

# Teradata Data Warehouse Appliance 2850

07.16 EB9388 DATA WAREHOUSING

## The Best Performing Appliance in the Marketplace

Teradata Corporation makes taking your first step toward an integrated data warehouse an easy one with the Teradata® Data Warehouse Appliance 2850. With this enterprise-ready platform from Teradata, you can start building your integrated data warehouse, and grow it as your needs expand.

## Ready to Run

Delivered ready to run, the Teradata Data Warehouse Appliance is a fully-integrated system purpose built for data warehousing. The appliance features the industry-leading Teradata Database, a robust Teradata hardware platform with dual Intel® Xeon® 18-core processors, up to 12TB of memory in a single cabinet, SUSE® Linux operating system, and enterprise-class storage—all preinstalled into a power-efficient unit. That means the system is up and running live in just a few hours for rapid time to value.



## Effortless Scalability

Unmatched in its scalability, the Data Warehouse Appliance accommodates future business growth by expanding incrementally from two to 2,048 nodes. It also accommodates user data space from 16TB to 34PB of uncompressed user data. Featuring a massively parallel processing (MPP) architecture, the platform supports scalable growth, not only in data capacity, but in all dimensions including performance, users, and applications.

The Teradata BYNET® system interconnect for high-speed, fault tolerant messaging between nodes is a key ingredient to achieving scalability. The BYNET is based on a robust, powerful protocol with innovative database messaging features that optimize the use of a dual Mellanox® InfiniBand™ fabric for the Teradata MPP architecture.

## Mission-Critical Availability

The Teradata Data Warehouse Appliance achieves availability and performance continuity through Teradata's unique clique architecture where nodes are connected to common storage. This clique approach allows Teradata Database to seamlessly failover workloads between the nodes in a clique if a node fails. The platform also contains redundant hardware components, so if a failure occurs, your business continues to run. Many of the hardware components are hot-swappable, allowing service repair without affecting system availability.

## Powerful

With modular design and architecture, the appliance is implemented with best-in-breed system elements, including dual 18-core Intel Xeon processors and ultra-high-density Seagate® storage arrays. It uses the proven, high-performance Teradata Database. Established in hundreds of customer sites around the world, it's the most robust database for analytic data warehousing.

This appliance's innovative design is optimized for fast scans, in-memory, and deep-dive analytical workloads. Its software-based, shared-nothing architecture delivers always-on parallelism, so even the toughest, most complex queries complete quickly. The platform fully

leverages both the Intel Multi-Core and Hyper-Threading processor technologies to gain maximum processor and system performance.

### Automatic Data Compression

- Uses advanced software compression algorithms.
- Increases customer data space with no DBA tuning or setup required.

### Parallel-Aware Optimizer

- Automatically designs the fastest query plan on complex queries without the need for hints.
- Can rewrite problem queries on the fly and optimize SQL from BI tools to take advantage of unique Teradata Database performance advantages.

### High-Performance Settings

- Primary indexes, multi-level partitioned primary indexes, and aggregate join indexes provide super-fast results and eliminate the need to scan entire tables.
- No time consuming data or SQL pre-preparation required.
- Utilizes high throughput Teradata BYNET V5 on InfiniBand interconnect.

### Robust Workload Management

- Enables fine grained classification of workloads.
- Uses dynamic priority management, including tactical priority for better Service Level Agreement (SLA) performance.
- Ensures your queries complete in business time.
- If the system is not fully utilized, CPU is automatically made available to lower priority performance groups.
- Threshold exception actions enable long-running queries to be passed to a lower priority level dynamically based on CPU seconds, allowing for more effective query management.
- System filters and throttles help manage queries, sessions, and utilities.

### Advanced Feature Functionality

- Teradata Intelligent Memory™ offers automatic, real time, usage-based monitoring of data access and uses this information to place the most heavily used data in memory. The total available memory scales automatically and linearly as the system grows due to Teradata's shared-nothing architecture.
- Optional Teradata Columnar for true hybrid row/columnar capabilities that drastically improves query performance and delivers maximum data compression.

- Optional Teradata Temporal for time-based analytics that allow a customer to track and analyze data in the warehouse that changes over time.
- Optional full disk encryption for tamper-proof security on data at rest within the rack.

