Azure Data Factory

Lab: Ingest Data using copy data tool from Storage Blob to SQL Database.

Pre-requisites:

- Azure Pass subscription
- Azure Data Lake Storage Gen2 storage account
- Azure SQL Database

Lab Objective:

After completing this lab, you will be able to:

- Create pipeline using Copy Data tool to ingest the data.

Exercise: Ingest Data using Copy Data Tool.

Create a source blob

1. Launch **Notepad**. Copy the following text and save it in a file named **inputEmp.txt** on your disk:

   ```
   FirstName|LastName
   John|Doe
   Jane|Doe
   ```

2. Create a container named **data** if not exists and upload the inputEmp.txt file to the container. You can use the Azure portal or various tools like Azure Storage Explorer to perform these tasks.

Create a sink SQL table

1. Use the following SQL script to create a table named **dbo.emp** in your SQL Database:

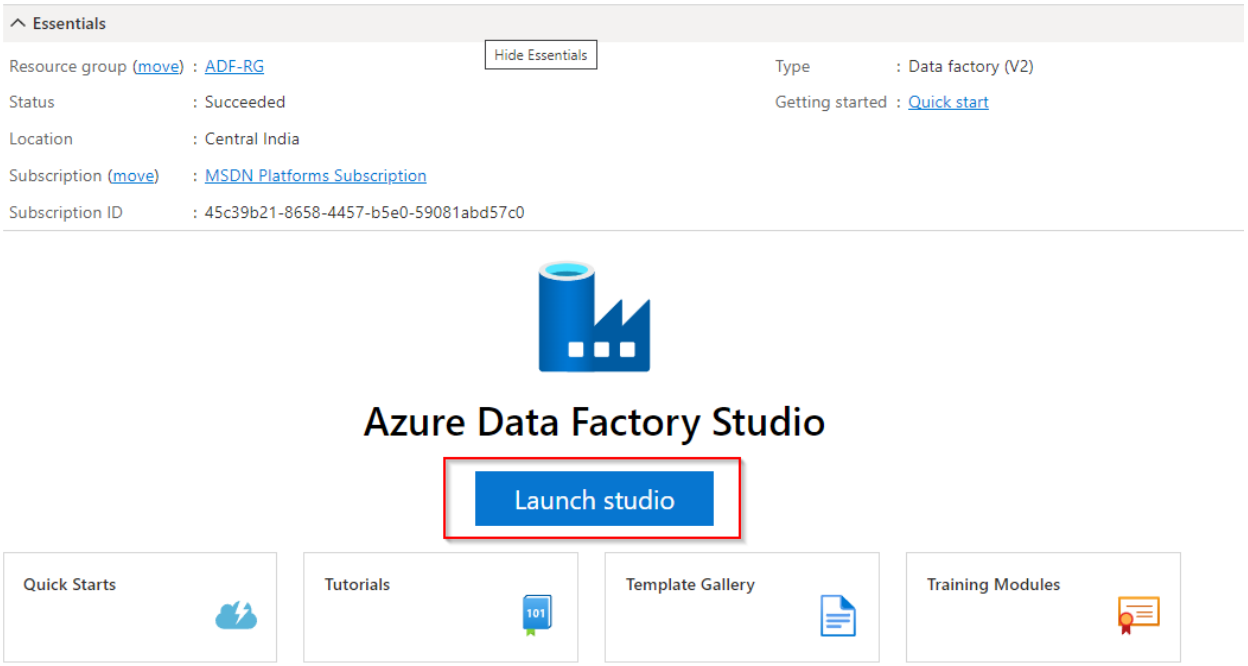
   ```
   CREATE TABLE dbo.emp
   (
      ID int IDENTITY(1,1) NOT NULL,
      FirstName varchar(50),
      LastName varchar(50)
   )
   GO
   ```

2. Allow Azure services to access SQL Server. Verify that the setting **Allow Azure services and resources to access this server** is enabled for your server that's running SQL Database. This setting lets Data Factory write data to your database instance.

   To verify and turn on this setting, go to logical SQL server > Security > Firewalls and virtual networks > set the **Allow Azure services and resources to access this server** option to **ON**.

