: What is the scope of database administration?

by Daniel J. Power

Editor, DSSResources.COM

Databases are central to transaction processing and decision support. Database administration is a complex, repetitive, time-consuming task and that requires significant training and experience. Since many databases hold mission-critical data, managers try to recruit smart people with technical backgrounds and database experience to administer them. Effective database administration is a basic requirement to maintain an organization's operations and insure 24/7/365 fact-based decision support.

Managing a database is an ongoing task. Database administrators often work during non-business hours to improve performance, update and install software and monitor backups. Database administration involves many tasks and some are routine and can be automated and then only need to be monitored. The degree to which administration of an organization's databases is automated determines the skills and staffing needed. On one end of the automation spectrum, a database infrastructure with very little automation requires many very skilled professionals. If a significant administration tasks are automated, then skilled staff can perform fewer routine tasks and the staff needed for a database infrastructure is reduced.

As automation of routine database maintenance tasks increases, the experienced, skilled database administrators create and manage the automation and less skilled "line" DBAs monitor the automated tasks and run predefined scripts. Organizations can develop training plans for less experienced DBAs and prepare succession plans and expand the use of databases. Experienced DBAs are in short supply is most job markets.

Relational and post-relational databases are often mission critical. When they are so important and central to the organization, then a DBA must have database recovery expertise and skills. Databases do fail and that creates a crisis. It may be a simple restart failure or a full catastrophic failure due to data corruption, hardware failure, or user created errors. In all cases, someone must be able to restart and to recover the database and prevent a loss of data. This task may take a few minutes or many long hours. Recovering a database should be anticipated and staff should prepare for the possibility and act to prevent crashes proactively.

Finally, experienced DBAs must plan for expanding database capacity. Data continues to accumulate and managers often want to capture and use new data sources. Capacity planning is a cooperative effort of system administrators, database administrators and network administrators. An experienced DBA must determine data object growth trends. Essentially the DBA must be concerned with two major issues: 1. Having a large enough server and storage to insure adequate

query performance; and 2) Providing adequate and sufficient backup and recovery capability to meet recovery time constraints. Database capacity planning involves answering the following questions: 1. How many users in 2 years? 5 years? 2. How much data in 2 years? 5 years? 3. What response times are expected? and 4. What system availability is expected?

Both relational and post-relational databases must be managed. Many of the habits and skills needed to manage a relational database apply to any type of database.

A good database administrator is a planner and a problem solver. A good database administrator is learning continuously and knows what he/she does not know as well as what he/she does know.

Author: Daniel Power
Last update: 2014-11-12 03:09