



TIBCO ActiveSpaces®

Release Notes

Version 4.8.0

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About This Product

The TIBCO ActiveSpaces® software is a distributed in-memory data grid product. Some features of ActiveSpaces® include use of familiar database concepts, high I/O capacity, and network scalability.

ActiveSpaces features a complete redesign and reimplementaion of the product and is straightforward to understand, use, and administer.

Product Editions

ActiveSpaces is now available in two editions: Community Edition and Enterprise Edition.

	Community Edition	Enterprise Edition
Ideal for	<p>Getting started with ActiveSpaces for implementing application projects, including proof of concept projects, for testing, and for deploying applications in a production environment.</p> <p>Production deployments running up to 5 nodes (a total of the copyset nodes or proxies in your data grid)</p> <p>For more information, see Terms used in Community and Enterprise Editions.</p>	<p>All application development projects, and for deploying and managing applications in the production environment of an enterprise.</p> <p>Production deployments with more than 5 nodes (a total of the copyset nodes or proxies in your data grid)</p> <p>For more information, see Terms used in Community and Enterprise Editions.</p>
Features	All features of the Enterprise Edition except enterprise monitoring using dashboards.	Includes all features presented in this documentation set.
Limitations	<p>Run up to 5 nodes (a total of the copyset nodes or proxies in your data grid).</p> <p>Although the community license limits the number of production instances, you can</p>	No limitations on a total of the copyset nodes or proxies in your data grid.

easily upgrade to the enterprise edition as your use of ActiveSpaces expands.		
Cost	Free	Paid
Compatibility	Compatible with both the enterprise and community editions of TIBCO FTL [®]	Depends on the enterprise edition of TIBCO FTL for monitoring and management of data grid components and secure communication.
TIBCO Support	No access to TIBCO Support	Access to TIBCO Support

Terms used in Community and Enterprise Editions

- Node - a copyset node or proxy where each copyset node or proxy is an operating system process with a unique process ID.
- Process ID - For the purposes of the definition of Node, Process ID means a standard computer industry term that uniquely identifies each operating system process.
- Copyset - For the purposes of the definition of Node, “Copyset” means a logical grouping of nodes such that a portion of the data is shared uniformly by all the nodes that form a copyset.

Terminology Used to Address the TIBCO FTL Realm

With TIBCO FTL 6.1 or later, ActiveSpaces uses the realm service capabilities or processes of the TIBCO FTL server. The following changes are made to the terminology to generically address the components of TIBCO FTL 5.x and TIBCO FTL 6.x:

The Term Used in the Document	The Equivalent Component in TIBCO FTL 5.4.1	The Equivalent Component in TIBCO FTL 6.1 or Later
Realm service	Realm server	Realm service running on the TIBCO FTL server
Realm service URL	Realm server URL	TIBCO FTL server URL
Backup realm service	Backup realm server	TIBCO FTL server that is a member of a cluster of three or more TIBCO FTL servers
Primary Realm	Primary Realm Server and its Backup Realm Server	A cluster of primary TIBCO FTL servers that provide realm services for the data grid.
Satellite Realm	Satellite Realm Server and its Backup Realm Server	A cluster of satellite TIBCO FTL servers that are connected to a cluster of primary TIBCO FTL servers.

New Features

The following features have been added in this release of TIBCO ActiveSpaces®.

- **Remove Rows From a Table by Using SQL DELETE Statements.**

The SQL DELETE statement removes rows from a table which satisfy the statement's WHERE clause.

For large tables, TIBCO recommends to use parameters in the WHERE clause to remove rows in batches.

For small tables, you can omit the WHERE clause to remove all rows from a table.

Options are provided to help prevent the accidental deletion of all rows of a table.

- **A new command is added to the tibdg admin tool to display the configuration properties of a specific proxy.**

A new command is added to the tibdg admin tool to display the configuration properties of a specific proxy.

- **A new tibdg table modify command is added to alter table properties**

The tibdg table modify command alters table properties. The tibdg table list command is modified to display current table properties as well.

- **A new configuration option `full_table_delete` is added at grid and table level.**

This release adds a new grid configuration option, `full_table_delete` to control whether all rows of a table can be deleted by using SQL DELETE. The `full_table_delete` option when configured for the grid is applied to all tables in the data grid.

If you use the `full_table_delete` option for a table configuration, it overrides the grid's `full_table_delete` configuration for SQL DELETE commands.

For more information, see "Grid Create Configuration Options" and "Table Create Configuration Options" in *TIBCO ActiveSpaces® Administration*.

- **Some new Connection and Session options are added.**

This release adds new Connection and Session options `TIBDG_CONNECTION_PROPERTY_BOOLEAN_IMMUTABLE_ROWS` and `TIBDG_SESSION_PROPERTY_BOOLEAN_IMMUTABLE_ROWS`, which optimize client library performance when the client application does not modify rows returned from the Get or ResultSet API calls.

