



Oracle Application Server 10^g - Support for Grid Computing

Information Technology Challenges Organizations face Today

The primary challenge facing organizations today is the very high cost of their information technology infrastructure. This very high cost arises from three related causes:

- *Excess Computing Capacity* that is poorly utilized due to the need to build capacity for peaks, and the inability to use the spare capacity efficiently;
- *Expensive Capacity Growth* due to the inability to add capacity quickly, when needed, and in low cost, modular units to avoid further compounding the problem of excess capacity;
- *High Cost of Management* due to the complexity of systems; the specialized tools, procedures, and skills required; and the large amounts of human intervention needed to manage systems.

Grid Computing & Oracle's Grid Computing Offering

Grid computing is a new software architecture designed to effectively pool together large amounts of low cost modular storage and servers to create a virtual computing resource across which work can be transparently distributed to use capacity very efficiently, at low cost, and with very high availability. The *resources* in a grid can include storage, servers, databases, application servers, and applications. By pooling resources together, Grid Computing can offer dependable, consistent, pervasive, and inexpensive access to these resources regardless of their location and when needed, thereby fulfilling the need for computing capacity on-demand.

While Grid Computing has primarily been used by the scientific community to solve very specialized problems, the rapid evolution of cost-effective networked storage; high speed, high density blade servers; high speed network Interconnects; and low cost operating systems together with the evolving capabilities of systems software (databases and Application Servers) to exploit these advances have now made it possible for Enterprises to leverage the benefits of Grid Computing.

Oracle offers a comprehensive solution to manage information and run Enterprise Applications on Grids using Oracle Database 10^g and Oracle Application Server 10^g. Both Oracle Database 10^g and Oracle Application Server 10^g can be managed in a Grid Computing environment using Oracle Grid Control. Together these products address the challenges faced by I/T organizations today:

- *Radically Reduce or Eliminate Excess Computing Capacity* by automatically load balancing workloads to use spare capacity efficiently eliminating "islands of computation"
- *Modular, Inexpensive Capacity Growth* by adding capacity on-demand in low cost modular units
- *Radically Lower Cost of Management* by centralizing administration of the resources in a Grid and automating provisioning and administration tasks across these resources

Oracle Application Server 10^g and its Benefits

Oracle Application Server 10^g, the next generation of Oracle's Integrated Software Infrastructure for Enterprise Applications has been designed to enable Grid Computing. It has been designed to effectively pool together large numbers of low cost servers to create a virtual computing resource across which Enterprise Applications can be transparently distributed to use capacity very efficiently, at low cost, and with very high availability. Any existing application that runs on Oracle Application Server can transparently take advantage of Grid Computing without any changes. Service-Oriented Applications will find additional benefits when deployed in a Grid.

Oracle Application Server 10g provides a number of Grid Computing features, most importantly:

- *Radically Reduce or Eliminate Excess Computing Capacity* through Policy-Based Resource Management; Metrics-based Workload Management; and a variety of advanced back-up, disaster recovery, and clustered fail-over solutions to provide maximum availability in a Grid.
- *Modular, Inexpensive Capacity Growth* through Automated Installation, Configuration, and Software Provisioning (including both software cloning and patch management) across hundreds of nodes in a Grid.
- *Radically Lower Cost of Management* and eliminating human errors in management through Centralized Systems Monitoring, Unified Application Server Cluster Management (including Cluster Monitoring, Cluster Optimization, and Cluster-wide Application Deployment), and centralized Identity Management across a Grid.