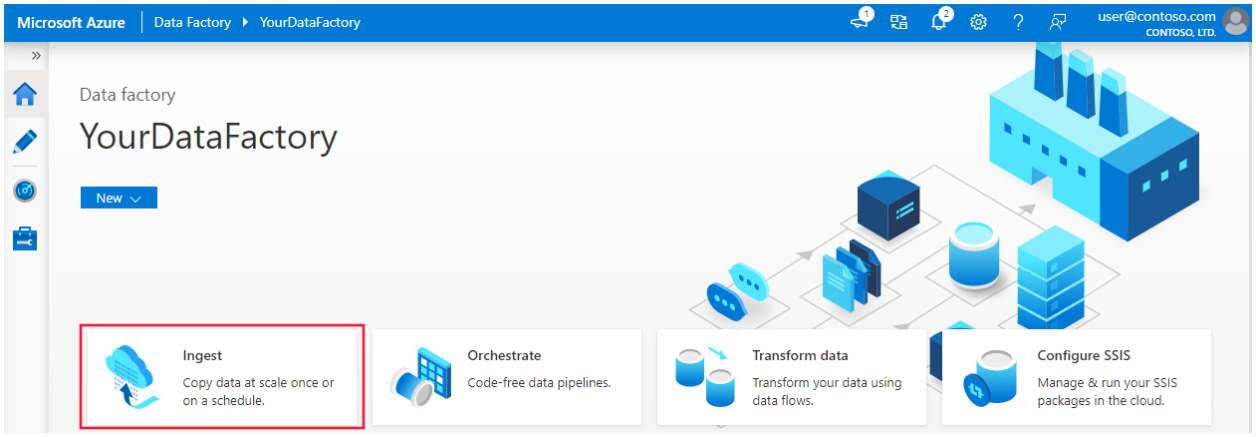
Open you Azure Data Factory workspace

1. To launch the Azure Data Factory user interface (UI) in a separate tab, select **Open** on the **Open Azure Data Factory Studio** tile.

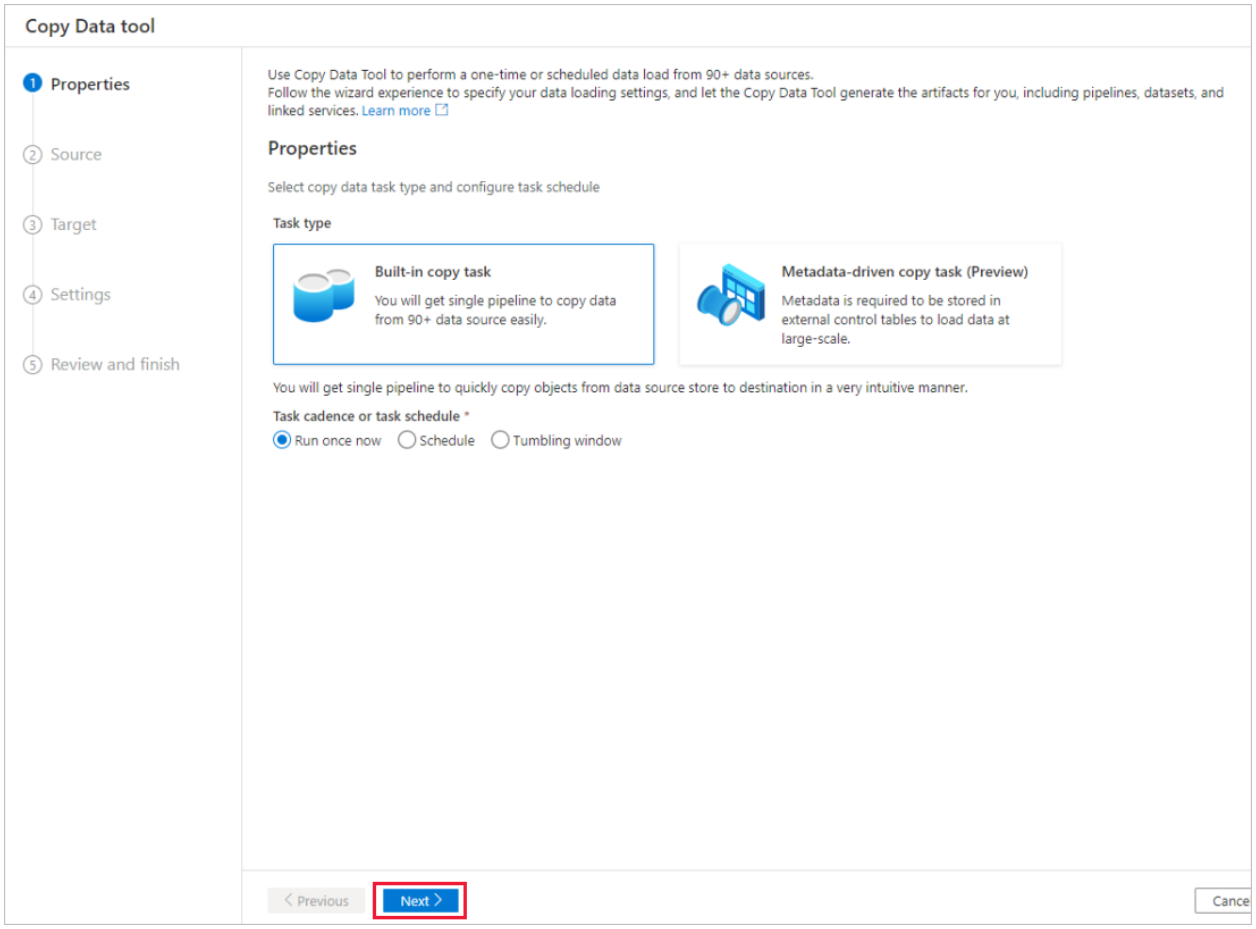


Use the Copy Data tool to create a pipeline

1. On the home page of Azure Data Factory, select the **Ingest** tile to launch the Copy Data tool.



2. On the **Properties** page of the Copy Data tool, choose **Built-in copy task** under **Task type**, then select **Next**.



