

Teradata Extreme Data Appliance

Analyze Deep, Large Data Volumes



Companies today create enormous amounts of data in their day-to-day operations. Every click on a web site, every call on a cell phone, every movement of an RFID tagged item, and every step of a manufacturing process generates data records. And, when those records are added up over months and years, you can end up with hundreds or even thousands of terabytes of data.

Savvy companies realize that with the right technology, they can finally gain real business value from analyzing those enormous amounts of behavioral or

process data. But first they must be able to make a significant amount of this extensive business area data available to the knowledge experts for corresponding deep analysis. This means that the data must be available on-line in a single system to accomplish the analysis simply, quickly, and cost effectively.

That's why Teradata Corporation, the global leader in enterprise data warehousing, has built the Teradata® Extreme Data Appliance 1550 for a specific purpose: to provide you with a complete, integrated

appliance to analyze massive amounts of deep data – an appliance that leverages Teradata's technical superiority at the lower cost per unit of data that matches your volume-based value needs.

Gain Strategic Intelligence

This purpose-built appliance allows you to gain deep strategic intelligence from extremely large amounts of detailed data. It supports very high-volume, non-enterprise data/analysis requirements for a small number of power users in specific workgroups or projects that are outside of your enterprise data warehouse (EDW).

Just as important, this appliance from Teradata is based on the field proven Teradata Purpose-Built Platform Family, bringing you the same scalability and data warehouse capabilities you've come to expect from Teradata. And like all the members of the family, the Teradata Extreme Data Appliance is based on the industry-leading Teradata Database software and utilities.

Feature-Rich Resources

The Teradata Extreme Data Appliance also leverages Teradata Database's unique virtual architecture and optimizer to enable the scale up of data available for processing by queries. Among its other key features are:

- > Extremely large user data capacities with 34TB per node of uncompressed user data. With a typical 40% compression level, the usable capacity per node expands to 50TB. This means that the appliance can support a 1PB data store/analysis need with only 20 Teradata nodes.

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- > Featuring massively parallel processing (MPP) architecture, the Teradata BYNET™ system interconnect with high-speed, fault tolerant, optimized messaging between nodes is a key scalability ingredient. The Teradata Extreme Data Appliance has scale out capability with up to 1,024 nodes, thereby enabling the potential of a huge data warehouse of more than 50PB.
- > Utilizes a density optimized version of Teradata Storage that is based on industry-standard, commercial high capacity drives and high-performance, industry leading disk array technology. Storage consists of a fixed configuration of 124 commercial data disk drives each with 1TB of capacity. The storage array also includes four hot standby drives to ensure minimal impact and data loss exposure from drive failures – an important capability due to the large amount of data in each array.
- > Pre-configured – to meet the demands of very large data set analysis with simple-to-order and easy-to-expand increments of a single Teradata node with storage.

Cost-Effective Flexibility

What does all that mean to you and your business? It means:

- > The total cost of acquisition for each unit of storage is right-sized to meet your ROI needs for analysis of massive amounts of data.
- > The enhanced density for storage and node technology reduces system data center footprint per TB by up to 75%

and reduces overall electrical power needs per TB by more than 60% over alternative approaches.

- > All the indexing capabilities of Teradata Database are included on this platform. These features, such as Partitioned Primary Index, help you efficiently organize and query the very large amounts of data.
- > System management is made easier with simplified platform administration, control, and monitoring through a single operational view and Teradata Viewpoint Server. This industry-leading, integrated systems management infrastructure monitors and controls the system, performs routine events, such as orderly start up and shut down, and protects the system from disruptive failure.
- > There is flexibility to migrate from Teradata Extreme Data Appliance to another Teradata platform family member as your needs evolve. You can leverage the same resources and processes since it runs the same underlying Teradata Database. Your data models, data, table structures, user views, queries, and load jobs will all migrate across the Teradata Purpose-Built Platform Family.

Purpose-Built Excellence

Teradata Extreme Data Appliance provides unmatched data scalability, eliminates the unexpected, reduces risk, and allows you to focus on driving the highest return on your data warehousing investments – today and tomorrow.

