

# 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](http://www.hp.com).

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