3. On the **Source data store** page, complete the following steps:

   a. Select **+ Create new connection** to add a connection.

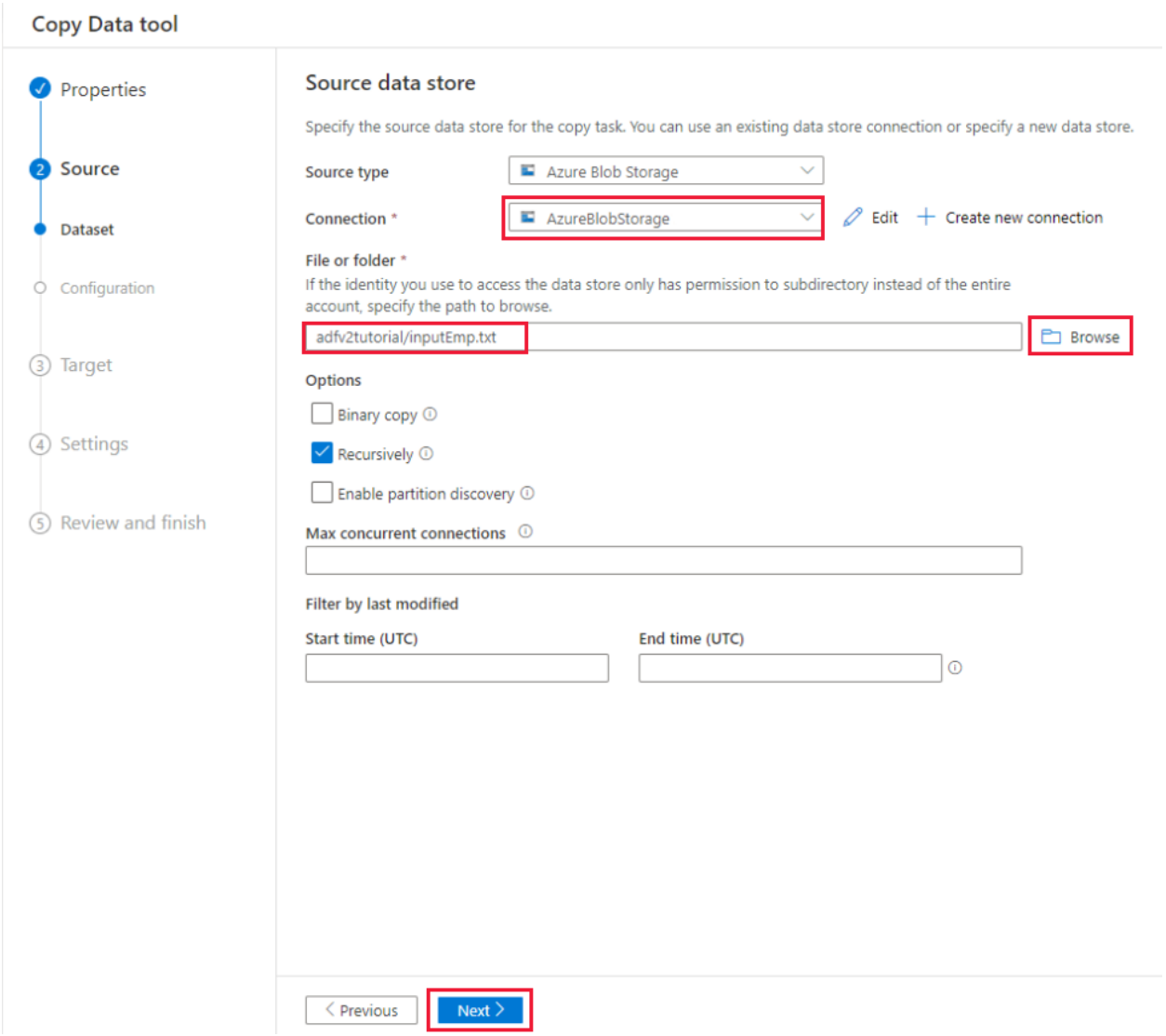
   b. Select **Azure Data Lake Storage** from the gallery, and then select **Continue**.

   c. On the **New connection (Azure Data Lake Storage**) page, select your Azure subscription from the **Azure subscription** list, and select your storage account from the **Storage account name** list. Test connection and then select **Create**.

