Set up Azure Synapse Analytics

In this reading you can see the steps involved in the process of setting up Azure Synapse Analytics.

Note

You are not required to complete the processes, tasks, activities, or steps presented in this example. Your system may differ from the system set-up in the demonstration in this reading. The various samples provided are for illu purposes only and it's likely that if you try this out you will encounter issues in your system.

Azure Databricks is an Apache Spark–based analytics platform that supports SQL analytics and can be integrated with Azure Synapse to run high-performance analytics.

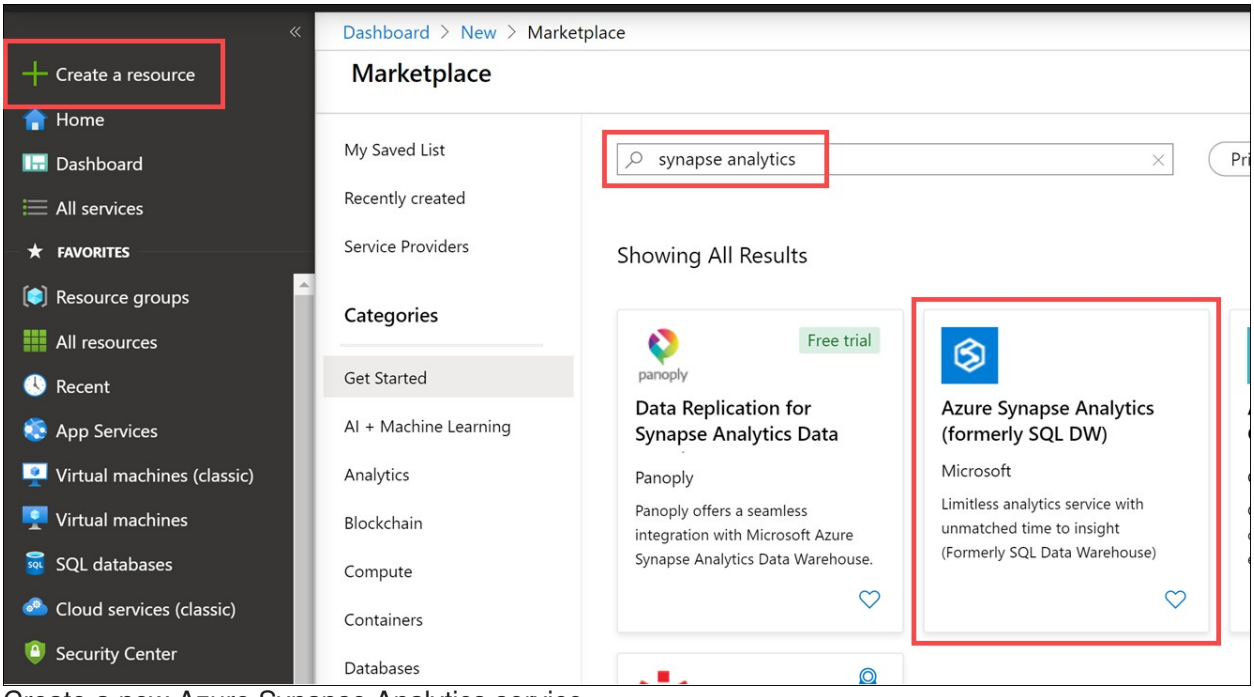
Creating end-to-end connectivity between Azure Databricks and Azure Synapse Analytics includes provisioning a sample Azure Synapse Analytics instance and setting up resources.

Let's start by setting up the environment.

Set up Azure Synapse Analytics

1. Carry out the following steps within the Azure Portal:

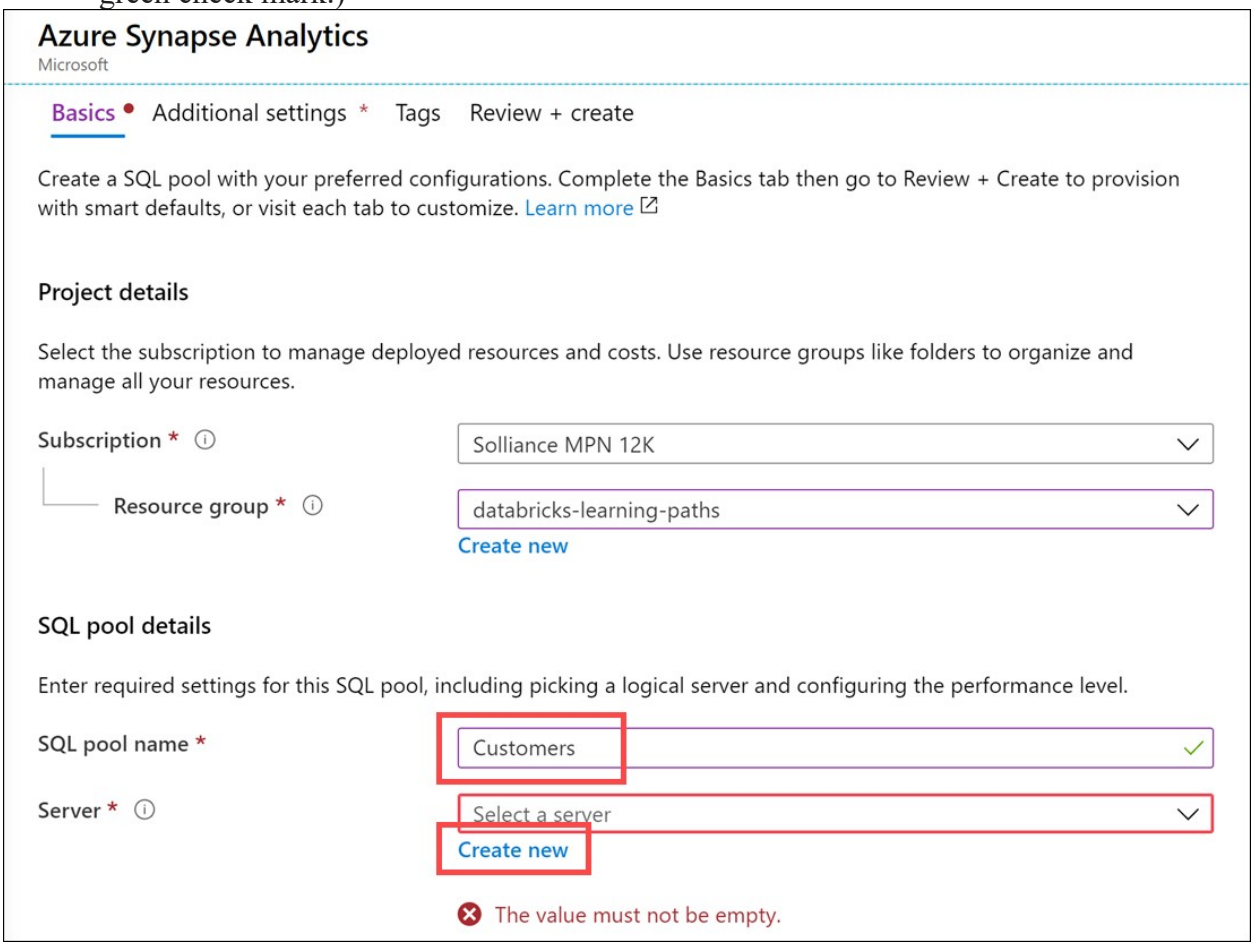
- Select **Create a resource**,
- Enter **Synapse Analytics** in the **Search the Marketplace** box,
- Select **Azure Synapse Analytics** in the results,
- Then select **Create**.



