Teradata Workload-Specific Platform Family

Maximize Your Enterprise Intelligence

Every business is unique. Each has its own business intelligence or analytical needs. Some are already taking advantage of an active enterprise data warehouse (EDW) environment to quickly move critical business insight to front-line decision makers. Some are consolidating various data marts into an integrated data warehouse, and others are deploying their first data warehouse or purpose-built appliance to meet specific needs.

But every company, including yours, shares some common requirements. Every one needs new and better ways to increase enterprise intelligence. And every one must be able to seamlessly grow their data warehousing capabilities as their business and analytical requirements change.

That's why Teradata Corporation, the world's largest company focused on data warehousing and enterprise analytics, offers a powerful family of workload-specific integrated data warehouse platforms—from entry level to fully active enterprise data warehousing—to meet the business and technical needs of companies everywhere.

End-to-End Solutions and Support

Each Teradata Workload-Specific Platform Family member runs Teradata® Database, the most robust analytical engine in the industry. The Teradata Database includes advanced capabilities such as hybrid columnar, temporal, and geospatial features while leading the industry with the data temperature-based use of large memory with Teradata Intelligent Memory™. And using Teradata QueryGrid™, every member of the platform family can seamlessly access data in other Teradata Database platforms, Teradata Aster® Database, and Hadoop. Every platform family member is enterprise ready: with integrated workload management, availability options, robust hardware from industry-leading vendors, a comprehensive backup and restore solution, encryption, almost limitless scalability, and a high-speed system interconnect fabric.

Teradata platforms are scalable, highly available, and reliable. And it's easy to migrate from one platform to another without changing ELT, data models, or underlying

Technical and Business Benefits

Each Teradata® Workload-Specific Platform Family member is designed to meet your unique business requirements. Specifically built for data warehousing, each member also brings you an array of built-in benefits, including:

Business
- Lets you focus on your business, not technology.
- Delivered ready to run for the fastest time to value.
- Minimizes risk with proven technology, processes, and support.
- Provides highest return on investment.
- Drives lowest total cost of ownership.
- Delivers increased business value with integrated data.

Technical
- Runs the industry-leading Teradata Database.
- Highly scalable.
- Highly available and reliable.
- Easy to migrate from one platform to another without changing ELT, data models, or underlying structures.
- Purpose built to meet your specific workload needs at a price point you can afford.

structures. Just as important, each platform has the kind of built-in functionality that makes it easy to manage and deliver rapid time to value.

The platform family also offers you an end-to-end solution, not just hardware. In addition to Teradata Database, it provides you with the software, tools and utilities, and all the Teradata Professional Services support you need. Teradata also offers specific packages that make getting a data warehouse from Teradata up and running faster and easier than ever. The result: unparalleled opportunity to lower your total cost of ownership and leverage your existing skill sets and resources. The platforms can help streamline your business—and your budget—by replacing legacy systems that require multiple hardware platforms and databases. They can also replace existing single-purpose analytical systems.

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Teradata's Workload-Specific Platform Family

Family Member	IntelliFlex™	IntelliBase™	Active Enterprise Data Warehouse	Data Warehouse Appliance	Integrated Big Data Platform	Data Mart Appliance	Virtual Environment
Scalability	Up to 47PB	Up to 750TB	Up to 94PB	Up to 34PB	Up to 341PB	Up to 12TB	Varies
Workloads	Strategic and operational intelligence, real-time updates, very high concurrency active workloads with flexible multi-dimensional growth	Test/development, smaller data warehouses with additional hardware versatility	Strategic and operational intelligence, real-time updates, very high concurrency active workloads	Strategic intelligence, decision-support system, moderate concurrency active workloads, fast scans	IDW offload, deep dive analytics, data storage, discovery, DR, ETL, low concurrency workloads	Test/development or smaller data marts and data warehouses	Test/development or production with operational flexibility of virtualization

Choose the Perfect Platform

Whatever your specific data warehousing requirements, there's a Teradata Workload-Specific Platform Family member to meet your needs:

Teradata IntelliFlex™

The Teradata IntelliFlex platform meets the widest range of operational and strategic intelligence needs as the highest performing, most dependable, most flexible, and most cost-effective Teradata active data warehousing solution. It provides much-needed flexibility in designing new systems and for expanding existing systems. Using an InfiniBand fabric-based architecture, IntelliFlex enables independent scaling of nodes (processing power) and storage (data capacity) so you add only what you need to meet current and future workload requirements.

