

Oracle Database 10g - Automatic Storage Management

DBA Storage Management Challenges

Database Administrators face many challenges as the rapid growth in database size and the demand for uptime continue to increase. Taking the database offline to perform maintenance and change disk configurations is becoming increasingly difficult to schedule.

The process of working with System Administrators to locate and remove I/O hot spots or fragmentation can be grueling. The lead-time required to provision storage for the database is increasing. Replacing Direct Attached Storage (DAS) with Storage Area Networks (SAN) or Network Attached Storage (NAS) introduces additional dependencies to the process of provisioning storage for the database environment.

At the same time the pressure of cost reduction no longer allows the growth in the DBAs staff to keep pace with the database growth rate. This results in what some refer to as the “Management Gap”. DBAs need better tools that can increase their productivity and help automate many of their manual tasks.



ASM Addresses these Challenges

Automatic Storage Management (ASM) is a new feature in Oracle Database 10g that provides the solution for these DBA storage management challenges. ASM provides a simple storage management interface that is consistent across all server and storage platforms.

ASM virtualizes the database storage into disk groups. The DBA is able to manage a small set of disk groups and ASM automates the placement of the database files within those disk groups.

ASM spreads data evenly across all available storage resources to optimize performance and utilization. This even distribution of database files makes the manual I/O performance tuning obsolete. ASM provides three mirroring options for protection against disk failure: none, two-way, and three-way mirroring.

As a vertically integrated file system and volume manager, purpose built for Oracle database files, ASM provides the performance of raw I/O with the easy management of a file system.

Furthermore, ASM enables the DBA to change the storage configuration without having to take the database offline. ASM automatically rebalances files across the disk group after disks have been added or dropped.

ASM is a tool specifically built to simplify the job of the DBA. It is a capability that saves the DBAs time and provides flexibility to manage a dynamic database environment with increased efficiency.