By default, these options are disabled.

- **The tibdg proxy status command now shows statistics of the ongoing SQL DELETE commands.**

The tibdg proxy status command now shows statistics of the ongoing SQL DELETE commands.

- **A new panel is added to the proxy dashboard**

A new panel is added to the proxy dashboard showing the number of SQL DELETE statements that have been executed.

- **Support is added for automatic retry of executeQuery**

A statement that was created before a proxy failure or a copyset leader failure is now automatically recreated by the client library. Earlier, an error was reported and the application had to close the old statement and create a new one.

- **Support is added to provide Kubernetes readiness probes for ActiveSpaces components**

Added a health server to proxy, node, and keeper that is enabled via `--health-server <interface>:<port>` command-line argument.

When enabled, http endpoints `/alive` and `/ready` are enabled and can be used as kubernetes liveness and readiness probes.

Changes in Functionality

The following functionality and features have been changed in this release of TIBCO ActiveSpaces®.

- **Cache mechanism for subsequent tibdgSession_OpenTable calls**

tibdgSession_OpenTable calls may cache data such that subsequent tibdgSession_OpenTable calls in the same Connection object may complete significantly faster.

- **Improved the as-start sample scripts.**

The as-start sample scripts are refactored to reduce start up time.

- **After upgrading to FTL 6.8, add the tibdg-internal role to the user that runs the statekeeper for the secure FTL servers that are configured to use authentication.**

The tibdg-internal role was previously required when using grid table permissions.

Now the role is required regardless of whether or not table permissions are configured on the grid.

- **The download location of the plug-in is changed**

TIBCO ActiveMatrix BusinessWorks Plug-in for ActiveSpaces software is now available under TIBCO ActiveMatrix BusinessWorks at eDelivery.tibco.com.

- **Retry operation for replication errors**

The node now performs a retry operation for replication errors that occur due to a secondary node failing.

- **The exception value returned when the maximum query limit is reached has been changed**

When the maximum query limit is reached, the exception value returned has been changed from TIB_NOT_PERMITTED to TIBDG_SQL_RESOURCE_UNAVAILABLE.

- **A node logs a warning rather than the SEVERE log**

When a transaction times out during the commit process, a node logs a warning rather than the SEVERE log.

- **The proxy and node log accumulated output tracing statistics at shutdown or**

reset.

Previously, the node and proxy latency statistics were added after each hour into a log file. However, the statistics were not added to a log file when the shutdown or reset command is triggered.

Now, the node and proxy statistics that have accumulated when you trigger the shutdown or reset command are also added to a log.

- **An exit code for the `tibdg <proc> status <name>` command on failure is changed.**

The `tibdg <proc> status <name>` command now exits with a non-zero exit code if the specified process does not respond with any status.

Deprecated and Removed Features

No features have been deprecated or removed as of this version of ActiveSpaces.

Migration and Compatibility

This version of ActiveSpaces is backward compatible with ActiveSpaces 3.x. However, ActiveSpaces 3.0 and later is not backward compatible with ActiveSpaces 2.x.

For information about upgrading from an earlier version of ActiveSpaces, see "Upgrading from an Earlier Version" in *TIBCO ActiveSpaces Installation*.

This release requires TIBCO FTL® 6.5 or later. For information about migrating from TIBCO FTL 5.x to TIBCO FTL 6.x, see the "Migration and Compatibility" section in *TIBCO FTL® Release Notes* and "Upgrade Migration to a New Release" section in *TIBCO FTL® Administration*.

i Note: For the upgrade to be successful, the latest version of ActiveSpaces must be used to run `tibdg grid rebuild` on the existing data grid before upgrading the ActiveSpaces components.

After installing this version of ActiveSpaces, you can take advantage of the new [Changes in Functionality](#).

Closed Issues

The following issues have been fixed in this release of TIBCO ActiveSpaces®.

Key	Summary
FFY-4513	A node could fail to properly start up when a table that previously existed no longer appeared in the realm config. Secondary indexes would not be activated at start up and the node would report they were "pending" reindexing and would never complete the reindexing.
FFY-4509	When running a one-time integrity scan as part of an upgrade, a node could report a warning about 'WU already released' and fail to start up.
FFY-4492	Frequently adding and deleting tables would cause memory growth in the node due to deleted tables not being removed from an internal list.
FFY-4471	Changes to the grid configuration including adding and deleting tables and indexes that take longer than 30 seconds fail even though the http-timeout option is set to an appropriate value.
FFY-4468	If a statement is executed with an unlimited fetch timeout the execute call does not return any value if the client is bound to a new proxy or a copyset leader fails.
FFY-4451	A node in a DR grid could crash when changing mirroring states.
FFY-4445	The client incorrectly allows a transaction to commit following a failover to a new proxy.
FFY-4443	A table index created in a tibdg script does not inherit the row_counts value from the parent table.

