# Teradata Database 15.10: High-Performance Analytics for Today's Business

## Because Performance Counts

The success of your data warehouse has always rested on the performance of your database engine. But as your data requirements grow increasingly complex, performance becomes more vital than ever. So does finding a faster, simpler way to manage your data warehouse. You can find that combination of unmatched performance, flexibility, and efficient management in the Teradata® Database.

In fact, we've enhanced the Teradata Database to provide you and your business with new features and functions for even higher levels of flexibility and performance, Integrated use of JSON data is faster in Teradata 15.10 with the use of BSON storage format. Query processing performance is also accelerated by the world's most advanced hybrid row/column table storage capability and in-memory optimization and vectorization for in-memory database speed. Enhanced hybrid row/column storage in Teradata Database 15.10 enables high performance for selective queries on tables with many columns while also allowing pinpoint access to single rows by operational queries. Sophisticated in-memory processing optimizations and use of vector commands in the latest processors to qualify many rows in a single operation combine with Teradata Intelligent Memory to provide in-memory processing speeds without the expense and restriction of keeping all of the needed data in memory.

This proven, high-performance decision-support engine, available on the Teradata Workload-Specific Platform Family, offers you a full suite of data access and management tools, plus world-class services based on Teradata's years of data warehouse experience. It's a unique combination of products and expertise that provides a time-tested data warehousing solution—a solution that delivers many business advantages to you and your company.

Already the foundation of the world's most successful data warehouses, Teradata Database is designed for decision support and parallel implementation. And it's as versatile as it is powerful. It supports hundreds of installations, from three terabytes to huge warehouses with petabytes (PB) of data and thousands of users. Teradata Database's inherent parallelism and architecture provide more than pure performance. It also offers low total cost of ownership (TCO) and a simple, scalable, and self-managing solution for building a successful data warehouse.

With the Teradata Software-Defined Warehouse, customers have the flexibility to segregate data and users on a single system. By combining Teradata 15.10's secure zones option with Teradata's industry-leading mixed workload management capabilities, multi-tenant economies and flexible privacy regulation compliance become possible in a single Teradata Database system.

## The Teradata Database Difference

Your data warehouse solution depends on its database engine. So make sure the database you select offers:

- Effortless scalability through fully parallel operation.
- Mission-critical availability.
- Complex and ad-hoc query performance.
- In-database advanced analytics, including geo-spatial, temporal, data mining, and modeling.
- Mixed workload management (ability to keep data current and handle strategic, tactical, and operational queries).
- Columnar.

- Cost-based optimizer.
- Intelligent Memory.
- Virtualized interconnect.
- Virtualized storage.
- Virtualized CPU.
- File system.
- Ease of manageability.
- Simplified mainframe integration.
- Complete support infrastructure.
- Reference accounts.
- Lowest total cost of ownership.

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## An Array of Powerful Analytics

When it comes to powerful analytics, Teradata Database is unmatched. That's because it's optimized to offer a range of analytical capabilities, everything from geospatial and temporal to slice-and-dice and data mining. The result? You can extract more value from your data, from more parts of your business, than ever. Plus, you can perform both general-purpose and specialized analyses in a database where all of your supporting data are available to enrich your analytical processes.

And Teradata Database includes a variety of built-in features that makes it faster and more efficient to run a wider scope of analytical processes, features that let you:

- Store and process geospatial data. With Teradata Database, your business intelligence (BI) and other applications can use location and proximity along with all the data dimensions you're used to. Unlike specialized GIS or geospatial visualization products, Teradata Database can analyze geospatial data inside the data warehouse. That means all your enterprise data are available. In addition to common geospatial capabilities, Teradata Database allows you to store a series of points with timestamp information to understand and analyze movement tracked by GPS or other means.

- Easily maintain and base analyses on the changes in your business data. The temporal option available with Teradata Database helps you cut through the costly, complicated, and time-consuming effort needed to keep pace with changes in your business.

  It replaces manual processes with automatic history-tracking capabilities. For example, a retailer can easily recategorize a product—frozen dessert to ice cream—and answer critical point-in-time business questions such as: How many customers did we have on a specific date? How many product categories? And how did our frozen dessert sales compare to the same month last year? The temporal option lets you optimize queries with time-based constraints. It also makes it easy to complete compliance reports that accurately reflect what you knew about your business on a certain date. Why? Because you have a full view of your business history readily available with a straightforward query.

- Enhance cube processing, data mining, query performance, and modeling. The ease-of-use and optimization features built into Teradata Database save you

"I would love to say that I spend half my time administering the Teradata system. Because when you consider the EDW's importance to the company, it should be half my time. But the truth is that I spend a lot more time maintaining other databases and performing other aspects of my job than I do working on the Teradata system. Teradata runs so well that it really runs on its own. I don't spend a lot of time managing it compared to the other databases that I am responsible for. It's by far the most important and yet it takes the least amount of effort to keep running."

– Sandy Rumble, Data Center and Operations Manager, PING, Inc.

time and provide increased currency and frequency of those analyses. Use of hybrid row/column table and in-memory optimizations are applied automatically along with other features for enhanced performance without query modification or DBA intervention.

