



TIBCO® Data Virtualization

Tibco Streaming Adapter Guide

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TIBCO Streaming Adapter

Introduction

This section explains the various connection and configuration options of the datasource TIBCO Streaming as well as the capabilities:

[Datasource Configuration](#)

[TIBCO Streaming Data Source Limitations](#)

[Data Type Mappings](#)

[TIBCO Streaming 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.

Data source Name	The name of the data source.
Connection URL Pattern	A template for generating a URL to connect to the physical data source.

Complete Connection URL String	A URL to connect to the physical data source.
Login	User name and password required to access the data source. 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.
Authentication Type	The type of authentication used by the data source.

Data source Name

The name of the data source.

Data Type

string

Default Value

""

Connection URL Pattern

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

Data Type

String

Default Value

""

Remarks

None

Complete Connection URL String

A URL to connect to the physical data source.

Data Type

String

Default Value

“”

Remarks

TDV does not validate modifications. The data source adapter might not validate changes. Refer to the datasource specific connection properties section for details.

Login

The login name used to authenticate the data source connection,

Data Type

string

Default Value

“”

Remarks

None

Password

The password used to authenticate the data source connection,

Data Type

string

Default Value

""

Remarks

Pass-through Login

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

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.

Authentication Type

Indicates the type of authentication used by the data source.

Data Type

String

Default Value

BASIC

Remarks

Following are the available Authentication types:

BASIC

KERBEROS

NTLM

NEGOTIATE

See the *TDV Administration Guide* for more information about Kerberos authentication.

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.

Datasource is enabled

Transaction Isolation

The degree to which transactions are isolated from data modifications made by other transactions.

Connection Attributes

Lets you specify property-value pairs to pass to the 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 Checkout Procedure	A procedure that returns a valid SQL statement that can be used to initialize the connection.
Connection Checkout Timeout	Time that a connection doing a checkout can remain idle without being dropped.
Datasource Driver doesn't Support Query Timeout	Select or clear the check box. If cleared, specify an Execution timeout value in seconds
Execution Timeout	The number of seconds an execution query on the data source can run before being canceled.
Execute SELECTs in separate transactions from INSERTs and UPDATES	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.
String Comparison Parameters	Multiple Parameters that can be set to control String manipulation by the data source.

Datasource is enabled

Data Type

Bool

Default Value

True

Remarks

None

Transaction Isolation

The degree to which transactions are isolated from data modifications made by other transactions.

Data Type

string

Default Value

NONE

Remarks

Valid values are:

- Read Uncommitted—Dirty reads, nonrepeatable reads, and phantom reads can occur.
- Read Committed—Nonrepeatable reads and phantom reads can occur.
- Repeatable Read—Only phantom reads can occur.
- Serializable—Dirty reads, nonrepeatable reads, and phantom reads are prevented.
- None

Connection Attributes

Lets you specify property-value pairs to pass to the data source. For example:

```
bootPassword=key attribute
```

```
collation=collation attribute
```

```
dataEncryption=true attribute
```

```
drop=true attribute
```

```
encryptionKey=key attribute
```

```
encryptionProvider=providerName attribute
```

```
encryptionAlgorithm=algorithm attribute
```

```
failover=true attribute
```

Data Type

String

Default Value

“”

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.

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 in separate transactions from INSERTs and UPDATEs

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 Checkout 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

Datasource Driver doesn't Support Query Timeout

Select or clear the check box. If cleared, specify an Execution timeout value in seconds

Data Type

Bool

Default Value

True

Remarks

None

String Comparison Parameters

Following flags can be used to manage the rules of the string comparison.

Case sensitivity mismatch between TDV
and data source can be ignored

Check to ignore case mismatches.

Ignore trailing space mismatches between

Check to ignore trailing spaces.

TDV and the data source

Honor trailing spaces for string comparison

Check to honor trailing spaces.

Case insensitive string comparison

Ignore case.

TIBCO Streaming Data Source Limitations

This section lists the general limitations related to TIBCO Streaming.