Each appliance is fully integrated and pre-tested, so it's ready to run right after delivery. In fact, you can begin loading data and running queries shortly after initial delivery – so you can quickly begin seeing real business value. And, Teradata Extreme Data Appliance is backed by award-winning Teradata consulting and support services, and Teradata Corporation's demonstrated data warehousing expertise.

Why Teradata?

Need more reasons to choose the Teradata Extreme Data Appliance to meet your extremely large data set analysis needs? This single vendor solution from Teradata provides everything you need to perform deep data analysis at a storage unit price point you can afford. And this appliance brings exactly what you've come to expect from Teradata: strong, proven technology; a solid track record; and deep industry experience.

Teradata Corporation, the global leader in data warehousing and analytic technologies, provides solutions that help make smart companies smarter. Teradata gives companies the people, technology, innovation, and a world-class network of customers and partners enabling them to gain competitive advantage to master their markets. With Teradata, the smartest wins.

For More Information

To find out more about how Teradata Extreme Data Appliance 1550 can help you raise enterprise intelligence while you grow your data warehousing capabilities – and your business – contact your local Teradata representative or visit Teradata.com.



Teradata Extreme Data Appliance

Teradata Extreme Data Appliance 1550 Description

<p>Node Cabinet</p> <ul style="list-style-type: none"> • One to nine Teradata processing nodes • BYNET switches • Server management server and network • UPS, Dual AC distribution, cooling fans • Patented enhanced airflow <p>Teradata Nodes</p> <p>Processors</p> <ul style="list-style-type: none"> • Up to two Quad Core Intel® Xeon® 5300 Series 2.33GHz processors with 8MB Advanced Transfer L2 Cache <p>Memory</p> <ul style="list-style-type: none"> • 32GB using DDR2 667MHz fully-buffered DIMM with ECC for Teradata Database running on Novell® SUSE® Linux 64-bit <p>Data Storage Devices</p> <ul style="list-style-type: none"> – Two hot-swappable 73GB or 146GB SAS hard drives (four max) – One CD/DVD-ROM drive – One 4mm 36/72GB tape drive per cabinet (standard) <p>Connectivity per Node</p> <ul style="list-style-type: none"> • Integrated RAID controller with SAS backplane • Storage Connectivity <ul style="list-style-type: none"> – 4Gb Quad Fibre Channel • Customer Network Connectivity <ul style="list-style-type: none"> – Four on-board 1Gbit Ethernet connections (two for Server Management) – 10/100/1000 Copper – Dual and Quad Ports – 1GB Fiber (Optical) – Single and Dual Ports • Mainframe Connectivity (requires Channel Node in cabinet) <ul style="list-style-type: none"> – IBM ESCON – IBM FICON <p>Operating System</p> <ul style="list-style-type: none"> • 64-bit Novell SUSE Linux 	<p>MPP Interconnect BYNET V3</p> <ul style="list-style-type: none"> • Enabling linear scalability up to 1,024 nodes • Fault tolerant interconnect via dual networks • Self configuring, fully fault diagnosable • 376MB per second per node bandwidth on dual redundant networks <p>High Availability Features</p> <ul style="list-style-type: none"> • Cabinet-mounted UPS ensures safe shutdown of Teradata applications during power failures. • Dual AC inputs enable power sourcing from two grids for maximum uptime. • Hot pluggable components include power supplies, UPS batteries, and disks. • Fault resilient fan modules, redundant power supplies, and fault tolerant interconnect. • Optional hot standby node that provides full performance continuity during node failure. <p>Teradata Administration Workstation</p> <ul style="list-style-type: none"> • Provides single operational view to administer the entire MPP system with local or remote system monitoring. • Connected via redundant gigabit Ethernet LAN to system elements. • Enables management of external disk subsystems. • Microsoft® Windows® 2003-based console server. <p>Teradata Managed Server</p> <ul style="list-style-type: none"> • General purpose server supervised by Teradata system management. • Used by applications that support Teradata Database, such as BAR, Teradata ViewPoint, and SAS. <p>Enterprise Storage Cabinet</p> <p>Disk Drive Supported</p> <p>Commercial, SATA interface, 7.2K RPM, 1TB capacity</p> <p>Storage Capacity – Spinning Disk</p> <ul style="list-style-type: none"> • Up to 124 drives = 124TB 	<p>System Configuration</p> <ul style="list-style-type: none"> • Connects directly to Teradata nodes and certified for operation with Teradata Database. <ul style="list-style-type: none"> – Quad Fibre Channel Adapters supporting 4Gb/sec connectivity between nodes and the multi-ported disk arrays. • Support for Novell SUSE Linux operating environments. <p>Features</p> <p>Dual high-performance, active – active controllers. Array features include:</p> <p>RAID Support</p> <ul style="list-style-type: none"> • RAID 1 – Mirroring <p>Node/Host Connectivity</p> <ul style="list-style-type: none"> • Maximum distance between node and storage: 100 meters (328 feet). • Each of the two controllers in an array provides four 4Gb Fibre Channel host ports. <p>Disk Drive Connectivity</p> <ul style="list-style-type: none"> • Four Fibre Channel drive interfaces (4Gb/sec each) from controller to drives. Drives provide Fibre Channel to SATA conversion <p>Cache Memory</p> <ul style="list-style-type: none"> • 1GB/controller • Double-bit error detection <p>Availability Features</p> <ul style="list-style-type: none"> • Isolated Drive Interconnect – direct point-to-point connections from controller to disk that provide greater fault isolation for higher availability. • Parallel Drive and On-Line Controller Firmware Download – Firmware can be quickly downloaded to eight disks in parallel, and controllers are loaded while on-line to increase availability. <p>Drive Recovery/Fault Detection</p> <ul style="list-style-type: none"> • Automatic drive I/O retries • Automatic drive media scan • Automatic failed drive detection • Drive fault signal • Subsystem summary fault signal
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Teradata Extreme Data Appliance 1550 Description (continued)