### Integrated Analytics Foundation

The Teradata Data Warehouse Appliance provides an environment that enables agile analytics with incredibly fast parallel processing, scalability to process massive volumes of data, and rich in-database analytic capabilities. Teradata provides a comprehensive set of in-database analytics that leverages the database's speed, while eliminating time consuming and costly data movement. The analytics range from data exploration, geospatial, temporal, predictive, emerging open source technology—such as R and GeoServer—big data integration, and development environments. In addition, Teradata has collaborated with industry-leading partners to provide unstructured data analytics, visualization, predictive analytics, and business intelligence, with highly optimized in-database integrations.

### Flexible and Versatile

The Data Warehouse Appliance offers many options to configure your system, depending on your data capacity requirements and workload requirements. To maximize cabinet efficiency for customers with multiple systems in the Teradata Unified Data Architecture™, Teradata Aster®, Apache® Hadoop, and SAS nodes can be installed into the base cabinet. Alternatively, up to three additional Teradata systems may be installed. Teradata Backup and Restore (BAR) storage hardware and Teradata Multipurpose Servers are also available. Customers may choose between two drive sizes—600GB or 1200GB—to best satisfy data storage needs.

The Teradata Data Warehouse Appliance is ideal for companies that are new to data warehousing or that want to complement an existing data warehouse. For instance, the platform can be used as a production integrated data warehouse, a cyclical data mart, disaster recovery, ELT offload, or an analytical sandbox for testing applications before their implementation in the enterprise data warehouse.

### Cost Effective and Easy to Manage

The Teradata Data Warehouse Appliance is so easy to manage, you can free up your DBA resources to do other valuable tasks. With virtualized CPU, memory, and storage—all designed to work together as a unit—you get automated management of physical disk space so your

database administrators never have to worry about data placement or data reorganization. The optimal use of in-memory data placement is determined and managed automatically. So, whether you have an appliance with two nodes or 200, the tasks for managing workloads and processing resources remain the same. Those tasks only increase as you gain more value from the system with more users and applications sharing the resources.

The long-term advantages are clear:

- Eliminate, or in many cases, integrate disparate data marts and simplify your organization by standardizing on a single Teradata Integrated Data Warehouse.
- Leverage your existing resources and tools—with Teradata as your standard for all BI platforms—your DBAs, systems administrators, and application developers can support multiple systems without additional training. Now they can focus on doing higher value activities and addressing the needs of the business.
- Grow from an integrated data warehouse to a platform with more active capabilities and user concurrency with Teradata IntelliFlex™ as your needs evolve by leveraging the same applications, data, data models, table structures, views, queries, and load programs.

## Complete Service and Support

In addition to hardware and software technology, Teradata offers you a full array of support advantages, including:

- A single vendor for all your support needs; there's no need for third-party coordination.
- Industry-certified regional and global Customer Care Centers.
- Experienced service representatives dedicated to data warehouse support.
- Tested and proven support processes.
- Secure remote connectivity options.

## A Robust Solution

As the industry leader in analytic data warehousing, Teradata has partnered with other world-class companies to provide you with an array of applications and tools to help you get the most value from your data warehouse. Applications and tools from industry innovators, including Ab Initio®, Alation, Alteryx®, Attunity®, Cloudera®, ESRI®, Fuzzy Logix, Harte Hanks®, Hewlett Packard Enterprise® Voltage Security,

### Teradata Data Warehouse Appliance 2850 Description

#### Integrated Cabinet

- Dual Intel Xeon Processors E5-2697 v4, each with 18 cores running at 2.3GHz
- Seagate Ultra48™ AssuredSAN® High-Density storage arrays
- Up to twelve nodes in a cabinet
- Up to 1TB of memory per node
- Global hot spare drives
- Teradata BYNET Interconnect software
- System Management Infrastructure and Teradata Administration
- Teradata Multipurpose Servers and BAR storage (tape or disk) may be installed in the base cabinet
- Up to two Teradata Data Warehouse Appliance 2800/2850 systems may be installed in the base cabinet as production or test/development
- Teradata Aster, Hadoop, or SAS nodes may be installed in the base cabinet

- Up to two Teradata Data Mart Appliance 680s may be installed in the base cabinet as a departmental data mart, IDW test/development, or entry-level IDW

Uncompressed Disk Capacities (Software compression enabled by default, typical rate is 3x depending on data)

