Database Server Consolidation Assessement

Client Overview

The client is a pharmaceutical company with over 700 million in revenue that develops and manufactures both branded and generic drugs. With multiple business units and frequent mergers, the company's database server environment had undergone unchecked growth, and operational costs had ballooned in tandem with the growth of the environment.

Challenge

Optimize Database Environment & Reduce Operational Costs
Thanks to years of expansion, the client's SQL server database environment had grown rapidly, with diverse application uses and owners. After the company's most recent reorganization, management recognized the need to take greater steps to ensure that the environment was both secure and optimized. Faced with mandates to reduce costs, the company did not want to increase its operational budget. The company turned to Aspect Consulting to conduct a database server consolidation exercise, with the goal of trimming 20% of its operational budget through consolidation alone.

Solution

Conduct Database Server Consolidation Exercise
Aspect used the following approach to assess and optimize the client's environment:

Conduct Environment Assessment

To begin the engagement, Aspect performed an in-depth assessment of the client's SQL Server database environment. Aspect collected key metrics:

- **Check 1: Detect Database Activity:** The assessment detected the database access level (seeks, scans, lookups, or updates) within the last seven days. Databases with no access were marked for retirement in order to free space, reduce RDBMS licensing costs and reduce administrative costs.

- **Check 2: Detect Database Backup Level:** At the individual server level, the assessment detected whether databases were backed up within the last 7 days. For each database instance, the assessment detected the backup level (system v. user database back up). Aspect flagged servers with incomplete or no backup for configuration.

- **Check 3: Collect Server Usage Statistics:** The assessment collected usage statistics from all active database servers (CPU utilization, RAM utilization, I/O rate) over a window of time. Usage levels were calculated over a moving average. If the average dipped below an agreed upon threshold, the database was marked for potential consolidation on servers with newly freed space. Aspect was able to detect multiple underutilized servers, marking the best candidates for consolidation, and others for retirement.

Optimize the Environment

Using the metrics collected during the assessment, Aspect took the following steps to stabilize and optimize the environment:

- **Archive Inactive Servers:** Aspect identified inactive databases (over 16%) and marked those databases for archive, freeing considerable space.

- **Close Maintenance Gaps:** Aspect identified databases with incomplete or no backup (up to 30%) and worked with the client to configure the appropriate level of backup and recovery, effectively closing previously unknown maintenance gaps.

- **Consolidate Database Servers:** Using server usage statistics collected during the assessment, Aspect identified underutilized servers and developed a plan for retiring entire servers, then centralized active databases over the remaining servers, utilizing the newly freed space.

Implement proactive monitoring

Once the database environment was in a stable state, Aspect implemented **WatchDog EMS,** its database monitoring solution. As a baseline, Aspect set up monitoring of disk and file space usage, database activity, key performance indicators, and backup and recovery frequency.

Benefits

Operational Cost Reductions & Environment Stability Achieved
The Server Consolidation exercise enabled the client to realize the following benefits:

Reduced operational costs

Aspect was able to retire databases and reduce the number of servers within the environment by approximately 25%, leveraging savings by reducing licensing costs and energy consumption.

Optimized Administration

Aspect closed all maintenance gaps, and comprehensive monitoring ensures that missed backups, downed servers, failed jobs, and out of range disk space or file size growth can no longer occur without alerting support staff. In addition, the reduction in database servers and instances resulted in less administrative overhead.

Cost Efficiency

Services were less than the savings realized by reduced costs, and with Aspect maintaining and extending the monitoring system, the client's existing staff was freed to address more mission critical projects.