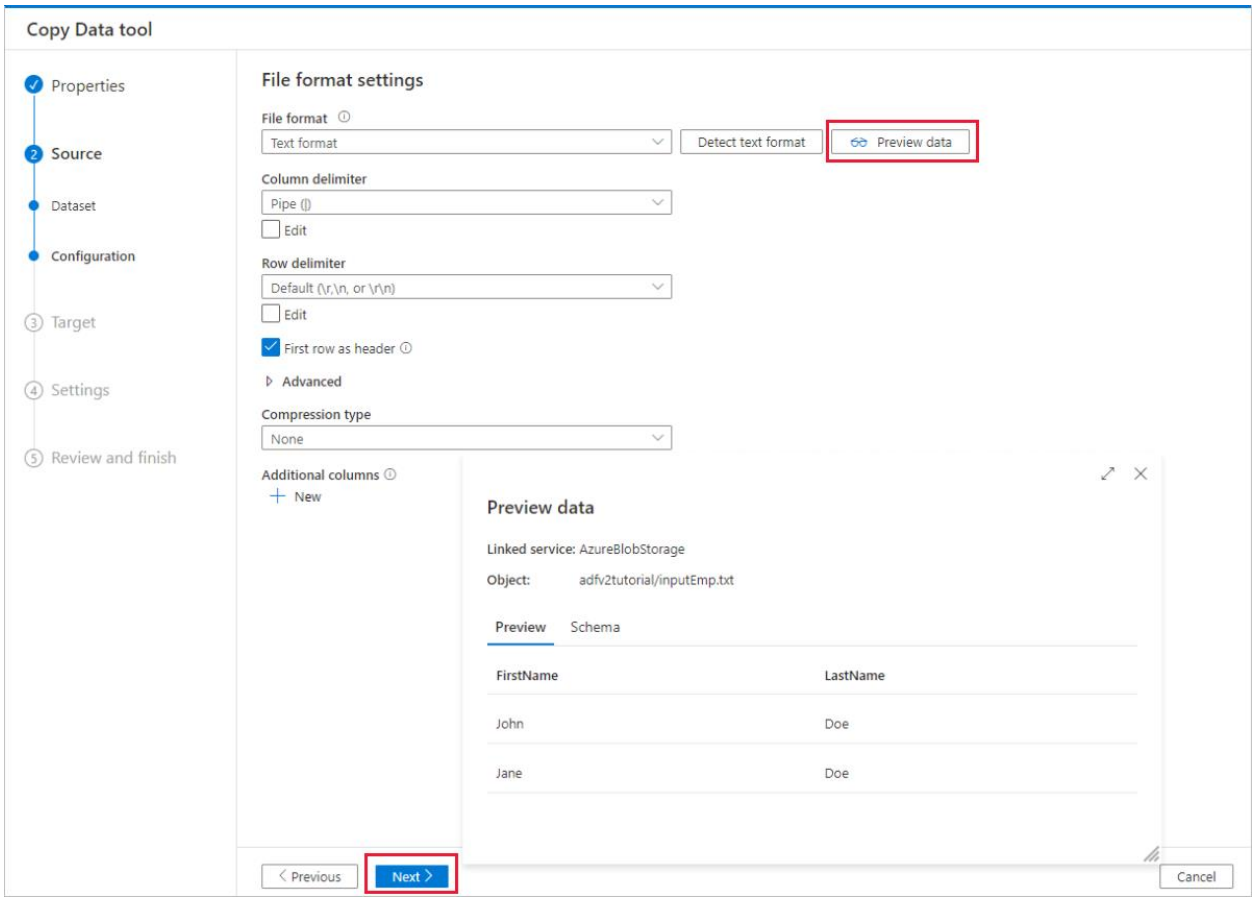
   d. Select the newly created linked service as source in the **Connection** block.

   e. In the **File or folder** section, select **Browse** to navigate to the **data** folder, select the **inputEmp.txt** file, then select **OK**.

   f. Select **Next** to move to next step.



4. On the **File format settings** page, enable the checkbox for *First row as header*. Notice that the tool automatically detects the column and row delimiters, and you can preview data and view the schema of the input data by selecting **Preview data** button on this page. Then select **Next**.