- 600GB Drives (RAID-1)
  - Full Cabinet - 100TB user space
- 1200GB Drives (RAID-1)
  - Full Cabinet - 200TB
- System scalable to more than 34 PB with 1200GB drive
- Includes the Teradata tools and utilities you need to build and maintain your data warehouse, including:
  - **Management** - Teradata Viewpoint Portlets
  - **Data Loading** - Teradata Parallel Transporter Load, Export, Backup, and Update Operators

- **Data Management** - Teradata Administrator
- **Connectivity** - ODBC, JDBC, CLI, OLE DB Provider, .NET Data Provider, Plug-in for Eclipse, Data Connector, Database Export Utility, Teradata QueryGrid™
- **SQL Generation** - Teradata SQL Assistant, Basic Teradata Query Utility (BTEQ)
- Teradata Virtualized Management Server
- Single, 1U server for database, hardware, and infrastructure management
- Teradata Viewpoint, Teradata Service Workstation, and cabinet management interface controller
- Provides single operational view to administer the entire MPP system with local or remote system monitoring

Hortonworks™, IBM®, Informatica®, Information Builders, Karmasphere, MapR™, Microsoft®, Microstrategy®, Oracle®, TIBCO® Spotfire, and WhereScape®, and others, are ready to run on Teradata Database. Since the Teradata Data Warehouse Appliance includes the Teradata Database, you can easily leverage these vendors' tools and applications without any complex integration work.

## Why 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. Teradata helps organizations leverage all their data so they know more about their customers and business, doing more of what's really important.

## For More Information

To find out how a Teradata Data Warehouse Appliance can make your entry into data warehousing fast, efficient, and cost-effective while you improve your decision-making capabilities and grow a stronger, more productive business, contact your local Teradata representative, or visit [Teradata.com](http://Teradata.com).

Specifications		
<p><b>Cabinet Specifications</b></p> <ul style="list-style-type: none"> <li>• Height: 80.5 in. (204.5 cm)</li> <li>• Width: 24 in. (61 cm)</li> <li>• Depth: 49 in. (124.4 cm) – 47 in. (119.4 cm) w/o the front and rear doors</li> <li>• Weight: 2,579 lbs. (1,170 kg) fully loaded with crate</li> <li>• Installed Weight: 2,179 lbs. (988 kg) fully loaded w/o crate</li> </ul> <p><b>Operating Specifications</b></p> <ul style="list-style-type: none"> <li>• Operating Temperature: Allowable: 59°F to 90°F (15°C to 32°C)</li> <li>• Recommended: 64.8°F to 80.6°F (18°C to 27°C)</li> <li>• Relative Humidity: Allowable: 20% to 80% (non-condensing)</li> <li>• Recommended: low-end moisture: 5.5°C DP (41.9°F DP); high-end moisture: 60% RH and 15°C DP (59°F DP)</li> <li>• Voltage Range: North America: 200-240VAC, International: 220-240/381-415V</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency: 50Hz/60Hz</li> <li>• Current: <ul style="list-style-type: none"> <li>- Worldwide 30A Single-Phase or Phase-Phase, 4 Cord (limited configuration only)</li> <li>- North America: 30A 3-p delta 4-cord or 60A 3-p delta 2-cord</li> <li>- International: 32A 3-p wye 2-cord</li> <li>- All plugs are IEC 60309 CEE17</li> </ul> </li> <li>• Max Power: 16.0kW</li> <li>• Dual AC: Standard. Bottom or top egress supported</li> <li>• Compliant with U.S. and International Safety and Emissions Standards</li> <li>• RoHS compliant; WEEE Services Available</li> </ul> <p><b>Support Services</b></p> <p><b>Teradata Premier Appliance Support</b></p> <ul style="list-style-type: none"> <li>• Delivers a single source service to maximize value and availability of your solution.</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible support options that allow you to select the coverage and response times you need.</li> <li>• Integrated, proactive tools, such as Teradata Vital Infrastructure and Teradata ServiceConnect™ remote connectivity.</li> <li>• Optional Services: Full Parts Replacement, Priority Service, or On-Site Spare Parts.</li> </ul> <p><b>Teradata Vital Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Built-in hardware and software support capability</li> <li>• Automatic alerting and seamless incident creation (Call Home)</li> </ul> <p><b>Implementation Services</b></p> <ul style="list-style-type: none"> <li>• System Installation</li> <li>• Software Implementation</li> </ul> <p><b>Operational Services</b></p> <ul style="list-style-type: none"> <li>• Critical System Management</li> <li>• Data Migration</li> <li>• Operational Mentoring</li> </ul>

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