



Datasheet

NetApp EF570 All-Flash Array

Make decisions faster, more actionable, and secure

Key Benefits

Extreme Performance

- Up to 1M IOPS and 21GBps of sequential bandwidth to help you scale
- Sub-100 microsecond latency to increase application responsiveness
- Support for multiple high-speed host interfaces, including 32Gb Fibre Channel, 25Gb iSCSI, 100Gb InfiniBand, 12Gb SAS, and the new 100Gb NVMe over InfiniBand in a compact 2U form factor

Unmatched Value

- Leading price/performance for both IOPS and MBps in the same system based on industry benchmarks
- Integration with the NetApp® Data Fabric for seamless backup and recovery to the hybrid cloud
- Support for over 367TB of raw flash capacity in a modular 2U building block that scales to 1.8PB

Proven Simplicity

- A modern, on-box, browser-based GUI enables you to get access to your data in under 10 minutes
- Full suite of APIs and application plugins (e.g., Splunk) for easy integration
- Fourth-generation all-flash system

The Challenge

Increasingly, organizations are looking for ways to improve the speed and responsiveness of the applications that control their key business operations. Because the performance of these applications is tightly linked to time to market, revenue, and customer satisfaction, it is critical that they operate at the highest levels with maximum efficiency. Getting value and insights quickly and reliably from a range of mixed workload environments can differentiate your organization from the competition and accelerate time to market.

The Solution

The midrange NetApp EF570 all-flash array is an all-SSD storage system that can turbocharge access to your data and increase its value. Requiring just 2U of rack space, the EF570 all-flash array combines extreme IOPS, sub-100 microsecond response times, and up to 21GBps of bandwidth with leading, enterprise-proven availability features, including:

- Redundant components with automated failover
- Intuitive storage management with comprehensive tuning functions
- Advanced monitoring and diagnostics with proactive repair
- NVMe over Fabric support, providing faster performance and investment protection
- NetApp SANtricity® Snapshot™, volume copy, and remote mirroring for data protection
- SANtricity Cloud Connector, enabling backup to the cloud and data mobility across NetApp systems

Combined, these capabilities provide the best price/performance, configuration flexibility, and simplicity in a compact package to help you make decisions faster, more actionable, and secure.

Extreme Performance

Designed specifically for mixed-workload environments, including big data analytics, technical computing, video surveillance, and backup and recovery, the EF570 all-flash array delivers over 1.0M sustained IOPS and response times in microseconds. Bandwidth-oriented workloads also benefit from the capability of the EF570 to provide up to 21GBps of throughput. The EF570 is also the first 2U array to support a broad range of high-speed host interfaces to protect investment in storage networks, including 32Gb Fibre Channel, 25Gb iSCSI, 100Gb InfiniBand, 12Gb SAS, and 100Gb NVMe over InfiniBand.

The EF570 increases performance for big data analytics applications such as Splunk by up to 2x, enabling you to search and analyze data in half the time. In customer deployments, the EF570 has cut video processing times by as much as 95%, reduced dataset analysis from weeks to hours, and accelerated response times for financial transactions by 4x.

The all-flash design is built in a 2U enclosure and delivers the performance of over two thousand 15,000-RPM HDDs while requiring under 2% of the rack space, power, and cooling. With up to 98% reduction in space and power consumption, the EF570 all-flash array helps significantly improve the overall efficiency of IT operations while continuing to meet performance requirements from business operations.

Unmatched Value

The EF570 all-flash array offers industry-leading price/performance in an enterprise-grade 2U system. With support for up to 367TB of flash capacity in a single modular 2U building block, the ultradense EF570 enables you to easily address always-changing business requirements. The EF570 provides investment protection to meet future demands without forklift upgrades through the ability to independently scale to 1.8PB of raw flash capacity and 1M IOPS.

Proven Simplicity

The EF570's modular design and simple management tools make it easy to scale without adding management complexity. The modern, on-box, browser-based SANtricity System Manager GUI enables you to simplify deployment and get access to your data in under 10 minutes.

The EF570 all-flash array runs on the enterprise-proven SANtricity software platform. Optimized for flash, SANtricity software allows storage administrators to maximize performance and use of their EF570 through extensive configuration flexibility, custom performance tuning, and complete control over data placement. SANtricity System Manager's graphical performance tools provide key information about storage I/O from multiple viewpoints, allowing administrators to make informed decisions about configuration adjustments to further refine performance.

SANtricity Cloud Connector is the newest feature to be added to the SANtricity software platform. SANtricity Cloud Connector enables backup to the cloud and is a part of the NetApp Data Fabric.

High Availability and Enterprise Reliability

Leveraging experience from an installed base of 1 million E-Series systems, the flash-optimized fourth-generation NetApp EF570 offers a secure, reliable foundation for your most valuable data.

The EF570 all-flash array was engineered from the start to support applications that are the heart of a corporation's business. Built with reliability in mind, the EF570 all-flash array leverages extensive expertise learned from over 20 years of development experience and 1 million implemented systems to provide enterprise reliability and fault tolerance in both the architecture and the software design.

Designed for no single point of failure, the EF570 all-flash array has fully redundant I/O paths with automated failover and extensive diagnostic capabilities that alert on and actively help resolve failures. SANtricity data assurance (based on the T10 PI industry standard) makes sure of data integrity and protects against silent data corruption. The EF570 also offers data management features such as Snapshot, volume copy, and mirroring. All management tasks are performed while the storage remains online with complete read/write data access. Storage administrators can make configuration changes and conduct maintenance without disrupting application I/O.

