**Storage configuration**

Customize performance, size, and workload type to optimize storage for this virtual machine. For optimal performance, separate drives will be created for data and log storage by default. [Learn more about SQL Server best performance practices.](#)

Review + create < Previous Next : Tags >

**Step6** Copy Ip address to open VM in Remote Desktop.

The screenshot shows the Azure portal interface for a virtual machine named 'MY-PC01'. The 'Overview' tab is selected. The 'Essentials' section shows the resource group 'AshfaqRG01', status 'Running', location 'West US 2', subscription 'Data - Deepak & Ashfaq', and subscription ID '8f6aa822-e567-4311-8197-ed01fe525a04'. The 'Operating system' is 'Windows (Windows Server 2019 Datacenter)'. The 'Size' is 'Standard\_DS1\_v2' with '16 GiB memory'. The 'Public IP address' is highlighted with a red box and a 'Copy to clipboard' icon. The 'Virtual network/subnet' is 'AshfaqRG01-vnet/default' and the 'DNS name' is 'mypc01.westus2.cloudapp.azure.com'.

**MY-PC01** Virtual machine

Search (Ctrl+/) << Connect Start Restart Stop Capture Delete Refresh Open in mobile

**Overview**

Activity log Access control (IAM) Tags Diagnose and solve problems settings

**Essentials**

Resource group (change) : AshfaqRG01

Status : Running

Location : West US 2

Subscription (change) : Data - Deepak & Ashfaq

Subscription ID : 8f6aa822-e567-4311-8197-ed01fe525a04

Operating system : Windows (Windows Server 2019 Datacenter)

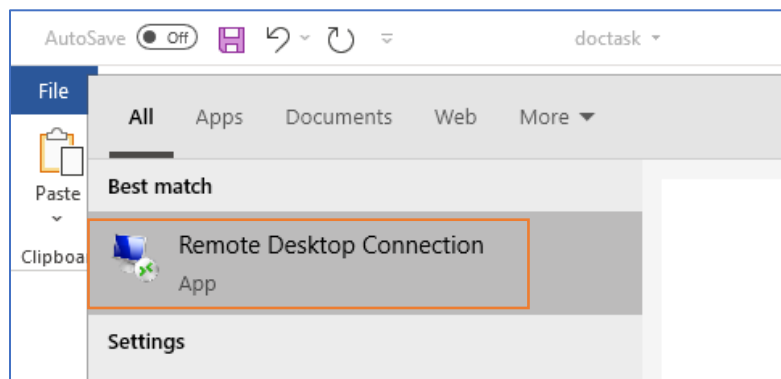
Size : Standard\_DS1\_v2 (16 GiB memory)

**Public IP address** : [Redacted] Copy to clipboard

Virtual network/subnet : AshfaqRG01-vnet/default

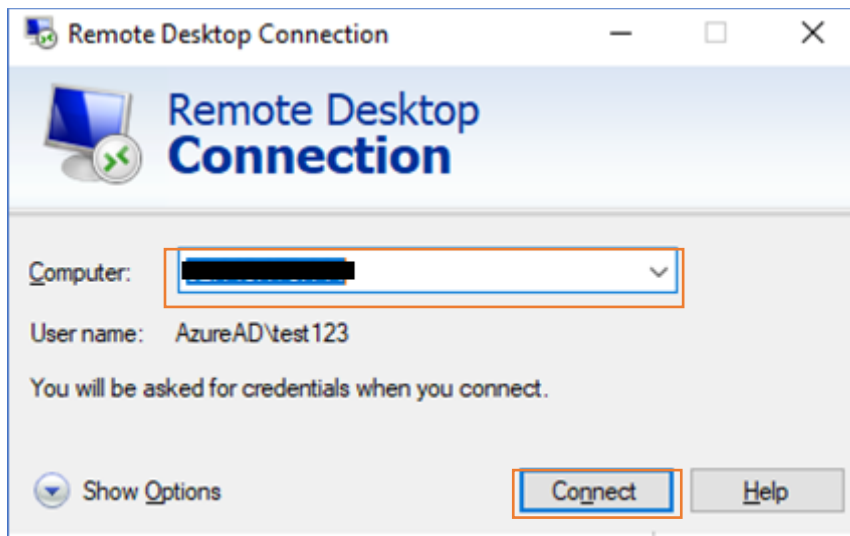
DNS name : mypc01.westus2.cloudapp.azure.com

