



TIBCO® Data Virtualization

Siebel Adapter Guide

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Using Siebel with TDV

This topic describes how to use a Siebel data source.

You must have a Siebel account with API-level access.

Siebel has two-level hierarchy of resources:

- Business Objects—are represented in TDV as schemas.
- Business Components—are represented as database tables.

When you introspect Business Components, you automatically get these system fields: Created, Created By, Updated, and Updated By.

The Business Services folder, contains Business Services, represented as schemas, which contain Business Service Methods, represented as database procedures.

- [Siebel Limitations](#)
- [Siebel Basic Tab](#)
- [Working with Siebel Connect Strings](#)
- [SQL Support Reference for Siebel](#)
- [Siebel Multi-Valued Groups](#)

Siebel Limitations

Application Views for Siebel

The organization of the views and folders follows the hierarchy of the Siebel Repository: Business Objects and Business Components. Each view uses one or more Business Components from the Repository to create a view containing relevant business information. Application View field names are the same as the field names of the Business Components.

Filter Data from Application Views

You can use application views to filter Siebel data either with Siebel filters or with TDV filtering, depending on the view and the capabilities of Siebel. Siebel supports simple filters in a WHERE clause.

Siebel Basic Tab

Input Field	Description
Server Name	Name of the computer on which the Siebel Server is installed.
Broker Port	The port that the Siebel Server listens on: 2321 by default for Siebel versions 7.7 and higher, 2320 by default for Siebel versions prior to 7.7.
Siebel Enterprise Name	The name of the Siebel Enterprise Server. The Siebel Enterprise Server is a name for a logical grouping of Siebel Servers that supports a group of Siebel users. The default name is siebel.
Application Object Manager	The name of the Siebel Application Object Manager (AOM). The AOMs available depend on the base application and the language. AOMs can be activated through the Siebel Server Manager. Example AOM: SCCObjMgr.
Language	The language used by the Siebel instance. The default is EN for English.
Username and Password	Valid user name and password for Siebel.
Save Password	This option works in combination with the Pass-through Login option. By default, this option is disabled and cannot be edited. It becomes editable when you select the Pass-through Login option.

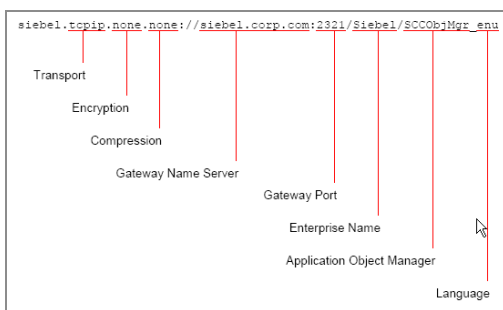
Input Field	Description
	<p>If you accept the default, the password is saved and the Pass-through Login option remains disabled. See the TDV User Guide for information on pass-through login.</p> <p>Use the query optimizer for statistics gathering.</p>
Pass-through Login	<p>Works in combination with the Save Password option. By default, this mode is Disabled (“non-pass-through mode”) and the password is saved. Refer to the details given for the Save Password option. If you select Enabled (“pass-through mode”), the Save Password option becomes editable.</p> <p>The operations you can and cannot perform in pass-through mode depend on whether Save Password is checked.</p>

Save password?	Operations you can perform	Operations you cannot perform
Yes	Introspection. You do not have to resupply the password.	N/A
No	<ul style="list-style-type: none"> Query/update/insert/delete operations. You need to resupply the original login credentials for the current session. Reintrospection, Add/Remove data source resources. You will be prompted to resupply the same password that was used when the data source was originally introspected. 	<ul style="list-style-type: none"> Schedule reintrospection. Statistics gathering, using the query optimizer.

Working with Siebel Connect Strings

A Siebel connect string contains most of the parameters necessary to communicate with Siebel. To use a Siebel connect string with TDV, you need to specify individual parameter values to put into the corresponding input fields of a Siebel data source. An appropriate connect string may already be available in a file named `eapps.cfg` on your Siebel Web server.

The connect string contains the parameters and their relationship to Siebel data source fields. The following connect string applies to Siebel versions 7.7 and later. Earlier Siebel versions include the Siebel server name at the end.



SQL Support Reference for Siebel

This topic describes SQL support for Siebel, and for Siebel Multi-Valued Groups, which manage data relationships.

- [Understanding Siebel Resources](#)
- [Siebel Multi-Valued Groups](#)

Understanding Siebel Resources

TDV integrates with Siebel at the level of data objects and services. In Siebel, objects and services are called Business Components and Business Services, respectively. The Siebel Adapter enables Siebel Business Components and Business Services to be used as fully SQL-92-compliant relational data sources.