Create a new Azure Synapse Analytics service.

2. On the **Create Azure Synapse Analytics** pane, enter the following information in the **Basics** tab:

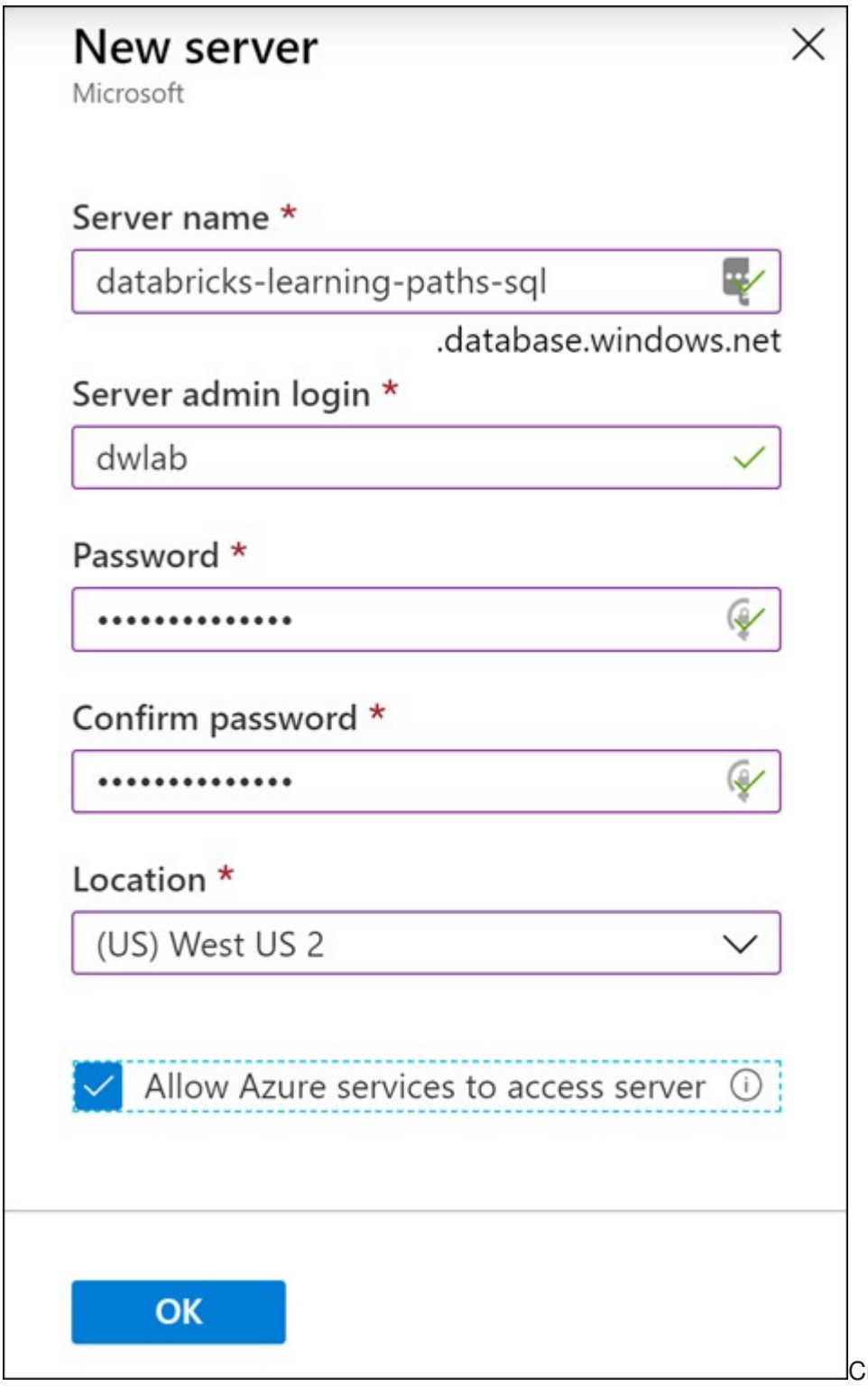
- **Subscription:** Select the subscription you're using for this module (The subscription you use will incur charges, this is not a free exercise. Pricing is shown on New Server pane).
- **Resource group:** Select the resource group you're using for this module.
- **SQL pool name:** Enter a unique name such as **Customers**. (Make sure you see a green check mark.)



