Teradata Active Enterprise Data Warehouse 5600

Active Data Warehousing Platform for Teradata Solutions

In today's fast-paced, ever-changing competitive environment, your data warehouse must provide higher performance, availability, and scalability to support your business's increased real-time and decision support workloads. Teradata offers a broad family of platforms that spans the business and analytical data warehouse needs throughout a company. Only the Teradata® Active Enterprise Data Warehouse (EDW) 5600 meets the operational and strategic intelligence needs as the most dependable, highest performing, massively parallel processing (MPP) platform ever released in a Teradata solution.

The Teradata Active EDW 5600 and the Teradata Database offer a totally integrated solution optimized to provide the complete platform solution for an enterprise data warehouse and its operational expansion as an active data warehouse. The result – you can focus on your business and not on managing technology, enabling you to make smarter decisions faster and maximize ROI.

The Teradata Active EDW 5600 platform is purpose built to run the Teradata Database with high efficiency to support all of your data warehousing initiatives. The MPP architecture of the platform fully supports the parallel, shared nothing architecture of the Teradata Database.

The Teradata Active EDW platform can deliver real-time intelligence by enabling Active Data Warehousing™ technology in your enterprise. This key capability places vital data into the hands of front-line decision makers, while extending traditional data warehouse functionality into the realm of tactical decision making. With the Teradata Active EDW, you can combine both strategic and operational workloads in a single data warehouse. The five key attributes of the Teradata Active EDW platform are:

High-performance Technology

With modular design and architecture (See Figure 1.), the Teradata Active EDW platform is implemented with discrete system functions that are independently evolved without impact to the rest of the system. In addition, Teradata leverages the industry-leading Intel® CPU technology to achieve high-performance processing nodes. It features Quad Core Intel Xeon® Processors with Intel 64-bit architecture. This technology enables the Teradata Active EDW to run 64-bit operating systems that support the expanded memory that best leverages the processor performance.

TERADATA®
Raising Intelligence

Teradata Active Enterprise Data Warehouse 5600

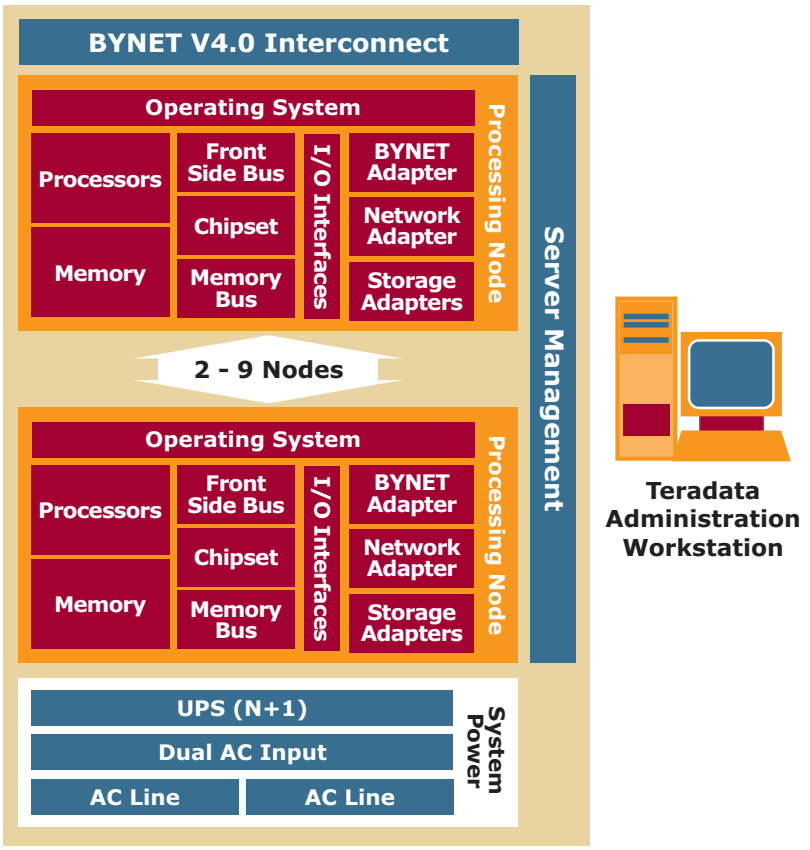

Figure 1. Teradata Active EDW 5600 Platform Components.