Key	Summary
FFY-4436	Some DDL commands could result in a timeout when used with the latest version of the FTL server.
FFY-4431	A Go application fails if it receives events during the creation of a table listener.
FFY-4425	A Go API fails if a public function is called on a nil pointer receiver.
FFY-4423	Statekeeper fails to reset itself after a tibstore operation results in uncertainty.
FFY-4420	The ResultSetMetadata for certain SELECT * queries shows an additional internal column that is not present in the table definition.
FFY-4413	A connection between a node in one grid in a gridset and a proxy in another grid in the same gridset can break and is never repaired.
FFY-4397	Globally consistent SELECT queries sometimes timeout during bin migration.
FFY-4389	A primary node can incorrectly mark a secondary node as out of sync if a primary node is processing client requests, and the client requests time out.
FFY-4384	The first batch submitted after a copyset leader failure or a proxy rebind always fails.
FFY-4366	If the tibdg_Close() C API is called after the tibdgConnection_Close() API, the client library logs an error message.
FFY-4362	Improved the performance of queries where all the output columns are columns from the table.

Key	Summary
FFY-4360	The latency of PUT and DELETE requests of a node is reduced by optimizing internal processing.
FFY-4359	Internal improvements are made to reduce the time to process a get request in the node.
FFY-4347	A proxy can miss a config change that happens while a grid process is starting.
FFY-4342	The tibdgadmind does not use the tibdg client's HTTP timeout value. If the tibdgadmind's HTTP timeout value is not large, it results in a timeout of long-running requests.
FFY-4333	A grid process such as statekeeper, node, and proxy no longer exits and continues retrying the realm connect process even when receiving an error from the realm server.
FFY-4331	A grid process such as statekeeper, node, and proxy no longer exits and continues retrying the realm connect process even when receiving an error from the realm server.
FFY-4327	A node does not exit during startup and displays an error when the statekeeper cannot be reached.
FFY-4325	The disk write operations in the node are optimized by reducing the amount of metadata that is to be synced with each write operation in some cases.
FFY-4288	The tibdg admin tool and the tibdgadmind are not handling signals correctly. The realm is left locked if the tibdg admin tool is interrupted (Ctrl+c) and the FTL Server can not redirect traffic to an alternate tibdgadmind for 10s after a tibdgadmind is shut down.
FFY-4287	An ActiveSpaces client application could experience a segmentation fault when creating a session in one thread and closing the same session's connection in another

Key	Summary
	thread.
FFY-4282	A copyset leader failover could cause a DDL command to fail unnecessarily.
FFY-4281	A tibdg script that is run with the tibdg -s option reports an error if the script creates a grid and includes commands such as table list or copyset list.
FFY-4280	Running the as-start script with the -s option prints an error instead of starting a secure grid.
FFY-4271	A secondary node in a copyset takes a longer time than needed to detect another node's change in state in the copyset.
FFY-4270	In certain situations, when a node becomes disconnected from the realm during startup, it times out while setting up its communication to other grid processes and exits instead of resetting to try again.
FFY-4260	When a client attempts to execute a DDL statement and the FTL Realm is locked, the description of the error does not indicate the root cause of the error.
FFY-4257	When a node receives requests from a proxy with an older version of ActiveSpaces the node logs unnecessary warnings.
FFY-4248	A proxy throws errors for queries and iterators that take longer than 30 seconds to return the first batch and use snapshot consistency.
FFY-4237	If committing a transaction fails because of a copyset leader failover, then the failed transaction could not release a table. After committing the transaction, a row from the unreleased table still remains in a locked state.

Key	Summary
FFY-4216	If a copyset leader stops working during the execution of a statement or iterator with an unlimited fetch timeout, then it is possible for the client to block resources indefinitely waiting for a response from the proxy.
FFY-4211	The tibdg client application does not always try all realm URLs when waiting for the FTL server cluster to become available.
FFY-4205	You could receive an incorrect error message if you provide an empty string ("") as an object name to the tibdg tool.
FFY-4199	A proxy can crash if special allocation debugging settings (TIB_MEM_DEBUG_CONF) are enabled.
FFY-4193	A memory leak occurs in the proxy when parsing CREATE TABLE commands with invalid syntax.
FFY-4192	A memory leak occurs in the proxy while parsing a SELECT statement with syntax errors.
FFY-4191	A memory leak occurs in the proxy due to parsing CREATE TABLE commands with invalid syntax.
FFY-4184	If you create a table, insert some data, delete the table, and recreate the same table with different data types, you can still insert the data with older data types.
FFY-4181	In certain cases, when a primary node starts up and is syncing with other secondary nodes, it can incorrectly be marked as dead or can incorrectly process internal write requests.
FFY-4150	The usage messages of some binaries include deprecated options.
FFY-4121	The proxy can make excessive and immediate retries of DDL

Key	Summary
	requests to the tibdgadmind if the realm workspace is locked and multiple FTL server URLs are specified.
FFY-4100	Repeatedly creating and deleting a table in a short time span, for example, within less than a second could result in errors.
FFY-4085	The proxy takes more than expected time to shutdown if the shutdown coincided with a DDL request from a client.
FFY-4035	If an error occurs at a node when processing a query, that error is not displayed at a client.
FFY-3856	A secondary node could incorrectly synchronize certain internal disk resources or mirroring related data from the primary node.

