



TIBCO® Data Virtualization

Microsoft Access Adapter Guide

Version 8.7.0 | October 2023

Contents

Contents	2
TDV Microsoft Access Adapter	3
Introduction	3
Datasource Configuration	3
Basic Tab	3
Advanced Tab	6
Data Type Mappings	17
Microsoft Access to TDV Data Types	17
Microsoft Access Cache Mapping	18
Microsoft Access Function Support	20
Microsoft Access Aggregate Function Support	20
Microsoft Access Analytic Aggregate Function Support	21
Microsoft Access Character Function Support	21
Microsoft Access Conditional Function Support	22
Microsoft Access Conversion Function Support	22
Microsoft Access Date Function Support	23
Microsoft Access Numeric Function Support	24
References	24
TIBCO Product Documentation and Support Services	26
How to Access TIBCO Documentation	26
Release Version Support	27
How to Contact TIBCO Support	27
How to Join TIBCO Community	28
Legal and Third-Party Notices	29

TDV Microsoft Access Adapter

Introduction

This section explains the various connection and configuration options of the datasource Microsoft Access as well as the capabilities:

[Datasource Configuration](#)

[Data Type Mappings](#)

[Microsoft Access Function Support](#)

[References](#)

Datasource Configuration

This section explains the connection properties that are defined while setting up a datasource.

Basic Tab

The following table and the sections below lists and explains the connection properties that are in the Basic Tab of the New Data Source Window.

Datasource Name	The name of the data source
Login/User Password	User name and password required to access the data source.
Pass-through Login	Flag to indicate whether pass-through login is enabled or not.

DSN	The Data Source Name. You might need to create a new User or System DSN using the ODBC Data Source Administrator utility (available with Windows Administrative Tools).
Character Set	Refer to the section Supported Character Encoding Types in the User Guide.

Datasource Name

Name or alias of the underlying data source. TDV Server uses this name to find and connect to the data source.

Data Type

string

Default Value

""

DSN

The Data Source Name. You might need to create a new User or System DSN using the ODBC Data Source Administrator utility (available with Windows Administrative Tools).

Data Type

String

Default Value

""

Login/User Password

User name and password required to access the data source.

Data Type

string

Default Value

“”

Remarks

When the data source is used as a target for cache tables or data ship, the user must also have permission to create tables, execute DDL, and perform other required tasks. Refer to the individual data source descriptions for details.

Pass-through Login

Flag to indicate whether pass-through login is enabled or not.

Data Type

string

Default Value

""

Character Set

Refer to the section Supported Character Encoding Types in the User Guide.

Data Type

string

Default Value

""

Remarks

Disabled (default)—This allows automated provisioning of a connection pool. Open connection threads can be used by authorized users after the validation query verifies connection status. If pass-through login is disabled, the Save Password check box is not available.

Enabled—A new connection to the data source uses the credentials supplied by the client when data is requested from that data source for the first time. Subsequent requests by the same user reuse the existing connection. When another user attempts to connect to a data source, a new connection is created.

See “Managing Security for TDV Resources” in the TDV Administration Guide for details.

Advanced Tab

The following table and the sections below lists and explains the connection properties that are in the Advanced Tab of the New Data Source Window.

Connection URL Pattern	A template for generating a URL to connect to the physical data source.
Connection URL String	The URL string generated from the connection URL pattern with the connection information you provide.
JDBC Connection Properties	Lets you specify property-value pairs to pass to the JDBC data source
Connection Pool Maximum Size	Maximum number of connections (both active and idle) allowed for the data source. When the maximum is reached, new requests must wait until a connection is available.
Connection Pool Minimum Size	Minimum number of connections in the pool even when the pool is inactive.
Connection Pool Idle Timeout	Number of seconds that a connection can remain idle without being dropped from the pool when there are more than the minimum number of connections.

Maximum Connection Lifetime	The number of minutes that a connection that was returned to the pool persists if there are more open connections than the minimum pool size.
Connection Validation Query	A data-source-specific query that the TDV query engine sends to see if the data source connection is valid. This query is executed every time a connection is checked out from the pool. Enter a query that returns quickly.
Execution Timeout	The number of seconds an execution query on the data source can run before being canceled.
Execute SELECTs Independently	Lets a SELECT statement be executed using a new connection from the connection pool, and committed immediately after completion. INSERT, UPDATE, and DELETE statements are executed using the same connection as part of the transaction.
Connection Check-out Procedure	A procedure that returns a valid SQL statement that can be used to initialize the connection.
Supports Star Schema	Check only if this data source supports very large predicates and very large cardinalities for star schema semijoins.
Max Source Side Cardinality for Semi Join	See the documentation for semijoins and the TDV Administration Guide for more information.
Min Target to Source Ratio for Semi Join	Sets the minimum target-to-source ratio of cardinality for semijoins. Refer to the TDV Administration Guide for more information.
Max Source Side of Semi Join To Use OR Syntax	See the documentation for semijoins and the TDV Administration Guide for more information.
Enable Native Data Loading	Lets the data source use its proprietary functionality to optimize performance.
Collation Sensitive	TDV does not use the SORT MERGE join algorithm if any