Create a Azure Synapse Analytics basics tab.

3. Select **Create New** in the Server field to open the **New Server** pane and enter the following:

- **Server name:** Enter a unique name (Make sure you see a green check mark).
- **Server admin login:** Enter **dwlab**.
- **Password:** Enter a valid password, and then confirm the password.
- **Location:** Select the location you're using for resources in this module.
- **Allow Azure services to access server:** Select the check box.
- Select **OK**.



Create a SQL server.

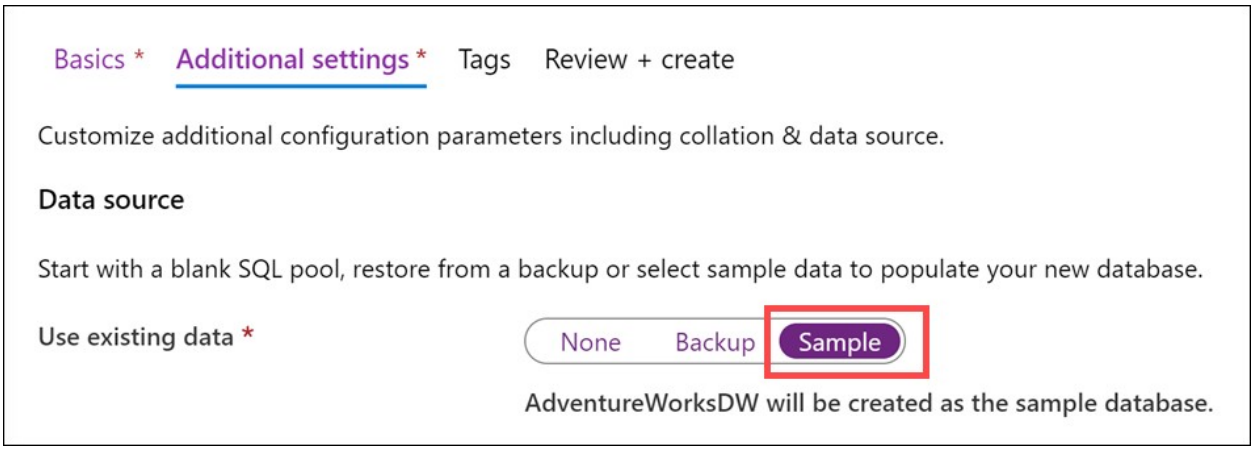
Note: *Make sure that you remember the user name and password for SQL Server as you will need them later.*

4. Select **Select Performance level** to open the Configure performance pane

5. Select **Gen2 DW100c**.

select data warehouse server size

6. In the **Additional settings** tab, select **Sample** under data source.



Select Sample for the data source.

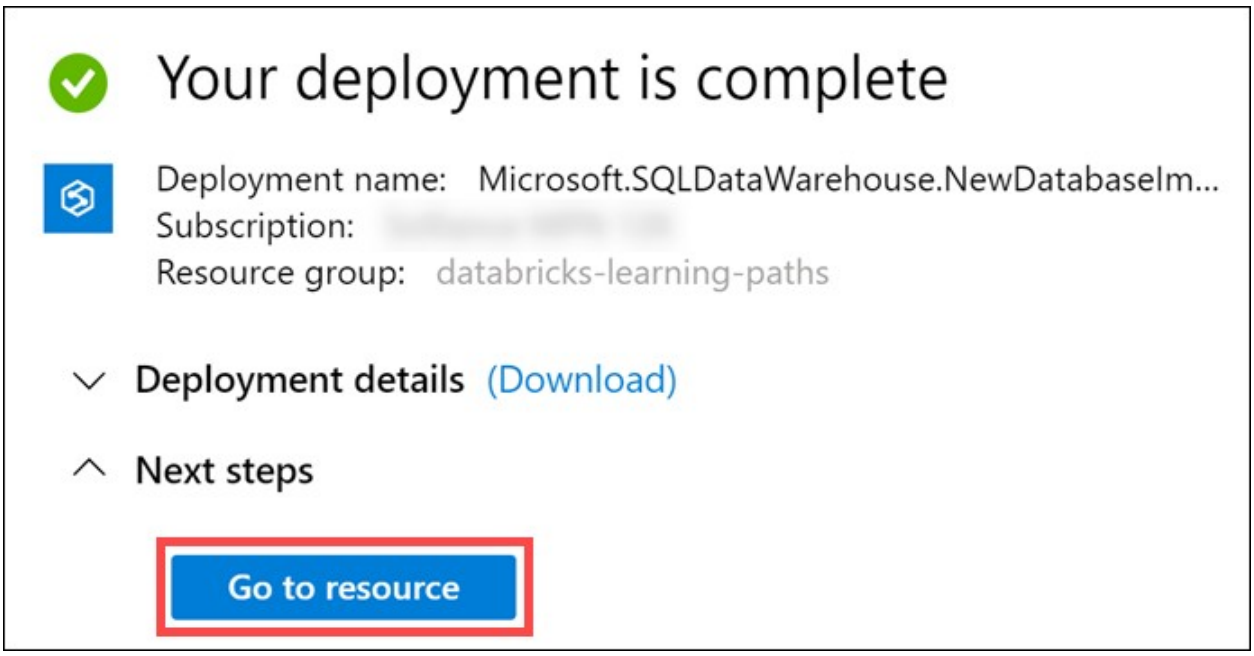
7. Select **Review +Create**.

