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NEC

NEC SNA500 Series

Affordable performance and simplicity

Key Benefits

01 Optimized Performance

Leverage all flash for a wide range of mixed workloads.

02 Application Integration

Facilitate ongoing management and maintenance. Enable seamless integration into your environment through application-aware plug-ins for VMware, Oracle, and Microsoft and through plug-ins and drivers for emerging applications, such as those from Splunk, Nagios, and OpenStack.

03 Ease of Use and Configuration

Easily install and administer NEC SNA storage systems by using the new on-box, web-based, and powerful SANtricity® software.

NetApp®

The Challenge

Today, many small and medium-sized businesses and remote and branch offices seek new ways to manage growing data requirements with minimal cost and maintenance. Consistent performance delivery is an imperative. Yet managing data is increasingly more complex—especially with limited resources, space, and power.

The Solution

All-flash and hybrid storage with low acquisition costs
The NEC SNA500 storage system offers all-flash and hybrid configuration options, so you can streamline your IT infrastructure and drive down costs. Pay-as-you-grow flexibility makes the NEC SNA500 an excellent solution for companies of all sizes that are facing rapid, unpredictable growth.

Unlike other storage systems that add file or virtualization layers in the I/O data path, SNA500 systems are purpose-built to optimize performance for mixed workloads. A next-generation controller that is built on Intel processor technology, along with a 12Gb SAS infrastructure, improves IOPS and throughput to help you extract value from your data and take action faster.
The SNA500 offers an improved user experience with an on-box, web-browser-based interface that is modern, simple, and clean. The intuitive interface of the SNA500 simplifies configuration and maintenance while providing enterprise-level storage capabilities to deliver consistent performance, data integrity, and security.

NEC SNA500 Series – Gain affordable performance and simplicity with our cost-effective all-flash and hybrid arrays

Software defined Storage (Dynamic Disk Pools)

Dynamic Disk Pools (DDP) is our Software defined Storage implementation which simplifies the management of traditional RAID groups by distributing data parity information and spare capacity across a pool of drives. DDP enhances data protection by enabling faster rebuilds after a drive failure, protecting against potential data loss if additional drive failures occur. DDP dynamic rebuild technology uses every drive in the pool to rebuild a failed drive, enabling exceptional performance under failure.
DDP eliminates complex RAID management. With DDP, there are no idle spares to manage, and you do not need to reconfigure RAID when you expand your system. Compared with traditional RAID, DDP also significantly reduces the impact on performance after one or more drives fail.

A key feature of DDP is the capability to dynamically rebalance data across all the drives in the pool when drives are added or removed. Unlike the rigid configuration of a traditional RAID volume group, which has a fixed number of drives, with DDP you can add or remove multiple drives in a single operation. DDP dynamically rebalances across the remaining (or additional) drives more quickly than traditional RAID does. This faster rebalancing also applies to a rebuild case. If additional drives fail, faster rebuilds on failed drives reduce the exposure window for data loss from days to minutes.

Optimized for Affordable Performance

The NEC SNA500 storage system optimizes price and performance to support any workload. The SNA500 features a next-generation entry-level controller that improves IOPS and throughput. Higher performance with solid-state drives (SSDs) enables the SNA500 to maximize storage density, requiring fewer disks for better performance.

High-performance file systems and data-intensive bandwidth applications benefit from the ability of the SNA500 to sustain higher read and write throughput. Database-driven transactional applications benefit from the higher IOPS and low latency of the SNA500.

Modular Flexibility

Flexible configuration options, including All-Flash as well as Hybrid SSD and HDD, enable you to build just one architecture to support a multi-tiered data model. This feature is particularly suited for third platform applications such as Splunk, which uses hot, warm, cold, and frozen tiers.

The NEC SAN500 offers multiple form factors and drive technology options to meet your requirements:

➔ The ultradense 60-drive system shelf supports up to 600TB in just 4U and is optimal for environments with vast amounts of data and limited floor space, with either 2.5-inch or 3.5-inch drives.

➔ The 24-drive system shelf combines low power consumption and exceptional performance density with its high-performance 2.5-inch drives.

➔ Both shelves support SNA500 controllers or can be used for expansion, enabling optimized configurations that meet performance, capacity, and cost requirements.

Flexible Interface Options

The NEC SNA500 supports a complete set of host or network interfaces that are designed for either direct server attach or network environments. Multiple interface options, including SAS, FC and iSCSI (both optical and copper), enable customers to connect based on performance, cost, or the need to protect existing investments in server and storage networks.

Maximum Storage Density

Today's storage must keep up with continuous growth and must meet the most demanding capacity requirements. The NEC SNA500 is designed for capacity-intensive environments that also require efficient data center space, power, and cooling utilization. The system's ultradense, 60-drive, 4U disk shelf provides industry-leading performance and space efficiency to reduce rack space by up to 60%. Its high-efficiency power supplies can lower power and cooling use by up to 40%.

