



Five Ways a Storage Health Check Assessment Can Advance Retail Operations

OVERVIEW

Enterprise retailers have distributed environments with geographically dispersed storefronts and warehouses that are critical to operations and service delivery. Yet, many operate with aging storage infrastructures that evolved over time and might not support current or future capacity needs. As new systems are rolled out and footprints are expanded, storage insufficiencies are revealed as latency, performance issues, and downtime. These business disrupters degrade customer experiences and competitive operations. Worse yet, undiagnosed issues outside of storage, like network latency, can be overlooked.

In this White Paper, you will learn how to proactively head off storage disruption with a **Denali Health Check Assessment** that evaluates and validates storage capabilities to support competitive retail operations.

The Problem With Aging Storage

Retail data being generated across data centers, edges, and clouds creates storage infrastructure complexity. A variety of structured and unstructured data is captured across different systems. On top of that, customers demand cross-channel experiences so they can engage with retailers when, where, and how they want.

Today's retail environment is dynamic and real-time, and customers expect their brands to provide a connected experience at every stage of their purchase journey. This involves capturing, tracking, and optimizing customer, purchase, and engagement data. But aging storage can't keep pace with data volume. Retailers are operating with legacy storage, using servers that are out of date, out of support, and prone to latency and downtime. In worst cases, storage performance problems interfere with transactions, putting revenue and customer satisfaction at risk. For example, outages can be caused by arrays at or near maximum capacity or network latency, and configuration errors can slow data transfer.

The Bottom-Line Impact of IT Downtime

\$90 million

The cost of a 14-hour outage in 2019 for Facebook¹

1%

The percentage of sales lost by Amazon for every 100 ms of latency²

175 zettabytes

The amount of data in the global datasphere by 2025³

74%

The rate of IT outages that cost more than \$1 million⁴

75% of online customers expect a response within five minutes⁵

How Storage Disruption Affects Retail Operations

Transaction processing: Storage latency or downtime causes point-of-purchase systems to lag or be unavailable, leading to an inability to accept payments and process transactions.

Supply chain: Supply chain system downtime can lead to inventory delays or an inability to obtain enough goods to satisfy demand.

Warehouse: The inability to track warehouse data can delay order processing, leave inventory unused, or result in overselling inventory that's not available.

Customer satisfaction: A lack of access to sales, customer, or service data can lead to gaps in service delivery that turn customers away from the brand.

Digital transformation: Investments in digital upgrades can experience performance issues that slow digital capability and degrade ROI.

Reactive vs. Proactive Storage Management

Legacy storage leaves retailers in a responsive stance, waiting for problems to occur before making upgrades. For many, it's a resource issue; not enough staff or expertise is available to evaluate a storage infrastructure that grew over time. As a result, storage isn't strategically aligned with workloads or business needs.

The lack of resources has a financial impact. More time is spent troubleshooting storage problems, which can lead to mistakes. Consider that 75% of downtime is caused by human error.⁴ What's more, IT staff focus is taken away from business, with 80% of the time in the data center focused on completing 20% of tasks.⁶

Five Ways to Optimize Storage With a Health Check Assessment

Just as an annual physical can reveal minor health problems before they turn into medical emergencies, a Health Check Assessment can proactively identify storage problems before they turn into IT downtime and disruption. An outside expert can give an unbiased view of storage infrastructure. This insight can be used to modernize storage with futureproofed investments. For example, storage consolidation can reduce cost and complexity. Flash storage can boost capacity while ensuring efficiency. Features like inline deduplication and compression can reduce storage volumes. And hybrid storage can support workload migration to the cloud.

Denali Health Check Assessments provide an end-to-end evaluation of storage capability so retailers can advance their infrastructure and business objectives. Here's how it works:

1. Evaluate What's Existing

Insufficient storage capacity and network issues can degrade application performance and slow workloads. A Health Check Assessment will evaluate the capacity, IOPS, throughput, and latency of existing storage for underlying performance issues. For example, a Denali Health Check Assessment for a global enterprise retailer identified mission-critical upgrades were needed across primary, backup, and NAS storage environments. It also found 1.5 PB of reclaimable space across VMware vCenter Server. Common storage problems that can be found include:

- Arrays nearing cache limits, end of life (EOL), or end of support (EOS)
- Insufficient flash capacity for mission-critical workloads
- Stranded, underutilized storage capacity
- Network problems affecting data transfer
- Lack of insight or monitoring of storage assets
- Storage that can't scale for new workloads
- Untested storage backup and recovery

2. Validate What's Needed

Legacy storage often includes a mix of HDD and flash arrays, but is flash deployed to mission-critical workloads with a low tolerance for latency? A Health Check Assessment will identify gaps in storage that are holding back business initiatives. It will also evaluate how much capacity is left, where servers are being over- or underutilized, and where workloads might need a different type of storage. A Denali Health Check Assessment helped a retailer upgrade Dell EMC VMAX arrays that were EOL, EOS, or near capacity limits, and identified Dell EMC Data Domain arrays at EOL and in need of networking redundancy across the environment.