8. Then select **Create**.

Configure JDBC Connection to Azure Synapse Analytics

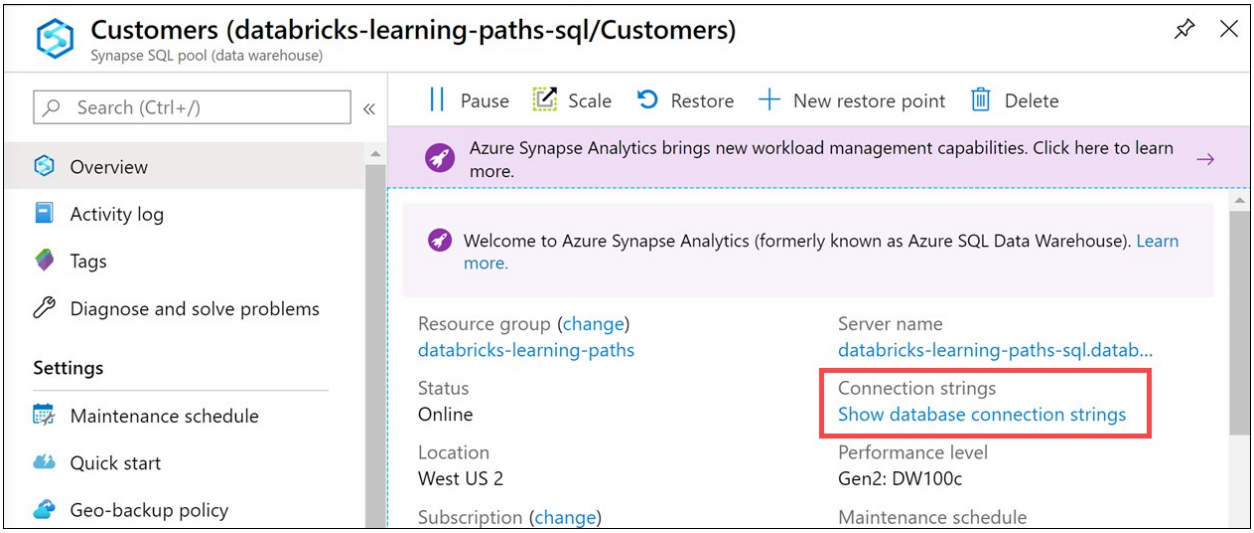
Interfacing with Azure Synapse Analytics requires a connection string. This can be retrieved from the Azure portal.

1. After the Azure Synapse Analytics instance is provisioned, open it by selecting **Go to resource** under notifications in Azure.



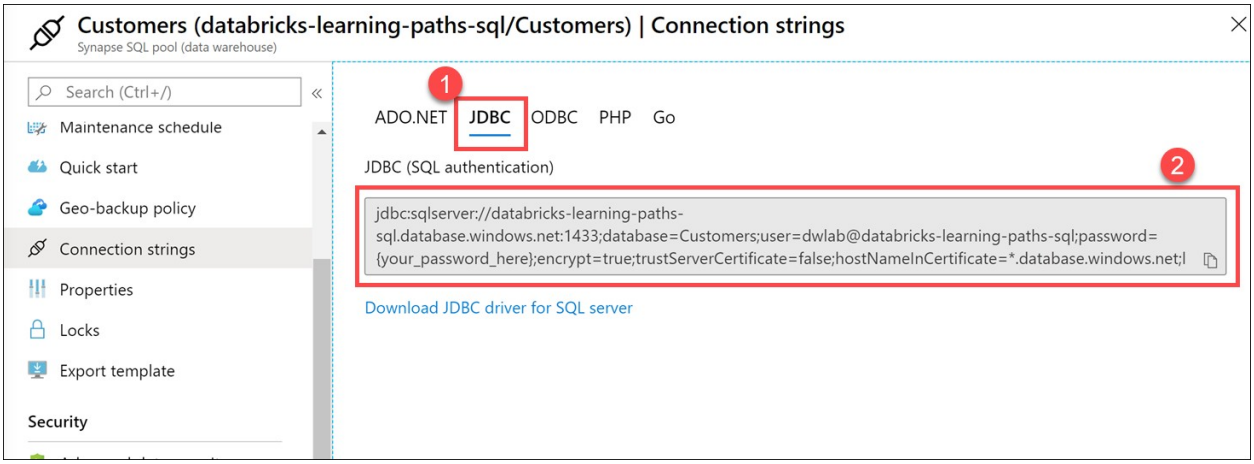
Select Go to resource.

2. At the top of the **Overview** pane, select the **Show database connection strings** link.



Select the Connection strings link.

3. On the page for connection strings (1) select the **JDBC** tab, then (2) copy this string to be used below.



JDBC connection string.

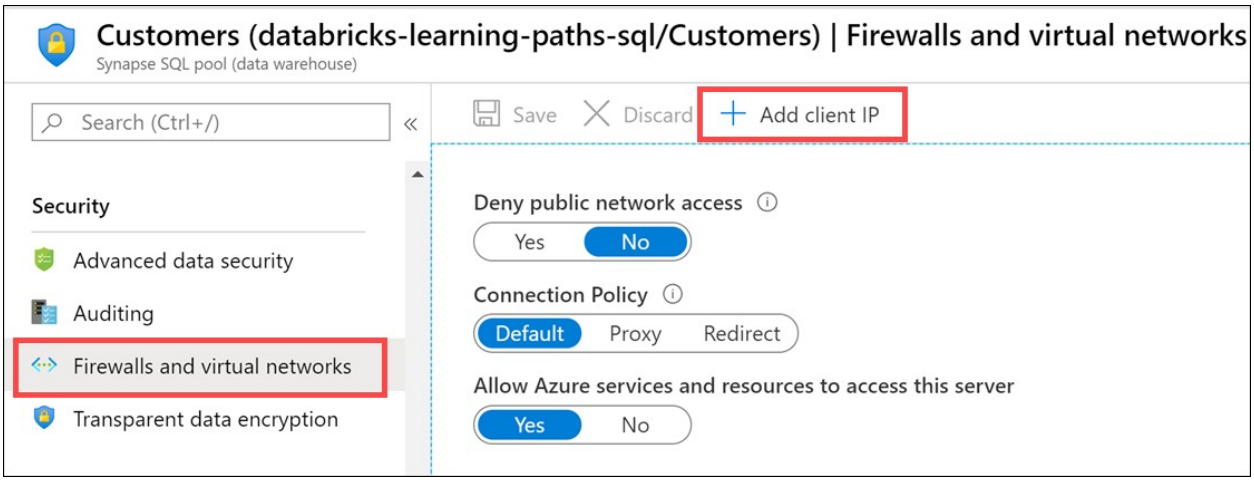
4. Paste the JDBC connection string to a text editor for later. Replace **{your_password_here}** with your SQL Server password.