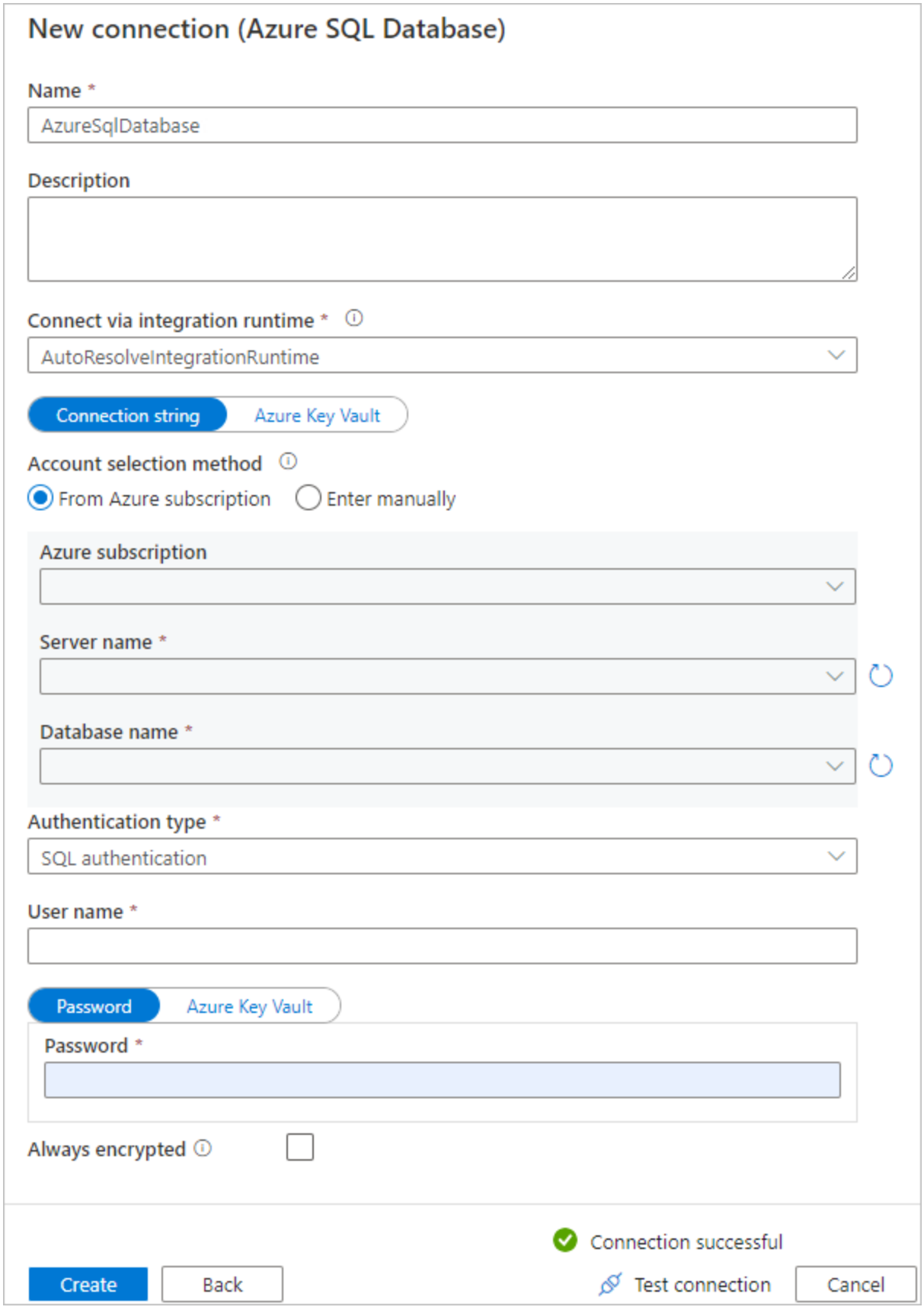


5. On the **Destination data store** page, completes the following steps:

   a. Select **+ Create new connection** to add a connection.

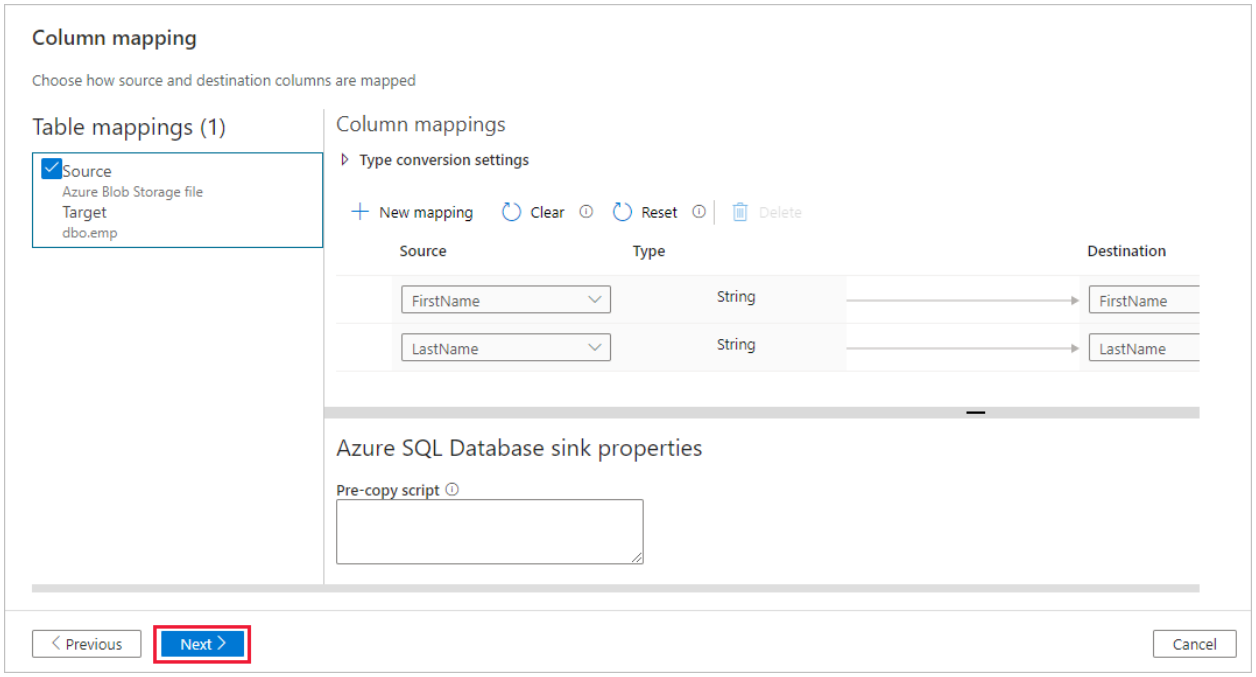
   b. Select **Azure SQL Database** from the gallery, and then select **Continue**.