- Keywords JOIN and DISTINCT are not supported
- Subqueries are not supported and will not be pushed down.
- TIBCO Streaming does not support table alias, (irrespective of whether the keyword AS is used or not). Do not use table alias in a TDV query. However, column aliases are supported
- In order to use the ORDER BY clause in your query, you must set the parameter “Result Set Size Limit For TIBCO Streaming” to a value greater than 0 in the Administration > Configuration > Data Sources > TIBCO Streaming Window. You can also specify a FETCH clause in the view to override the default result set size limit.
- When using a GROUP BY clause, calculated columns are not supported in a query.

Data Type Mappings

TIBCO Streaming to TDV Data Types

Mapped TIBCO Streaming data types have the following restrictions:

- Maximum BINARY length is 255.
- Maximum VARBINARY length is 4000.

- Maximim BLOB length is 4294967296
- Maximum CHAR length is 255.
- Maximum VARCHAR length is 4000.
- Maximum CLOB length is 4294967296

The following table shows the mapping from TIBCO Streaming data types to TDV data types.

TIBCO Streaming Data Type	TDV Data Type
BLOB	BLOB
BOOL	BOOLEAN
DOUBLE	DOUBLE
INT	INTEGER
LONG	BIGINT
STRING	VARCHAR
TIMESTAMP	TIMESTAMP

TIBCO Streaming Cache Mapping

The data type mappings for caches stored on TIBCO Streaming are as follows.

Data Type	Native Type
BIGINT	LONG
BINARY	BLOB
BIT	INT

Data Type	Native Type
BLOB	BLOB
BOOLEAN	BOOL
CHAR	STRING
CLOB	BLOB
DATE	TIMESTAMP
DECIMAL	DOUBLE
DOUBLE	DOUBLE
FLOAT	DOUBLE
INTEGER	INT
INTERVAL_DAY	STRING
INTERVAL_DAY_TO_HOUR	STRING
INTERVAL_DAY_TO_MINUTE	STRING
INTERVAL_DAY_TO_SECOND	STRING
INTERVAL_HOUR	STRING
INTERVAL_HOUR_TO_MINUTE	STRING
INTERVAL_HOUR_TO_SECOND	STRING
INTERVAL_MINUTE	STRING
INTERVAL_MINUTE_TO_SECOND	STRING
INTERVAL_SECOND	STRING

Data Type	Native Type
INTERVAL_YEAR	STRING
INTERVAL_YEAR_TO_MONTH	STRING
INTERVAL_MONTH	STRING
NUMERIC	DOUBLE
REAL	DOUBLE
SMALLINT	INT
TIME	TIMESTAMP
TIMESTAMP	TIMESTAMP
TINYINT	INT
VARBINARY	BLOB
VARCHAR	STRING
XML	STRING

TIBCO Streaming Function Support

TDV supports the following types of functions for TIBCO Streaming:

- [TIBCO Streaming Numeric Function Support](#)
- [TIBCO Streaming Character Function Support](#)
- [TIBCO Streaming Conversion Function Support](#)
- [TIBCO Streaming Date Function Support](#)
- [TIBCO Streaming Aggregate Function Support](#)
- [TIBCO Streaming Conditional Function Support](#)

- [TIBCO Streaming Binary Function Support](#)
- [TIBCO Streaming Push Only Function Support](#)
- [TIBCO Streaming SparkSQL Function Support](#)

TIBCO Streaming Aggregate Function Support

TDV supports the aggregate functions listed in the table below for TIBCO Streaming.

TIBCO Streaming Aggregate Function	Notes
AVG	
COUNT	
MAX	
MAX_DISTINCT	
MIN	
MIN_DISTINCT	
SUM	
SUM_DISTINCT	
COVAR_SAMP	
REGR_AVGX	
REGR_AVGY	
REGR_AVGY	
REGR_COUNT	

TIBCO Streaming Aggregate Function	Notes
REGR_SLOPE	
REGR_INTERCEPT	
REGR_SXX	
REGR_SXY	
REGR_SYY	

TIBCO Streaming Binary Function Support

TDV supports the binary functions listed in the table below for TIBCO Streaming.

