Checklist for Database Environment Best Practices

THREE BEST PRACTICES FOR ACHIEVING FASTER INSIGHT, CONTINUOUS AVAILABILITY AND COST REDUCTION

Today's businesses rely on databases for online transaction processing, online analytics processing and other critical work. Transaction rates need to increase to meet customer and business demands. Response times must support real-time analytics and subsequent fast decision making. Reducing the time for backups, updates and migrations is vital, because downtime is not a viable option.

To address database challenges, you need a highly scalable storage system capable of virtualizing and consolidating multiple, discrete databases, increasing utilization levels and unifying management. Virtualization is a prerequisite for an optimized storage architecture that meets service levels for cost, performance, reliability and availability.

The following best practices show how a storage system can help you optimize performance, ensure continuous operations and simplify database administration.

❑ 1. OPTIMIZE PERFORMANCE WITH ENTERPRISE-CLASS FLASH STORAGE

When IT teams can't meet business needs for performance in a database environment, the problem may be the storage system. Database environments can produce concentrated workloads very quickly. Often, an organization has an immediate use for the data produced by users, applications, automated processes and machines. However, workloads such as real-time transaction records or analysis can be affected when the storage resources are inadequate for the workloads.

Flash optimized storage offers high density and highly sustained performance along with low and consistent response time. With real-time storage tiering that automatically promotes active data to flash media, organizations can ensure the fastest access to the most important data. Flash-optimized storage systems are not only a magnitude faster than hard disk drive (HDD) systems, but they also meet enterprise requirements for density and durability.

Advantage: The well-integrated use of flash storage accelerates applications to increase revenue and the insights needed for better decision-making. It also drives down the average cost per gigabyte across the storage infrastructure by decreasing the cost of housing, powering and cooling large numbers of underutilized HDDs. Hitachi Accelerated Flash is built specifically for the most demanding enterprise-class workloads.

❑ 2. ENSURE MISSION-CRITICAL RESILIENCE AND CONTINUOUS OPERATIONS

In a global marketplace, where 24/7 availability is a user expectation, any amount of downtime to critical systems is extremely expensive and increasingly intolerable. However, the amount and types of data that require backup for purposes of recovery, compliance and analysis continue to grow. A traditional backup takes many hours to complete and requires stopping or pausing activity during those hours. The longer the time between backups, the more data is at risk of loss. Unlike operational backups, recovery results from a power outage or other disaster. With millions of dollars an hour at stake, recovery following a data loss incident must be swift.

Maintaining continuous availability requires global storage virtualization across multiple virtualized storage systems plus snapshot, cloning and replication capabilities. Active-active clustering eliminates the need for failover following a disaster, because a full set of applications and processes is already running and available at a second location. You can also apply active-active stretch clustering to live migration of databases and workloads, which makes consolidation even easier to conduct in practice.

Advantages: Integrated active mirroring of virtual storage across data centers ensures the highest levels of continuous availability, driving recovery point objective (RPO) and recovery time objective (RTO) to zero. The ability to nondisruptively migrate databases between data centers simplifies hardware upgrades and speeds up disaster recovery. Snapshot, cloning and replication capabilities provide quick copies of data to reduce backup windows or enable backup operations to run concurrently with production applications.

❑ 3. AUTOMATE MANAGEMENT FOR GREATER EFFICIENCY

To deliver predictable performance, capacity efficiency and continuous availability in mission-critical environments requires a high degree of automation and centralized management. A unified virtual environment with automation for key data management functions (data configuration, mobility, optimization and protection) increases agility while reducing operations overhead and risk.

Be on the lookout for automation and controller-based functionality in data provisioning, data mobility and data analytics. The ideal storage system automatically moves data to the optimal storage type based on usage and cost, and allows managers to oversubscribe available space for growing room without wasted excess capacity. It automatically applies policies to ensure appropriate access levels and migrates data in ways that are transparent to the application.

Advantage: Single-pane-of-glass management of internal and external virtualized storage simplifies operations and lowers total cost of ownership. With automated workload balancing and performance troubleshooting, IT can ensure service levels to individual servers and applications. Administrators no longer need to micromanage the storage system. They can take advantage of advanced data dispersion technologies and dynamic load balancing to automatically optimize performance, manage data protection, reduce energy and maximize storage utilization.

HELP YOUR DATABASES WORK HARDER

Tuning your databases is not enough to ensure faster insight, 24/7 access to information, and reduced costs in data-intensive environments. You need a storage system that supports the virtualization of heterogeneous storage, cost-effectively eliminates storage bottlenecks, and automates key management functions, such as data tiering, data provisioning and migrations.

Want to simplify management, enable continuous availability and meet mission-critical business needs? Find out how our scalable Hitachi Virtual Storage Platform family and database integration can maximize performance, ensure resilience and automate management in your database environment.

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