Topic	Description of what the topic covers
Siebel Resources within TDV	describes the list of Business Components and Business Services, allows the user to select them and translates the Siebel metadata into relational tables that TDV understands.
Supported Capabilities	describes how a SQL statement is divided among Siebel TDV and other data sources that might be referenced in the query.
Joins and Query Performance	describes how joins can affect query performance, and discusses options for improving performance.
Timestamp Operations	describes how some SQL queries using time stamp operations might need to be modified for use with TDV.

Siebel Resources within TDV

The following sections describe how Siebel resources work within TDV:

- [Resource Hierarchy](#)
- [Metadata Mapping](#)

Resource Hierarchy

The Siebel Adapter provides Siebel Business Components and Business Services as resources in TDV. Business Components are introspected by starting with the folder named “Business Objects” and drilling down into a two-level hierarchy of folders. The first level is the Business Object, which is a grouping of Business Components. If you are not sure which Business Object contains the Business Component you need, you can use Siebel Tools to find it.

Introspection automatically includes these system fields for Business Components: Created, Created By, Updated, and Updated By.

Business Services are introspected starting with the folder named “Business Services” and drilling down into a two-level hierarchy of folders. The first level is Business Service, which contains a collection of Business Service Methods.

Metadata Mapping

When introspecting Business Components, each field of the Business Component becomes a column in TDV with the same name. When introspecting Business Services, each parameter of the Business Service Method becomes a parameter in the TDV procedure with the same name. In both cases, data types in Siebel are mapped to TDV SQL-based types. The following table lists the Siebel data types, whether they are supported in TDV, and their corresponding TDV type.

Siebel Data Type Name	Supported?	TDV Data Type
TEXT, ID, PHONE, NOTE, BOOL	Yes	VARCHAR. If length is undefined in Siebel, it defaults to 255.
INTEGER	Yes	BIGINT
NUMBER, CURRENCY	Yes	DOUBLE
DATE	Yes	DATE
TIME	Yes	TIME
UTC DATETIME	Yes	TIMESTAMP
Link Specification	Yes	Inherits type of linked business component.
Multi-valued Field	Yes	Inherits type of associated business component.
String	Yes	VARCHAR(65536)
Integration Object	Yes	XML

Some field definitions, particularly link specifications, contain no type information in Siebel. TDV considers untyped fields to be VARCHAR(255). The data types of multi-valued and link specification fields are obtained from their associated Business Components, and MULTI_VALUED or LINK_SPECIFICATION is appended to native type names.

Supported Capabilities

Capabilities characterize the features and limitations of data sources. For example, an Oracle data source can execute subqueries, while Siebel cannot. Capabilities are consulted when a query is processed so that data sources receive only the query processing work they support; otherwise, TDV performs the work itself.

The following table lists commonly used capabilities and whether they are supported in queries against Siebel Business Components. Pushed indicates whether query processing can be passed to Siebel. For efficient queries, minimize use of non-push capabilities.

Capability	Supported?	Pushed?	Notes
CASE	Yes	No	
DELETE	Yes	Yes	Special behavior for multi-valued groups.
DISTINCT	Yes	No	
Filter	Yes	Yes	
Filter - LIKE	Yes	Yes	
Filter – BETWEEN	Yes	Yes	
Filter – IN	Yes	Yes	
Functions – Aggregate	Yes	No	
Functions – CAST	Yes	Yes	
Functions – Others	Yes	No	
GROUP BY	Yes	No	
INSERT	Yes	Yes	Special behavior for multi-valued groups.

Capability	Supported?	Pushed?	Notes
Join	Yes	No	
ORDER BY	Yes	Yes	
Subquery	Yes	No	
Transactions	No	No	
UNION	Yes	No	
UPDATE	Yes	Yes	Special behavior for multi-valued groups.

Joins and Query Performance

Joins cannot be pushed to Siebel. Executing joins in TDV can degrade performance, because a table scan would be required to fetch every row of the joined tables. The technology that TDV uses to connect with Siebel is not optimized for large data sets, so table scans should be avoided. It is better to use filters on queries to Siebel Business Components.

A semijoin is the best way to reduce the number of Siebel rows retrieved and processed. To force a semijoin to occur in a query, add the option immediately before the table to be joined. For example:

```
SELECT * FROM A INNER {OPTION SEMIJOIN} JOIN B ON A.K = B.K
```

Values of A.K are collected and passed in a query to B as the filter:

```
SELECT * FROM A
```

```
SELECT * FROM B WHERE K IN ({values_of_X.K_from_previous_queryy})
```

If A has many rows, queries against B can be lengthy. TDV automatically partitions them and reassembles the results into a unified set.

