

# Tosca - ADX Automation

## Objective

This document describes the steps and details that are required to connect with ADX using Tosca and how to validate ADX data using Tosca

## Components Involved

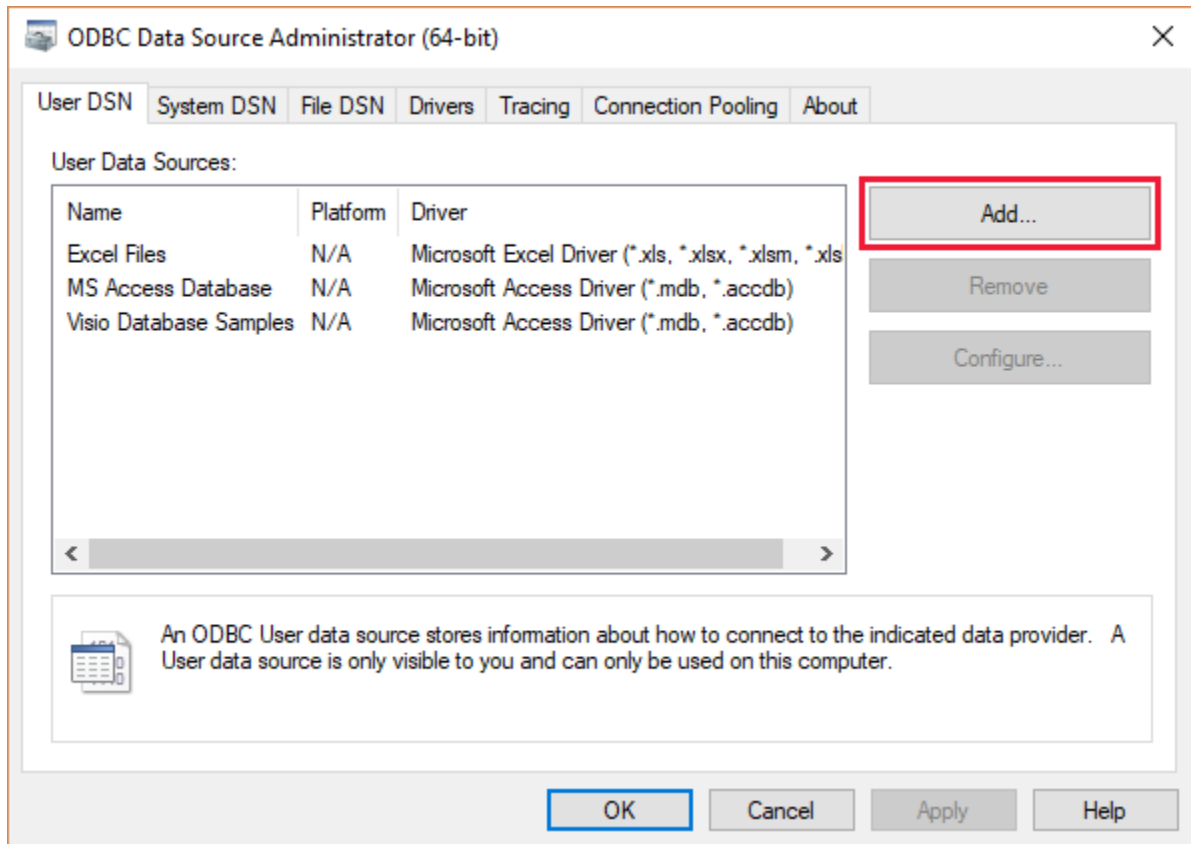
In order to automate an ADX in Tosca tool, we need the following details

1. ADX cluster name
2. Database name under ADX
3. ODBC data source
4. ODBC driver for SQL server
5. Tosca tool
  - a. Data Integrity Testing module

