

The heart of the Adaptive Enterprise

NonStop SQL delivers all the capabilities expected from an adaptive infrastructure

TODAY, CORPORATIONS ARE FACED WITH WORLDWIDE competition in a rapidly changing business environment. The company that can react the fastest to change, that understands its customers the best, and that runs most efficiently will win in this new business landscape.

The companies that are winning today use IT to gain visibility into relevant events that are taking place (both inside and outside their organizations) and to determine which of these events are important to their ongoing success. Even more important, IT helps the companies react in time to take advantage of opportunities or correct problems instantly. An “operational” business intelligence (BI) system can help provide critical information in time for the decision to matter—whether that’s seconds, minutes, or hours after the data is received. HP NonStop SQL is the kind of database that can make a BI system successful for the Adaptive Enterprise.

A critical enabler for an effective BI implementation is computing technology that can:

- Process thousands of transactional events per second, from a global set of operational systems
- Recognize events that must be acted on
- Initiate the right sequence of activities at the right time
- Do all of the above on a 24x7 basis

THE RIGHT DATABASE FOR THE JOB

The heart of any such system is its database. In the past, databases could either be very good at high-update transaction processing or excel at read-only business intelligence solutions. Try to combine both types of applications—reading and writing the same data—and the result would be erratic response times for transaction processing and suboptimal query response times. The Adaptive Enterprise requires a new kind of database management system (DBMS) that can simultaneously handle massive transactional work, large strategic queries, and quick-response operational queries. NonStop SQL is the first DBMS that excels at this multifaceted processing mix.

NonStop SQL is integrated with, and takes full advantage of, the real-time online transaction processing (OLTP) and massively parallel processing

(MPP) power provided by the parallel hardware and software of the HP Integrity NonStop system. It is unique in its ability to prioritize the complex demands on the DBMS from OLTP, queries, loads, and online maintenance. No other DBMS has demonstrated this level of success in this type of mixed processing environment.

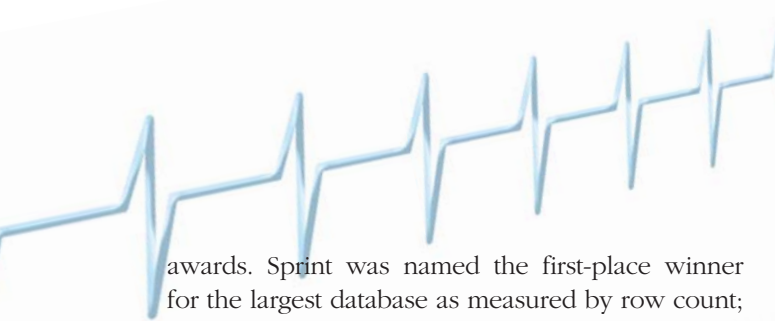
For instance, HP uses NonStop SQL in its central Integration Hub. This real-time DBMS is constantly updated by hundreds of transactional application systems worldwide. At the same time, rules-based engines analyze incoming transaction events and combine them with historical transaction information to determine the need for a real-time reaction. Managers are immediately notified of urgent events from anywhere in the world, as they happen.

Significant querying of the combined data from all these transactional systems is done simultaneously with all of the real-time updates. Queries that would have required tens or hundreds of messages to and from remote systems can now be done with a simple “select” statement.

The hub also maintains running totals of critical operational statistics (usually on a separate operational data store, or ODS). The rules are applied to these running totals to detect trends that require attention and to view a current “snapshot” of the entire worldwide supply chain.

Massive linear scalability is a proven characteristic of the NonStop SQL system. A particularly demanding benchmark required the system to insert 4 billion rows of new data in a 24-hour period, while running thousands of large and small queries. NonStop SQL was the only system to successfully complete the benchmark. This demonstrated its ability to deliver unequalled levels of data availability and performance for the most demanding applications with very large, multi-terabyte databases. NonStop SQL is the only standards-based enterprise DBMS specifically designed for a clustered architecture, using a shared-nothing architecture that prevents bottlenecks when processing high volumes of database queries.

In 2005, the high-profile Winter TopTen Program recognized NonStop SQL database implementations from both Sprint and HP with prestigious



awards. Sprint was named the first-place winner for the largest database as measured by row count; its NonStop SQL database comprises more than 2.8 trillion rows. And HP's own Integration Hub supply-chain management solution was honored with awards for both peak workload and normalized data volume. Based on NonStop SQL software, the HP Integration Hub solution centralizes key business data to provide a consistent, integrated view of the entire supply chain with subsecond response time. HP and Sprint are in the vanguard of a significant number of corporations that are using NonStop SQL at the core of their IT strategies.

BETTER-THAN-EVER SQL

The latest version of the NonStop SQL database—NonStop SQL/MX—goes beyond its predecessor in several important areas. It includes many features that enhance programmer productivity and facilitate the porting of applications to and from other database systems. The features provide very close source code and compatibility with “merchant” DBMSs, facilitating the conversion of applications from those environments to NonStop SQL/MX. Corporations that have reached the limit of their current DBMS can now move to NonStop SQL/MX more practically and easily. In fact, anyone who is licensed for the earlier NonStop SQL/MP version of the software is automatically licensed for NonStop SQL/MX.

NonStop SQL/MX is a dynamic product. Traditional system users who move to NonStop SQL/MX will benefit from the rapid evolution of its performance and feature set. The product will continue to deliver significant new enhancements in online manageability, even greater source-level compatibility with merchant database management systems, and increased support for unstructured binary and character data.

Continuous software quality improvement is also a major focus, and the news on this front is positive. “Stronger development processes, combined with enhanced testing and verification programs, have led to very good quality for NonStop SQL/MX,” noted Tim Keefauver, HP NonStop Enterprise Division director of software product management.

NonStop SQL/MX is the mainstream database product for the future of Integrity NonStop servers. It continues the NonStop SQL trend of aligning with industry standards, and it facilitates the porting of applications to the NonStop and Integrity NonStop platforms. And, as part of the all-important BI system that enterprises now depend on for competitive advantage, it delivers the availability, scalability, performance, and flexibility to get the job done right. ♦



Productivity, porting, and performance

NonStop SQL/MX delivers its advanced capabilities via industry-standard SQL syntax, Data Definition Language (DDL) manipulation, and other core characteristics. The following NonStop SQL/MX features enhance programmer productivity and facilitate application porting:

- **Grant/ revoke security** enables industry-standard access of database information.
- **International character sets** facilitate global use.
- **Stored procedures** allow complex logic to be written once, stored in the DBMS, and utilized by many applications.
- **Referential integrity** lets the database administrator define and enforce important relationships between tables to prevent damage to DBMS integrity.
- **Triggers** allow the user to define actions to be taken by the system when specific values are changed in the DBMS.
- **Hash partitioning** leverages parallelism to automatically balance the database evenly across multiple disk drives.
- **Row sets** enhance performance by making it possible to insert or select multiple rows at a time and to deliver large numbers of rows to interactive processes running on other systems in a multi-tier architecture.
- **Publish and subscribe** lets the database act as an agent on the subscriber's behalf, notifying users when a “subscribed” event takes place. Leading corporations and solution providers are building high-performance, secure, and continuously available business process integration servers that leverage the intrinsic capabilities of NonStop SQL/MX.
- **Embedded statistical functions** make it easy to perform sampling and find minimum or maximum values, standard deviations, moving averages, and more.
- **JDBC Type 4 driver** allows client tools or applications running on another platform to access the database on the back end (JDBC Type 4 and updated ODBC available at no added charge).