**Step7** Open Remote Desktop.

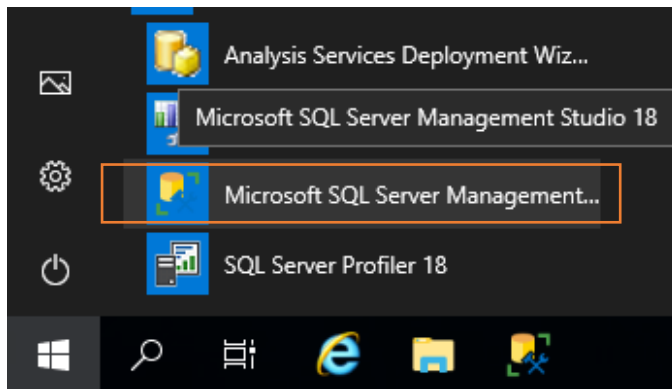




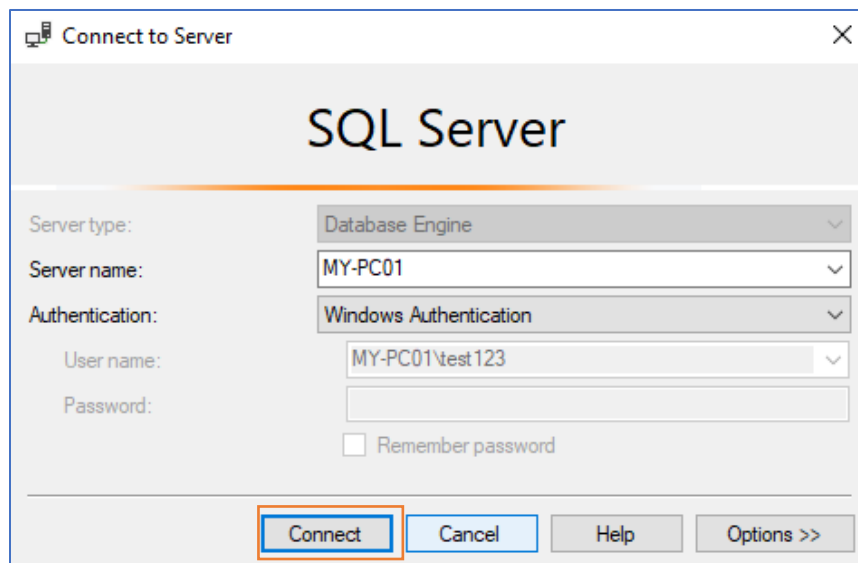
**Step8** Enter Ip address and Click on **Connect** Button.



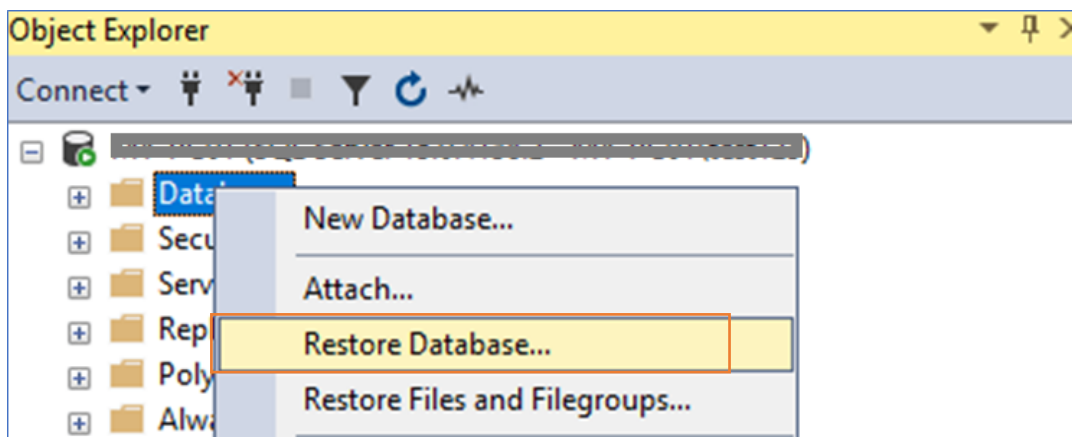
**Step9** Open MSSM in VM.



**Step10** Click on **Connect** Button.



**Step11** Right Click on **Databases** and select **Restore Database...**



**Step11.1** Select **Device** Option and Click on 3 Dot .

Restore Database -

No backupset selected to be restored.

Select a page

- General
- Files
- Options

Script | ? Help

Source

☐ Database: [dropdown]

☒ Device: [text box] [...]

Database: [dropdown]

Destination

Database: [dropdown]

Restore to: [text box] [Timeline...]

Restore plan

Backup sets to restore:

Restore	Name	Component	Type	Server	Database	Position	First LSN	Last LSN
---------	------	-----------	------	--------	----------	----------	-----------	----------

View connection properties

Connection

MY-PC01 [MY-PC01\test123]

