

What's New in TimesTen 26.1

An overview of all new features in TimesTen 26.1

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Public

This document provides an overview of features and enhancements included in TimesTen 26.1. It is intended solely to help you assess the business benefits of upgrading to TimesTen 26.1 and planning for the implementation and upgrade of the product features described.

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Overview of the TimesTen Releases

This document lists all new features that are available in TimesTen 26.1 when compared to TimesTen 22.1.1. The list is based on the initial release for TimesTen 26.1 and the TimesTen 22.1.1.38.0 patch release. The latter was the most recent TimesTen patch release at the time of the initial release of TimesTen 22.1.1.

Throughout the lifecycle of a TimesTen release, patch sets and patch releases are made available. Both patch set and patch releases contain bug fixes, but a patch set release typically also contains several new large product features. If a patch release does contain new features, then these are typically small product enhancements. As shown in Table 1, the latest patch TimesTen 22.1 release is 22.1.1.38.0. At the time of this writing, there is no patch release for TimesTen 26.1 yet.

Table 1. Overview of the various TimesTen releases

Release	Type	Release date	Supported until	Most recent patch (April 2026)
TimesTen 22.1.1	Patch release	Nov 2021	Nov 2030	22.1.1.38.0
TimesTen 26.1.1	Initial release	Apr 2026	Apr 2034	n/a

In addition to the information in this document, the release notes for a patch release always include a list of any new functionality introduced in that patch release.

Oracle Cloud Infrastructure Marketplace

Oracle TimesTen In-Memory Database for OKE (Oracle Kubernetes Engine) is now available on Oracle Cloud Infrastructure Marketplace. The following OCI Marketplace listings are available:

- Oracle TimesTen In-Memory Application Cache for OKE – x86
- Oracle TimesTen In-Memory Application Cache for OKE – ARM
- Oracle TimesTen In-Memory System of Record for OKE – ARM
- Oracle TimesTen In-Memory System of Record for OKE – x86

With these listings, Oracle Cloud OKE users can quickly deploy high-performance in-memory caching or system-of-record solutions, supporting applications that demand low latency and high throughput especially for edge cache data management.

Installation and Packaging

XLA shared library

A new library, libttxla.so, was added for direct-linked applications. Applications that link with libtten.so must now also link with this libttxla.so .

TimesTen Kubernetes Operator

Security improvements

- Automate configuration of client/server TLS certificates.
- Default to using a seccomp profile.
- Support for Bring-Your-Own (BYO) CA certificates and certificate rotation.

New metrics

- Active and standby pods.

Connection Manager

- Provide a choice for applications to connect to active or standby node.

Improvements to TimesTenClassic object cleanup.

- Speed up deletion time for large caches.

Cluster Scope support

- Additional support for user environment.

TimesTen Database Engine and SQL

JSON datatype

TimesTen 26.1 adds native JSON data type support across the database engine, replication, cache, and all utilities. It is compatible with the Oracle Database JSON data type and JSON functions.

Parallel redo

Parallel redo speeds up database load during startup or recovery by processing transaction logs concurrently. It is especially beneficial for larger databases or environments with many transaction log files to process, and it helps reduce duplicate time in replicated setups.

Online defragmentation

This feature provides online defragmentation that removes fragmentation in user tables and releases memory back to permanent space. It runs automatically in the background with low impact and includes tuning options to control its behavior.

SELECT without FROM

This enhancement allows SELECT statements without a FROM clause, providing a convenient shortcut such as `select sysdate` instead of `select sysdate from dual`. It also aligns with Oracle Database 23ai behavior.

MERGE without USING

This enhancement allows MERGE statements without a USING clause, in which case using `sys.dual` is implied. This provides a convenient shortcut and aligns with Oracle Database 23ai behavior.

PL/SQL

The PL/SQL engine has been upgraded to PL/SQL 26ai.

API Support

JDBC 4.3

The TimesTen JDBC driver now fully supports the JDBC 4.3 specification.

JDK 25

JDK 25 enforces stricter controls for code that uses native libraries (JNI) through the Java Platform Module System (JPMS). A module descriptor has been added to the TimesTen JDBC driver and the TimesTen Jakarta Messaging provider to support use with JDK/JRE 25.

Cache

JSON data type support

This feature adds JSON data type support for cache usage by allowing Oracle JSON columns to be cached as TimesTen JSON columns. It remains compatible with the Oracle JSON data type, and `ttLoadFromOracle` supports loading data directly from Oracle JSON columns.

Read-only cache groups with GoldenGate

This feature integrates read-only cache groups with GoldenGate as an alternative mechanism for refreshing read-only caches. It supports both dynamic and static read-only cache groups and includes support for JSON columns.