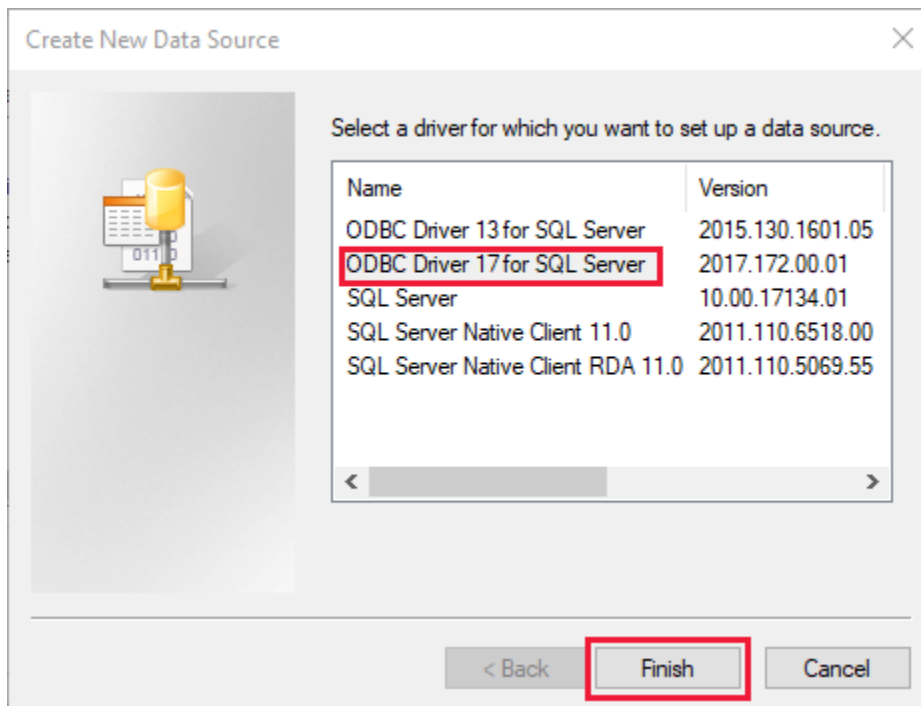
## Connect ADX using ODBC

1. Download ODBC driver for SQL server using  
<https://learn.microsoft.com/en-us/sql/connect/odbc/download-odbc-driver-for-sql-server?view=sql-server-ver16>
2. In Windows, search for *ODBC Data Sources*, and open the ODBC Data Sources desktop app.