Create a Master Key and table in Azure Synapse Analytics

In this step, we create a Master Key and a new table. However, before we use the query editor, we must first add the client IP address to the server firewall using the following steps:

1. In Azure Synapse Analytics, select **Firewalls and virtual networks** on the left-hand menu.

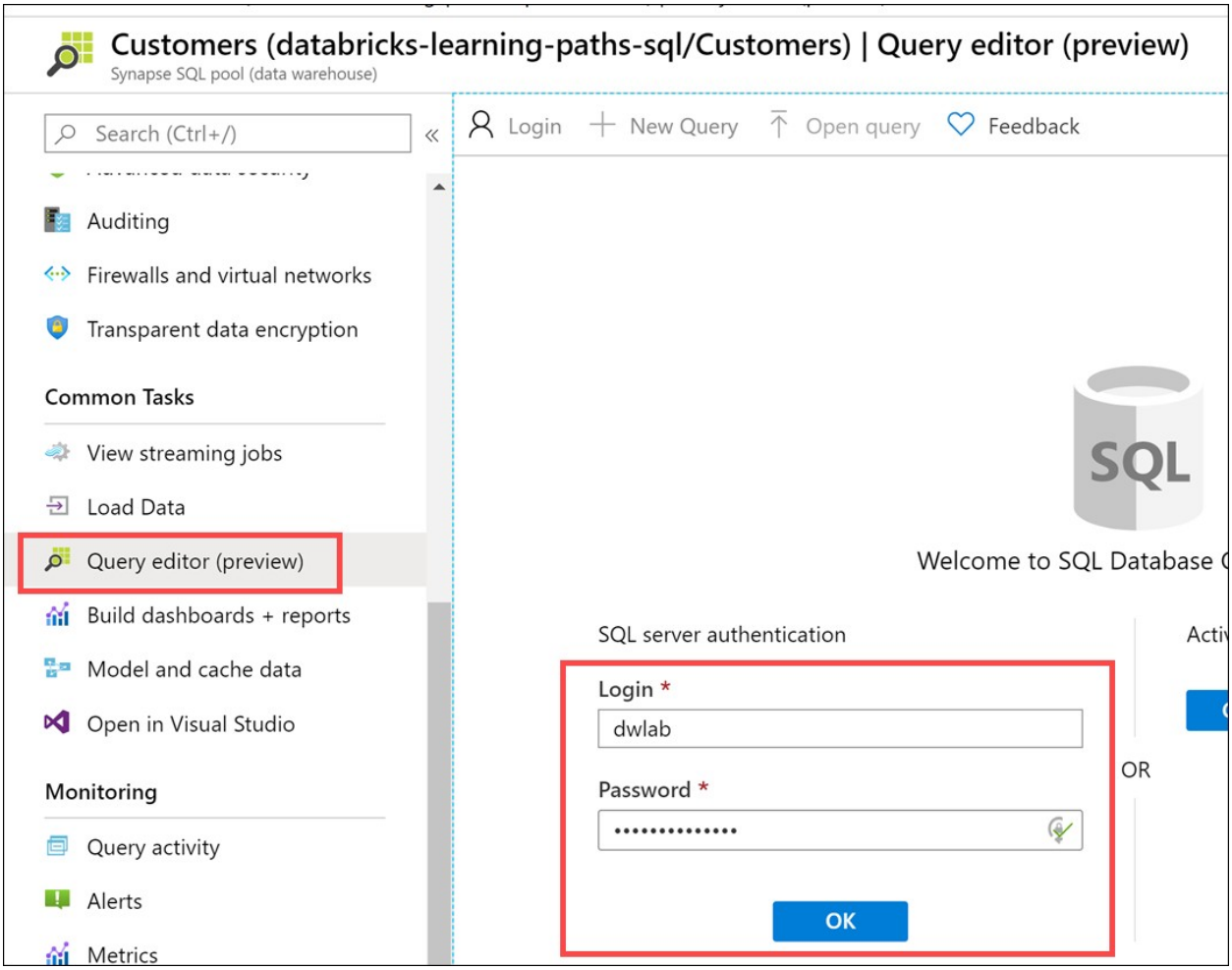
2. Within the Firewalls and virtual networks blade, select **+ Add client IP** and then **Save**.



Add client IP to the firewall.

3. In Azure Synapse Analytics, select **Query editor** on the left-hand menu.

4. Log in with the SQL credentials.



Query Editor login.

