

# TIBCO Foresight® Transaction Insight®

## Partitioned Database Overview

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Two-second advantage®



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# IMPORTANT

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## Database Support Disclaimer

**TIBCO Foresight Support does not provide database administration or database troubleshooting services.** Database support and maintenance are the responsibility of your database administrator and database vendor. Always refer to your database administrator, database vendor, and associated database documentation and support agreements for database issues.

TIBCO support maintenance is outlined in the document **maintenance-program-guide\_tcm8-9382.pdf**, which can be downloaded as follows:

1. Access [www.tibco.com](http://www.tibco.com).
2. Click Services.
3. Click Support.
4. Select the "Maintenance Program Guide" link.

The support agreement covers all TIBCO licensed software and products. Please refer to Section 3.3 of the Maintenance Program Guide for details.

# Partitioned Database Introduction

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TIBCO Foresight® Transaction Insight® Release reduces call volume and improves provider-member relations through advanced reporting, secure portal technology, and facilitated research capabilities.

The Transaction Insight® (TI) 5.0.0 and later database utilizes partitioning. This is a change from previous versions of TI. Partitioning allows you to manage the size of your database more consistently and should improve portal performance in most environments.

Customers should pay close attention to the information provided in System Requirements (page 3) and Database Partitioning (page 5) for important information on this change as additional software is required and advance planning is vital.

# System Requirements

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Supported platforms, hardware requirements, and software requirements have changed from previous versions of TI. TI Release 5.0.0 and later may require additional software procurement or and/or upgrades to existing hardware and software.

Key changes:

- TI 5.0.0 and later **requires** an Oracle or Microsoft SQL Server database that provides database partitioning, such as Oracle Database 12c Enterprise Edition with Oracle Partitioning or Microsoft SQL Server 2012 Enterprise edition.
- Customers may need to upgrade existing hardware, memory, and third party software to meet required minimums for TI 5.0.0 and later.
- Only 64-bit platforms are supported.

The complete list of requirements is shown in the following table.

Requirement Type	Requirement	Supported Versions
Platforms	IBM AIX	6.1 64-bit on POWER 7.1 64-bit on POWER
	Microsoft Windows Server	2008 R2 64-bit on x86-64 2012 R2 64-bit on x86-64 (recommended)
	Red Hat Enterprise Linux Server	6.0 64-bit on x86-64
Hardware Requirements (minimum)	Free disk space	Disk space is dependent upon document volume.
	Memory	Memory is dependent upon volume of data.
	CPU	64-bit Xeon (Nehalem-based Xeon or newer recommended) POWER6 (POWER7 or newer recommended)
Software Requirements <b>NOTE:</b> Either an Oracle or Microsoft SQL Server Database is required.  (continued)	Oracle Database	Oracle Database 11g Release 2 (11.2) Enterprise Edition with Oracle Partitioning Oracle Database 12c Enterprise Edition with Oracle Partitioning Oracle Instant Client 12.1.x <sup>1</sup>

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<sup>1</sup> Oracle Instant Client specifies additional OS requirements for IBM AIX platforms. For more information see **TIB\_transactioninsight\_<version>\_installation.pdf** or visit [https://docs.oracle.com/database/121/AXCLI/pre\\_install.htm#BABJCABH](https://docs.oracle.com/database/121/AXCLI/pre_install.htm#BABJCABH).

Requirement Type	Requirement	Supported Versions
	Microsoft SQL Server Database	Microsoft SQL Server 2008 R2 Datacenter or Enterprise edition Microsoft SQL Server 2012 Enterprise edition <a href="#">Microsoft .NET Framework 4.5</a>
	Java	Sun Java Runtime Environment 8 or later (Windows and <a href="#">Red Hat Enterprise Linux Server</a> ) Oracle Java Runtime Environment 7 or later (AIX)
	GlassFish (Required if: - using Web Services - using Transaction Insight to view EDIFACT transactions.)	GlassFish Server Open Source Edition 4.1 (Windows and <a href="#">Red Hat Enterprise Linux Server</a> ) or 3.1.2.2 (AIX)
	<a href="#">GNU Standard C++ Library (libstdc++)</a>	Version 6

# Database Partitioning Overview

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## Introduction

The TI 5.0.0 and later database utilizes partitioning. This is a change from previous versions of TI. Partitioning allows you to manage the size of your database more consistently and should improve portal performance in most environments. Customers should notice:

- Faster purging of database information
- Increased speed for searches with date ranges included.

