Executive Summary:

Evolving Availability Requirements Demand More Than Just a Resilient Storage Infrastructure

Sponsored by: **NetApp**

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This is an Executive Summary of a longer white paper focused on evolving availability requirements in the enterprise and the key technologies and features that information technology (IT) managers should consider for high availability workloads such as Oracle and SAP deployments.

Primary research performed by IDC in 2019 shows that in this era of digital transformation, availability requirements for enterprise storage infrastructure are on the rise. Overall, 57.8% of enterprises now deem 26%+ of their workloads to be mission critical, and 34.6% of enterprises manage their mission-critical workloads to "five-nines" (99.999%) or greater availability. Cost effectively meeting this level of availability requires a storage infrastructure that supports: high reliability, rapid recovery, a range of enterprise-class data services that can be applied at the individual application level, nondisruptive operations, redundancy at both the data level and the component level, and reliable, efficient information technology (IT) workflows.

A checklist of high-availability features is a starting point for short list selection, but vendors that can show a track record of meeting "six-nines plus" availability (~30 seconds of downtime per year) across tens of thousands of production deployments offer more definitive proof that they can meet the most stringent high-availability requirements.

Based on research conducted in the enterprise storage markets over the past five years, IDC has identified a framework for evaluating a vendor's ability to meet high-availability requirements for performance-sensitive primary storage workloads. **The framework is built around seven key criteria** that are needed in storage infrastructures that are evolving to meet the needs of today's emerging digitally transformed enterprise. **The criteria are:**

1. Performance

2. High availability

3. Hybrid cloud

4. Support for solid state and other emerging persistent memory technologies

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5. Security

6. Self-managed storage that leverages artificial intelligence and machine learning (AI/ML) to dynamically optimize storage to meet defined service-level objectives as workloads evolve

7. A focus on customer experience (CX)

Tens of thousands of controller pairs running ONTAP 9 software in NetApp's installed base of AFF and FAS systems.

While at first glance CX may not appear to be connected to high availability, the industry's leading CX programs have a broad impact across many areas, with improved high availability being only one of those. CX covers more than just customer satisfaction, and vendors that are leading the charge in this area can quantitatively show how they drive value for customers in a manner that results in their willingness to recommend a vendor and its products and services to their colleagues.

In a new white paper entitled *Evolving Availability Requirements Demand More Than Just a Resilient Storage Infrastructure*, IDC discusses evolving enterprise storage market requirements in this era of digital transformation and fleshes out the seven checklist items in some level of detail. **NetApp's enterprise-class high availability features measure up very well against this checklist, leading to a proven credible "six nines plus" availability metric across their entire installed base** (validated by IDC through field data collected through Active IQ Unified Manager, the vendor's cloud-based predictive analytics platform). This metric included data on the tens of thousands of controller pairs running ONTAP 9 software in NetApp's installed base of AFF all-flash and FAS hybrid-flash systems.

The full white paper is aimed at those responsible for high-availability storage strategy and administration. It reviews two key areas for NetApp's strength in high availability:

Hardware, including redundant multipathing with transparent recovery, storage subsystem resiliency, and chassis architecture

Software, including nondisruptive operations, disaster recovery, replication options, security and ransomware protection, secure multitenancy, quality-of-service management, cloning and snapshot technologies, automatic controller and path failover, error correction and data protection, and write algorithms optimized for high performance with both solid state drives and hard disk drives
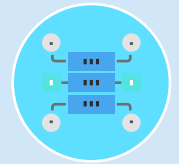
The white paper also discusses NetApp's unified management tools that provide single-pane-of-glass management spanning on-premises and off-premises infrastructure as well as

the vendor's excellent support for virtualized and hybrid cloud environments. The breadth of functionality offered by NetApp ONTAP storage infrastructure offers compelling solutions for digitally transforming enterprises that need to leverage key technologies such as **solid state storage, artificial intelligence/machine learning (AI/ML), scale-out architectures, public multi cloud services, and software-defined architectures** to meet today's "always on" business requirements.

Customers looking for **high-performance**, **highly scalable storage solutions**, in either all solid state or hybrid configurations that must be able to deliver "six nines plus" availability, should consider NetApp.

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