

hp real-time enterprise

a technical brief from hp



eliminating latency creates competitive advantage

In an information-based market, organizations that eliminate "information float"—the costly lag between the time data is created and when it gets used—have a natural advantage. Accelerating the collection and use of decision-making data is increasingly a critical requirement for companies that compete in diverse information-intensive industries such as financial services, telecommunications, retail, and healthcare. In these industries, real-time knowledge can ensure the highest levels of customer satisfaction and profitability. However, only a handful of companies have the technical and financial resources needed to achieve this real-time capability.

hp's real-time architecture

Recognizing the advantages of eliminating latency, HP has developed a unique solution that combines a high-performance operational data store (ODS) with an enterprise application integration (EAI) hub. The result is a high-performance solution that can handle high-volume mixed workloads and process queries and transactions simultaneously and continuously, even while other applications access information in real time to support decision-making and business processes. This ODS solution, built on Oracle9i Real Application Clusters (RAC), utilizes HP's advanced cluster technologies and an innovative HP real-time ODS design solution, as well as the HP ODS Manager software module.

performance tests prove support of robust mixed workloads

Recently completed tests characterized the performance and demonstrated the functional impact of mixed workloads using an Oracle® ODS on clustered UNIX® systems. These tests

- Demonstrated that interactions between the online transaction processing (OLTP) and decision support system (DSS) domains can be segregated to the point where a level of service can be sustained for the incoming data records
- Determined maximum OLTP rates for specified system configurations while simultaneously executing a fixed-DSS workload
- Determined the effect of varying DSS activity on transaction throughput and maximum values for queries



- Defined optimal configurations and tuning parameters for a range of mixed OLTP and DSS workloads
- Determined the response of clustered systems to individual node failure and associated degradation when running the ODS workload
- Predicted scalability and performance across multiple nodes in a cluster with larger databases

The results of this testing have proven robust mixed-workload support and paved the way for new solutions with HP AlphaServer systems and the Tru64 UNIX operating system as the hub. The port to the HP-UX platform is under way and is expected to be available by December 2002.

failover and scalability

Along with the mixed-workload capabilities, a robust ODS requires high database scalability and failover capabilities. Failover needs are met through the leadership capabilities of HP TruCluster software, including software control from one central node, a clustered file system, and the use of direct I/O as an alternative to the issues associated with the use of raw devices. TruCluster software's low latency interconnect (less than 2 microseconds) and the Oracle9i database provide linear and efficient scaling (0.75+) by adding additional nodes—without taking the cluster down or adding to overall system management costs.

resource control

A key design issue in developing a high-performance, mixed-use ODS is to ensure that the flow of updates is never compromised by other demands on the system.

To successfully achieve this, HP has designed a control module, ODS Manager software, that interfaces to the Oracle9i database. This unique design ensures that insert performance is maintained even under heavy query workload conditions.

the enterprise application integration hub

The EAI hub supports a large number of applications and integration technologies working together to provide real-time integrated application functionality while supporting the needs of the ODS. The EAI hub supports the dual goals of providing a consistent and manageable environment for businesses while supporting diverse application integration methods and technology.

a methodology

It is essential to keep in mind that a real-time enterprise solution is a methodology, not simply a software package and an installation guide. The solution must provide certain functionality to meet real-time requirements, but can be implemented in different ways. While the ODS is the foundation of the solution, there are alternative implementations for that as well. HP's Real-Time Enterprise solution provides the flexibility to tailor the ODS architecture and the hardware configuration to meet different levels of performance and availability based on your requirements.

available today

With testing completed, real-time solutions are available now. In conjunction with our partners, HP can immediately address the needs of organizations that are ready to make the leap to a new level of competitiveness and become real-time enterprises.



For more information, go to www.hp.com.

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