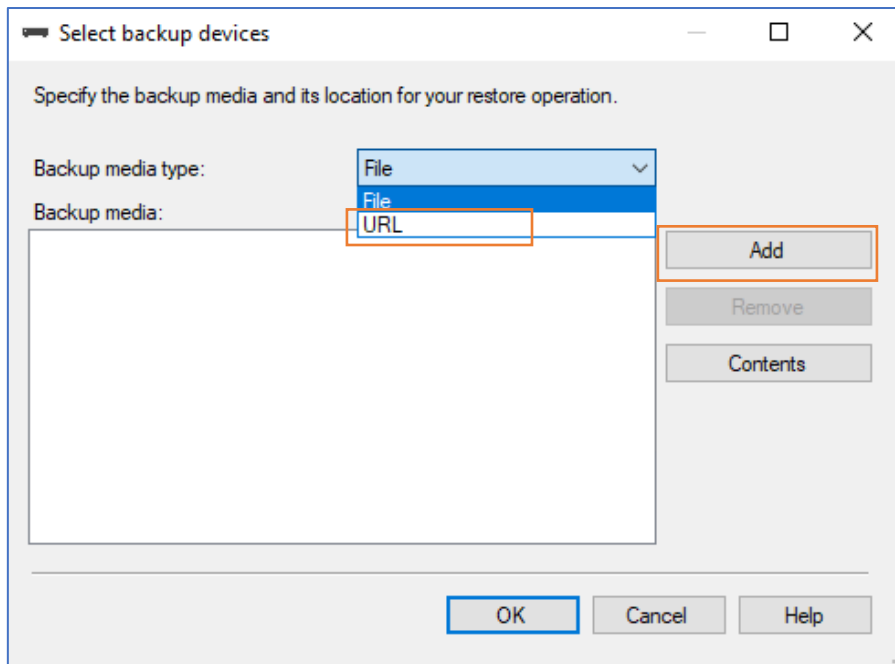
Progress

Ready

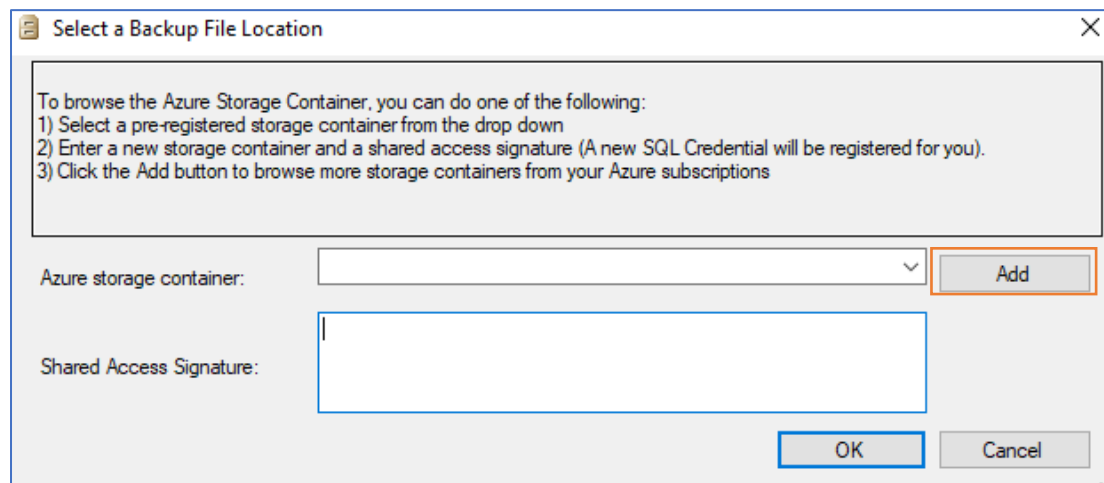
Verify Backup Media

OK Cancel Help

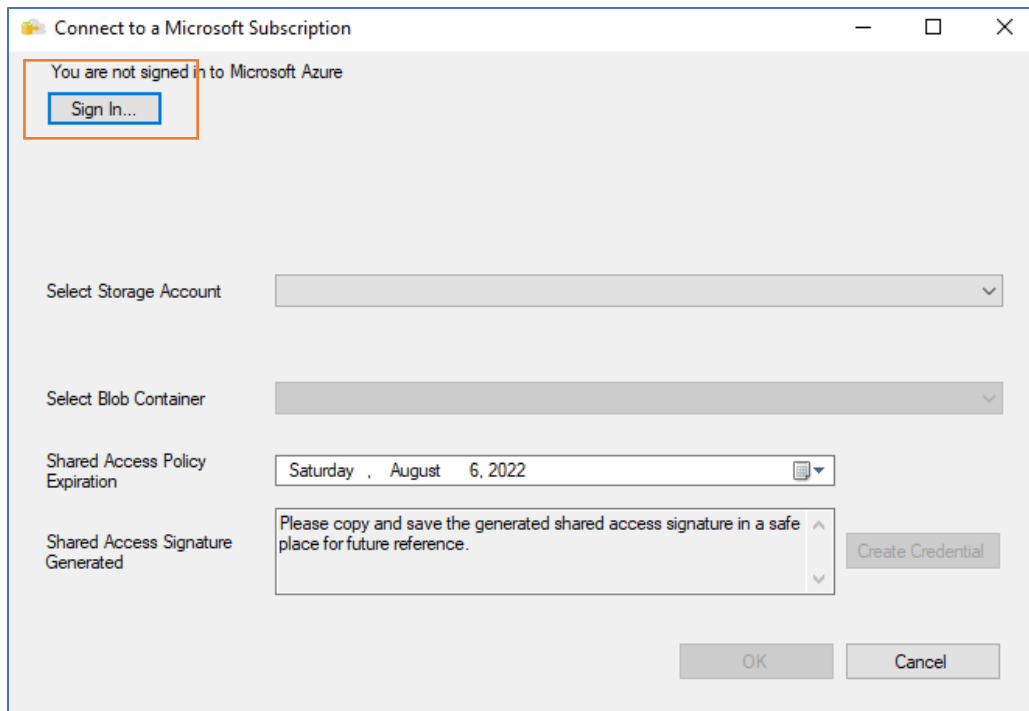
**Step11.2** Select **URL** From **Backup media type:** and Click on **Add** Button.