   c. On the **New connection (Azure SQL Database)** page, select your Azure subscription, server name and database name from the dropdown list. Then select **SQL authentication** under **Authentication type**, specify the username and password. Test connection and select **Create**.

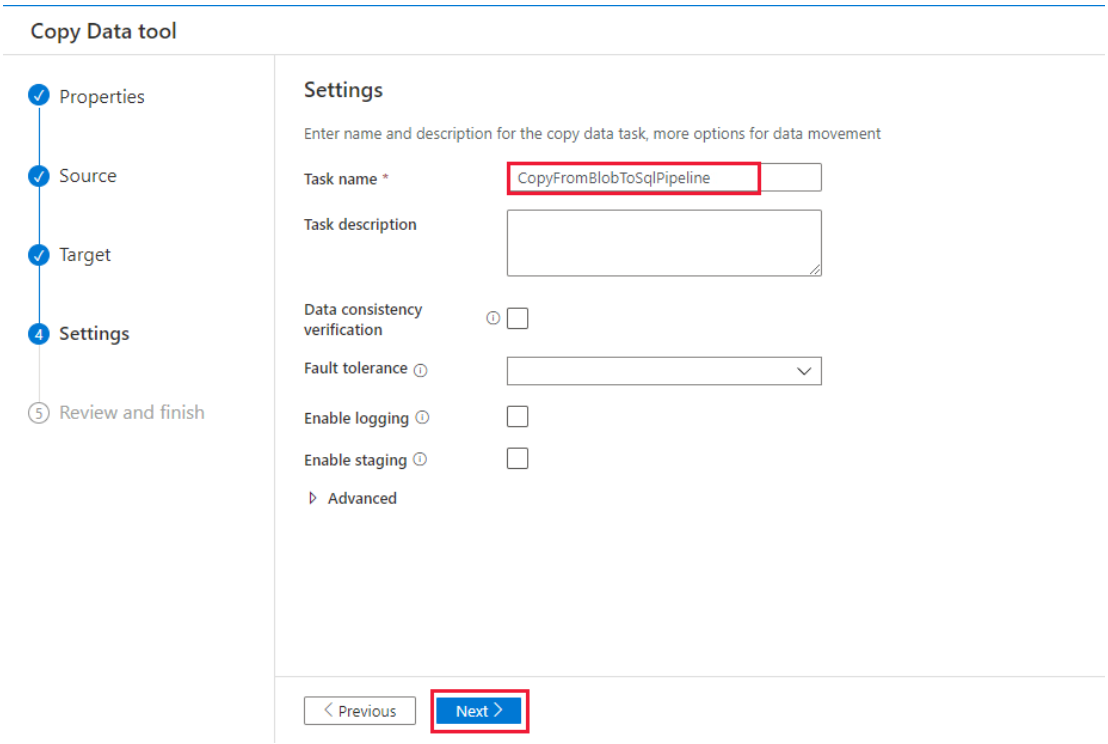


d. Select the newly created linked service as sink, then select **Next**.