3. Select Add.

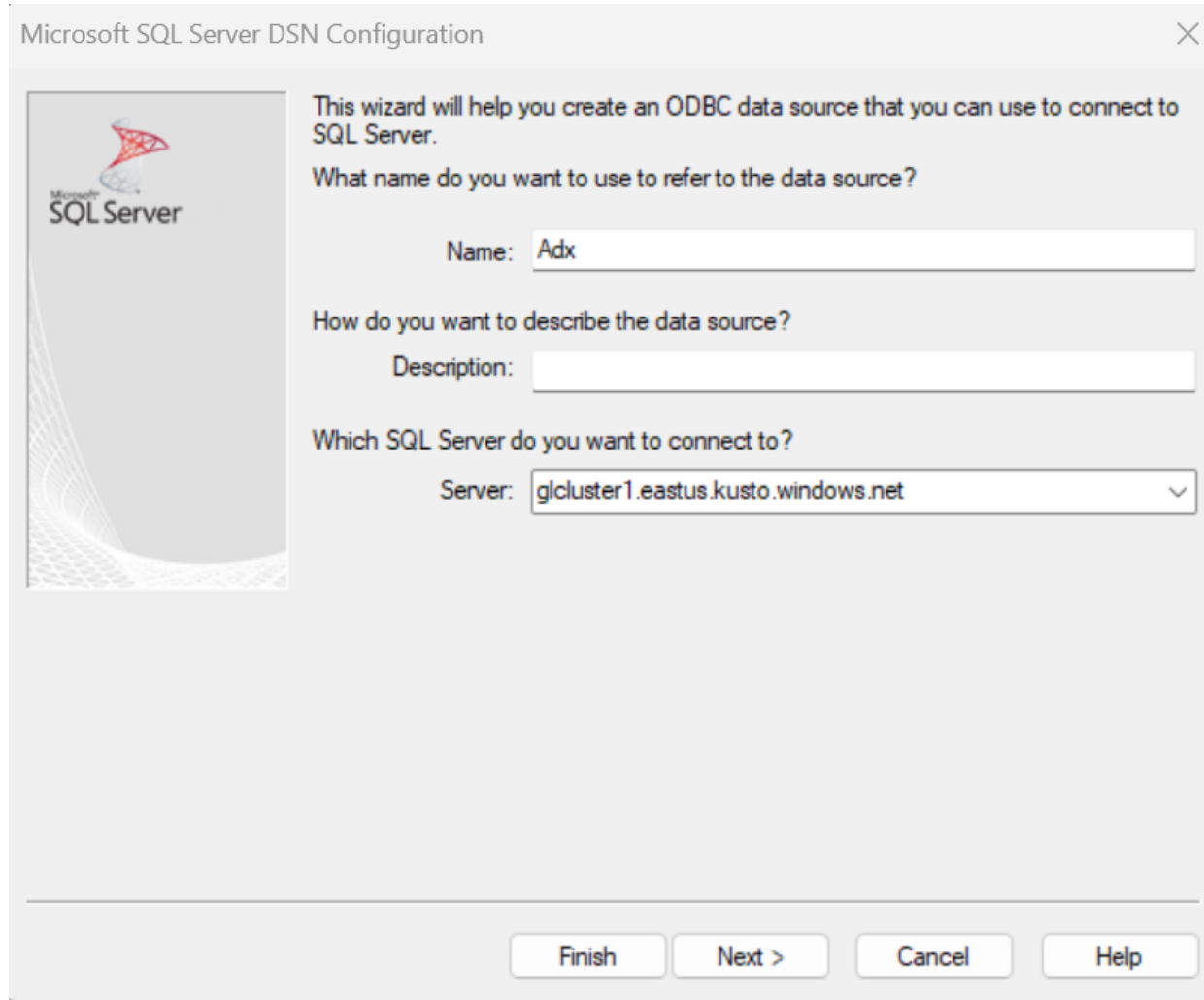


4. Select ODBC Driver 17 for SQL Server then Finish.



5. Enter a name and description for the connection and the cluster you want to connect to, then select Next. The cluster URL should be in the form *<ClusterName>.<Region>.kusto.windows.net*.

Example: glcluster1.eastus.kusto.windows.net



Microsoft SQL Server DSN Configuration

This wizard will help you create an ODBC data source that you can use to connect to SQL Server.

What name do you want to use to refer to the data source?

Name:

How do you want to describe the data source?

Description:


Which SQL Server do you want to connect to?

Server:

Finish Next > Cancel Help

6. Select the option below on the screen and provide username and password

Microsoft SQL Server DSN Configuration



How should SQL Server verify the authenticity of the login ID?

- ☐ With Integrated Windows authentication.  
SPN (Optional):
- ☐ With Azure Active Directory Integrated authentication.
- ☐ With SQL Server authentication using a login ID and password entered by the user.
- ☒ With Azure Active Directory Password authentication using a login ID and password entered by the user.
- ☐ With Azure Active Directory Interactive authentication using a login ID entered by the user.
- ☐ With Azure Managed Service Identity authentication.
- ☐ With Azure Service Principal authentication.


Login ID:

Password:

< Back    Next >    Cancel    Help

7. Select the database with the sample data then Next.

Microsoft SQL Server DSN Configuration



☒ Change the default database to:  
glpocadxdatabase

Mirror server:

SPN for mirror server (Optional):

☐ Attach database filename:

☒ Use ANSI quoted identifiers.  
☒ Use ANSI nulls, paddings and warnings.

Application intent:  
READWRITE

☐ Multi-subnet failover.  
☒ Transparent Network IP Resolution.  
☐ Column Encryption.