With exceptionally modular design and architecture, Teradata IntelliFlex is implemented with best-in-breed system elements that enable the most powerful, yet most flexible Teradata hardware platform to date. IntelliFlex features the latest Intel® Xeon® Processor, and the platform's parallel architecture fully leverages both the Intel Multi-Core and Hyper-Threading processor technologies to gain maximum processor and system performance.

Another key technology featured in IntelliFlex is the use of hybrid storage that now combines two sizes of Solid State Drive (SSD) technologies for performance optimization of your data. With Teradata's all-SSD hybrid storage, the frequently used hot data is stored on very high-performance SSD devices that are designed for write-intensive operations (many writes per day) while the less frequently used warm/cold data is placed on the larger drives optimized for read-intensive usage (few writes per day). The performance capabilities of the SSD within hybrid storage enable fast and consistent query response times that support very stringent service level

agreements (SLAs) to be met as required in operational workload environments. Unique to Teradata data warehouses, the placement and migration of data based on data temperature is fully automatic with the Teradata Virtual Storage feature.

As companies grow, so do business requirements, and systems should be able to flexibly expand to meet fast-paced changing workloads. IntelliFlex drives more concurrent queries, higher availability, increased performance, and better business agility. It also enhances workload management capabilities to support the complex environments of continuous and batch loads, operational queries, simple reporting, and complex analytics, all on the same platform. IntelliFlex is configured and designed to meet these challenging active data warehouse requirements.

The bottom line is that higher query throughout, along with faster, more consistent query response times provide business value. They allow more real-time users and applications, faster response to events, deeper and more complex analytics, and broader application of your active data warehouse.

Teradata IntelliBase™

Teradata IntelliBase is a compact, fully-integrated environment for data warehousing, iterative data exploration and advanced analytics, and low-cost data storage. The versatile platform enables a mixture of Teradata and Hadoop nodes to meet your workload requirements—all installed into one cabinet to preserve valuable data center floor space. IntelliBase offers a cost-effective, fully-supported solution for entry-level Teradata systems and enterprise-class Hadoop ecosystems. A new feature for added investment protection and business agility is the ability to re-purpose hardware via software re-imaging (e.g. convert a node from running Teradata Database to running Hadoop).

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For Teradata Database users, IntelliBase offers two node types depending on workload and data storage requirements: Performance and Capacity. The Performance nodes mimic the capabilities and are suitable for many workloads of the Teradata Data Warehouse Appliance while the Capacity nodes are similar in data storage to the Teradata Integrated Big Data Platform. Hadoop users can choose from all of the node options currently in the Teradata Appliance for Hadoop.

Additionally, customers can also install Teradata Data Warehouse Appliance 2800/2850 and Teradata Data Mart Appliance 680 nodes, Teradata Multipurpose Servers, and Backup and Restore (BAR) storage in the IntelliBase cabinet.

Teradata Active Enterprise Data Warehouse

The Teradata Active Enterprise Data Warehouse (EDW) is the foundation for true active data warehousing. Optimized for strategic and operational mixed workloads, it offers high performance and effortless scalability to nearly 100PB of user data. The Teradata Active EDW utilizes hybrid storage and Teradata Virtual Storage for fast and consistent query response times that support very stringent SLAs.

The Teradata Active EDW provides enterprise concurrency for thousands of users and events in hundreds of applications. It also protects your investment with a proven, unique coexistence capability allowing you to add new generations of platforms to existing systems with full performance, thereby virtually eliminating the costly replacement of older technology. The Teradata Active EDW quickly and efficiently puts vital business intelligence into the hands of your front-line users, giving them powerful insight for smarter, faster decision making in real time.

