

Applications today are limited by being directly tied to the database tier. Together, Hitachi storage technology and ScaleArc database load-balancing software break this 1:1 mapping. The joint solution creates an agile data tier that enhances the continuous availability, performance and reliability of Microsoft® SQL Server®.

DATASHEET

## Enable Continuous Availability for SQL Server With Hitachi and ScaleArc

### Combined Solution Enables an Agile Data Tier

Most SQL databases use Hitachi storage technology. For example, Hitachi Dynamic Tiering automatically moves hot, warm and cold portions of each database to the appropriate storage tier (flash, 15K, 10K, 7.2K). Hitachi Dynamic Provisioning consolidates multiple RAID sets together in a single virtual pool, which allows dynamic capacity and workload sharing of all drives within the pool. And Hitachi Unified

Compute Platform allows SQL users to easily deploy and manage private clouds. ScaleArc's software inserts transparently between applications and database servers, providing an abstraction layer that shields applications from database infrastructure (see Figure 1). Together, Hitachi storage technology and ScaleArc database load-balancing software allow automated failover and zero-downtime maintenance. This combination enables scale out of the database structure and migration to the cloud with no application changes.

### Automated Failover With Fewer App Errors

ScaleArc software understands your database topology. It monitors servers and automatically migrates client connections and traffic from a failed database node to a healthy node in the cluster. During failover of a primary or master node, the ScaleArc software uses a query queue to hold incoming write queries in memory until another server is promoted and can accept that traffic. This architecture dramatically reduces app errors and prevents apps from hanging or

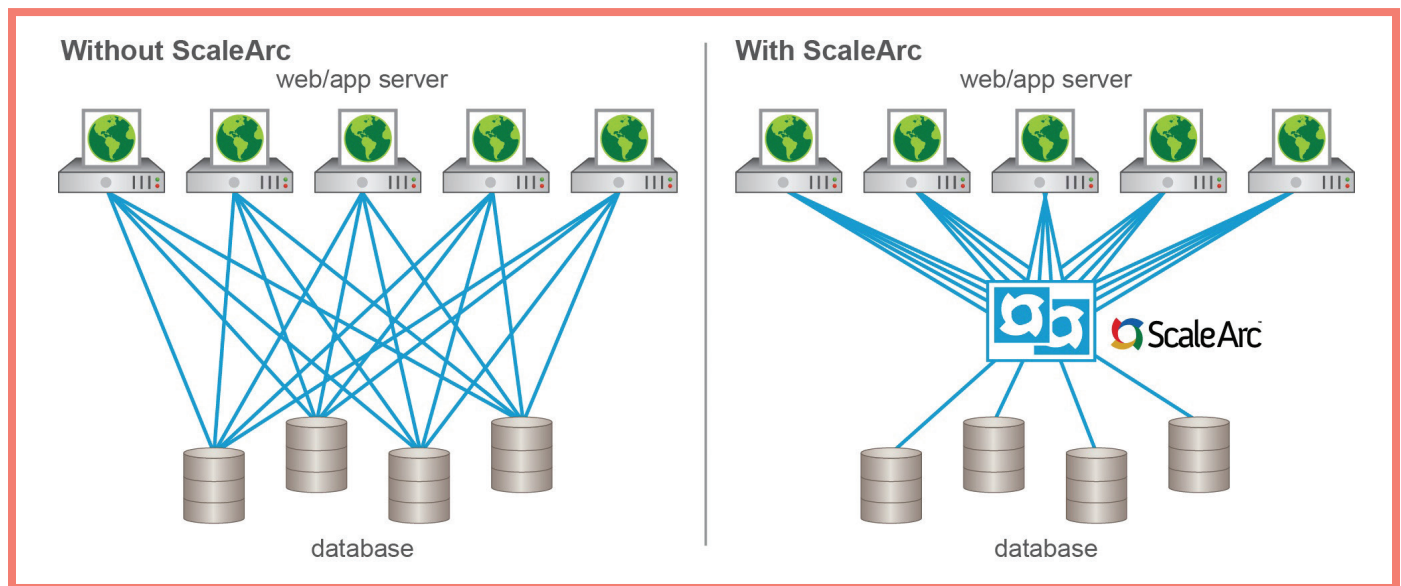


Figure 1: The ScaleArc software provides an abstraction layer that shields apps from the database infrastructure.

having to be restarted. The only errors the application gets are from queries that were midflight to the failed server, which ensures transactional integrity and no double writes.