Known Issues

The following issues exist in this release of TIBCO ActiveSpaces®.

Key	Summary
FFY-3493	<p>Summary: Using <code>tibdRow_ToString</code> does not display all columns when the SELECT list contains duplicate column names.</p> <p>Workaround: In the SELECT list, instead of column names, use the unique label names. For example, <code>SELECT lastname, firstname, lastname AS ln2 FROM mytable.</code></p>
FFY-2942	<p>Summary: Queries involving GROUP BY do not work with expressions. The following limitations apply when using GROUP BY:</p> <ul style="list-style-type: none">• SQL CASE expressions cannot be used in select lists when aggregation is used.• SQL CASE expressions cannot contain aggregation functions.• Nested functions and nested expressions in select lists cannot be used when aggregation is used. <p>Workaround: None</p>
FFY-2711	<p>Summary: The SQL INSERT parameter values must exactly match the type defined for the column in the table. No attempt is made to cast from the data type of the parameter to the data type of the column in the table.</p> <p>Workaround: Set the parameter value into the statement by using the type that exactly matches the column type of the table.</p>

Key	Summary
FFY-2140	<p data-bbox="638 296 1393 527">Summary: Removing a mirror grid from a gridset, either by using the <code>tibdg gridset remove</code> command or by using the <code>tibdg gridset delete</code> command, results in unexpected behavior if the <code>-p</code> or <code>--makePrimary</code> flags are not used. As a result, data grids cannot be added back after they are removed from the gridsets.</p> <p data-bbox="638 596 1409 785">Workaround: Use the <code>-p</code> or <code>--makePrimary</code> flag when performing an operation to remove a data grid from a gridset. Using these options transitions the mirror grid into a standalone grid. As a result, the data grid removed cannot be added to a gridset as a mirror grid.</p>
FFY-1654	<p data-bbox="638 833 1377 1022">Summary: When creating a table using SQL, the SQL data types are mapped to their underlying FTL types. When the metadata for the table is returned, the original data types are not preserved and you can only see the following mapping:</p> <p data-bbox="638 1033 954 1222"> long => BIGINT string => VARCHAR double => DOUBLE datetime => TIMESTAMP opaque => VARBINARY </p> <p data-bbox="638 1291 1409 1402">Workaround: For information about how SQL data types are mapped to ActiveSpaces data types, see the "SQL Data Type Mapping" section in <i>TIBCO ActiveSpaces® Administration</i>.</p>
FFY-1569	<p data-bbox="638 1451 1385 1598">Summary: In an iterator, calling <code>tibdgRow_ToString()</code> on a row or executing a query such as <code>SELECT * FROM <table></code> does not always return columns in the order defined in the table.</p> <p data-bbox="638 1667 1360 1743">Workaround: Retrieve the columns individually by name and in the order you want.</p>

Key	Summary
FFY-1474	<p>Summary: Occasionally, using special characters for identifiers is out-of-sync between the tibdg tool and the SQL DDL commands. In some scenarios, you can create a table by using the TABLE CREATE command, but not drop the table by using the tibdg tool or by using the SQL DROP TABLE command.</p> <p>Workaround: Create simple table names. The tables names must use lowercase characters, but no special characters or embedded spaces.</p>

TIBCO Documentation and Support Services

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. To access the latest documentation, visit <https://docs.tibco.com>.

Product-Specific Documentation

The following documentation for TIBCO ActiveSpaces® is available on the [TIBCO ActiveSpaces® Product Documentation](#) page:

- TIBCO ActiveSpaces® *Release Notes*
- TIBCO ActiveSpaces® *Installation*
- TIBCO ActiveSpaces® *Concepts*
- TIBCO ActiveSpaces® *Administration*
- TIBCO ActiveSpaces® *API Reference*
- TIBCO ActiveSpaces® *Security Guidelines*
- TIBCO ActiveSpaces® *ActiveSpaces4-Sizing-Guide*

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- For an overview of TIBCO Support, visit <http://www.tibco.com/services/support>.
- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the TIBCO Support portal at <https://support.tibco.com>.
- 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 <https://support.tibco.com>. If you do not have a user name, you can request one by clicking Register on the website.

How to Join TIBCO Community

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