TIBCO Streaming Binary Function	Notes
INT1AND, INT2AND, INT4AND, INT8AND	
INT1NOT, INT2NOT, INT4NOT, INT8NOT	
INT1OR, INT2OR, INT4OR, INT8OR	
INT1XOR, INT2XOR, INT4XOR, INT8XOR	

TIBCO Streaming Character Function Support

TDV supports the character functions listed in the table below for TIBCO Streaming.

TIBCO Streaming Character Function	Notes
BTRIM	
CHARACTER_LENGTH	
CONCAT	
FIND_IN_SET	
INITCAP	
INSTR	
ISNULL	
LOWER	
LPAD	
LTRIM	
POSITION	
REPLACE	
RPAD	
RTRIM	
SPACE	
SUBSTR	
SUBSTRING	
TRANSLATE	

TIBCO Streaming Character Function	Notes
TRIM	
TRIMBOTH	
TRIMLEADING	
TRIMTRAILING	
UPPER	
LENGTH	
LOCATE	
REPEAT	
STRPOS	
OCTET_LENGTH	

TIBCO Streaming Conversion Function Support

TDV supports the conversion functions listed in the table below for TIBCO Streaming.

TIBCO Streaming Conversion Function	Notes
CAST	
TO_DATE	
TO_NUMBER	
TO_TIMESTAMP	

TIBCO Streaming Conversion Function	Notes
TO_TIMESTAMP_TZ	
PARSE_TIME	

TIBCO Streaming Conditional Function Support

TDV supports the conditional functions listed in the table below for TIBCO Streaming.

TIBCO Streaming Conditional Function	Notes
COALESCE	
ISNULL	
NULLIF	
NVL	
IFNULL	

TIBCO Streaming Date Function Support

TDV supports the date functions listed in the table below for TIBCO Streaming.

TIBCO Streaming Date Function	Notes
CLOCK_TIMESTAMP	
CURRENT_DATE	

TIBCO Streaming Date Function	Notes
CURRENT_TIMESTAMP	
DATEPART	
DAY	
DAYNAME	
DAYOFMONTH	
DAYOFYEAR	
DBTIMEZONE	
EXTRACT_DAY	
EXTRACT_HOUR	
EXTRACT_MINUTE	
EXTRACT_MONTH	
EXTRACT_SECOND	
EXTRACT_YEAR	
FROM_UNIXTIME	
COVAR_SAMP	
MINUTE	
MONTH	
MONTHNAME	

TIBCO Streaming Date Function	Notes
NEXT_DAY	
NOW	
NEXT_DAY	
QUARTER	
SECOND	
TIMEOFDAY	
YEAR	
FORMAT_DATE	
HOUR	

TIBCO Streaming Numeric Function Support

TDV supports the numeric functions listed in the table below for TIBCO Streaming

TIBCO Streaming Numeric Function	Notes
ABS	
ACOS	
APPROX_COUNT_ DISTINCT	

TIBCO Streaming Numeric Function	Notes
ASIN	
ATAN	
CBRT	
CORR	
COS	
COSH	
CEIL	
CEILING	
COVAR_SAMP	
EXP	
FACTORIAL	
FLOOR	
MOD	
POWER	
LOG	
LOG10	
LSHIFT	
RSHIFT	

TIBCO Streaming Numeric Function	Notes
RADIANS	
RANDOM	
SIGN	
SIN	
SINH	
SQRT	
TAN	
TANH	
PERCENTILE	
PERCENTILE_APPROX	

TIBCO Streaming Push Only Function Support

TIBCO Streaming Push Only Function	Notes
GET_JSON_OBJECT	
JSONPATH	
REGEXP	
REGEXP_REPLACE	
RLIKE	

TDV supports the push only functions listed below for TIBCO Streaming.

TIBCO Streaming SparkSQL Function Support

TDV supports the SparkSQL functions listed in the table below for TIBCO Streaming.

TIBCO Streaming SparkSQL Function	Notes
FACTORIAL	
FLOOR	
LOCATE	
REGEXP_REPLACE	
TRUNC	
UNIX_TIMESTAMP	

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 Optimizations</i>
Data ship	User Guide, Chapter <i>Data Ship Performance Optimization</i>
Caching	User Guide, Chapter <i>TDV Caching</i>

Capabilities	Section
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.

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.

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 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](#).

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