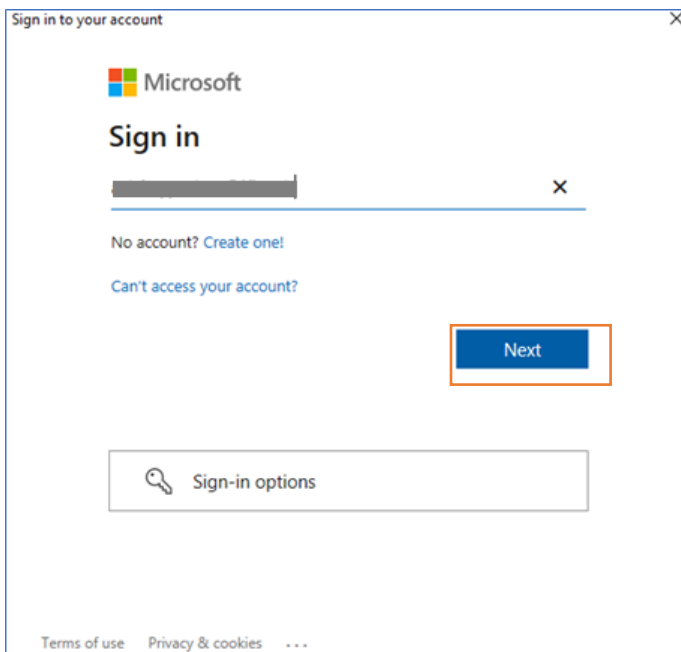
**Step11.3** Click on **Add** Button.



**Step11.4** Click on **“Sign in”** Button.



**Step11.5** Enter Email address.



**Step11.6** Enter password and Click on Sign in Button

Sign in to your account

Microsoft

← [redacted]@fi.tech

Enter password

[redacted]

[Forgot my password](#)

[Sign in](#)

[Terms of use](#) [Privacy & cookies](#) ...

**Step11.7** Enter data as given below.

**Select a Subscription to use:**<select from drop-down>

**Select Storage Account:** <select Storage account from drop-down>

**Select Blob Container:**<Select Container from drop-down>

Click on **Create Credential** button and then click on **Ok** Button.

Connect to a Microsoft Subscription

You are signed in as Ashfaq.Pathan@fi.tech. [Change user](#)

Select a subscription to use:

