NetApp

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*Datasheet*

# NetApp All-Flash FAS

## High performance, low latency and rich data management for business-critical applications

**KEY BENEFITS**

**Accelerate latency-sensitive workloads**
Consistent, submillisecond latency and scale-out architecture let you meet SLOs for critical applications.

**Best-in-Class Data Management**
Operational efficiencies let you more easily manage and reduce your storage footprint.

**Superior Availability**
Experience >99.999% availability plus nondisruptive operations that eliminate planned downtime.

**Enable Performance on Demand**
Transparently move workloads from hybrid to all-flash nodes as needs change.

**Enterprise Proven, Today**
Twenty-year heritage of supporting business-critical applications.

### The Challenge

As corporations continue to drive faster time to market and higher customer satisfaction, they need new ways to deliver greater speed and responsiveness from key business operations. IT leaders are focused on adding new components to their IT infrastructure that offer consistent, low-latency delivery of data to and from critical workloads. However, this often requires sacrificing core needs such as robust data management, data protection, proven uptime, and deep application integration.

### The Solution

All-flash FAS addresses these enterprise requirements with high performance and low latency as well as reliability and superior data management. It delivers a powerful combination that's critical for organizations that need to accelerate workloads without compromising on the way they deploy, manage, and protect data across their environment.

Powered by NetApp® Data ONTAP®, all-flash FAS is a key part of IT when advanced storage control is needed for high-speed workloads. It's especially valuable for VDI power users and database applications that require consistent low-latency performance.

In addition, all-flash FAS configurations can be deployed as a node in a cluster with hybrid FAS systems, giving you the flexibility to transparently adjust where an application lives—all-flash or hybrid flash plus disk storage—based on changing business needs.

Combined, these capabilities enable all-flash FAS to improve the speed of business as well as the overall efficiency, reliability, and flexibility of IT operations. This win for the company, and for IT, translates to a better overall experience for both you and your customers.

### High-Performance Architecture

All-flash FAS delivers submillisecond response time for critical applications that demand low latency. The systems optimize I/O and maximize application throughput while running leading data management functions, featuring:

- Leading multiprocessor Intel® chipsets with a higher number of cores
- High-performance DDR3 memory modules
- Increased NVRAM for persistent write cache
- I/O-tuned PCIe gen3 architecture

# All-flash FAS delivers a powerful combination that's critical for organizations that need to accelerate workloads without compromising on the way they deploy, manage, and protect data across their environment.

All-flash FAS configurations use high-performance solid state drives (SSDs), available in a broad set of capacity points from 200GB to 1.6TB, enabling customization to meet specific cost and density needs. If additional IOPS are required, all-flash FAS configurations can scale out in a cluster up to 24 nodes, providing millions of IOPS at submillisecond latency and supporting nearly 5PB of SSD capacity.

In addition, Data ONTAP has features that enhance all-flash performance. For example, the Write Anywhere File Layout (WAFL® file system), read-ahead algorithm, and unrestricted scheduling of processes across all cores improve the latency. These features reduce the impact of random operations to the SSDs, accelerating system-level performance and extending the SSD lifetime.

### Simplify Operations with Best-in-Class Data Management

In a data-driven business, you need the ability to leverage data for competitive advantage and to assign resources dynamically for more effective operations. All-flash FAS benefits from NetApp's years of experience building our leading data management capabilities:

- Management of your infrastructure is simplified with tight, best-in-class integration with popular virtualization and leading backup applications.
- Space-efficient cloning capabilities allow almost instantaneous creation of data copies that can be used for business intelligence or to accelerate the development of new product offerings.
- Role-based access control and workflow automation tools simplify provisioning and data protection so you can assign resources more quickly.
- Enterprise QoS helps you better monitor and assign performance, so your high-performance workloads get the resources they need to meet SLOs.
- The breadth of storage efficiency technologies of Data ONTAP, such as deduplication, compression, thin provisioning, and space-efficient Snapshot™ copies, reduces your cost per effective gigabyte of storage and lowers your total cost of ownership.
- Complexity is reduced with a single, unified storage management approach across all your FAS storage platforms.

### Enterprise Reliability: Proven Availability and Nondisruptive Operations

Built on years of Data ONTAP deployment experience and FAS engineering refinement, all-flash FAS meets the most demanding availability requirements. These systems are designed to deliver 99.999% or greater availability through a comprehensive approach to system resiliency that includes alternate control path, persistent NVRAM write logs, and integrated service processors. All I/O devices—including embedded ports—can be independently reset, allowing the FAS system to detect, contain, and recover from faults. Going even further, NetApp Integrated Data Protection technologies protect your data, accelerate recovery, and integrate with leading backup applications for easier management.

In clustered scale-out configurations, you can nondisruptively add or replace storage systems and components as well as mix and match different FAS models. Scaling occurs without maintenance windows or the challenge of coordinating downtime across teams. Software and firmware updates,

## SUPPORTING HIGH-PERFORMANCE WORKLOADS TODAY

All-flash FAS configurations aren't new. Customers use them today to support a range of workloads, especially VDI and databases that require:

- High performance
- Low latency
- Reliability
- Rich data management capabilities of Data ONTAP

hardware repair and replacement, load balancing, and tech refreshes happen without planned downtime.

Advanced service analytics software prevents issues from becoming outages. Risk signatures are constantly monitored, and your administrators and/or NetApp service staff are alerted to proactively address issues that might affect operations.

### Enable Performance on Demand

The extra value of all-flash FAS shines when it's used as high-performance nodes combined with hybrid FAS systems in a clustered Data ONTAP environment. This combination delivers native multi-tenancy, QoS, nondisruptive operations, and easily defined tiers of service. Workloads can be transparently moved to the node that best meets the customer's requirements at different points of time. Storage can be quickly provisioned to meet specific service levels.

All-flash FAS offers additional ways to flexibly adapt to changing workloads and optimize your storage environment:

- With support for SAN and NAS protocols, all-flash FAS can handle new workloads regardless of the protocol.
- The integrated unified target adapter (UTA2) ports can be configured for 16Gb Fibre Channel or 10GbE, whichever is needed. This lets you support a broader range of workloads (across FC, FCoE, iSCSI, NFS, and SMB) and adjust on demand without needing to install new ports.

### Get More Business Value with Services

Whether you are planning your next-generation environment, need specialized know-how for a major deployment, or want to get the most from your current storage, NetApp and our certified partners can help.

We collaborate with you to enhance your IT capabilities through a full portfolio of services that covers your IT lifecycle with:

- **Strategy services** to align IT with your business goals
- **Design services** to architect your best storage environment
- **Deploy and transition services** to implement validated architectures and prepare your storage environment
- **Operations services** to deliver continuous operations while driving operational excellence and efficiency

In addition, NetApp provides in-depth knowledge transfer and education services that give you access to our global technical resources and intellectual property.

Learn more at *netapp.com/services.*

### Unlock the Power of Your Data and Your People

Built with years of flash experience, all-flash FAS achieves high I/O at submillisecond latency without compromising on core enterprise requirements such as robust data management, proven reliability, and flexibility to respond to changing requirements.

### About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at *www.netapp.com*.

Go further, faster®

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