Migration from earlier versions to TI 5.0.0 and later require a new environment with a new database. There is no upgrade path from previous versions (see “Upgrades from Previous Versions of TI” on page 6).

TI 5.0.0 and later includes a recommended partitioning scheme.

## Impact on Existing TI Customers

Planning for the move to TI's partitioned database structure is essential. The first step is to contact the TIBCO Foresight Professional Services Group and/or TIBCO Foresight Technical Support to prepare a plan for the new installation. The following items must be considered.

### Additional Software Required

TI 5.0.0 and later **requires** an Oracle or Microsoft SQL Server database that provides database partitioning, such as Oracle Database 12c Enterprise Edition with Oracle Partitioning or Microsoft SQL Server 2012 Enterprise edition. Refer to **System Requirements** on page 3 for additional information.

This may require additional software procurement or upgrades to existing database software.

### Possible Hardware and Software Upgrades

Customers may need to upgrade existing hardware, memory, and third party software to meet required minimums for TI 5.0.0 and later. Refer to **System Requirements** on page 3 for additional information.

### Database Administration Support

TI depends on a robust, well-managed database for optimal performance. Therefore, database administration support is critical in setting up and maintaining the TI database.

It's essential to plan the partitioning structure before creating the database and importing data. Making changes to an already partitioned database is extremely difficult. TI 5.0.0 and later comes with a recommended monthly partitioning structure; however the final configuration of the database is up to the customer and their database administrator.

Remember, database support and maintenance are the responsibility of the database administrator and database vendor. *TIBCO Foresight Support does not provide database administration or database troubleshooting services.* See Database Support Disclaimer (page 1).



## Upgrades from Previous Versions of TI

**IMPORTANT:** Data from previous versions of TI (e.g., from 4.x.x to 5.0.0) will not be migrated.

There is no upgrade path from previous versions of TI. For this reason, customers may choose to have a time period during which data is imported into both the old (4.x.x) database as well as the new (5.0.0 and later) database before completely cutting over to TI 5.0.0 and later.

Although you can upgrade from TI 5.0.0 to newer versions, there is no upgrade path from previous versions to TI 5.0.0 and later. You must use a new environment with a new database.

For example:

TI 5.0.0 → TI 5.1.0 = upgrade available

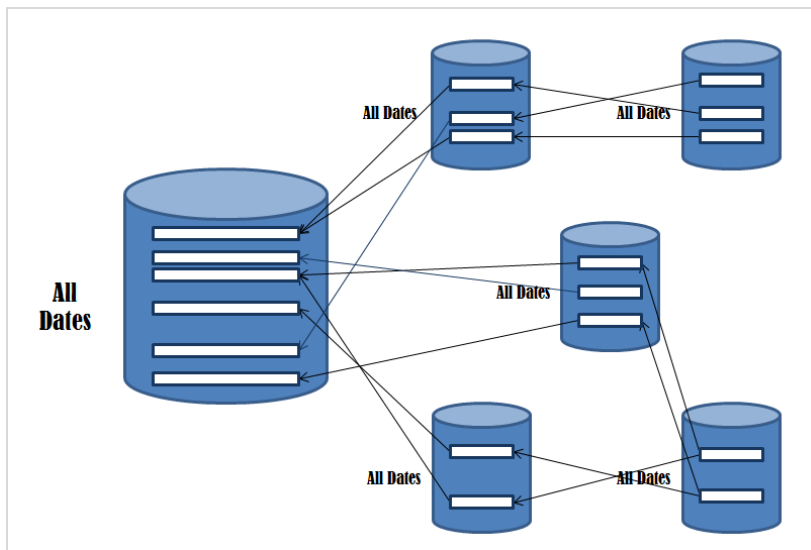
TI 4.2.0 → TI 5.0.0 = no upgrade available

TI 4.4.0 → TI 5.1.0 = no upgrade available

TIBCO Foresight will provide “move” scripts to transfer administrative data from 4.x.x to 5.0.0 and later. These scripts will copy information like Partners, Senders, and Receivers, but not document data.