Scalability

Unmatched in its scalability, a Teradata system based on the Teradata Active EDW 5600 platform accommodates future business growth by expanding incrementally from one to 1,024 nodes – the basic Teradata processing element. It also accommodates user data space from three terabytes to more than 11 petabytes. Featuring MPP architecture, the platform supports scalable growth in all dimensions. The Teradata BYNET® system interconnect for high-speed, fault tolerant warehouse-optimized messaging between nodes is another key scalability ingredient.

Availability

Minimizing the impact of component or module failures, the platform contains redundant hardware components, so if a failure occurs, it won't affect Teradata Database operation or the end-user experience. Many of the hardware components are hot-swappable, allowing service repair without affecting system availability. The Teradata Active EDW platform also achieves availability through Teradata's unique clique architecture in which one or two nodes and a Hot Standby node are connected to common storage. This clique approach allows Teradata Database to failover workloads between the nodes of the clique if a node fails.

Manageability and Ease of Use

The platform features simplified platform administration, control, and monitoring through the single operational view on the Teradata Administration Workstation.

An 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, such as a power loss or extreme heat. Combined with Teradata Database's powerful workload management capabilities, the platform enables users to quickly achieve business results.

Growth with Investment Protection

The Teradata Active EDW platform and the Teradata Database have the capability called coexistence to support multiple platform generations within a single system while gaining full performance from each generation. By enabling expansion through coexistence, you can expand your system to include the latest platform, while reaping a return on your initial technology investment and leveraging the price/performance curve as it evolves.

TERADATA®
Raising Intelligence

Teradata Active Enterprise Data Warehouse 5600

Flexible Platform Options

The Teradata Active EDW supports a variety of processing elements integrated into the cabinet for the flexibility to meet customer needs. These include:

Teradata node – the basic processing element for the Teradata Database.

Hot standby node – a redundant Teradata node added to a clique to provide full performance continuity during node failure.

Channel node – a dedicated Teradata node that supports Teradata Database's unique capability for mainframe connectivity.

Managed server – applies enterprise level Teradata system management capabilities to a commodity server for applications that support Teradata Database. A base model of the server can be configured to meet your needs, and supports Linux and Windows 2003 operating systems. A variety of pre-configured models are available for specific applications, such as Teradata Viewpoint, load, Data Mover, and Multi-System Manager.

Platform Sustainability

The Teradata Active EDW platform's performance and scalability enable you to save significant energy and floor space while achieving the same data warehouse work as done by previous systems. Also, the Teradata platform's unique coexistence capability lengthens the useful life of Teradata systems resulting in less carbon and electronic waste.

The Teradata Active EDW Platform

Two models of the Teradata Active EDW are available. To meet your needs, you can choose the level of processing power in each node, as determined by the number of Intel Xeon Processors and the scalability of system data.

> 5600H is the model that provides the highest performance and scalability. This model leverages the full breakthrough in processing power that a Quad Core Intel Xeon Processor in a two-way configuration can deliver to meet your enterprise's demands for Active Data Warehousing™ performance and growth.

> 5600C delivers the processing power that achieves coexistence with three previous Teradata platform generations and offers a fully scalable entry-level solution with a node based on a single Quad Core processor.

Model	5600H	5600C
Application	High Performance	Coexistence and scalable entry level
Cores	8	4
System Interconnect	BYNET V4	BYNET V4
Scalability	1 to 1024 Nodes	1 to 1024 Nodes
User Data Space/Node (@Design Center)	Up to 11.6TB	Up to 6.1TB

Purpose-Built Platform Excellence

The Teradata Active EDW platform can adapt and grow along with your business. Backed by award-winning professional services, support, and Teradata Corporation's demonstrated data warehousing expertise, the Teradata Active EDW is the solid foundation you need to protect your data and your investment.

Each platform is integrated according to your configuration and pre-tested, so it's ready to run right after delivery. You can begin loading data and running queries shortly after initial delivery – and quickly begin getting business value.

The Teradata platform provides unmatched performance, eliminates the unexpected, reduces risk, and allows you to focus on driving the highest return on your data warehousing investments – today and in the future.