Data - Deepak

Select Storage Account

storageaccountgen2

Select Blob Container

bak

Shared Access Policy Expiration

Saturday, August 6, 2022

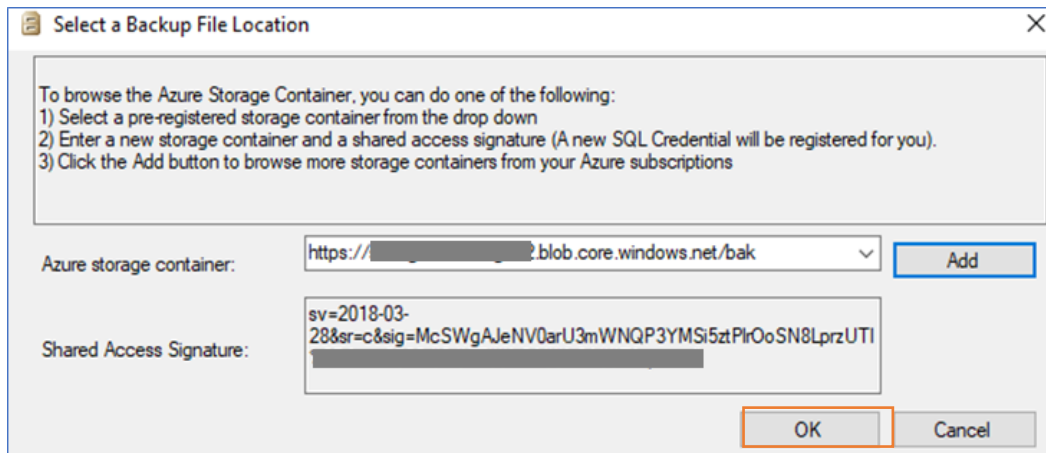
Shared Access Signature Generated

sv=2018-03-28&sr=c&sig=McSWoAJeNV0arU3mWNQP3YMSi5ztPlrOoSN8LprzUTI

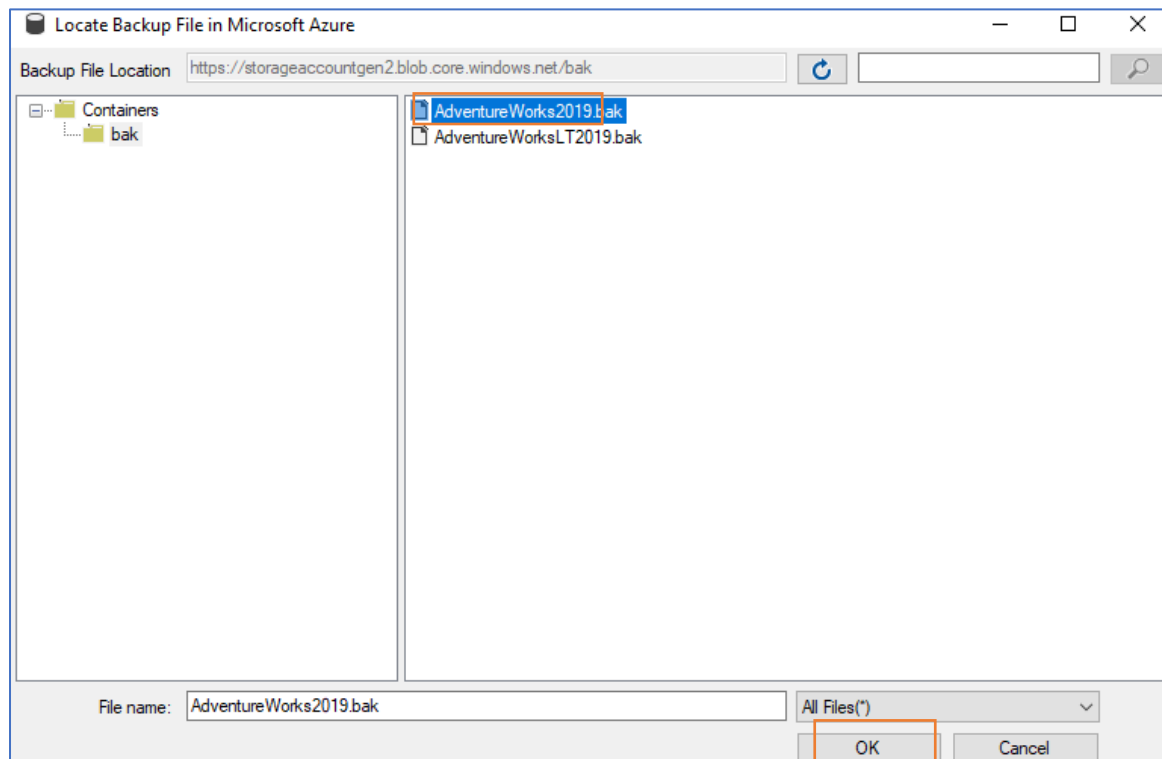
[Create Credential](#)

[OK](#) [Cancel](#)

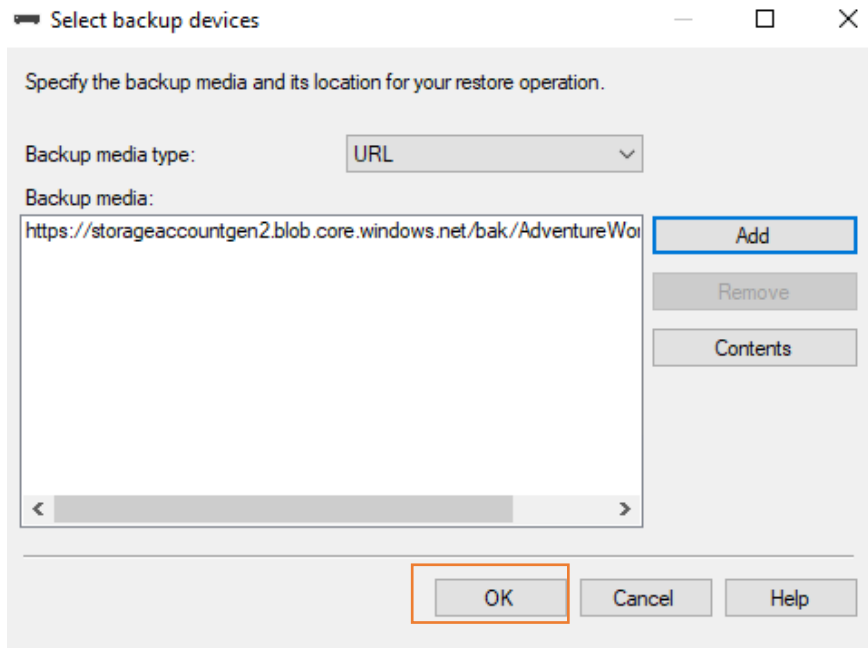
**Step11.8** Click on **OK** Button.