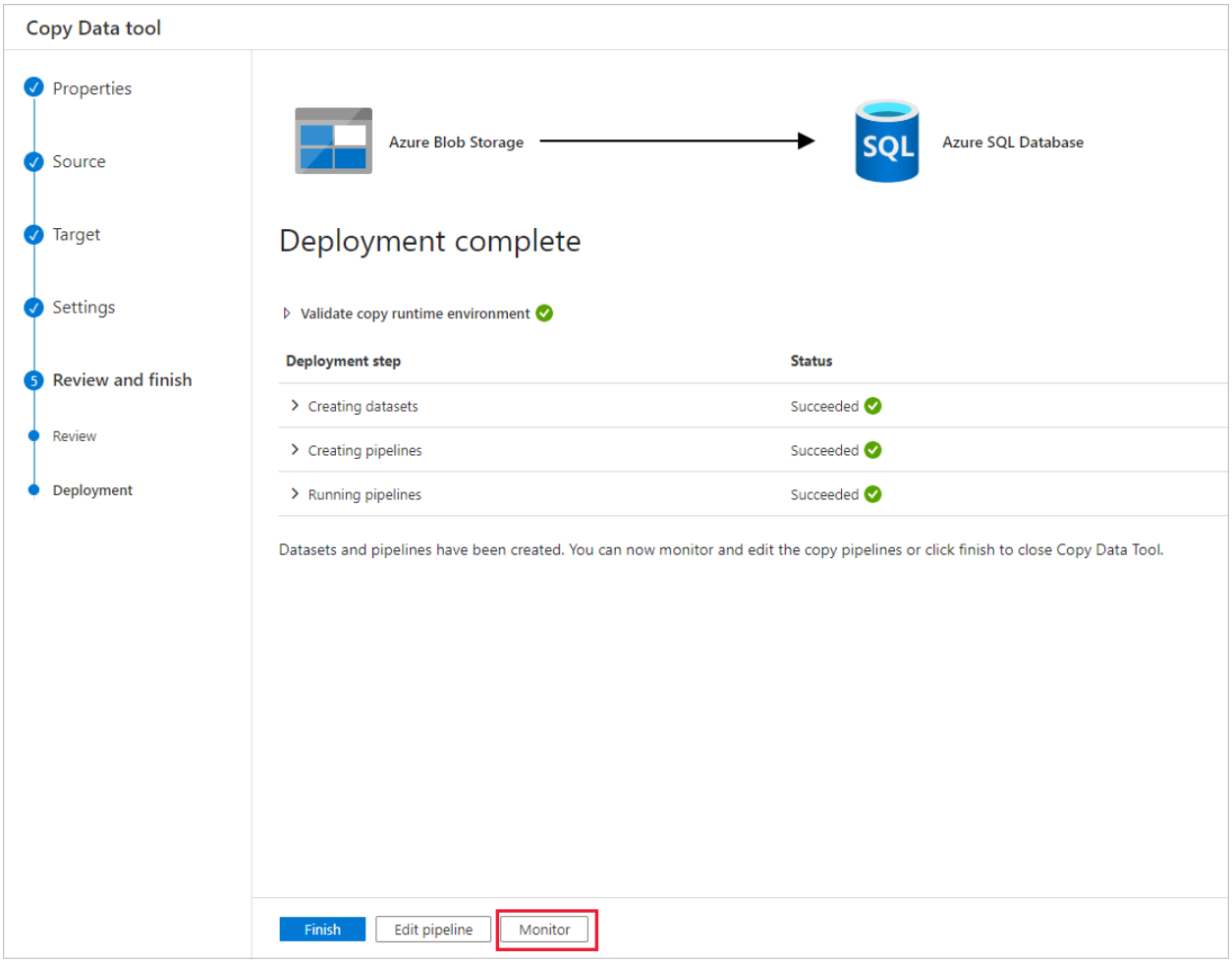
6. On the **Destination data store** page, select **Use existing table** and select the **dbo.emp** table. Then select **Next**.
7. On the **Column mapping** page, notice that the second and the third columns in the input file are mapped to the **FirstName** and **LastName** columns of the **emp** table. Adjust the mapping to make sure that there is no error, and then select **Next**.



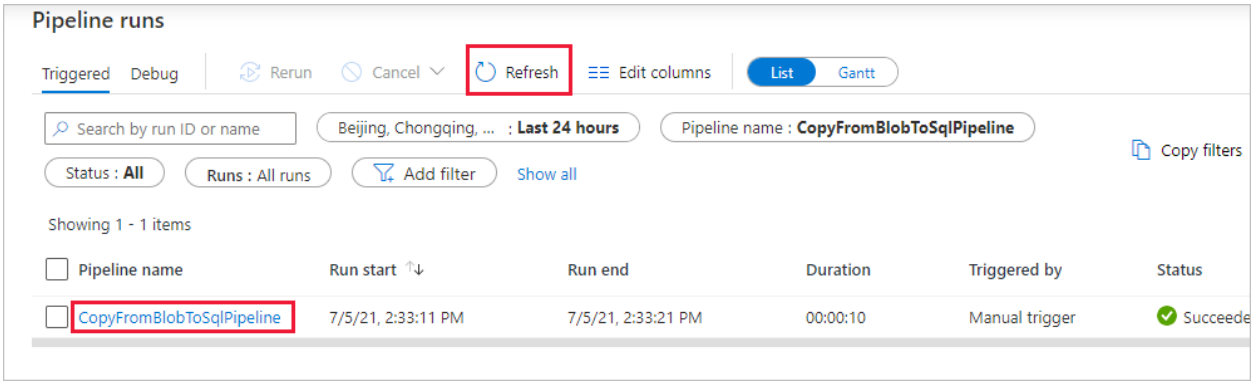
8. On the **Settings** page, under **Task name**, enter **CopyFromBlobToSqlPipeline**, and then select **Next**.



