Teradata Appliance for SAS® High-Performance Analytics

Powerful, Scalable, and Built Specifically for SAS® Analytics

The Next-Generation Appliance for SAS® In-Memory Analytics

Teradata Corporation, the global leader in data warehousing and analytics, offers an integrated analytic platform for high-performance and quick time-to-value capabilities required for today's leading companies. The Teradata® Appliance for SAS High-Performance Analytics Model 750 is the next generation and is specifically for SAS High-Performance Analytics Products, SAS® Visual Analytics, SAS® Visual Statistics, and SAS® IMSTAT. The appliance integrates SAS in-memory capabilities with the industry-leading data warehouse platform, for data model development, data visualization, and advanced analytics.

By leveraging these analytical features on Teradata, organizations can quickly identify and add important variables and perform more data model iterations to get insights about even the most difficult questions enabling confident, data-driven decisions.

Designed to Deliver High Performance

The Teradata Appliance for SAS High-Performance Analytics readily extends the entire Teradata Unified Data Architecture™ (UDA), providing ultra-high speed SAS In-Memory Analytics against Teradata data warehouses. The appliance features clustered servers, each with either dual Intel® eight- or twelve-core processors, SUSE® Linux operating system, up to 768GB of RAM, and enterprise-class Mellanox® InfiniBand™ networking infrastructure—combined into a power-efficient system. The appliance connects directly to Teradata BYNET®, ensuring unsurpassed data access speeds, 50-250 times faster than traditional ODBC, and superior analytic processing. Best of all, the solution is supported by the most trusted name in data warehousing—Teradata.

Enterprise Integrated

- Centralized Teradata Viewpoint capabilities, providing a centralized monitoring point for the entire Teradata ecosystem.
- Connected via InfiniBand and Teradata BYNET, supporting ultra-fast data access methods used inside the Teradata Database.
- Simple system administration, via centralized systems management capabilities.

Optimized for Speed

- Fast, 8-12-core processors for parallel analytic calculations.
- Large, clustered memory pool for terabytes of high-performance analytics.
- Isolated high-performance networks for both database and analytic data flow.

Independently Scalable

The Teradata Appliance for SAS High-Performance Analytics enables advanced analytics with incredibly fast parallel processing, scalability to process massive volumes of data, and rich in-memory analytics capabilities. This environment provides a set of in-memory analytics algorithms that leverages the database's speed, while eliminating time-consuming and costly data analysis.

The Teradata appliance includes analytical capabilities spanning data visualization and data model development executed in a highly scalable, in-memory processing architecture. It will let customers explore massive volumes of data with SAS Visual Analytics, develop analytical models using complete data—not just a subset—with SAS High-Performance Analytics Products, and refine the data models with SAS® Visual Statistics to deliver accurate and timely insights for data-driven decisions. Often faced with hundreds of candidate variables, this offering helps to determine unimportant variables, describe important relationships, and identify the important factors for subsequent models and data visualization and exploration.

With the Teradata appliance, companies can start with powerful small configurations, and then extend that analytic capacity of their environments as driven by their ongoing analytic needs.

Cost Effective, Easy to Manage

The easy to manage Teradata Appliance for SAS High-Performance Analytics enables you to free up your DBA resources to do other valuable tasks. With CPU, memory, and networking all designed to work together as a unit for managing data, you get automated management of storage so your DBAs never have to worry about data placement or data reorganization.

And the long-term advantages are clear:

- A database standard for enterprise analytics – you can source your analytic and data warehousing platforms by standardizing on Teradata systems across your organization.
- Leverage your existing resources and tools – with Teradata as your standard for all analytic platforms, your SAS users, your DBAs, systems administrators, and application developers can support multiple systems without additional training.
- Easily migrate applications into an enterprise data warehouse from Teradata by leveraging the same data, data models, table structures, views, queries, and load programs. Grow into an integrated data warehouse platform as your needs evolve.

Typical Configurations

The Teradata Appliance for SAS High-Performance Analytics is designed to scale and support a broad set of requirements, from small cluster dual node departmental systems, all the way up to large clusters with hundreds of nodes.

For SAS High-Performance Analytics Products, Teradata includes all of the components required to support Teradata connect capabilities with up to 768GB SAS High-Performance Analytics workers nodes, all connected with high-speed InfiniBand infrastructure. See Figure 1 for a sample of some standard configurations for SAS High-Performance Analytics products for Teradata. The appliance can be built and customized based on the customers' requirements beyond the standard configurations.

Nodes	Teradata Connect	Worker Cores and Data Capacity
4	1	64-96 cores, 1-3TB
6	1	96-144 cores, 1.5-4.6TB
12	2	192-288 cores, 3-9.2TB
18	2	288-432 cores, 4.6-13.8TB

Figure 1. Configuration options for SAS High-Performance Analytics Products with Teradata Appliance for SAS

For SAS Visual Analytics, SAS Visual Statistics and SAS IMSTAT, Teradata includes all of the components required to support Teradata Connect capabilities with up to 768GB per worker node SAS® LASR Analytic Server support, and SAS Middle Tier/Web Server support, all connected with a high- speed InfiniBand backbone. See Figure 2 for some standard configurations for SAS Visual Analytics for Teradata. The appliance can be built and customized based on your requirements beyond the standard configurations.