One of the most critical aspects of an enterprise solution is the ability to detect and resolve issues. In this area, the EF570 all-flash array provides significant depth of capabilities, including:

- Extensive capturing of diagnostic data provides comprehensive fault isolation and simplifies analysis of unanticipated events.
- Background monitoring proactively scans media and tracks drive health against defined thresholds.
- Integrated Recovery Guru diagnoses problems and provides the applicable procedure to use for recovery.
- With DDP and RAID 6, a drive rebuild continues even when encountering an unreadable sector or second failure.
- NetApp AutoSupport® provides proactive dispatch and maintenance.

Advanced Data Protection

SANtricity DDP technology allows storage administrators to simplify RAID management, improve data protection, and maintain predictable performance under all conditions. DDP technology evenly distributes data, protection information, and spare capacity across the entire EF570 pool of drives, simplifying setup and maximizing use. This innovative technology minimizes the performance impact of a drive failure and can return the system to optimal condition up to eight times more quickly than with traditional RAID. With shorter rebuild times and patented technology to prioritize reconstruction, DDP capabilities significantly reduce exposure to multiple disk failures, offering a level of data protection that simply can't be achieved with traditional RAID.

With SANtricity software, all management tasks can be performed while the storage remains online with complete read/write data access. Storage administrators can make configuration changes, conduct maintenance, or expand the storage capacity without disrupting I/O to attached hosts. SANtricity software online capabilities include:

- Dynamic volume expansion allows administrators to increase the capacity of an existing volume.
- Dynamic segment size migration enables administrators to change the segment size of a given volume.
- Dynamic RAID-level migration changes the RAID level of a RAID group on the existing drives without requiring the relocation of data. Supported RAID levels are 0, 1, 5, 6, and 10.
- All firmware updates (controller, drive, IOM) are nondisruptive with no interruption to data access.

To protect against data loss and downtime events, both locally and over long distance, the EF570 all-flash array offers advanced data protection that is common to enterprise storage. These features include:

- **Snapshot.** Create and restore point-in-time copies of datasets in less than a second to protect against accidental data loss on the local array.
- **Volume copy.** Create a complete physical copy (clone) of a volume for applications that require a full point-in-time copy of production data.
- **Asynchronous mirroring.** Volume replication over FC or IP long distance to remote site to enable your business operations to continue running no matter what happens.
- **Synchronous mirroring.** Continuous volume replication over FC at campus distances.
- **Cloud backup.** SANtricity Cloud Connector enables flexible and cost-effective backup and recovery from on-premises storage to the cloud.

With the EF570 all-flash array, you can easily replicate data to another EF570 or a NetApp E-Series system. With this capability, you can create a high-speed, low-latency recovery system that runs at the same speed as your production operations. You can also choose to fail over to a consolidated E-Series system with more cost-effective disk storage. This flexibility in design allows you to choose the profile of performance and cost that your business needs.

Secure Data, Secure Management

NetApp SANtricity drive encryption combines local key management with drive-level encryption for comprehensive security for data at rest with no impact to performance. Because

all drives eventually leave the data center through redeployment, retirement, or service, it is reassuring to know that your sensitive data isn't leaving with them. Customers can choose to manage the drive authentication keys natively for a simple lowest-cost solution or use a KMIP-compliant external key manager for centralized administration.

Management access to the EF570 is protected with role-based access control and LDAP/Active Directory integration. The

“The EF-Series could handle 10 times the number of concurrent users in 95% less processing time, even while playing large video files.”

Bill Kernan, CIO
Western Oregon University

security administrator manages user privileges and password requirements. The exportable audit log provides visibility into management actions taken on the array. All management communication is over https.

Application Integration

The NetApp SANtricity Plug-Ins for Microsoft, Splunk, and VMware provide a consolidated view of the NetApp EF-Series systems, enabling users to monitor and manage their NetApp EF-Series storage from the application. Having such an integrated tool reduces the total cost of ownership by eliminating the need to manually compile critical information from several different tools. Thus, it streamlines the correlation of availability and performance problems across the entire set of IT components.

DevOps Ready

To enable the automation and agility that are needed in the DevOps-based IT revolution, EF570 supports a RESTful web services API along with Java and Python client libraries. Modules for Puppet, Chef, and Ansible are available for open-source orchestration and configuration management. And for easy integration and automation in traditional IT and Windows ecosystems, EF570 also supports Windows PowerShell and SMI-S 1.6.

ASHRAE Compliant

EF570 systems meet the certification requirements of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), a global society that advances human well-being through sustainable technology for the built environment. The EF570 is ASHRAE A4 compliant.

Professional and Support Services

Achieve high availability and high performance

Whether you are struggling to meet SLAs or need help identifying workloads that are best suited for flash, professional and support services can help you architect and operate a data management solution that optimizes performance and availability for business-critical enterprise applications. Delivered by NetApp and its services certified partners, we have the skills and the expertise you need to get your all-flash storage into production quickly and with minimal disruption. We offer:

- **Plan services.** Gain insight and guidance by identifying challenges, opportunities, risks, and requirements for aligning IT with your business goals and improving IT service delivery today and in the future.
- **Build services.** Speed deployments and integration to lower your risk, deployment time, and cost to deliver business results more quickly.
- **Run services.** Deliver end-to-end oversight to achieve continuous operations and operational excellence.

Combining a history of enterprise storage know-how with proven expertise in defining data management strategies and in deploying integrated storage solutions for a Data Fabric, our services can help you rapidly respond to changing business needs across multiple applications, systems, and locations worldwide.

For more information

- NetApp EF570:
www.netapp.com/us/products/storage-systems/all-flash-array/ef-series.aspx
 - NetApp Professional Services:
www.netapp.com/us/services-support/services/professional-services.aspx
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About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit www.netapp.com. #DataDriven