	data source involved in the join is marked Collation Sensitive.
Concurrent Request Limit	Works with the Massively Parallel Processing engine configuration parameters to control the amount of parallelization for the queries for a particular data source.

Connection URL Pattern

A template for generating a URL to connect to the physical data source.

Data Type

string

Default Value

jdbc:<DATA SOURCE>//<HOST>:<PORT>/<DATABASE_NAME>

Remarks

TDV does not validate modifications at the time of configuration. The data source adapter might not validate changes.

Connection URL String

The URL string generated from the connection URL pattern with the connection information you provide.

Data Type

string

Default Value

“”

Remarks

This string is used by the JDBC adapter to connect to the physical data source. This field cannot be edited. For details, see the section “Connecting through JDBC Adapters” in the *TDV Administration Guide*.

JDBC Connection Properties

Lets you specify property-value pairs to pass to the JDBC data source.

Data Type

string

Default Value

“”

Remarks

Click to add custom connection properties for any JDBC data source. Commonly used properties are populated with default values. Use the Add Argument button to specify other properties and values.

TDV does not validate property names. Some data source adapters ignore invalid property names or values; others return an error.

The driver properties specify connection timeout settings required by specific drivers. To avoid leaving connections open indefinitely, specify properties explicitly for your data source.

Connection Pool Maximum Size

Maximum number of connections (both active and idle) allowed for the data source. When the maximum is reached, new requests must wait until a connection is available.

Data Type

Numeric

Default Value

100

Remarks

If the maximum number of connections is in use when a request comes in (even with pass-through authentication), the new request is blocked and queued until a connection is available or the Connection Pool Idle Timeout is reached.

If no connection was made available within the specified timeout, a check is made for an available connection by the same user. If none is available, the least recently used connection for another user is dropped and a new connection is opened.

Studio reuses pooled connections if they continue to be valid after changes (such as connection name), but JDBC requests are forced to use new connections if any part of the data source connection configuration has changed.

Connection Pool Minimum Size

Minimum number of connections in the pool even when the pool is inactive.

Data Type

Numeric

Default Value

0

Remarks

When a connection has been idle, a validation query is used to verify whether an open connection is still valid just prior to submission of a request. If the connection is invalid, the connection is discarded and another is used.

Connection Pool Idle Timeout

Number of seconds that a connection can remain idle without being dropped from the pool when there are more than the minimum number of connections.

Data Type

Numeric

Default Value

30

Maximum Connection Lifetime

The number of minutes that a connection that was returned to the pool persists if there are more open connections than the minimum pool size.

Data Type

Numeric

Default Value

30

Remarks

The duration is calculated from connection creation. Default value is 60 minutes. Set a smaller value if the pool is likely to run out of connections. Be sure to add a validation query. Set a larger value if you want the connections to be held for a longer period. Set a value of 0 to keep connections alive indefinitely.

Connection Validation Query

A data-source-specific query that the TDV query engine sends to see if the data source connection is valid. This query is executed every time a connection is checked out from the pool. Enter a query that returns quickly.

Data Type

string

Default Value

""

Remarks

If this query returns a non-error result, the data source connection is considered valid. If this query fails, the connection is discarded and a new connection is checked out from the available pool.

No one SELECT statement works with all data sources. To verify that TDV is running and that it can connect to the data source, devise a query against a published table from that data source.

Enable Native Data Loading

Lets the data source use its proprietary functionality to optimize performance.

Data Type

Bool

Default Value

True

Remarks

See the User Guide, Chapter About Data Source Native Load Performance Options” for more details,.

Collation Sensitive

TDV does not use the SORT MERGE join algorithm if any data source involved in the join is marked Collation Sensitive.

Data Type

Bool

Default Value

False

Remarks

None

Concurrent Request Limit

Works with the Massively Parallel Processing engine configuration parameters to control the amount of parallelization for the queries for a particular data source.