Teradata Data Warehouse Appliance

The Teradata Data Warehouse Appliance is ideal for companies that are new to data warehousing, that have fewer users or applications than IntelliFlex and the Active EDW support, or that want to complement an existing active data warehouse. For instance, the platform can be used as a production integrated data warehouse (IDW), a cyclical data mart, disaster recovery, ELT offload, or an analytical sandbox for testing applications before their implementation in the main IDW. It offers enterprise concurrency with hundreds of users. It can also be used to offload the work associated with applications that are best deployed on a separate platform, but are still dependent on the data within the IDW.

It delivers more complex queries, more concurrent users, and better workload management than other appliances in the market today for best-in-class performance. Its integrated cabinet has a very efficient footprint as it allows the optional installation of up to two Teradata Data Warehouse Appliance production or test/development systems, one or two Teradata Data Mart Appliances, Hadoop, Teradata Aster, or SAS nodes, Teradata Multipurpose Servers, and Backup and Restore (BAR) storage.

The Teradata Data Warehouse Appliance is a cost-effective, fully-integrated, scalable platform with dual eighteen-core Intel Xeon processors, industry-standard enterprise-class storage, open Novell® SUSE® Linux 64-bit operating system, and Teradata Database and utilities. All are pre-installed in a single ready-to-run cabinet with energy-efficient green technologies. That means you can have the system up and running live in just a few hours. The Teradata Data Warehouse Appliance also enables scalability up to 34PB. This powerful platform family member is optimized for deep-dive analytical analysis and decision-support workloads, making it the ideal platform for data warehousing.

Teradata Integrated Big Data Platform

Teradata Integrated Big Data Platform is purpose built to cost effectively analyze extremely large amounts of detailed data—up to 341PB—to gain deep strategic intelligence from all of your data. Coupled with Teradata Unity and additional database features, the platform enables data and workload reallocation from the production integrated data warehouse. It also supports new workloads including deep history analytics, storage of massive amounts of multi-structured data, a raw data landing zone with transformation capability, and disaster recovery/high availability for the integrated data warehouse. Now you are able to keep all data within the Teradata Database—with the same format and schema— there is no need to sample or discard data due to storage limitations. Based on the field-proven Teradata platform family technologies, it enables the very same scalability and analytical data warehouse capabilities as the industry has come to expect from Teradata.

This complete, fully-integrated appliance leverages Teradata's technical superiority at the lowest cost per terabyte in the platform family. This appliance is ready to run; you can begin loading data and running queries shortly after delivery so you can quickly begin seeing real business value from your investment. If your requirements change in the future, the Integrated Big Data Platform runs the same underlying Teradata Database, so your data, data models, table structures, user views, queries, and load jobs will all migrate seamlessly across the platform family.