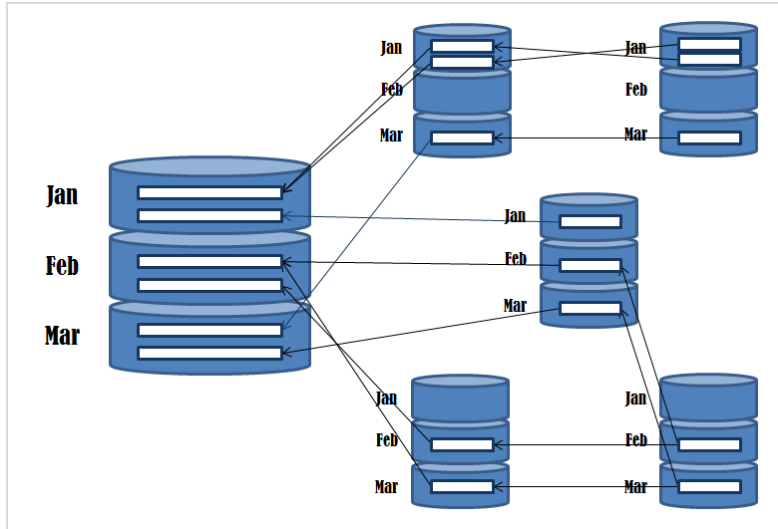
## What is a Partitioned Database?

Partitioning is an advanced database feature that requires a database administrator to handle setup and maintenance. At a high level, partitioning allows the database to sub-divide the data for any particular table into smaller segments based around time or numeric values. For example, instead of keeping the data for all dates in one large table, as shown here...



...the database can “partition” the table (Jan, Feb, Mar, etc.) and view each partition as though it were a smaller table containing only that month of data.

Queries referring to a single partition may perform better and older data can be removed regularly leading to a more consistent database size and application experience.



## Additional Information

More in-depth information on partitioned databases is widely available in print and via internet websites. We recommend:

- Oracle Help Center: Database VLDB and Partitioning Guide ([http://docs.oracle.com/cd/B28359\\_01/server.111/b32024/partition.htm](http://docs.oracle.com/cd/B28359_01/server.111/b32024/partition.htm))
- Microsoft Developer Network: Partitioned Tables and Indexes (<https://msdn.microsoft.com/en-us/library/ms190787.aspx>).

# Database Partitioning Reference

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## Partition Key

The TI-supported partition key is SubmissionDate.

Note that some tables should also be partitioned by the Date column. Using the date ties the partitioning scheme to the tables that are not linked by foreign keys.

## Recommended Partitioning Scheme

The following partitioning schemes are illustrated in the default TI Create scripts.

Interval Partitioning (Oracle):

- Oracle - Interval partition with extremely old (e.g., 1900) first partition and monthly pattern

Range Partitioning (SQL Server):

- SQL Server - Range partition with default values for months of the next five years

## Partition Management

### Table Order (PurgeTableList)

PurgeTableList is a database table that lists partitioned tables and the order in which they must be processed when purging.

### Foreign Keys (Oracle and SQL Server)

Many TI tables are connected by foreign keys. Therefore, the order presented in the PurgeTableList table must be followed when dropping partitions or performing partition maintenance. This is important because dropping partitions requires disabling (Oracle) or dropping (SQL Server) the foreign keys before operation and re-enabling or re-building them afterward.

### Indexes (Oracle and SQL Server)

Many TI tables have Global Indexes. Please note that, while dropping partitions can happen quickly, rebuilding indices on the tables being purged may take time and can affect performance (Oracle) or can affect the behavior necessary for partition dropping (SQL Server).