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Fact Sheet

High Availability -

Oracle





High availability in Oracle databases

The Oracle database has been widely acknowledged for its technical and thought leadership in the area of high availability (HA), with a broad suite of capabilities that help businesses maintain continuous operations both during unexpected failures and scheduled maintenance activities. With Oracle Database 11g, Oracle has expanded its innovative leadership in HA, with a suite of new features that provide significant value for the customer, as described in the following outline:

Minimize Downtime - While solutions such as RAC and Data Guard have addressed this area in prior releases, Oracle Database 11g introduces new capabilities that eliminate / minimize downtime even further. One such capability is Online Patching. Initially available for Linux, this allows certain diagnostic patches to be installed in a completely online manner, i.e. without requiring the database to be brought down and applications to be disconnected. So - a novel capability that further minimizes downtime, leading to faster diagnostic analysis, and more customer satisfaction.

Offload Processing & Utilize Resources - Traditional methods of implementing HA involve idle servers and offline storage that cannot be used for productive work. In contrast, Oracle Database 11g provides various capabilities that allow customers to offload processing from the production server to standby servers, thereby enhancing performance levels of the production server and utilization of the standby servers. For example - the Oracle Active Data Guard Option enables real-time read-only access to a physical standby database to offload queries, sorting, reporting, web-based access, etc. from the production database, while continuously applying changes received from the production database. Similarly, the new Snapshot Standby capability allows physical standby to be open read/write for testing/reporting while simultaneously accepting redo data from the primary, and hence providing DR protection at the same time.

Scale for Growth - Oracle Database's scale-out architecture supports dynamic addition/removal of servers (through RAC) and storage disks (through ASM) in a grid model, allowing easy ways for customers to expand their architecture as their business grows. Oracle Database 11g allows the use of the new capabilities in a similarly innovative manner. For example, the previously discussed Active Data Guard now allows physical standbys to be used in a Reader Farm configuration, where multiple physical standbys can be used to offer real-time read access in a highly scalable manner. An on-line music catalogue provider can now have multiple physical standbys that scale web-site read access (e.g. catalogue browsing). At peak holiday periods when website traffic is expected to increase, the customer simply adds more physical standbys to support the additional workload, and this doesn't incur any downtime of the production database.



Integrate Smartly - Oracle Database's HA technologies, since they are all integrated and are all Oracle-aware, can provide tremendous value-added service. For example, by optimizing the direct integration between Oracle Secure Backup and RMAN, Oracle Secure Backup 10.2 is considerably faster compared to competitive products. Another stellar solution in this area is Data Recovery Advisor. It's a tool (accessible through Enterprise Manager or RMAN CLI) that has the Oracle kernel intelligence to automatically diagnose data failures in the database, present various possible repair options, and execute desired repairs at the user's request. Using such smart integration throughout the Oracle Database HA solution set, much of the error-prone and manual operations are taken out of the day-to-day database administration tasks, thereby improving the overall availability of the database.

Maximum availability architecture (MAA)

Operational best practices are key to the successful implementation of IT infrastructure. Technology alone is not enough. Oracle Maximum Availability Architecture (MAA) is a fully integrated and proven blueprint for building highly available systems. Enterprises that have based their system architecture on MAA find they can quickly and efficiently design and deploy applications that meet their business requirements for system availability. MAA encompasses specific design and configuration recommendations, which have been extensively reviewed and tested to ensure optimum system availability and reliability. The MAA blueprints examine and detail the combined use of key Oracle Database features for high availability including Real Application Clusters, Data Guard, Streams, Recovery Manager, Enterprise Manager, etc. They also address the configuration and integration of other critical components of highly available systems including servers, storage, networking, and the application server.