Put the table that returns the larger number of rows on the right side of the join whenever possible. When running a new query for the first time, activate the Execution Plan tab in

Studio and click Execute and Show Statistics. Examine each node's row count and query after processing has begun to make sure filters are pushed down to Siebel. This is a good way to see the mechanics of a semijoin in action. If the interaction between TDV and Siebel is still unclear and performance is poor, enable debug logging for the adapter as described in the *TDV Installation and Upgrade Guide*.

Timestamp Operations

Some Siebel time stamp operations might need to be modified due to TDV's more stringent time stamp requirements. For example, you might have this Siebel time stamp operation:

```
WHERE Service_Request."Opened Date" = date '2015-11-02'
```

You must change this to:

```
WHERE Service_Request."Opened Date" BETWEEN date '2015-11-02' AND date  
'2015-11-03'
```

Siebel Multi-Valued Groups

To manage one-to-many or many-to-many relationships, Siebel Business Components use Multi-Valued Groups (MVG). Multiple records may match a given field or set of fields in a record. An example is a Contact with multiple Addresses. Siebel uses MVGs to manage the link between the Contact and Addresses. Operations on Siebel MVGs are inferred automatically from SQL statements and Siebel metadata. Specific behavior is based on the type of SQL operation executed.

- [Filter on MVG Fields](#)
- [SELECT from 1:n \(one-to-many\) MVG Fields](#)
- [SELECT from m:n \(many-to-many\) MVG Fields](#)
- [INSERT with VALUES for MVG Fields](#)
- [UPDATE with SET on MVG Fields](#)
- [DELETE on MVG Fields](#)

Filter on MVG Fields

TDV uses a Siebel EXISTS clause to expand queries with WHERE clauses that reference an MVG field. For example, take the following TDV SQL query:

```
SELECT * FROM /Siebel/Contact/Contact
```

```
WHERE "Related Contact UId" = '1-16N'
```

This would be provided to Siebel as the following search expression:

```
EXISTS("Related Contact UId" = '1-16N')
```

SELECT from 1:n (one-to-many) MVG Fields

Business Components with 1:n (one-to-many) relationships to other Business Components can typically be queried by combining simple SQL with filters on foreign keys. For example, you can find all of the contacts associated with a given account as follows:

```
SELECT * FROM /Siebel/Contact/Contact WHERE "Account Id" = '1-16N'
```

SELECT from m:n (many-to-many) MVG Fields

Business Components with m:n (many-to-many) relationships cannot be completely queried in SQL. Siebel maintains an intersection table that maps the MVGs, but it is not accessible directly to Business Components. (Queries are limited to fields available in any given Business Component.) For example, contacts can have multiple addresses, and addresses can be associated with multiple contacts. The Contact Business Component designates a single address as primary. A query for a contact and address would return the contact and address identified as the primary address.

INSERT with VALUES for MVG Fields

MVG fields are automatically associated with records matching the values provided in the INSERT statement. For example, consider the following SQL:

```
INSERT INTO /Siebel/Contact/Contact ("First Name", "Last Name",
"Personal Street Address", "Personal City") VALUES ('Tom',
'Siebel', '1 Siebel Way', 'San Mateo');
```

This creates a new record in the Contact Business Component, and examines all MVG relationships in the fields provided (in this case, Personal Street address and Personal City). If the MVG link is specified as “No Associate” in Siebel’s metadata, the fields are directly set on the parent (Contact) Business Component. Otherwise, a search is performed on the child Business Component (Address) for records matching the inserted values (1 Siebel Way, San Mateo). The first matching address record is associated with the new contact record. If no matching address records are found, a new address record is added and associated

Note: In the Siebel UI, an additional step is sometimes performed whereby an Address or other MVG receives a Primary designation. This step is not performed by the Siebel data source. To set a related record as Primary, that record’s unique identifier must be queried and its corresponding Primary field set manually with an UPDATE statement on its parent.

UPDATE with SET on MVG Fields

UPDATE on MVG fields behaves the same as INSERT. An UPDATE cannot safely modify a record in a linked Business Component because other records may depend on it. Instead, perform a search on the linked Business Component to find a record matching the values specified in the SET fields. Add the first record found to the association list for the record. If no matching record is found, add a new record to the association list. Existing associations remain unchanged.

DELETE on MVG Fields

A DELETE operation on a Business Component never cascades to remove associated Business Components. For example, if an account is inserted with a new address, that address is added to the proper MVG business component and a relationship established between the account and address. If this account is later deleted, the address record remains in Siebel.

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.

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