3. Align With Best Practices

New storage innovations are designed to ensure storage agility, efficiency, and resiliency. They're driven by automation and configured to scale as needs change, with less cost and complexity. Best practices for storage include consolidation to reduce hardware, unified management for ease of oversight, and automation to reduce manual tasks. A recent Denali Health Check Assessment provided a retailer with recommendations to modernize its storage environment with predictive, self-healing, and automated capacity that supported single-pane-of-glass management.

67%

of consumers
will pay more for a
great experience⁵

4. Recommend an Action Plan

A Health Check Assessment makes recommendations for modernizing storage for future workloads. This includes prescriptive recommendations for a storage server refresh to augment existing infrastructure investments. A Denali Health Check Assessment for a large, global enterprise retailer identified Dell EMC VMAX and Dell EMC Data Domain arrays that were at or near their cache limits and at EOL. Denali made recommendations to upgrade to Dell EMC PowerMax with real-time support for machine learning, end-to-end NVMe, seamless cloud mobility, and inline data deduplication.

5. Plan Investments

More storage is needed at the edge where mobile devices are being used to process transactions and data. But how confident are you in your current storage to support edge workloads? A Health Check Assessment can identify workloads that benefit from best-in-class storage that can scale as needs change. For example, Denali deploys Dell EMC PowerMax arrays for higher performance and futureproofed capacity. This takes the pressure off aging arrays that can continue to add value for secondary workloads.

Conclusion

Storage problems left unchecked and undiagnosed can lead to downtime of critical retail systems, like point-of-sale, inventory tracking, and warehouse data. As retailers embrace more digital systems, they need to ensure their storage infrastructure is ready to handle the upgrades. A Denali Health Check Assessment can evaluate existing storage infrastructure and identify areas where upgrades are needed or workloads need to be migrated. In many cases, this outside perspective can help reduce storage costs by migrating from out-of-date, expensive storage to best-in-class storage solutions that deliver more capacity in less space and ease management with automation.

About Denali

Denali Advanced Integration delivers exceptional technology solutions and services powered by strategic experts and industry-leading partners to help guide our clients through the most complex IT challenges. Since 1992, Denali has been among the most trusted and prominent technology providers in North America.

Call 425.885.4000 to learn more about Denali Storage Health Check Assessments.

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Benefits of an Independent Storage Evaluation

Improve storage management. Find gaps in storage infrastructure, staff resources, and expertise. Denali has worked with retail outlets to make recommendations for skills training and increased headcount for strategic management and storage asset oversight.

Optimize storage capacity. Find areas where storage is being overprovisioned and underutilized so capacity can be realigned. Identify opportunities to upgrade legacy storage and migrate to modern storage to accommodate future workloads.

Streamline storage operations. Identify areas and opportunities for consolidation with monitoring tools that alert to storage problems before becoming disrupters. Gain expertise to standardize on centralized management for end-to-end visibility and control over storage volumes.

Reduce storage costs. Reduce the cost of supporting EOL, EOS, and legacy storage that adds more problems than value to the business. Advance to best-in-class storage technology designed to reduce resource consumption with automation that eliminates the time IT staff spends on oversight.



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¹ Atlassian, "The Path to Better Incident Management Starts Here," accessed Aug. 2021.

² Gigaspaces, "Amazon Found Every 100ms of Latency Cost them 1% in Sales," Jan. 2019.

³ Seed Scientific, "How Much Data is Created Every Day?" Jan. 2021.

⁴ Network World, "The Biggest Risk to Uptime? Your Staff," Oct. 2019.

⁵ Forbes, "100 Stats on Digital Transformation and Customer Experience," Dec. 2019.

⁶ Anexinet, "Automation, Reduce Human Error, Save time, and Improve Efficiencies," accessed Aug. 2021.