TERADATA®
Raising Intelligence

Teradata Active Enterprise Data Warehouse 5600

Teradata Active Enterprise Data Warehouse 5600 Description

Teradata Nodes

Processors

- Up to two Quad Core Intel Xeon 5500 Series 2.66GHz processors
- 8MB Level 3 Cache per processor
- Intel Hyper-Threading Technology with up to 2 threads per Core
- Quick Path Technology at 6.4 Giga-transactions per second

Memory

- Up to 48GB using DDR3 fully-buffered DIMM with ECC for Teradata Database running on Novell® SUSE® Linux 64-bit or Microsoft Windows Server 2003 64-bit
- Memory controller built in each processor

Internal Storage Devices

- Integrated RAID controller with SAS backplane
- Six media bays per node
  - Up to four hot-swappable 300GB or 450GB SAS hard drives (three standard)
  - One CD/DVD-ROM drive
  - One 4mm 36/72GB tape drive per cabinet (standard)

Connectivity per Node

- Five PCI slots:
  - Three full profile PCIe Gen 2
  - Two half profile PCIe Gen 2
- Storage Connectivity
  - 4GB Dual Fibre Channel and Quad Fibre Channel
  - 2GB Quad Fibre Channel
- Customer Network Connectivity
  - Six on-board 1Gbit Ethernet connections (two for Server Management)
  - 10/100/1000 Copper – Quad Ports
  - 1Gbit Fiber (Optical) – Dual Ports
- Mainframe Connectivity (requires Channel Node)
  - IBM ESCON
  - IBM FICON

Operating System

- Novell SUSE Linux 64-bit
- Microsoft Windows Server 2003 64-bit (2010)

MPP Interconnect BYNET V4.0

- Enabling linear scalability up to 1,024 nodes
- Fault tolerant interconnect via dual networks
- Self configuring, fully fault diagnosable
- 960MB per second per node bandwidth on dual redundant networks
- Up to 100M link cable length for data center flexibility
- BYNET adapters on 64-bit PCIe for optimal interconnect MPP performance

Data Storage

- Teradata Enterprise Storage 6844
- EMC DMX Storage

Teradata Database

- Integrated and certified with Teradata Database
  - Versions 12 and 13

Cabinet

- One to nine Teradata nodes or Managed Servers
- Teradata BYNET switches (base models)
- Server management server and network
- UPS, dual AC distribution, cooling fans
- Patented enhanced airflow

High Availability Hardware Features

- 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, fault tolerant BYNET Interconnect.

External Backup and Recovery

- Teradata integrated backup and recovery products and solutions
  - Sun/Storagetek Tape libraries
  - EMC Virtual Tape Library
  - Storage management with Symantec NetBackup, BakBone NetVault, or IBM Tivoli

Operating Specifications

- Height: 77 in. (195.6 cm)
- Width: 24 in. (61.4 cm)
- Depth: 48 in. (121.9 cm) with doors
- Weight: 1,650 lbs. (750 kg) fully loaded
- Operating Temperature: 50°F to 104°F (10°C to 40°C)
- Voltage Range: 208/220/230/240VAC
- Frequency: 50-60Hz
- Current: 40 Amp (9-node cabinet), 30 Amp (7-node cabinet), 32 Amp 3-phase (available where required)
- Power: 6000 Watts Max
- Dual AC: Configurable
- Compliant with U.S. and International Safety and Emissions Standards
- RoHS and WEEE compliant

Support Services

Global Support

- Experienced data warehousing service personnel
- 24-hour x 365 days availability

Warranty Support

- One-year remote and on-site hardware support, operating system problem resolution
- 24-hour incident reporting

Availability Management Services

- Proactive, holistic approach for protecting a system from risk events that can reduce or degrade availability.

Enterprise System Support

- Delivers quality, one-source support and single point of delivery with each service level.
- Two flexible support solution levels designed to grow: Base and Business Critical.
- Integrated, proactive tools, such as Teradata Vital Infrastructure and VPN secure remote connectivity.

Teradata Vital Infrastructure

- Built-in support software available on each Teradata Active EDW platform.
- Regularly collects system asset data.
- Fault event data are recorded, automatic incident reports are created.
- Alert notifications are sent and tracked (*Call Home* capability).

Implementation Services

- Staging Services
- Installation Services