- Extend the scope of data stored in the data warehouse and the data used in analyses. Store XML and JSON documents natively in the database and directly query the documents along with other data in the database for analysis using SQL. Late binding allows JSON content to change over time without physical database changes. Issue common SQL queries to the Teradata Database and include joins of data contained in Hadoop, Teradata Aster® Database, and other common databases using Teradata QueryGrid™ for diverse analyses within the high-performance Teradata Database.

## Built-in Business Benefits

Teradata Database delivers benefits that provide a single view of your business, a view that lets you make smarter, faster decisions and realize top- and bottom-line growth. In fact, it will help you:

### Extend Decision Support Capabilities

Teradata Database can enable more sophisticated BI analysis by optimizing increasingly complex analytics and simplifying their development. That increased performance gets answers to users faster and processes more work in the same time frame.

TERADATA.

## Ease Enterprise Integration

Our enterprise extensions allow Teradata Database to fit better with your enterprise infrastructure. We also offer enhanced security and privacy capabilities that meet all consumer and regulatory legislation. And our enhanced accessibility for external sources, targets, and processes enables multiple language data warehouses for global corporations.

## Extend the Capabilities of Teradata Database

Each industry, business, and application is unique. Many incorporate unique types of data and analytic functions. Within Teradata Database's high-performance and scalable parallel architecture, you can extend the native capabilities with user-defined types, user-defined functions, user-defined SQL operators, stored procedures, and table operators. Embed script program logic with special script table operators for Ruby, Perl, Python, R, or shell scripts to put application logic in the database for architectural flexibility. Store any type of data your business uses, or have a query automatically reach out for data stored in Hadoop or Oracle transaction systems and analyze it with all of the scalability and ease of management you expect from Teradata Database.

"We are serving dashboards that allow decision makers to see what is happening on the system, how many subscribers there are and how much money the company earns in a day."

– Vedat Güneş, Technical Project Manager, Türk Telekom

## Increase Performance for Operational Workloads

Teradata Database lets you acquire data faster than ever for more effective, timely decisions. We'll show you how to extend the operational use of your data warehouse to more easily support front-line applications and decision makers.

## Streamline Mixed Workload Management

Optimize your data warehouse efficiency and improve business responsiveness with streamlined management of mixed workloads that will:

- Automatically define workloads based on business needs.
- Establish service level goals for multiple workload types.
- Develop prioritization strategies according to business rules.
- Separate system resources into virtual partitions for departments, geographic regions, or funding models.
- Monitor adherence to your service level goals.

## Need More Reasons to Choose Teradata?

Teradata helps companies get more value from data than any other company. Our big data analytic solutions, integrated marketing applications, and team of experts can help your company gain a sustainable competitive advantage with data.

## For More Information

To learn more about how Teradata Database can help you build a better data warehouse—and a better business—call your Teradata representative, or visit **Teradata.com**.

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# Teradata Database 15.10 Specifications

## Database Capacity

- 3TB - 234PB
- Up to 2,048 nodes

## Data Model

- Relational
- ANSI SQL compatible
- Full query parallelism
- Balanced performance

## Architectures Supported

- Symmetric multiprocessing (SMP)
- Massively parallel processing (MPP)
- Cloud

## Operating Systems Supported

- Linux

## Client Platforms Supported

- Microsoft® Windows®
- Apple® Mac OS X
- IBM z/OS MVS
- Most UNIX® platforms
- Linux

## Optional Capabilities

- Teradata Temporal
- Teradata Columnar
- Teradata QueryGrid
- Teradata Row-Level Security
- Teradata Secure Zones

## Mainframe Integration

- IBM (or compatible) mainframe

## Language Preprocessors

- PL/1, C, COBOL

## Tools and Utilities

- Teradata Management Portlets
- Teradata Viewpoint (web-based system management portal)
- Teradata Parallel Transporter (unified load utility for continuous, single, or multi-table loads from a variety of sources with script or programmatic controls)
- Teradata TPump (continuous load)
- Teradata FastLoad (data loading)
- Teradata MultiLoad (data loading)
- Teradata FastExport (data extraction)
- Teradata Data Mover (data movement between systems)
- Teradata Geospatial import/export
- Teradata Backup Archive and Recovery Solutions
- Teradata Active System Management Portlets (mixed workload management)
- Teradata Analyst Pack, including Teradata Visual Explain, Teradata System Emulation Tool, and Teradata Index Wizard

- Teradata Utility Pack
- Teradata Warehouse Miner (data mining)
- Teradata Profiler (data quality)
- Teradata Analytic Data Set Generator (data preparation)
- R add-on for Teradata (data mining)
- Teradata Aggregate Designer
- Teradata OLAP Connector for Excel
- Teradata BTEQ (basic query tool)
- Teradata SQL Assistant (basic query tool)
- Teradata Studio (query, DBA, and ad-hoc data loading tool)
- Teradata Unity (multi-system ecosystem management, synchronization, and query routing)
- Teradata Meta Data Services

## Application Programming Interfaces

- ODBC Driver for Teradata
- Teradata JDBC Driver
- Teradata CLI
- .NET Data Provider for Teradata
- Teradata Plug-in for Eclipse
- Teradata REST Services
- JMS Adapter (JMS messaging system interface)