Data Type

Numeric

Default Value

0

Remarks

None

Execution Timeout

The number of seconds an execution query on the data source can run before being canceled.

Data Type

Numeric

Default Value

0

Remarks

None

Execute SELECTs Independently

Lets a SELECT statement be executed using a new connection from the connection pool, and committed immediately after completion. INSERT and UPDATE statements are executed using the same connection as part of the transaction.

Data Type

Bool

Default Value

True

Remarks

None

Connection Check-out Procedure

A procedure that returns a valid SQL statement that can be used to initialize the connection.

Data Type

string

Default Value

""

Remarks

The signature of the initialization procedure should be:

```
(IN ds_name VARCHAR, OUT sqlText VARCHAR)
```

Give the full path to the procedure in the Connection Check-out Procedure box.

Connection Checkout Timeout

Time that a connection doing a checkout can remain idle without being dropped.

Data Type

Numeric

Default Value

45

Remarks

None

Max Source Side Cardinality for Semi Join

See the documentation for semijoins and the TDV Administration Guide for more information.

Data Type

Numeric

Default Value

""

Remarks

None

Max Source Side of Semi Join To Use OR Syntax

See the documentation for semijoins and the TDV Administration Guide for more information.

Data Type

Numeric

Default Value

2147483647

Remarks

None

Min Target to Source Ratio for Semi Join

Sets a minimum ratio to trigger use of semi join optimization.

Data Type

Numeric

Default Value

""

Remarks

None

Supports Star Schema

Check only if this data source supports very large predicates and very large cardinalities for star schema semijoins.

Data Type

Bool

Default Value

False

Remarks

Refer to the section Star Schema Semijoin in the User Guide, for more information.

Data Type Mappings

Microsoft Access to TDV Data Types

The following table shows the mapping from Microsoft Access data types to TDV data types.

Microsoft Access Data Type	TDV Data Type
BIT	BIT
BYTE	TINYINT
COUNTER	INTEGER
CURRENCY	NUMERIC
DATETIME	TIMESTAMP
DECIMAL	DECIMAL

Microsoft Access Data Type	TDV Data Type
DOUBLE	DOUBLE
FLOAT	DOUBLE
INTEGER	INTEGER
LONGBINARY	BLOB
LONGCHAR	CLOB
REAL	REAL
SMALLINT	SMALLINT
VARCHAR	VARCHAR

Microsoft Access Cache Mapping

Microsoft Access does not have a TIME data type.

The data type mappings for caches stored on Microsoft Access are as follows.

Data Type	Native Type
BIGINT	DECIMAL(20,0)
BINARY	LONGBINARY
BIT	BIT
BLOB	LONGBINARY
CHAR	VARCHAR(n)
CLOB	LONGCHAR

Data Type	Native Type
DATE	DATETIME
DECIMAL	DECIMAL(p,s)
DOUBLE	DOUBLE
FLOAT	FLOAT
INTEGER	INTEGER
INTERVAL DAY	VARCHAR(30)
INTERVAL DAY TO HOUR	VARCHAR(30)
INTERVAL DAY TO MINUTE	VARCHAR(30)
INTERVAL DAY TO SECOND	VARCHAR(30)
INTERVAL HOUR	VARCHAR(30)
INTERVAL HOUR TO MINUTE	VARCHAR(30)
INTERVAL HOUR TO SECOND	VARCHAR(30)
INTERVAL MINUTE	VARCHAR(30)
INTERVAL MINUTE TO SECOND	VARCHAR(30)
INTERVAL MONTH	VARCHAR(9)
INTERVAL SECOND	VARCHAR(30)
INTERVAL YEAR	VARCHAR(9)
INTERVAL YEAR TO MONTH	VARCHAR(12)
NUMERIC	DECIMAL(p,s)

Data Type	Native Type
REAL	FLOAT
SMALLINT	SMALLINT
TIMESTAMP	DATETIME
TINYINT	BYTE
VARBINARY	LONGBINARY
VARCHAR	VARCHAR(n)

Microsoft Access Function Support

TDV supports the following types of functions for Microsoft Access:

- [Microsoft Access Aggregate Function Support](#)
- [Microsoft Access Analytic Aggregate Function Support](#)
- [Microsoft Access Character Function Support](#)
- [Microsoft Access Conditional Function Support](#)
- [Microsoft Access Conversion Function Support](#)
- [Microsoft Access Date Function Support](#)
- [Microsoft Access Numeric Function Support](#)

Microsoft Access Aggregate Function Support

TDV supports the aggregate functions listed in the table below for Microsoft Access.

Microsoft Access does not support the DISTINCT keyword in aggregate functions.

