Running Oracle’s PeopleSoft Human Capital Management on Oracle SuperCluster T5-8
Fully Integrated Hardware and Software Platform

Oracle SuperCluster T5-8 provides a highly available, high-performance platform for running Oracle’s PeopleSoft Human Capital Management (PeopleSoft HCM) industry-leading human resource management systems and payroll processing software. The results are quicker deployment, faster end-user response times, better system availability, and accelerated payroll processing—which translate to higher productivity levels and lower TCO.

The new Oracle SuperCluster T5-8 platform includes extremely scalable storage and servers, combined with a high-performance operating system and integrated virtualization technology, to provide superior consolidation capabilities for running enterprise applications. Based on Oracle’s newest SPARC T5-8 servers, this integrated solution provides the scalability, reliability, and security of Oracle Solaris; the optimized database performance of Oracle Exadata storage; and the accelerated middleware processing of Oracle Exalogic Elastic Cloud—all of which are deployed, managed, and serviced as a single engineered system. Applications such as Oracle’s PeopleSoft Payroll and PeopleSoft Human Resources run securely and reliably to deliver fast response times and accelerated payroll processing.

Mixed Workload Requirements of PeopleSoft HCM

PeopleSoft HCM delivers an industry-leading set of human resources functionality. Only Oracle has a global, web-based, single-system HCM solution that covers every aspect of the HCM roadmap, from core human resources (HR) transactional functionality through service automation and delivery to integrated enterprise management solutions.

An enterprise-wide PeopleSoft HCM solution addresses a broad and complex set of business needs, each of which can stress the infrastructure differently. For example, payment and payroll processing requires very intensive compute and throughput (I/O) capabilities in order to complete large-scale batch jobs within a required window. Conversely, online services such as benefits enrollment are highly transactional in nature with dramatic spikes in resource utilization rates. The ideal platform for PeopleSoft HCM deployments must have the ability to run both batch and transactional workloads and to easily scale up or down based on resource utilization requirements.

Scalable, Flexible Solution Architecture

Oracle SuperCluster T5-8 provides a scalable, flexible platform for securely deploying PeopleSoft applications (see Figure 1). Two SPARC T5-8 servers are preconfigured with two Oracle Solaris 11 domains each. The PeopleSoft application and web tiers, with their heavy OLTP workloads, are deployed on the general-purpose domain; the database, with its batch-intensive workload, is deployed on the separate database domain. The SPARC T5-8 server nodes communicate with Oracle Exadata Storage Servers and Oracle’s Sun ZFS Storage Appliance over a high-performance InfiniBand network, and they are connected via 10 GbE to the data center network. Resources are split between the general-purpose and database domains and can be adapted to specific customer configuration requirements.
Oracle SuperCluster is available in half-rack (two servers/four processors), full-rack (two servers/eight processors), and multi-rack configurations with storage expansion options to meet the most demanding application requirements.

Figure 1. Oracle SuperCluster T5-8 provides a scalable and flexible architecture for deploying PeopleSoft applications.

Maximize Business Results with Improved Performance

PeopleSoft deployments currently running on Oracle’s SPARC SuperCluster T4-4 can run unchanged on Oracle SuperCluster T5-8 and immediately benefit from the improved performance of the new platform. Oracle SuperCluster T5-8 has increased processing power and memory, with twice the number of cores and twice the number of threads per rack, 20 percent faster core technology, and twice the memory per node (up to 2 TB per rack). A new compute node I/O subsystem (PCIe 3) provides lower latency for faster response time and higher bandwidth. Enhanced storage cell technology, with additional storage cells and write-back flash cache (WBFC), provides increased I/O performance.

These performance improvements translate into direct performance benefits for PeopleSoft deployments on the Oracle SuperCluster T5-8 platform.

- **Approximately twice the number of concurrent users.** The number of concurrent users is estimated at 8,000 to 9,000 per server socket, approximately twice that of SPARC SuperCluster T4-4 deployments. When deployed on the half-rack Oracle SuperCluster T5-8 platform, the number of concurrent users of PeopleSoft Human Resources is estimated at 18,000.
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- **Faster response times for OLTP.** Preliminary testing indicates that response times should be improved by approximately 20 percent compared to SPARC SuperCluster T4-4 deployments. Expected average response times are less than 0.5 seconds per search transaction and less than 1 second for save transactions with up to 18,000 concurrent users.

- **Accelerated payroll processing.** Payroll processing’s batch workload performance primarily stresses the database tier. Preliminary testing estimates performance levels of 500,000 users with CPU utilization under 50–60 percent using two SPARC T5 sockets for both payroll batch processing and the process scheduler.

Realize High Availability for Mission-Critical Applications

Oracle SuperCluster is designed from the ground up for high availability. Hardware components in Oracle SuperCluster are configured with no single point of failure, hot-swappable components increase reliability, and multiple I/O paths provide redundancy. On the software side, the Oracle Solaris operating system’s Predictive Self Healing feature and fault management capabilities increase uptime, and there is end-to-end software high availability. Optional use of the advanced clustering technology in Oracle Solaris Cluster provides even higher levels of availability by providing automatic failure detection and failover of virtual environments and applications across Oracle SuperCluster servers.

High availability failure detection and failover times for Oracle SuperCluster T5-8 are expected to be similar to those on the SPARC SuperCluster T4-4 platform, helping meet enterprise-class uptime requirements. The critical-failure detection times and recovery times listed in Table 1 were measured under load on SPARC SuperCluster T4-4. For example, a failure of the web tier was detected by Oracle Solaris Cluster in 13 seconds, and the failover to the remaining node was completed in 11 seconds. A complete recovery of the failed web container back to full redundancy took only 68 seconds. A failure of the application tier was detected in 6 seconds and failed over in 4 seconds. These measurements are provided as guidance and will vary depending on many parameters including, but not limited to, the configuration, the software revisions, the workloads, and the number of concurrent users.

<table>
<thead>
<tr>
<th>TABLE 1. ORACLE SUPERCLUSTER HIGH AVAILABILITY PERFORMANCE (ESTIMATED)</th>
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<tbody>
<tr>
<td>DESCRIPTION</td>
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<tr>
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</tr>
<tr>
<td>Failure-detection time</td>
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<td>Failover-completion time</td>
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<td>Recovery-to-full-redundancy time</td>
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Best IT Deployment Choice for PeopleSoft HCM

Running PeopleSoft HCM on Oracle SuperCluster not only greatly reduces deployment time and operational risks, but also provides clear efficiency and acquisition savings. Oracle SuperCluster T5-8, with its significant performance, availability, and efficiency improvements over the previous generation based on Oracle’s SPARC T4-4 server, is the best IT deployment strategy for Oracle’s PeopleSoft Human Capital Management. This platform choice delivers extreme performance, scalability, and availability, increasing productivity across the organization while lowering risks and TCO.
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Hardware and Software, Engineered to Work Together