5. Execute the following query to create a Master Key in Azure Synapse Analytics. This facilitates the connection from Azure Databricks:

```
CREATE MASTER KEY ENCRYPTION BY PASSWORD = 'CORRECT-horse-battery-staple';
```

6. Execute the following query to create a staging table for the Customer table. This query creates an empty table with the same schema as the Customer table:

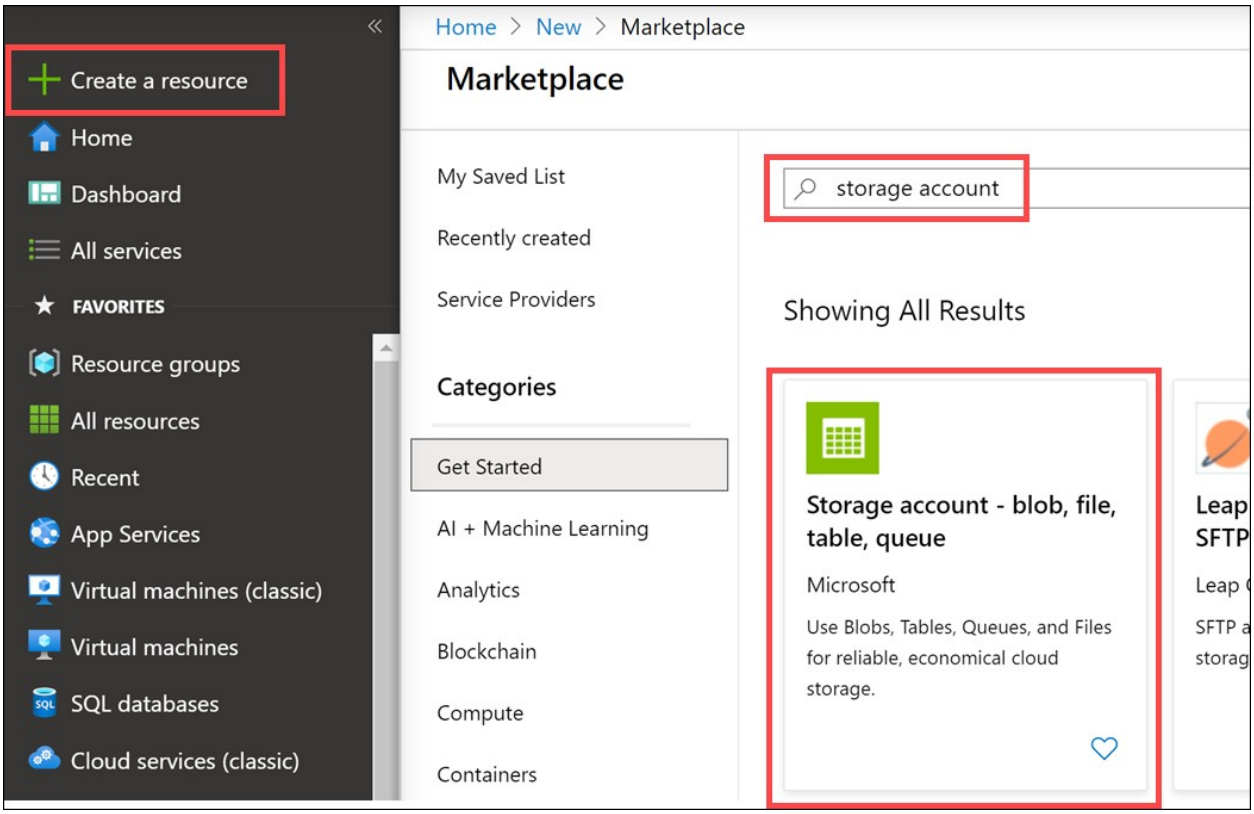
```
CREATE TABLE dbo.DimCustomerStaging
WITH
```

```
( DISTRIBUTION = ROUND_ROBIN, CLUSTERED COLUMNSTORE INDEX )
AS
SELECT *
FROM dbo.DimCustomer
WHERE 1 = 2
;
```

Create Azure Blob Storage account

1. Carry out the following steps in the Azure Portal:

- Select **Create a resource**,
- Enter **storage account** in the **Search the Marketplace** box,
- Select **Storage account - blob, file, table, queue** in the results,
- Select **Create**.