Microsoft Access Aggregate Function	Notes
AVG	DISTINCT not supported.
COUNT	DISTINCT not supported.
MAX	DISTINCT has no effect.
MIN	DISTINCT has no effect.
SUM	DISTINCT not supported.

Microsoft Access Analytic Aggregate Function Support

TDV supports the analytic aggregate functions listed in the table below for Microsoft Access.

Microsoft Access Analytic Aggregate Function	Notes
STDDEV_POP	
STDDEV_SAMP	
VARIANCE_POP	
VARIANCE_SAMP	

Microsoft Access Character Function Support

TDV supports the character functions listed in the table below for Microsoft Access.

Microsoft Access Character Function	Notes
CONCAT	
LENGTH	
LOWER	
REPLACE	Even though Microsoft Access has this function, the driver does not recognize it.
RTRIM	
SPACE	
TRIM	
UPPER	

Microsoft Access Conditional Function Support

TDV supports the conditional function listed in the table below for Microsoft Access.

Function	Notes
NULLIF	

Microsoft Access Conversion Function Support

TDV supports the conversion functions listed in the table below for Microsoft Access.

Microsoft Access Conversion Function	Notes
CAST	
CDATE	NULL values can cause this function to fail.
CDBL	NULL values can cause this function to fail.
CSTR	NULL values can cause this function to fail.
TO_CHAR	
TO_DATE	
TO_NUMBER	
TO_TIMESTAMP	

Microsoft Access Date Function Support

TDV supports the date functions listed in the table below for Microsoft Access.

Microsoft Access Date Function	Notes
CURRENT_DATE	
CURRENT_TIME	
CURRENT_TIMESTAMP	
DAY	
MONTH	
YEAR	

Microsoft Access Numeric Function Support

TDV supports the numeric functions listed in the table below for Microsoft Access.

Microsoft Access Numeric Function	Notes
ABS	
ACOS	Not supported.
ASIN	Not supported.
ATAN	
COS	
COT	
EXP	
LOG	NULL values can cause this function to fail.
ROUND	
SIN	
TAN	

References

Refer to the following Guides for further details about the capabilities of the data source:

Capabilities	Section
Query Engine	User Guide, Chapter <i>TDV Query Engine</i>

Capabilities	Section
<i>Optimizations</i>	
Data ship	User Guide, Chapter <i>Data Ship Performance Optimization</i>
Caching	User Guide, Chapter <i>TDV Caching</i>
Performance Optimization	User Guide, Chapter <i>Performance Tuning</i>
TDV Massively Parallel Processing Engine	User Guide, Chapter <i>Configuring the TDV MPP Engine</i>
Kerberos	Administration Guide Chapter <i>Configuring Kerberos</i>

TIBCO Product Documentation and Support Services

For information about this product, you can read the documentation, contact TIBCO Support, and join the TIBCO Community.

How to Access TIBCO Documentation

Documentation for TIBCO products is available on the [TIBCO Product Documentation](#) website, mainly in HTML and PDF formats.

The [TIBCO Product Documentation](#) website is updated frequently and is more current than any other documentation included with the product.

Product-Specific Documentation

The following documentation for this product is available on the [TIBCO® Data Virtualization](#) page.

- **Users**
 - TDV Getting Started Guide
 - TDV User Guide
 - TDV Web UI User Guide
 - TDV Client Interfaces Guide
 - TDV Tutorial Guide
 - TDV Northbay Example
- **Administration**
 - TDV Installation and Upgrade Guide
 - TDV Administration Guide
 - TDV Active Cluster Guide
 - TDV Security Features Guide
- **Data Sources**

TDV Adapter Guides

TDV Data Source Toolkit Guide (Formerly Extensibility Guide)

- **References**

TDV Reference Guide

TDV Application Programming Interface Guide

- **Other**

TDV Business Directory Guide

TDV Discovery Guide

- *TIBCO TDV and Business Directory Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

Release Version Support

TDV 8.5 is designated as a Long Term Support (LTS) version. Some release versions of TIBCO® Data Virtualization products are selected to be long-term support (LTS) versions. Defect corrections will typically be delivered in a new release version and as hotfixes or service packs to one or more LTS versions. See also

https://docs.tibco.com/pub/tdv/general/LTS/tdv_LTS_releases.htm.

How to Contact TIBCO Support

Get an overview of [TIBCO Support](#). You can contact TIBCO Support in the following ways:

- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the [TIBCO Support](#) website.
- For creating a Support case, you must have a valid maintenance or support contract with TIBCO. You also need a user name and password to log in to [TIBCO Support](#) website. If you do not have a user name, you can request one by clicking **Register** on the website.