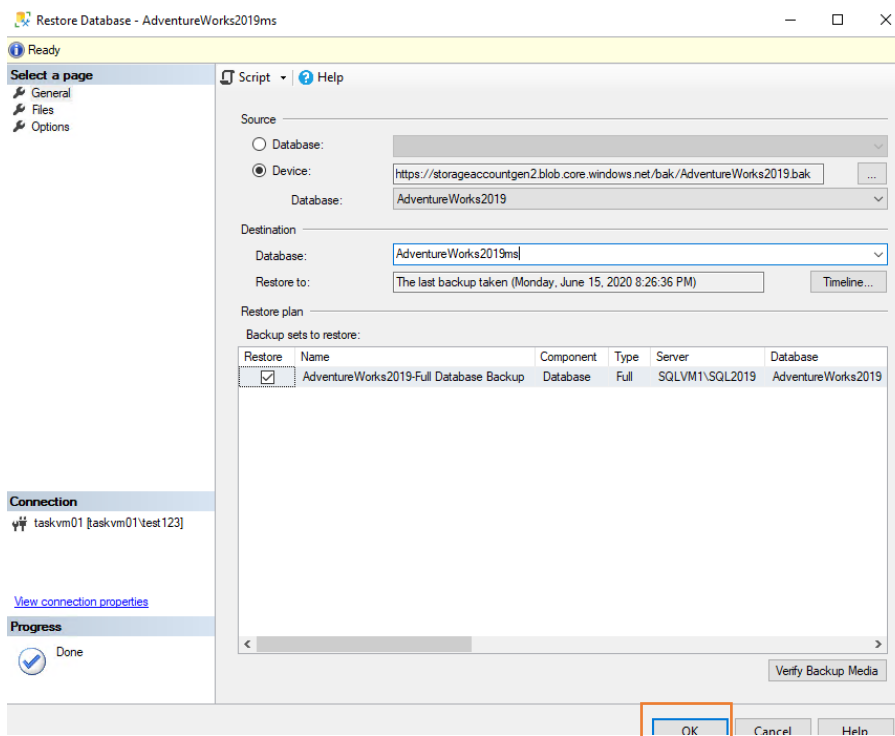
**Step11.9** Select **.bak** file from bak Container and click on **ok** button.