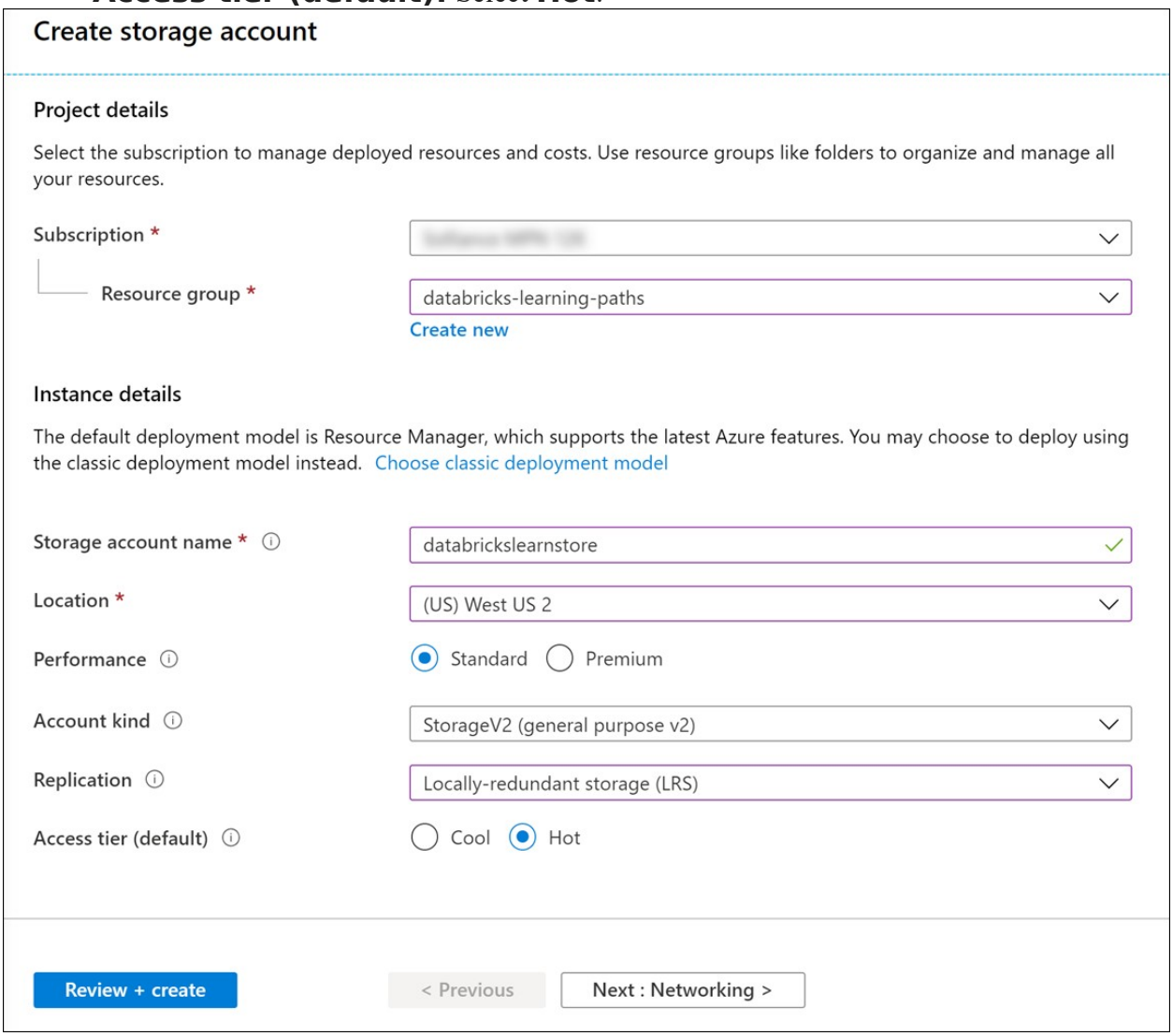


Create storage account.

2. On the **Create storage account** pane, enter this information in the **Basics** tab:

- **Subscription:** Select the subscription you're using for this module.
- **Resource group:** Select the resource group you're using for this module.
- **Storage account name:** Enter a unique name. (Make sure you see a green check mark.)
- **Location:** Select the same location as the other resources in this module.
- **Performance:** Select **StandardV2 (general purpose v2)**.

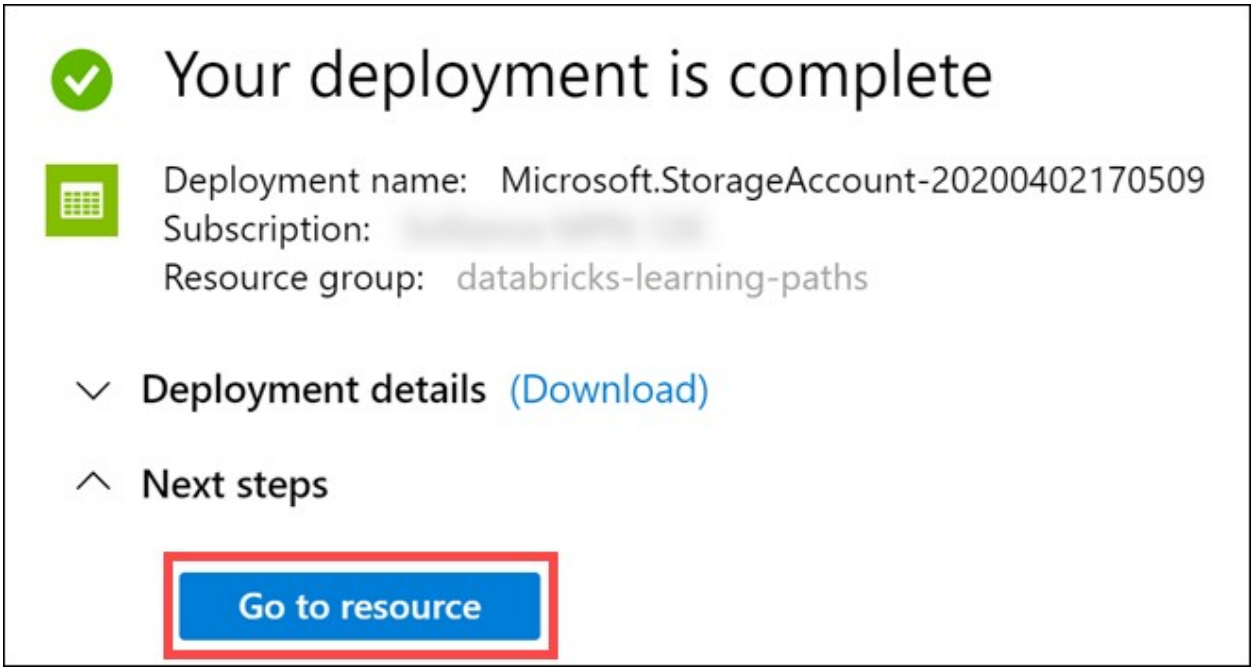
- **Replication:** Select **Locally-redundant storage (LRS)**.
- **Access tier (default):** Select **Hot**.



Create storage account basic form in portal.