## Zero-Downtime Maintenance

ScaleArc lets you adopt a zero-downtime maintenance architecture for your database stack, allowing you to gracefully stop sending traffic to a specific server in a cluster before you perform maintenance on it. You can patch, update schema and perform other maintenance on that specific server, and when done bring it back into the cluster to receive traffic. With no need to take apps offline, it's the end of maintenance windows.

## Replication-Aware Load Balancing

Once you've scaled out, the ScaleArc software automatically optimizes application performance by taking server response time into account when directing traffic. The software allocates more load to the server that will respond fastest. Since ScaleArc is monitoring replication lag, it never sends a query to a server that is lagging behind on replication farther than the threshold you configured.

## Scalability With No Application Changes

Typically, to get an application to scale across multiple database servers requires a lot of reprogramming and complex techniques such as sharding (database partitioning). With ScaleArc, when you add a new server to a database cluster, it immediately becomes available to your applications as added capacity. ScaleArc can also cache the

most frequently requested queries, such as metadata or static queries and serve them at lightning fast speeds. You gain the advantage of increased scalability without taking your app developers off the task of building new functionality. ScaleArc also offers advanced auto-cache invalidation methods that enable a true ACID-compliant caching.

These ScaleArc capabilities combined with Hitachi Dynamic Provisioning and Hitachi Dynamic Tiering maximize storage efficiency and performance. And Hitachi Unified Compute Platform can provide both the scale-up or scale-out resources within a unified storage, compute and networking environment.

## On-Premises, Cloud and Hybrid Deployments

Cloud deployments often pose a challenge for database performance and scalability. Database instances are typically smaller, and hybrid deployments, such as database on-premises and app in the cloud, can introduce performance problems. ScaleArc and Hitachi Unified Compute Platform solve the challenges of cloud and hybrid deployments and make it easy to migrate workloads into the cloud. You can easily aggregate the capacity of smaller database instances to serve the needs of apps designed to work with a single large database server.

For more information on how ScaleArc for SQL Server enhances your Hitachi storage environment:

- Request a demo: [sales@scalearc.com](mailto:sales@scalearc.com)
- Visit: <http://scalearc.com/how-it-works/products/scalearc-for-sql-server>

## About ScaleArc

ScaleArc is the leading provider of database load balancing software. The ScaleArc software inserts transparently between applications and databases, creating an agile data tier that provides continuous availability and increased performance for all apps. With ScaleArc, enterprises also gain instant database scalability and a new level of real-time visibility for their application environments, both on-premises and in the cloud. Visit [www.scalearc.com](http://www.scalearc.com).

## About Hitachi Data Systems

Hitachi Data Systems, a wholly owned subsidiary of Hitachi, Ltd., builds information management and Social Innovation solutions that help businesses succeed and societies be safer, healthier and smarter. We focus on big data that offers real value – what we call the Internet of Things that matter. Our IT infrastructure, analytics, content and cloud solutions and services drive strategic management and analysis of the world's data. Only Hitachi Data Systems integrates the best information technology and operational technology from across the Hitachi family of companies to deliver the exceptional insight that business and society need to transform and thrive. Visit [www.HDS.com](http://www.HDS.com).

## @Hitachi Data Systems

**Corporate Headquarters**  
2845 Lafayette Street  
Santa Clara, CA 95050-2639 USA  
[www.HDS.com](http://www.HDS.com) [community.HDS.com](http://community.HDS.com)

**Regional Contact Information**  
**Americas:** 866 374 5822 or [info@hds.com](mailto:info@hds.com)  
**Europe, Middle East and Africa:** +44 (0) 1753 618000 or [info.emea@hds.com](mailto:info.emea@hds.com)  
**Asia Pacific:** +852 3189 7900 or [hds.marketing.apac@hds.com](mailto:hds.marketing.apac@hds.com)

