Datasheet

NetApp EF280 All-Flash Array

Process more data faster for more insightful decisions

Key Benefits

Affordable Performance

- Up to 300K IOPS and 10GBps bandwidth to help you scale
- Microsecond latency to increase application responsiveness
- Support for multiple high-speed host interfaces, including 16Gb FC, 10Gb iSCSI, and 12Gb SAS in a compact 2U form factor

Enterprise 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 1.4PB

Proven Simplicity

- A modern, on-box, browser-based GUI enables you to get access to your data in under 10 minutes
- A full suite of APIs and application plug-ins (for example, Splunk) for easy integration
- Simple and flexible administration, as well as automatic configuration

The Challenge

Increasingly, many small and medium-sized 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 without disruptions at the highest levels of efficiency. Consistent performance and cost-effective delivery are imperative. Yet managing data is increasingly more complex and costly—especially with limited resources, space, and power.

The Solution

The entry-level NetApp EF280 all-flash array is an all-SSD storage system that can increase access to your data and increase its value. Requiring just 2U of rack space, the EF280 all-flash array combines affordable IOPS, microsecond response times, and up to 10GBps 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
- NetApp SANtricity® Snapshot™ copy creation, volume copy, and asynchronous mirroring for data protection
- SANtricity Cloud Connector to enable backup to the cloud and data mobility across NetApp systems
- SANtricity data assurance (T10-PI) for data integrity and protection against silent data corruption

Combined, these capabilities provide optimal price/performance, configuration flexibility, and simplicity in a compact package to help you process more data faster for more insightful decisions.

NetApp®

Affordable Performance

Designed specifically for mixed-workload environments such as big data analytics and databases, the EF280 all-flash array delivers over 300K sustained IOPS and response times in microseconds. Bandwidth-oriented workloads also benefit from the capability of the EF280 to provide up to 10GBps of throughput. The EF280 supports a broad range of high-speed host interfaces to protect your investment in storage networks, including 16Gb Fibre Channel (FC), 10Gb iSCSI, and 12Gb SAS.

The EF280 increases performance for big data analytics applications such as Splunk, enabling you to search and analyze data in less time. The EF280 also helps significantly improve the overall efficiency of your IT operations while continuing to meet performance requirements from your business operations.

Enterprise Value

The EF280 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 EF280 enables you to easily meet always-changing business requirements. The EF280 also helps protect your investment. Through the ability to independently scale to 1.4PB of raw flash capacity and with the nondisruptive support for higher-speed host interfaces in the near future.

Proven Simplicity

The EF280 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 EF280 all-flash array runs on enterprise-proven SANtricity software. Optimized for flash, SANtricity software enables your storage administrators to maximize the performance and use of the EF280 through extensive configuration flexibility, custom performance tuning, and complete control over data placement. The SANtricity System Manager graphical performance tools provide key information about storage I/O from multiple viewpoints, so your administrators can make informed decisions about configuration adjustments to further refine performance.

The SANtricity Cloud Connector software solution provides a cost-effective basic backup approach. It provides backup and recovery to the cloud from NetApp E-Series systems and is 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 NetApp EF280 offers a secure, reliable foundation for your most valuable data.

The EF280 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 EF280 all-flash array leverages extensive expertise that has been learned from over 20 years of development experience and from 1 million implemented systems. It provides enterprise reliability and fault tolerance in both the architecture and the software design.

Designed for no single point of failure, the EF280 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) confirms data integrity and protects against silent data corruption.

The EF280 also offers data management features such as Snapshot copy creation, volume copy, and mirroring. All management tasks are performed while the storage remains online with complete read/write data access. Your storage administrators can make configuration changes and perform 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, also, the EF280 all-flash array provides a significant depth of capabilities; for example:

- 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.
- The integrated Recovery Guru diagnoses problems and provides the applicable procedure to use for recovery.
- With Dynamic Disk Pools (DDP) technology and RAID 6, a drive rebuild continues even when it encounters an unreadable sector or a second failure.
- NetApp AutoSupport® telemetry is built into the EF280, so you can take advantage of the Active IQ® hybrid cloud services to optimize your environment.

Advanced Data Protection

SANtricity DDP technology helps your storage administrators 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 EF280 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 8 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. Your storage administrators can make configuration changes, perform maintenance, or expand the storage capacity without disrupting I/O to attached hosts. The SANtricity software online capabilities provide many benefits, such as:

- 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, I/O module) are nondisruptive, with no interruption to data access.

To protect against data loss and downtime events, both locally and over long distances, the EF280 all-flash array offers advanced data protection that is common to enterprise storage. These features include:

- **Snapshot copy creation.** 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.** Replicate volumes over FC or IP long distance to remote sites so that your business operations can continue running no matter what happens.
- **Synchronous mirroring.** Get continuous volume replication over FC across campus distances.
- **Cloud backup.** Use SANtricity Cloud Connector for flexible and cost-effective backup and recovery from on-premises storage to the cloud.

With the EF280 all-flash array, you can easily replicate data to another EF280, to a NetApp EF570 system, or to a NetApp hybrid 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.

> "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

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. You can choose to manage the drive authentication keys natively for a simple, lowest-cost solution, or you can use a Key Management Interoperability Protocol–compliant external key manager for centralized administration.

Management access to the EF280 is protected with role-based access control and Lightweight Directory Access Protocol/Active Directory integration. Your security administrator manages user privileges and password requirements. The exportable audit log provides visibility into management actions that have been 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, so you can monitor and manage your NetApp EF-Series storage from the application. Having such an integrated tool reduces your TCO by eliminating the need to manually compile critical information from several different tools. Thus, it streamlines the correlation of availability and performance problems across your entire set of IT components.

DevOps Readiness

To enable the automation and agility that are needed in the DevOps-based IT revolution, the EF280 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, the EF280 also supports Windows PowerShell and Storage Management Initiative Specification (SMI-S) 1.6.

ASHRAE Compliance

EF280 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 built for the environment. The EF280 is ASHRAE A4 compliant.

Professional and Support Services

Achieve high availability and high performance

Whether you are struggling to meet SLAs or you need assistance in identifying workloads that are best suited for flash, our professional and support services can help. With guidance from our experts, you can architect and operate a data management solution that optimizes performance and availability for your business-critical enterprise applications. Delivered by NetApp and its Services Certified Partners, we offer the skills and the expertise that you need to get your all-flash storage into production quickly and with minimal disruption.

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

For more information

- NetApp EF280 flash storage arrays overview
- NetApp Professional Services overview

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