Plenary Session:
Driving Forces in Database Technology

Steven Hagan
Engineering Vice President, Server Technologies
Oracle Corporation
http://www.oracle.com/rdb/index.html

Abstract

Several forces, with impacts so fundamental that they are akin to tectonic plate movements, are driving the commercial database marketplace. First is hardware commoditization: arrays of low priced computers with high speed interconnects which yield the new cluster based computing capabilities referred to as ‘Grid,’ ‘Utility,’ and ‘on-demand’ computing, at price points radically lower than standard Moore’s law projections. The dramatic reductions in online storage hardware costs now makes it cost effective for companies to keep previously unimagined amounts of complex data online. This will enable V/ULDB projects with petabyte databases such as online image applications and data-driven supply chain management approaches (e.g. RFID) that store huge volumes of highly granular detail information in data warehouses (with significant history of temporal and spatial interest).

Second is the Sarbanes/Oxley Act and related compliance activities that are driving mandated Security, Auditing, High Availability, Disaster Recovery, and data and history retention (V/ULDB size) enhancements. Complex datatype support for documents (XML, Image, and Text) and geographic referencing and analysis (Spatial), as well as user-defined enhancements, is now the norm for these applications and will be required in data management systems. Complex data requirements combined with Sarbanes/Oxley compliance is yielding a rapid migration from the use of decentralized, unconsolidated file storage to consolidated database repositories of secure, recoverable, auditable content.

Another emerging trend is the use of rule-based programming. This is a relatively recent addition to programming technologies that cater to new applications that need to act upon complex input conditions, evaluate these conditions on stored information (rules and facts), and determine an appropriate action. Databases are becoming de facto rules engine platforms due to their inherent scalability. In the future, entire tables in a large database will be the source and repository of rules, the number of which may be measured in hundreds of thousands and even millions.

Biography

Steven Hagan is the Engineering Vice President in Server Technologies, based at Oracle’s New England Development Center in Nashua, New Hampshire. He has been at Oracle for 9 years, and reports to Chuck Rozwat, Executive Vice President of Server Technologies.

Steve is in charge of several portions of the Oracle 9i database server development, including disaster recovery, utilities, migration, multimedia, and extensible databases, as well as portions of the IAS mid-tier application server. He has over 200 people in his organization.

Steve is a 30+ year veteran of the software industry. Before joining Oracle, Steve spent seven years at Digital Equipment Corporation as the senior engineering manager for database technologies. Prior to that he spent 8 years in the design and development of databases for engineering applications. He received his Masters of Computer Science from University of Southern California.