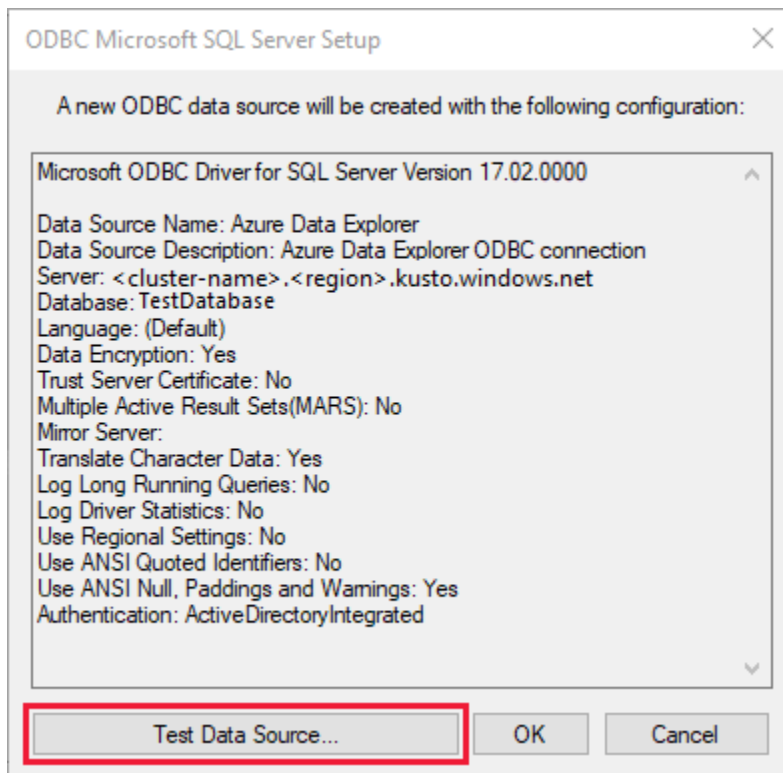
Enclave Attestation Info:   
Keystore Configuration...

☐ Use FMONLY metadata discovery.

< Back    Next >    Cancel    Help

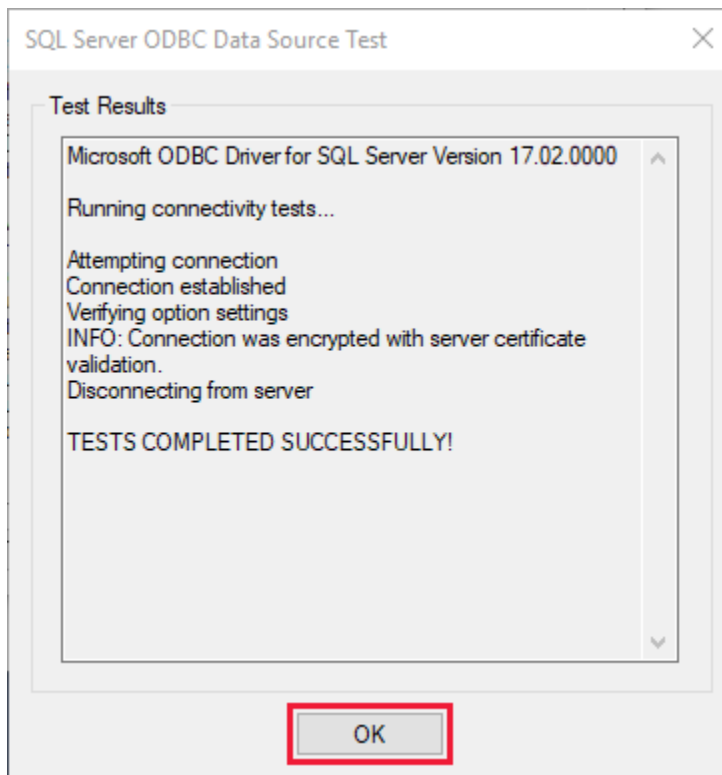
8. On the next screen, leave all options as defaults then select Finish.

9. Select Test Data Source.



10. Verify that the test succeeded then select OK. If the test didn't succeed, check the values that you specified in previous steps, and ensure you have sufficient

permissions to connect to the cluster.



## Connect ADX using TOSCA

1. Create new project in Tosca
2. Import Data Integrity module in that project

- ADX
      - Configurations
      - Data Integrity Testing
        - \_DI Templates**
        - Configurations\_import230327\_1103
        - Data Integrity Testing\_import230327\_1103
        - Execution\_import230327\_1103
        - Issues\_import230327\_1103
        - Modules\_import230327\_1103
        - Reporting\_import230327\_1103
        - Requirements\_import230327\_1103
        - TestCaseDesign\_import230327\_1103
        - TestCases\_import230327\_1103
        - TestPlanning\_import230327\_1103
      - Training Exercises
        - Execution
        - 0. Connection Prerequisites
        - 1. Pre-Screening
        - 2. Vital Checks
        - 3. Field Tests