<p>Configuration/Monitoring</p> <ul style="list-style-type: none">• SYMPlicity Software• Multi-Pathing Software• Failover Configuration Monitoring <p>Global Hot Spare</p> <ul style="list-style-type: none">• Includes four global hot spare drives• Higher level of data availability• Automatic drive reconstruction <p>Redundant Components</p> <ul style="list-style-type: none">• Hot-swappable component canisters replaceable online<ul style="list-style-type: none">– Drives, power supplies, fans/fan control boards, and controllers– Redundant dual active controllers• Fully redundant data access<ul style="list-style-type: none">– Support for automatic failover of host adapters, (dual) data paths, and controllers• On-line resource allocation <p>Node and Storage Cabinet Specifications</p> <p>Physical Cabinet Dimensions</p> <ul style="list-style-type: none">• Height: 77 in. (195.6 cm)• Width: 24 in. (62.6 cm)• Depth: 45 in. (114.3 cm)	<ul style="list-style-type: none">• Weight:<ul style="list-style-type: none">– Node Cabinet: 1,575 lbs. (714.4 kg) with 8 nodes– Storage Cabinet: 1,670 lbs. (758 Kg)• Operating Temperature: 50°F to 104°F (10°C to 40°C)• Voltage Range: 208/220/230/240VAC• Frequency: 50-60Hz• Current: 50 Amp (32 Amp 3-phase available when required)• Power: 6000 Watts• Dual AC: Configurable• Compliant with U.S. and International Safety and Emissions Standards• RoHS and WEEE compliant <p>Support Services</p> <p>Global Support</p> <ul style="list-style-type: none">• Most experienced data warehousing service personnel• 24-hour x 365 days availability <p>Warranty Support</p> <ul style="list-style-type: none">• One-year remote and on-site hardware support, operating system problem resolution• 24-hour incident reporting	<p>Availability Management Services</p> <ul style="list-style-type: none">• Proactive, holistic approach for protecting a system from risk events that can reduce or degrade availability. <p>Enterprise System Support</p> <ul style="list-style-type: none">• Delivers quality, one-source support and single point of delivery with each service level.• Two flexible support solution levels designed to grow, including Base and Business Critical.• Integrated, proactive tools, such as Teradata Vital Infrastructure and VPN secure remote connectivity. <p>Teradata Vital Infrastructure</p> <ul style="list-style-type: none">• Built-in support software available on each appliance.• Regularly collects system asset data.• Fault event data are recorded, automatic incident reports are created.• Alert notifications are sent and tracked. <p>Implementation Services</p> <ul style="list-style-type: none">• Staging Services• Installation Services
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