How to Join TIBCO Community

TIBCO Community is the official channel for TIBCO customers, partners, and employee subject matter experts to share and access their collective experience. TIBCO Community offers access to Q&A forums, product wikis, and best practices. It also offers access to extensions, adapters, solution accelerators, and tools that extend and enable customers to gain full value from TIBCO products. In addition, users can submit and vote on feature requests from within the [TIBCO Ideas Portal](#). For a free registration, visit [TIBCO Community](#).

Legal and Third-Party Notices

SOME TIBCO SOFTWARE EMBEDS OR BUNDLES OTHER TIBCO SOFTWARE. USE OF SUCH EMBEDDED OR BUNDLED TIBCO SOFTWARE IS SOLELY TO ENABLE THE FUNCTIONALITY (OR PROVIDE LIMITED ADD-ON FUNCTIONALITY) OF THE LICENSED TIBCO SOFTWARE. THE EMBEDDED OR BUNDLED SOFTWARE IS NOT LICENSED TO BE USED OR ACCESSED BY ANY OTHER TIBCO SOFTWARE OR FOR ANY OTHER PURPOSE.

USE OF TIBCO SOFTWARE AND THIS DOCUMENT IS SUBJECT TO THE TERMS AND CONDITIONS OF A LICENSE AGREEMENT FOUND IN EITHER A SEPARATELY EXECUTED SOFTWARE LICENSE AGREEMENT, OR, IF THERE IS NO SUCH SEPARATE AGREEMENT, THE CLICKWRAP END USER LICENSE AGREEMENT WHICH IS DISPLAYED DURING DOWNLOAD OR INSTALLATION OF THE SOFTWARE (AND WHICH IS DUPLICATED IN THE LICENSE FILE) OR IF THERE IS NO SUCH SOFTWARE LICENSE AGREEMENT OR CLICKWRAP END USER LICENSE AGREEMENT, THE LICENSE(S) LOCATED IN THE “LICENSE” FILE(S) OF THE SOFTWARE. USE OF THIS DOCUMENT IS SUBJECT TO THOSE TERMS AND CONDITIONS, AND YOUR USE HEREOF SHALL CONSTITUTE ACCEPTANCE OF AND AN AGREEMENT TO BE BOUND BY THE SAME.

This document is subject to U.S. and international copyright laws and treaties. No part of this document may be reproduced in any form without the written authorization of TIBCO Software Inc.

TIBCO, TIBCO logo, Two-Second Advantage, TIBCO Spotfire, TIBCO ActiveSpaces, TIBCO Spotfire Developer, TIBCO EMS, TIBCO Spotfire Automation Services, TIBCO Enterprise Runtime for R, TIBCO Spotfire Server, TIBCO Spotfire Web Player, TIBCO Spotfire Statistics Services, S-PLUS, and TIBCO Spotfire S+ are either registered trademarks or trademarks of TIBCO Software Inc. in the United States and/or other countries.

Java and all Java based trademarks and logos are trademarks or registered trademarks of Oracle Corporation and/or its affiliates.

All other product and company names and marks mentioned in this document are the property of their respective owners and are mentioned for identification purposes only.

This software may be available on multiple operating systems. However, not all operating system platforms for a specific software version are released at the same time. See the readme file for the availability of this software version on a specific operating system platform.

THIS DOCUMENT IS PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

THIS DOCUMENT COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE PERIODICALLY ADDED TO THE INFORMATION HEREIN; THESE CHANGES WILL BE INCORPORATED IN NEW EDITIONS OF THIS DOCUMENT. TIBCO SOFTWARE INC. MAY MAKE IMPROVEMENTS AND/OR CHANGES IN THE PRODUCT(S) AND/OR THE PROGRAM(S) DESCRIBED IN THIS DOCUMENT AT ANY TIME.

THE CONTENTS OF THIS DOCUMENT MAY BE MODIFIED AND/OR QUALIFIED, DIRECTLY OR INDIRECTLY, BY OTHER DOCUMENTATION WHICH ACCOMPANIES THIS SOFTWARE, INCLUDING BUT NOT LIMITED TO ANY RELEASE NOTES AND "READ ME" FILES.

This and other products of TIBCO Software Inc. may be covered by registered patents. Please refer to TIBCO's Virtual Patent Marking document (<https://www.tibco.com/patents>) for details.

Copyright © 2002-2023 Cloud Software Group, Inc All Rights Reserved.