3. Select data integrity module and click on manage connection

The screenshot shows the software interface with the 'DATA INTEGRITY' tab selected. The ribbon contains various tools, and the 'Manage connections' button is highlighted with a blue arrow. Below the ribbon, the 'ADX' project tree is visible, showing the 'Data Integrity Testing' folder expanded. To the right, a 'Details' pane shows the 'Test configuration' table.

| Name  | Value | ActionM... | DataT... |
|---|-------|------------|----------|
| Data Integrity Te...  |       |            |          |
| <ul style="list-style-type: none"> <li>_DI Templates               <ul style="list-style-type: none"> <li>Modules</li> <li>TestCase T...</li> </ul> </li> <li>Configuratio...</li> <li>Data Integrit...</li> <li>Execution_im...</li> <li>Issues_impor...</li> <li>Modules_im...</li> <li>Reporting_i...</li> <li>Requirement...</li> <li>TestCaseDesi...</li> <li>TestCases_im...</li> </ul> |       |            |          |



- Click on + sign on connections page and provide all the details as below on the screen.

Connection Wizard

**Connections**

Data Integrity - MS SQL

Adx Connection 1

Remove

**General**

Connection

Connection name  
Adx Connection 1

Connection type  
ODBC data source

ODBC Data Source  
Adx (64 Bit, User DSN)

Credentials

UserID  
milap.soni@globallogic.com

Password  
\*\*\*\*\*

Timeout

Connection [s]  
30

Command [s]

Test connection

**Tables and columns** Uniqueness Foreign keys

Data preview:

Reset SQL Validate

Please validate your metadata

Close Save

- Click on test connection and Validate button sequentially.

Manage Connections

Connection Wizard

**Connections**

Data Integrity - MS SQL

Adx Connection 1

**General**

Connection

Connection name  
Adx Connection 1

Connection type  
ODBC data source

ODBC Data Source  
Adx (64 Bit, User DSN)

Credentials

UserID  
milap.soni@globallogic.com

Password  
\*\*\*\*\*

Timeout

Connection [s]  
87

Connection valid

**Tables and columns** Uniqueness Foreign keys

Data preview:

| SCHEM | TABLE    | COLUM     | TYPE     | LENGTH | SCALE | NULLABLE |
|-------|----------|-----------|----------|--------|-------|----------|
| dbo   | glpocadx | id        | int      | 10     | 0     | Y        |
| dbo   | glpocadx | firstname | nvarchar | 0      | 0     | Y        |
| dbo   | glpocadx | lastname  | nvarchar | 0      | 0     | Y        |
| dbo   | glpocadx | graduate  | bit      | 1      | 0     | Y        |
| dbo   | glpocadx | age       | int      | 10     | 0     | Y        |