Client/Server

Parallel connect

The parallel connect feature improves throughput during bursts of concurrent connection requests.

Replication

JSON data type support

This capability supports replicating JSON data stored in JSON columns, and it also enables schema evolution by replicating the addition of JSON columns to tables that are already being replicated. Supported in both Active/Standby and Classic replication.

Replication Security

This replication security enhancement supports replicating rekey operations for encrypted databases and provides network encryption using TLS 1.3. Supported in both Active/Standby and Classic replication.

Security

Encryption for data at rest

This feature encrypts checkpoint and transaction log files on disk to prevent offline reading or tampering with database contents. It supports AES-128, AES-192, and AES-256 encryption, including FIPS 140-2 mode, and enables online key rotation without changing application behavior. It also supports backup and restore operations for encrypted databases.

TLS 1.3 support

This feature adds TLS 1.3 support, providing stronger security and often lower connection setup latency than TLS 1.2. It applies to both replication and client/server network traffic, while TLS 1.2 remains available to maintain backward compatibility with older clients.

ttCreateCerts enhancements

These ttCreateCerts enhancements align cipher suite support with Oracle Database 26ai, add FIPS140-2 mode for certificate generation, and introduce RSA support (in addition to ECC) for creating TLS certificates.

Restrict Mode for TimesTen Utilities

Enforces secure execution when using elevated privileges through sudo and /etc/sudoers

Change of Crypto algorithms

This update strengthens credential storage by moving to SHA-256 and improves handshake security between TimesTen processes. It also maintains backward compatibility with older releases.

Utilities

ttlsq| improvements

The utility program ttlsq| can now read bind variable values from a file, which is especially convenient when working with JSON documents. It also supports the new restrict mode, which prohibits shell escapes and prevents overwriting existing files.

ttBulkCp

Support for the new JSON datatype has been added to ttBulkCp, allowing users to load and export JSON data from/to tables with JSON columns. A new security enhancement, restrict mode, was added. This mode blocks overwriting any existing files.

ttMigrate

Support for the new JSON datatype has been added to ttMigrate, allowing users to export and import JSON data from/to tables with JSON columns. A new security enhancement, restrict mode, was added. This mode blocks overwriting any existing files.

Platforms and Certifications

Certifications

- Oracle JDK 11, 17, 21, 25
- OpenJDK 11, 17, 21, 25
- Clusterware 19c
- Oracle Database 19, 23ai, 26ai
- Oracle Autonomous Database Serverless Release 19c, 23ai for the Transaction Processing workload type, for mTLS-based connections.
- Kubernetes 1.34 - amd64, arm64, or multi-architecture clusters
- GoldenGate version 21.3+ required for read-only cache group feature.
- ODP.Net Framework 4.0 with Oracle Data Provider for .NET 19
- SQL Developer 24.3.0

Supported Platforms

- Linux X64: Oracle Linux 8.4+, 9.2+, Redhat Enterprise 8.4+, 9.2+, SUSE Enterprise Server 15, Ubuntu 22.04

Other

The Oracle Library included with TimesTen has been updated to RDBMS 26ai, bringing improvements to several areas, including:

- PL/SQL engine
- Instant Client
- Pro*C compiler
- Internal Oracle library functions for NLS, Encryption, Oracle databases, etc.

This update is fully backwards compatible with the previous version, ensuring a seamless transition.

Change in Defaults

The default value for DSN attribute CACHEADMINWALLET is 1.

Deprecated Features

The following features are deprecated in this release and will be removed in a future release:

- `javax.jms` – replaced with `Jakarta.jms`
- PWDcrypt General Connection Attribute. Customers are advised to use password wallets instead.
- COMPACT command in `ttlsq`
- Using the DSN attribute `CACHEADMINWALLET` with value 0 is deprecated, customers are advised to use `CACHEADMINWALLET=1` instead.
- The RETURN RECEIPT service in replication is deprecated. Instead, asynchronous or RETURN TWOSAFE replication are preferred.

Removed Functionality

The following features were deprecated in a previous release and have been removed in TimesTen 26.1:

- TimesTen Scaleout.
- The SHOW DISTRIBUTION, GRID commands in `ttBulkCp`
- User-defined track-based parallel replication (`ReplicationApplyOrdering=1`). Use automatic parallel replication instead.
- Client-server connections using `shmipc`. Instead, customer wishing to create client-server connections to TimesTen must use TCP/IP instead.
- The `ttjdbc8.jar` file, for use with JDK 8, as JDK 11 is the lowest JDK version supported.
- The TimesTen debug drivers are no longer included in the release.
- TimesTen XE release. TimesTen 22 XE will continue to be available but there will not be a TimesTen 26.1 XE release.



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