Nodes	Teradata Connect	SAS Middle Tier	Worker Cores and Data Capacity
3	1	1	48-72 cores, 758GB-2.3TB
6	1	1	96-144 cores, 1.5-4.6TB
12	2	1	192-288 cores, 3-9.2TB
16	2	1	256-384 cores, 4-12.3TB

Figure 2. Configuration options for SAS Visual Analytics and Visual Statistics with Teradata Appliance for SAS

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.
- Collaborative support model spanning expertise in both Teradata and SAS.
- Experienced service representatives dedicated to data warehouse support.
- Tested and proven support processes.
- Secure remote connectivity options.

Optimally Configured for SAS® High-Performance Analytics

The Teradata Appliance for SAS High-Performance Analytics is optimally configured to deliver benefits to your analytical staff and your organization alike, including:

- **Faster time to market** – react more quickly and confidently to seize new opportunities, manage risks and make the right choices before the window of opportunity closes. Ask and answer new business questions in a timely manner without latency and apply new insights to your daily operations.
- **Consistent and repeatable performance** – derive insights at breakthrough speed for high-value and time-sensitive decisions. The integrated analytic environment delivers blazing fast performance to evaluate alternative scenarios and detect changes in a volatile market to make timely recommendations.
- **In-memory analytics processing capabilities** – Teradata Appliance for SAS High-Performance Analytics is an integrated analytical solution that can handle massively parallel processing of complex analytics queries simultaneously to visualize, explore all data, and develop complex data models.
- **Rapid time to implementation** – Teradata and SAS are highly skilled in the data integration space, with best-in-class data management technology and capabilities. Together, we provide a comprehensive analytics life-cycle framework, from defining business problems, to building required analytics capabilities to implementation.
- **Integrated with the Teradata Unified Data Architecture** – seamless fit into Teradata UDA facilitating data management and application of SAS in-memory analytics throughout the architecture.

Why Teradata?

Teradata Corporation is the world's leading analytic data solutions company focused on integrated data warehousing, big data analytics, and business applications. Teradata's innovative products and services empower organizations to integrate, analyze, and profit from data for competitive advantage.

For More Information

To find out how a Teradata Appliance for SAS High-Performance Analytics 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/sas**.

Teradata Appliance for SAS® High-Performance Analytics Description

The Teradata Appliance for SAS High-Performance Analytics includes:

- Support for Teradata Database version 14.0 or higher
- Support for SAS 9.3 M2 or higher – Asymmetric architecture and embedded process support for Teradata
- SAS high-performance analytic worker nodes
  - Base worker nodes - Dual Inte|® eight-core processors @ 2.6GHz per node
  - 256/512/768 GB of RAM options
  - System Management Infrastructure and Teradata Administration
  - SUSE® Linux SLES 11 SP3 64-bit
- Teradata Connect Node
  - Dual Intel® eight-core processors @ 2.6GHz per node
  - Teradata BYNET connectivity supported: BYNET over Ethernet, BYNET v4, BYNET v5 integrates to any modern Teradata Appliance running Teradata Database 14.0 or newer

Teradata Virtualized Management Server

- Single, 1U server for database, hardware, and infrastructure management
- Teradata Service Workstation and cabinet management interface controller
- Provides single operational view to administer the entire massively parallel processing system with local or remote system monitoring

Specifications

Cabinet Specifications

- Height: 80.5 in. (204.5 cm)
- Width: 24 in. (61 cm)
- Depth: 49 in. (124.5 cm) – 47 in. (119.4 cm) w/o the front and rear doors
- Weight: 2,228 lbs. (1011 kg) fully loaded with crate
- Installed Weight: 1,828 lbs. (830 kg) fully loaded w/o crate

Operating Specifications

- Operating Temperature: Allowable: 59°F to 90°F (15°C to 32°C); Recommended: 64.8°F to 80.6°F (18°C to 27°C)
- Relative Humidity: Allowable: 20% to 80% (non-condensing)
  - Recommended: Low-end moisture: 5.5c DP (41.9F)
  - High-end moisture: 60% RH and 15c DP (59F DP) Compliant with U.S. and International Safety and Emissions Standards
- Electrical
  - North America Voltage Range: 200 - 240V, 3-+PE
  - Current: – 30A, 3-p, 4-wire, 4-cord – 60A, 3-p, 4-wire, 2-cord
  - International Voltage Range: 220 - 240/381 - 415, 3- +N +PE with three phase
  - Current: – 32A/30A, 3-p, 5-wire, 2-cord, all continents (including North America with EU style power)
- Frequency: 50Hz – 60Hz
- Maximum Power: 12.25kW

Support Services

Core Support/Core Advantage/ Business Critical

- Integrated hardware and software maintenance and support
- Secure remote connectivity
- Fast response times
- Flexible coverage hours (7X24 and 8X5)
- Robust diagnostic capabilities with Teradata Vital Infrastructure
- Easy access to software updates via Teradata @ Your Service
- Proactive system monitoring
- Software release management and installation
- Service and support reporting and reviews
- On-site spare parts

Implementation Services

- System Installation
- Software Implementation

10000 Innovation Drive, Dayton, OH 45342 **Teradata.com**

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