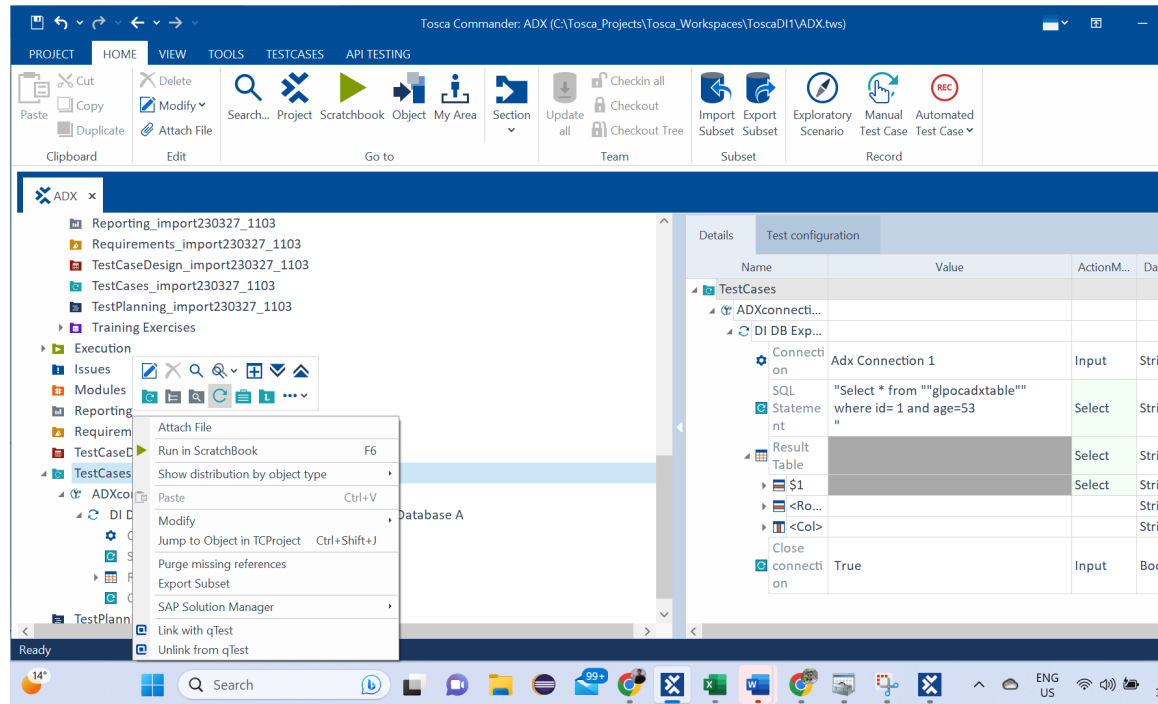
Reset SQL Validate

Validated!

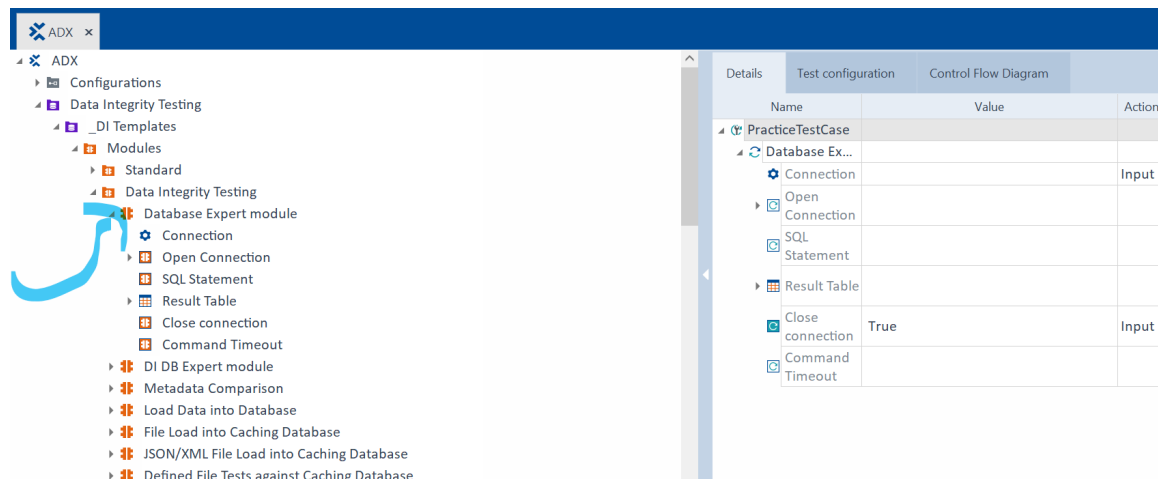
- Click on save button and then close this window

## Validate ADX data using TOSCA

1. Create New Test case under Testcases folder by selecting option from the menu



2. Click on the newly created test case and add below module in that test case by simple drag and drop



3. Provide all inputs as below and run the test case in scratchbook

| Details              |  |   |            |          |         |
|----------------------|--|---|------------|----------|---------|
| Control Flow Diagram |  | SQL Editor  |            |          |         |
| Name                 |  | Value   | ActionM... | DataT... | WorkS.. |
| DI DB Expert M...    |  |   |            |          |         |
| Connection           |  | Adx Connection 1  | Input      | String   |         |
| SQL Statement        |  | "Select * from ""glpocadxtable""<br>where id= 1 and age=53<br>" | Select     | String   |         |
| Result Table         |  |   | Select     | String   |         |
| \$1                  |  |   | Select     | String   |         |
| firstna...           |  | Rhonda  | Verify     | String   |         |
| lastna...            |  | Jones   | Verify     | String   |         |
| <Cell>               |  |   |            | String   |         |
| <Row>                |  |   |            | String   |         |
| <Col>                |  |   |            | String   |         |
| Close connection     |  | True  | Input      | Boole... |         |