

# Microsoft SQL Data Warehouse Connections

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This section describes how to create connections to Azure Synapse Analytics (Formerly Microsoft SQL DW) (DW).

**Tip:** This connection is now known as Azure Synapse Analytics.

**Supported Versions:** n/a

**Supported Environments:**

Operation	Trifacta Self-Managed Enterprise Edition	Amazon	Microsoft Azure
Read	Not supported	Not supported	Supported
Write	Not supported	Not supported	Supported

**NOTE:** Additional configuration is required.

## Limitations

- Azure Synapse Analytics (Formerly Microsoft SQL DW) connections are available only if you have deployed the Trifacta® platform onto Azure.
- SSL connections to Azure Synapse Analytics (Formerly Microsoft SQL DW) are required.

**NOTE:** In this release, this connection cannot be created through the APIs. Please create connections of this type through the application.

## Prerequisites

- If you haven't done so already, you must create and deploy an encryption key file for the Trifacta node to be shared by all relational connections. For more information, see *Create Encryption Key File*.

## Connection Types

The Trifacta platform supports two types of connections to an Azure SQL DW data warehouse:

Connection Type	Description	Notes
SQL DW Read-Only	<p>Read-only access to the Azure Synapse Analytics (Formerly Microsoft SQL DW). This connection is available on the Import Data page only.</p> <p>To create, see <i>Import Data Page</i>.</p>	This connection requires fewer permissions on the data warehouse and its databases but is less performant.
SQL DW Read-Write	<p>Read-write access to the Azure Synapse Analytics (Formerly Microsoft SQL DW). This connection is available for reading, direct publishing, and ad-hoc publishing.</p> <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> <p><b>NOTE:</b> Under Azure SSO, write operations are not supported through SQL DW connections.</p> </div> <p>To create, see <i>Connections Page</i>.</p>	<p>This connection requires more permissions. You must also specify an External Datasource Name. See below.</p> <div style="border: 1px solid #90EE90; padding: 5px; margin: 10px 0;"> <p><b>Tip:</b> Spark-based jobs that read or write through your SQL DW connection leverage PolyBase for faster performance.</p> </div>

## Azure Synapse Analytics (Formerly Microsoft SQL DW) permissions

- **Read-Only connection:** The authenticating DB user must have read permissions to any Azure Synapse Analytics (Formerly Microsoft SQL DW), schemas and tables to which the user should have access.
- **Read-Write connection:** In addition to the above, the authenticating DB user must have the following permissions:

```
CREATE TABLE**
ALTER ANY SCHEMA
ALTER ANY EXTERNAL DATA SOURCE
ALTER ANY EXTERNAL FILE FORMAT
```

- The authenticating DB user must also have read access to the external data source.

## Azure Synapse Analytics (Formerly Microsoft SQL DW) External Data Source Name

When specifying a SQL DW Read-Write connection, you can provide an External Data Source Name value as part of the connection definition. The External Data Source enables publishing and support for large-scale data ingestion.

**NOTE:** This setting is not used for Azure Synapse Analytics (Formerly Microsoft SQL DW) Read-Only connections.

If the External Data Source is not provided:

- The connection is read-only.
- The native ingestion of the Trifacta platform is used.

### Requirements:

- The external data source must be created by the database admin on the default database defined in the SQL DW connection. For more information, see <https://docs.microsoft.com/en-us/sql/t-sql/statements/create-external-data-source-transact-sql?view=azure-sqldw-latest&tabs=dedicated>

- The External Data Source must point to the same storage location as the base storage layer for the Trifacta platform. For example, if the base storage layer is WASB, the External Datasource must point to the same storage account defined in Trifacta configuration. If this configuration is incorrect, then publishing and ingestion of data fail.
- For more information on privileges required for the authenticating DB user, see <https://docs.microsoft.com/en-us/sql/t-sql/statements/create-external-table-transact-sql>.

## Configure

To create this connection:

- **Read-only connection:** See *Import Data Page*.
- **Read-write connection:** See *Connections Page*.
- For additional details on creating a relational connection, see *Relational Access*.

Please create a connection of this type in the appropriate page and modify the following properties with the listed values:

Property	Description
Host	Enter your hostname. Example:  <div style="border: 1px solid #ccc; padding: 5px; width: fit-content; margin: 5px auto;">testsql.database.windows.net</div>
Port	Set this value to 1433.
Database	Set this value to the default database name.
External Data Source Name	For read-write connections, you must provide an External Data Source. Otherwise, the connection is read-only. See above for details.
Connect String options	Include any options required for your environment:
User Name	Username to use to connect to the database.
Password	Password associated with the above username.
Credential Type	<ul style="list-style-type: none"> <li>• <code>basic</code> - Specify username and password as part of the connection</li> <li>• <code>Azure Token SSO</code> - Use the SSO principal of the user creating the connection to authenticate to the SQL Server database. Additional configuration is required. See <i>Enable SSO for Azure Relational Connections</i>.</li> </ul>
Default Column Data Type Inference	Set to <code>disabled</code> to prevent the Trifacta platform from applying its own type inference to each column on import. The default value is <code>enabled</code> .

## Configure for SSO

If you have enabled Azure AD SSO integration for the Trifacta platform, you can create SSO connections to Azure relational databases.

**NOTE:** When Azure AD SSO is enabled, write operations to Azure Synapse Analytics (Formerly Microsoft SQL DW) are not supported.

See *Enable SSO for Azure Relational Connections*.

## Use

For more information on locating data, see *Database Browser*.

For more information, see *Using SQL DW*.

## Data Conversion

For more information on how values are converted during input and output with this database, see *SQL DW Data Type Conversions*.