3. Select **Review + create**, then select **Create**.

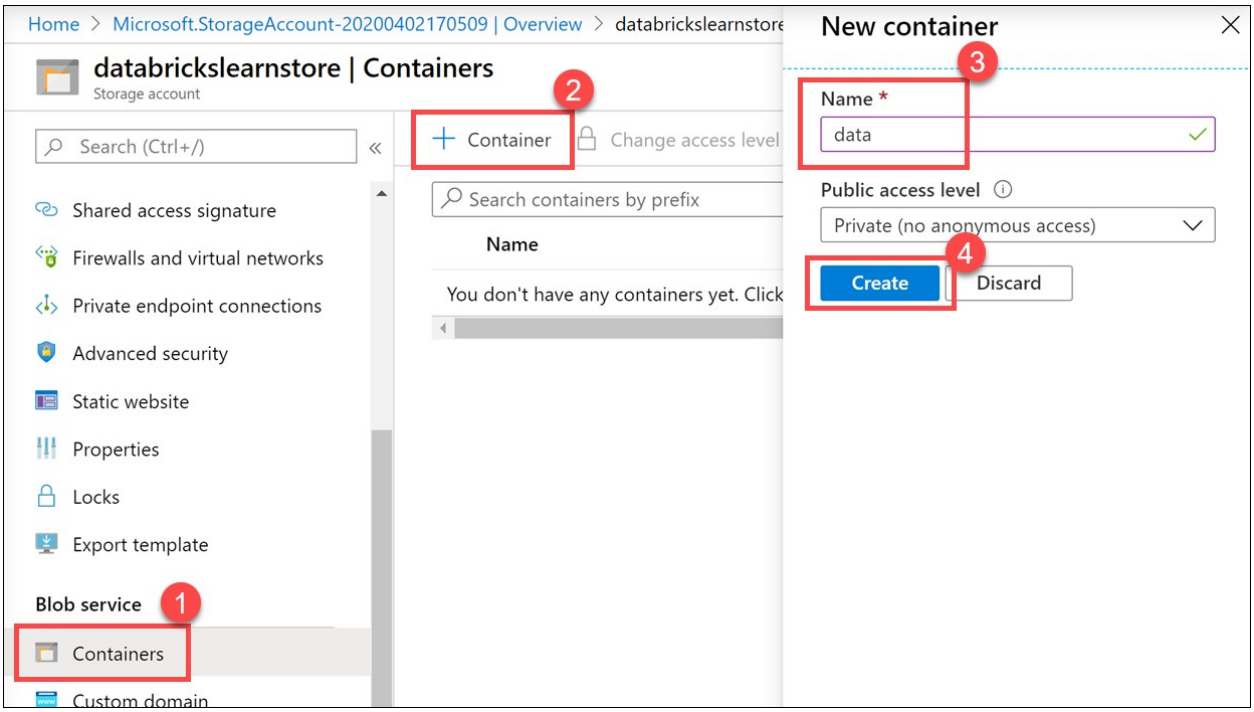
4. After the storage account is provisioned, open it by selecting **Go to resource** under notifications in Azure.



Select Go to resource for your storage account.

5. Within the new storage account, carry out the following steps:

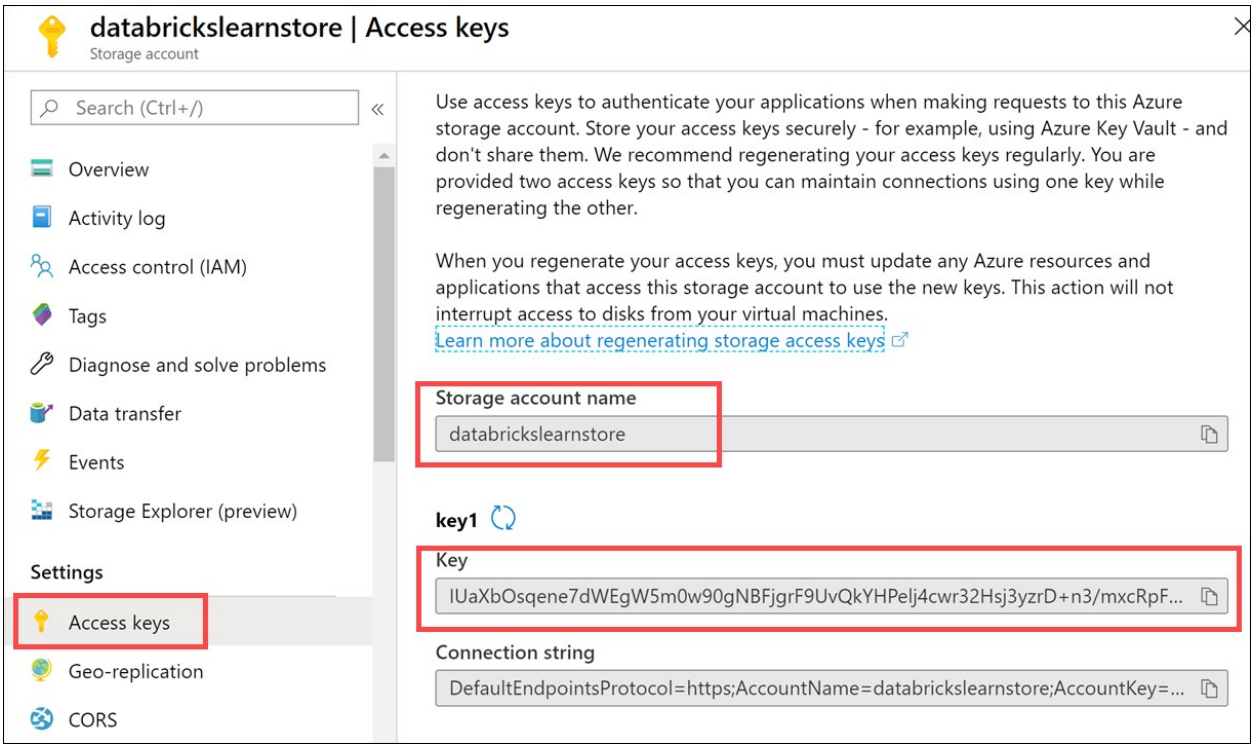
- Select **Containers** in the left-hand menu.
- In the Containers blade, select **+ Container** to add a new container.
- In the New Container form, enter **data** for the name and set the public access level to **Private**.
- Select **Create**.



Create a new container.

6. Select **Access keys** in the left-hand menu.

7. In the Access keys blade, copy the **Storage account name** and **Key** under **key1** (Save these values in a text editor for later).



Access keys.