**Step11.10** Click on **Ok** Button.

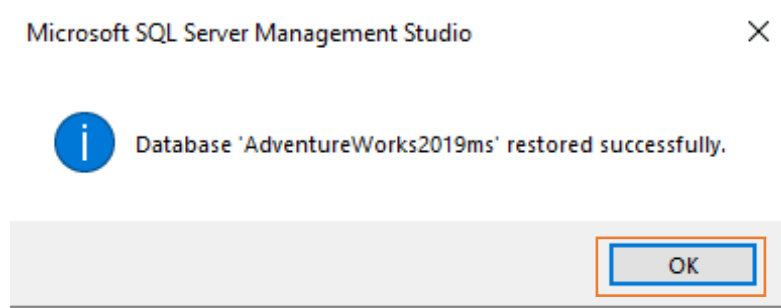


**Step11.11** Click on Ok Button.

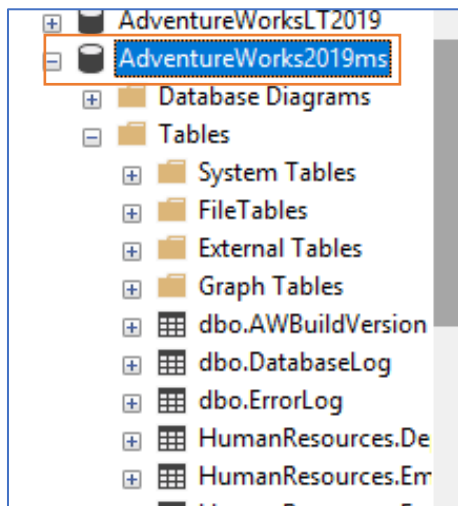




**Step11.12 Click on Ok Button.**

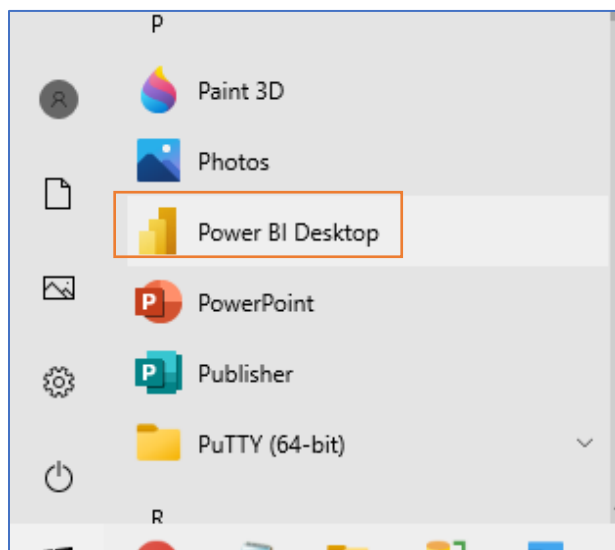


**Step11.13 Database restore Done properly as we can see tables in the table folder.**

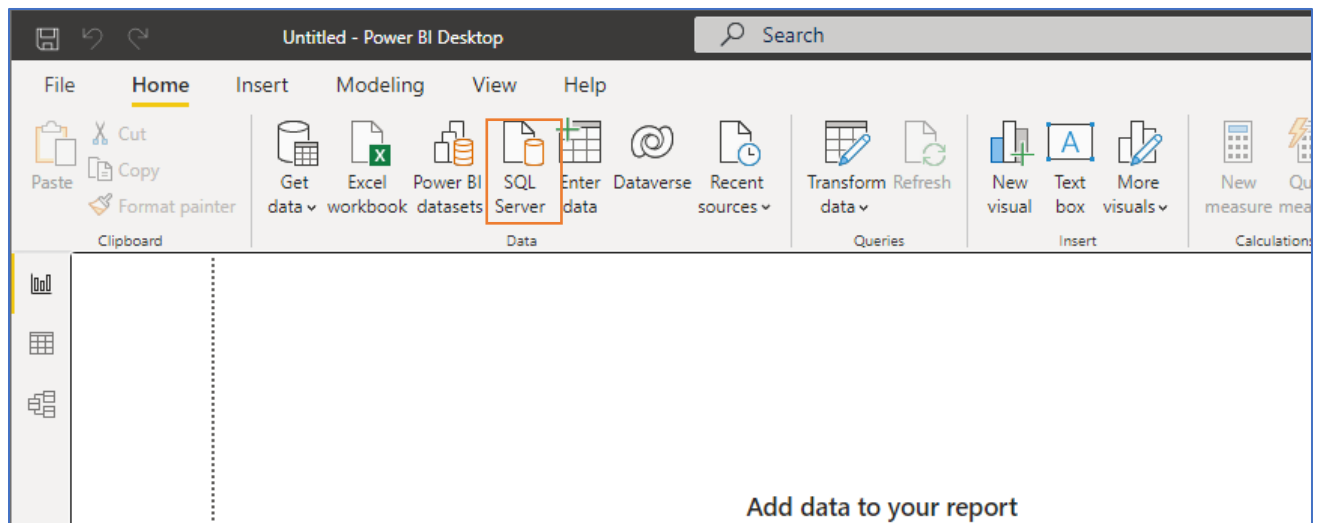


**G we will connect the Azure SQL-VM database to Power BI Desktop.**

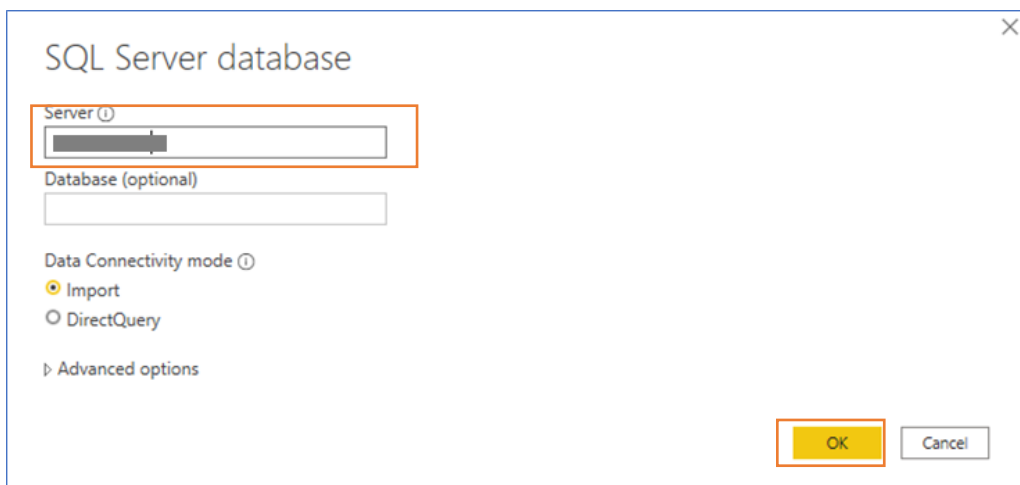
**Step1 Open Power BI Desktop.**



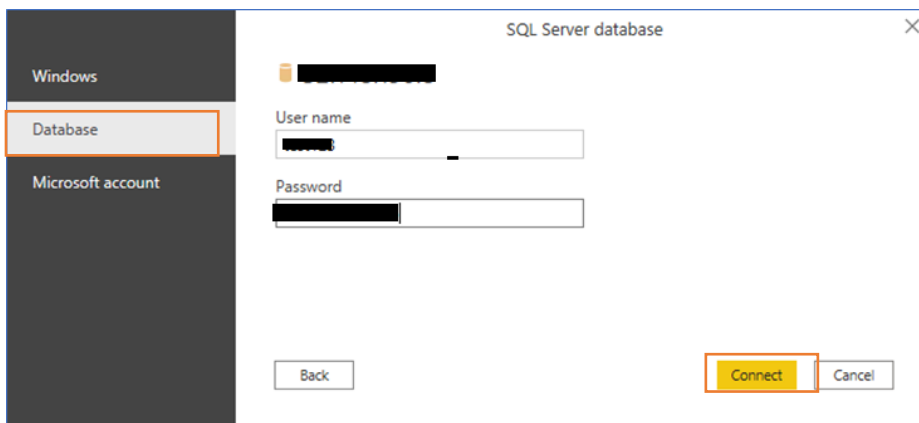
**Step2** Click on **“SQL Server”** from **“Home”** Tab.