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Hardware Specifications

Model	IntelliFlex	IntelliBase*	Active Enterprise Data Warehouse	Data Warehouse Appliance	Integrated Big Data Platform	Data Mart Appliance
Description	Integrated system of node and storage including:	Integrated system of node and storage including:	Integrated system of node and storage including:	Integrated system of node and storage including:	Integrated system of node and storage including:	Efficient single rack system including:
Nodes	Up to fourteen active MPP nodes per cabinet with Dual Intel Xeon Eighteen-Core Processors	Up to 18 MPP nodes per cabinet with Dual Intel Xeon Ten- or Fourteen-Core Processors	Up to three active MPP nodes per cabinet with Dual Intel Xeon Fourteen-Core Processors	Up to twelve MPP nodes per cabinet with Dual Intel Xeon Eighteen-Core Processors	Up to three active MPP nodes per cabinet with Dual Intel Xeon Eight-Core Processors	Single node—with Dual Intel Xeon Fourteen-Core Processors
Operating System	SUSE Linux	SUSE Linux	SUSE Linux	SUSE Linux	SUSE Linux	SUSE Linux
Storage	Up to 24 SSD per node, mixture of 1.6TB and 6.4TB	22—1.8TB HDD or 11—8TB HDD per node	Up to 168—300- or 600GB HDD drives per node and up to 40—1.6TB SSD per node	44—600- or 1200GB drives per node	Up to 168—3TB or 4TB drives per cabinet	Up to 44—300-, or 600-, or 900GB drives
Total Capacity—User Data	Up to 47PB	Up to 750TB	Up to 94PB	Up to 34PB	Up to 341PB	Up to 12TB
Scalability	Scales up to 2,048 nodes	Scales up to 36 nodes	Scales up to 2,048 nodes	Scales up to 2,048 nodes	Scales up to 2,048 nodes	Single node
Availability	Includes RAID, system availability with node failover and recovery; data resilience, performance continuity with hot standby nodes	Includes RAID, system availability with node failover and recovery; data resilience, hot spare drives	Includes RAID1, system availability with node failover and recovery; fallback, performance continuity with hot standby nodes	Includes RAID1 data protection with node failover and recovery, global hot spare drives	Includes RAID6 data protection, global hot spare drives, and optional hot standby nodes	Includes RAID1 disk mirroring
Memory	Up to 1TB per node	Up to 1TB per node	Up to 512GB per node	Up to 1TB per node	Up to 512GB per node	Up to 512GB
Interconnect	Teradata BYNET® V6	Teradata BYNET V5	Teradata BYNET V5	Teradata BYNET V5	Teradata BYNET over 1GB Ethernet or BYNET V5	Teradata BYNET V5
Purpose	Integrated data warehouse; active data warehouse	Integrated data warehouse, deep history analytics, online archive, disaster recovery	Integrated data warehouse; active data warehouse	Integrated data warehouse; analytical sandbox; traditional decision support, disaster recovery	Deep history analytics, IDW work and data offload, online archive, disaster recovery	Data mart; test and development
System Management	Fully integrated across cabinets and system	Fully integrated across cabinets and system	Fully integrated across cabinets and system	Fully integrated across cabinets and system	Fully integrated across cabinets and system	Cabinet level

*Configuration for Teradata Database

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Teradata Data Mart Appliance

The Teradata Data Mart Appliance is a departmental data warehouse designed to meet the need for a smaller, less expensive system. It allows you to leverage the power of Teradata Database and utilities on a smaller scale—up to 12TB—at an attractive entry price. The Teradata Data Mart Appliance was developed to run multiple applications or be used as a data mart or analytical sandbox. It is a cost-effective standalone data mart or a test and development platform for the Active EDW as it offers similar capabilities, including full Teradata Active System Management. It's simple to set up, easy to use, and its fully-integrated design means all components and software are tested and ready to run. While only available as a single node, starting out with this low-priced member of the Teradata Workload-Specific Platform Family enables you to migrate applications and data to more scalable Teradata platforms when your data or user volumes grow.

Virtual Environment

The Teradata Database on VMware® packages the latest Teradata Database with its optional features and is pre-installed and pre-configured on SUSE Linux Enterprise Server (SLES) operating system. This software product offers a scalable MPP deployment option on your VMware virtualized platform and can be used to develop, test, and deploy data marts and analytic applications.

Make the Most of Your Resources

The Teradata Workload-Specific Platform Family makes it easy for you and your business to leverage your current resources and tools. So your systems administrators, DBAs, and application developers can support multiple systems without the need for additional training. The platform family also gives you the flexibility necessary for meeting your short- and long-term data integration requirements.

Why Teradata?

Because Teradata is the world's largest company focused on analytic data solutions through integrated data warehousing, big data analytics, and business applications. Only Teradata gives organizations the advantage to transform data across the organization into actionable insights empowering leaders to think boldly and act decisively to make the best decisions.

For More Information

To find out more about how the Teradata Workload-Specific Platform Family can help you get more value from your data and grow your data warehousing capabilities—and your business—contact your local Teradata representative, or visit **Teradata.com**.

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