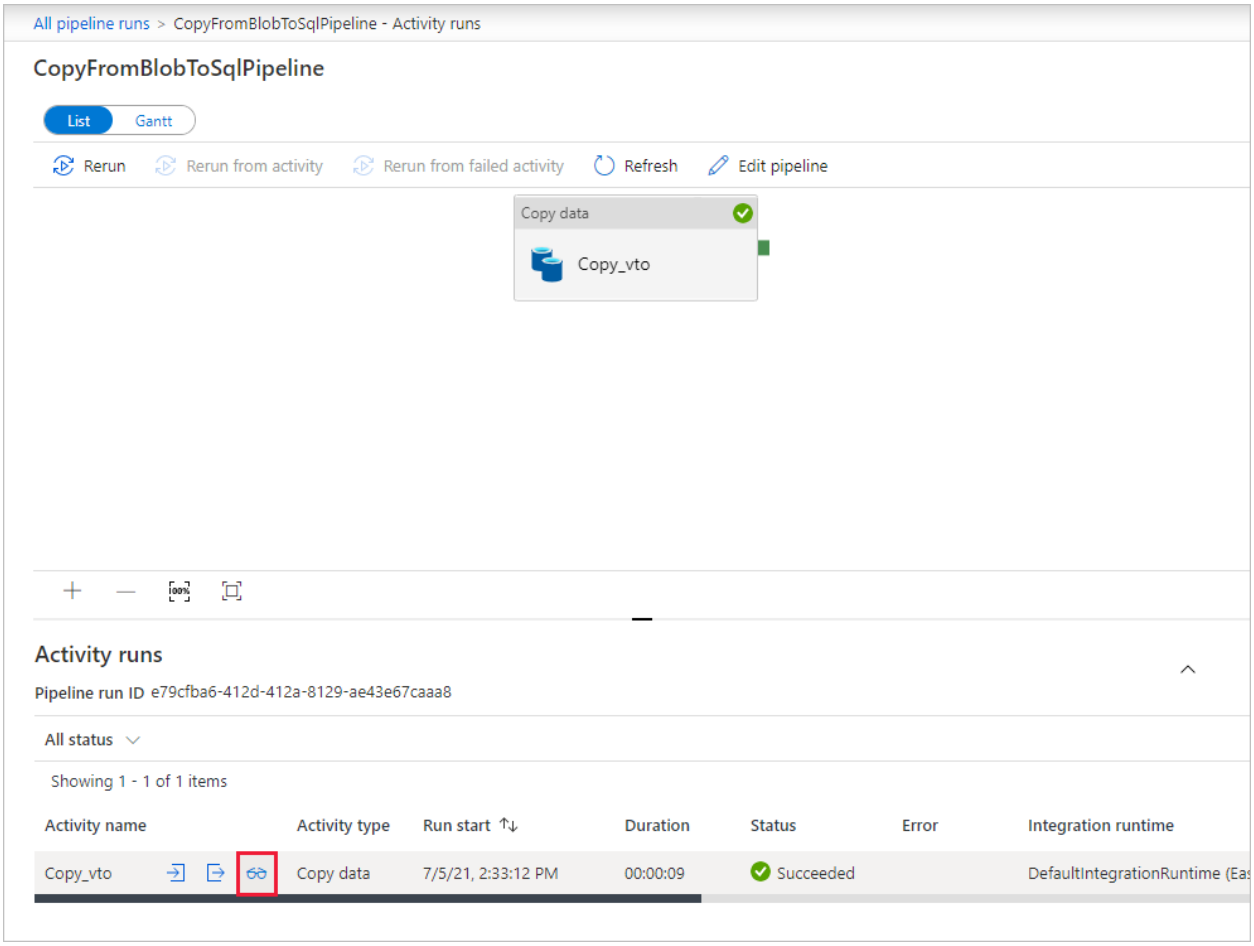
9. On the **Summary** page, review the settings, and then select **Next**.
10. On the **Deployment** page, select **Monitor** to monitor the pipeline (task).



11. On the Pipeline runs page, select **Refresh** to refresh the list. Select the link under **Pipeline name** to view activity run details or rerun the pipeline.



12. On the "Activity runs" page, select the **Details** link (eyeglasses icon) under **Activity name** column for more details about copy operation. To go back to the "Pipeline runs" view, select the **All pipeline runs** link in the breadcrumb menu. To refresh the view, select **Refresh**.



13. Verify that the data is inserted into the **dbo.emp** table in your SQL Database.
14. Select the **Author** tab on the left to switch to the editor mode. You can update the linked services, datasets, and pipelines that were created via the tool by using the editor.