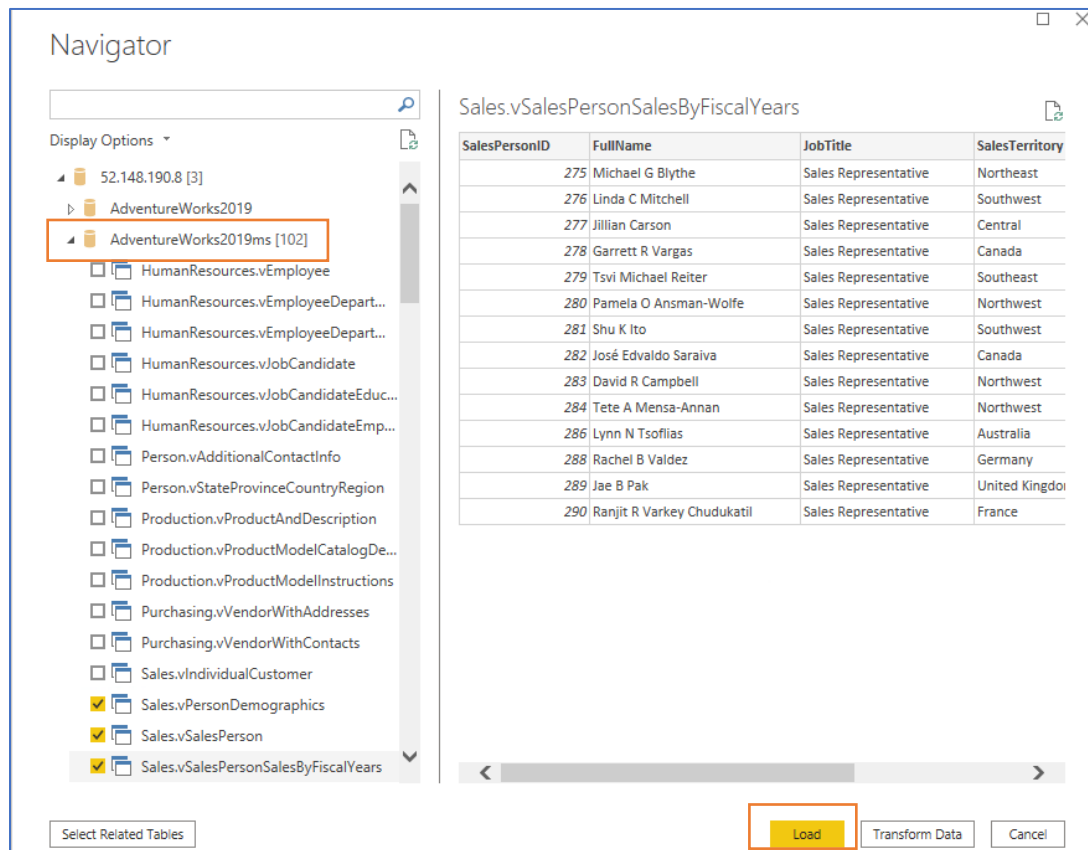
**Step3** Enter VM IP Address in Server text field. and Click on **OK** Button.



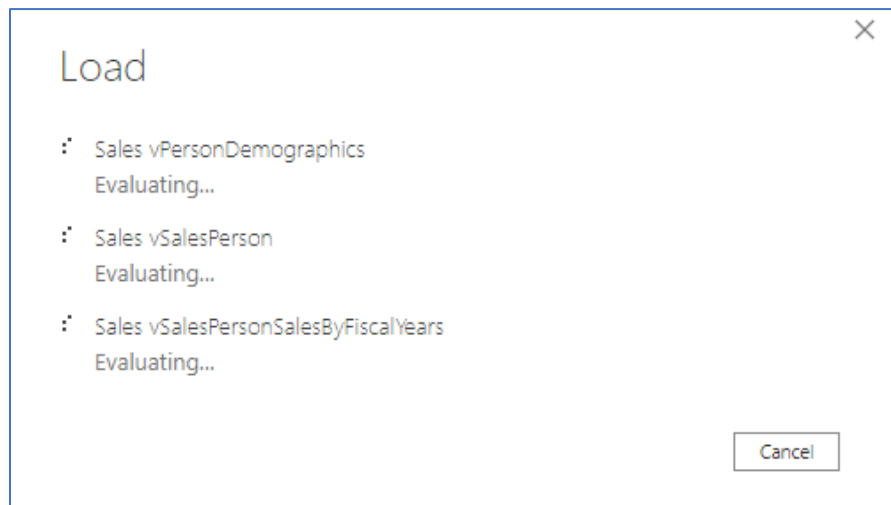
**Step4** Click on **Database** and enter VM **User id** and **Password**. and Click on **Connect** Button.



**Step5** Select **Database** and **Tables** and Click on **Load** Button.



**Step6** This Will Load Tables in Power BI.



**Step7** You can See **Table** in **Fields** in Power BI.

