

Ignite's ScaleArc Solution Helps Dell Achieve Zero Downtime on Dell.com

Challenges:

- Handle 10x traffic for Black Friday and holiday season
- Avoid downtime during maintenance of the database tier
- Ensure continuous availability during database infrastructure changes
- Leverage AlwaysOn capabilities with no application changes

Results:

- Delivers 100% uptime despite significant traffic surges
- Provides 3x to 5x query read capacity increase
- Supports scale out using AlwaysOn without updating the website code, using automatic read/write split
- Enables zero downtime of applications during database patching or maintenance
- Leveraged analytics to identify “problem” queries creating an unnecessary load on the database

Overview

In preparation for Black Friday 2013, the operations team supporting Dell.com sought a solution that could handle the onslaught of consumer web traffic while maintaining high availability and performance. In particular, the team was eager to increase the uptime, scalability, and throughput of the SQL Server deployment supporting the website.

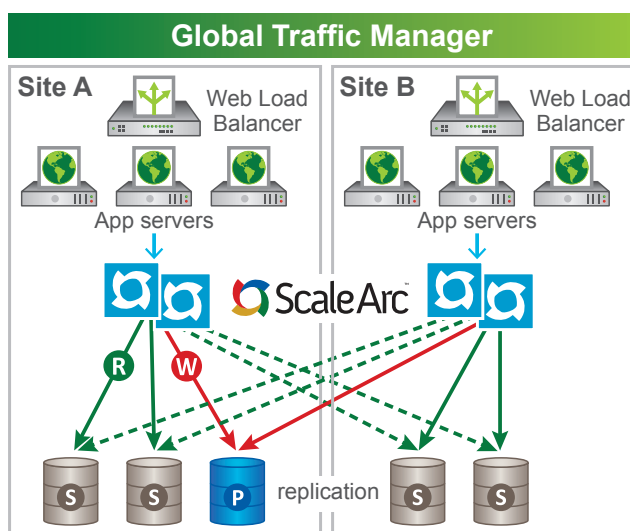
After discussing with Microsoft alternatives for Availability Groups using DNS, the operations team turned to Ignite's ScaleArc database load balancing software. The Dell team selected, tested, and deployed ScaleArc's software within 6 weeks, well in advance of the Black Friday deadline.

Integration with SQL Server 2012 to Ensure High Availability

To take advantage of the high availability benefits of SQL Server 2012, the operations team deployed Ignite's ScaleArc software between their web application and SQL Server database environment to enable database auto failover and load balancing. The ScaleArc software works with SQL Server 2012/2014 and AlwaysOn, leveraging the replication and failover in the database system. The ScaleArc software augments AlwaysOn failover, holding connections and queueing queries during the failover to prevent Dell's customers from experiencing errors or performance issues during the failover process.

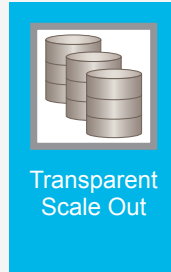
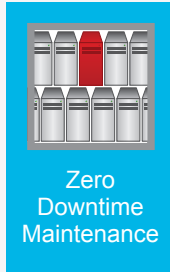
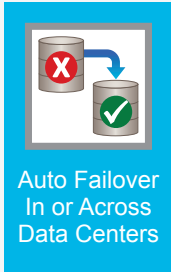
During the initial Black Friday week, ScaleArc supported significant traffic surges, supporting more than 5 million requests per hour across different portions of the site. The team delivered 100% uptime throughout the week, enabling billions of dollars in transactions.

Technical Details

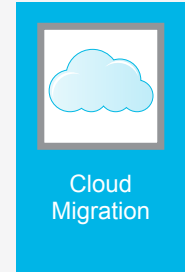
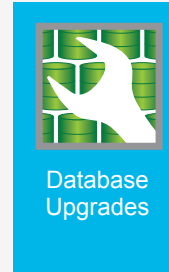
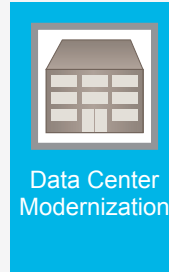


- Ignite's ScaleArc solution deploys transparently – no app changes, no database changes
- ScaleArc runs in two data centers, with automatic read/write split
- ScaleArc supports geo-aware load balancing to enable clusters to span separate data centers

Continuous App Availability



As part of projects for:



All enabled without any changes to the app or database

“Along with improving uptime and performance, ScaleArc also speeds development because we don’t have to code HA into the apps.”

– Justin Roan
IT Director, Dell

About Ignite Technologies

Founded in 2000, Ignite is a privately-held company and a member of the ESW Capital group of companies. Since it was reinvented on the heels of a senior management change in 2013, the Company’s mission is to help customers Ignite the power of their workforce to drive better business performance. Ignite leads all its efforts with a sharp focus on a simple but challenging objective – 100% Customer Success – measured through the achievements of its customers. The Company launched its innovative, new Ignite Prime program in 2017 delivering free enterprise software to its licensed and supported customers. For more information on Ignite’s solutions and innovative Prime program, visit ignitetechnologies.com.



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Zero Downtime Maintenance

After the initial deployment, the Dell.com IT team wanted to move to zero-downtime maintenance, using ScaleArc’s failover technology to take the load off the servers to bring them offline for patching. Like all companies, Dell isn’t always able to complete the desired patching process within a maintenance window, forcing a roll back. Incomplete patching leaves database servers vulnerable to identified security risks.

ScaleArc enables Dell to eliminate maintenance windows and avoid any application downtime while keeping servers fully up to date with patches. The company is now able to direct traffic to the other database servers in the cluster when one server is taken down for patching, eliminating all downtime. With ScaleArc, maintenance windows are completed 100% of the time – even in the middle of the day. This approach also enabled a physical database infrastructure upgrade without any downtime of database servers. After updates are complete, the team adds the servers back to the cluster and ScaleArc automatically resumes sending traffic to them.

Scalability and High Performance for Improved Customer Experience

Using Ignite’s ScaleArc solution, Dell.com’s IT operations team identified “bad” queries that were slowing the website. Caching the responses to these particular queries shaved half the page download time. In addition, the company has reduced server CPU and query count, further aiding application availability and performance. As a result, Dell.com customers now have a much better experience online.

Auto Failover for High Availability Across Regions

Dell needed strong failover not just within one data center but across multiple locations. With traditional cross-region failover, database uptime – and therefore Dell.com – takes a hit. The result is application errors and, more importantly, decreased customer satisfaction.

With ScaleArc’s automatic failover capabilities, Dell has been able to move to an active/active architecture, enabling multiple data centers to serve application traffic at the same time and deliver 100% uptime. Ignite’s ScaleArc software automates and accelerates the failover process for unplanned server failure by effectively steering and load balancing traffic across the data centers.