Proven Data Reliability, Availability, and Serviceability

The NEC SNA500 is based on a field-proven architecture that delivers high reliability and greater than five-9s availability—often exceeding six-9s availability when NetApp best practices are followed. The SNA500 is easy to install and to use. It is optimized for performance efficiency, and it fits into most application environments. The SNA500 system offers excellent price-to-performance for HPC applications, small and medium-sized businesses, remote and branch offices, and workgroups within an enterprise. The SNA500 offers enterprise-level reliability, availability, and serviceability features:

➔ Data assurance, based on the ANSI T10-PI standard, offers enterprise-grade data integrity and protects against silent data corruption.
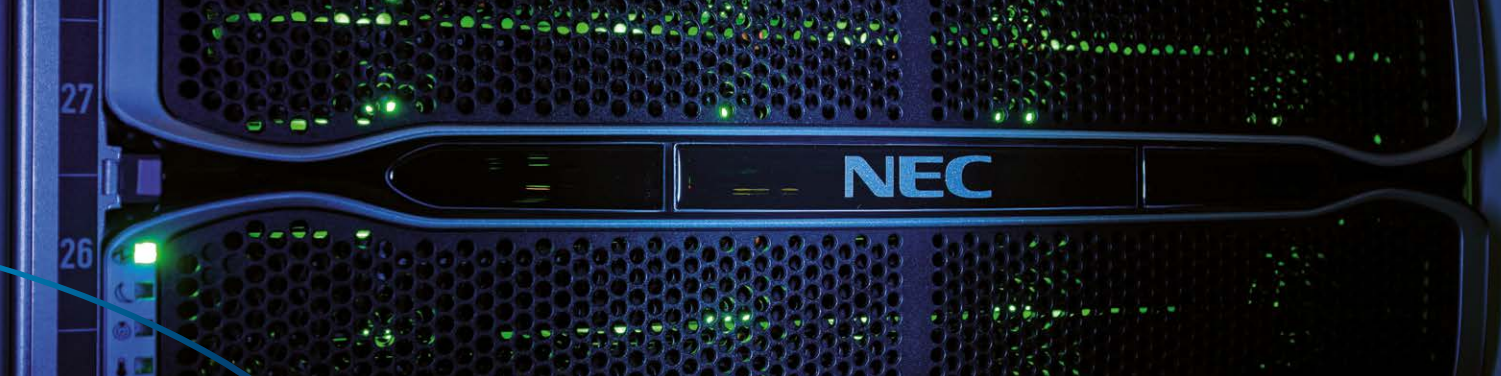
Intuitive Management

SANtricity software offers a combination of comprehensive features and ease of use. Storage administrators appreciate the extensive configuration flexibility that allows optimal performance tuning and complete control over data placement. With its dynamic capabilities, SANtricity software supports dynamic expansion, reconfigurations, and maintenance without interrupting storage system I/O.

SANtricity Storage Manager gives you full control and visibility across your NEC SNA Series storage systems. Released with the SNA500, SANtricity System Manager is a modern, browser-based, on-box tool that allows you to manage and monitor your E2800 by using an intuitive web interface. It can be integrated into other monitoring systems like Icinga and Nagios.

ENERGY STAR Certified

All NEC SNA systems use "85% PLUS" power supplies, exceeding the EPA ENERGY STAR requirements of 80% efficiency.

The modular NEC SNA storage systems can be deployed in tens of thousands of different energy-efficient configurations. The following configurations are EPA ENERGY STAR certified:

➜ SNA524 up to 24 SAS drives
➜ SNA560 up to 60 NL-SAS drives

	SNA560 System Shelf SNA060c Disk Shelf 4U/60 drives (both 2.5" and 3.5")	SNA560 System Shelf SNA060c Disk Shelf 2U/24 drives (2.5")
Type	All-flash storage array or hybrid storage array	All-flash storage array or hybrid storage array
Form factor	4U, 60 drives (both 2.5" and 3.5")	2U, 24 drives (2.5")
Maximum raw capacity	720TB system shelf 2.16PB with disk shelves (using 12 TB drives)	76.8TB system shelf (using 3.2TB and 12TB drives) 1.5PB with disk shelves
Maximum drives[1]	180 with mixed shelves 120 SSD limit (25 SSDs per 60-drive shelf)	180 120 SSD limit
Drives supported	4/8/10/12TB[2] NL-SAS 10TB3 NL-SAS FIPS 900GB, 1.2/1.8TB SAS 1.8TB SAS FIPS 800GB, 1.6/3.2TB SSD 1.6TB SSD FIPS	900GB, 1.2/1.8TB SAS 1.8TB SAS 10K FIPS 800GB, 1.6/3.2TB SSD 1.6TB SSD FIPS
System memory	16GB/64GB	
Included host I/O ports	4 ports 16Gb FC or 4 ports 10Gb iSCSI (optical) or 4 ports 10Gb iSCSI (copper)	
Optional host I/O ports	8 ports 12Gb SAS 8 ports 16Gb FC 8 ports 10Gb iSCSI (optical) 4 ports 10Gb iSCSI (copper)	
Operating system and system management	SANtricity OS 8.40 SANtricity System Manager 11.40	
High-availability features	Dual active controller with automated I/O path failover Auto load balancing and path connectivity monitoring Dynamic Disk Pools technology and traditional RAID levels 0, 1, 5, 6, and 10 Redundant, hot-swappable storage controllers, disk drives, power supplies, and fans Automatic rebuild after a drive failure Mirrored data cache with battery-backed destage to flash Proactive drive health monitoring Greater than 99.999% availability (with appropriate configuration and service plans)	
Host operating systems	Microsoft Windows Server, Red Hat Enterprise Linux, Novell SUSE Linux Enterprise Server, Apple Mac OS, Oracle Solaris, HP, HP-UX, CentOS Linux, Oracle Enterprise Linux, IBM AIX, VMware ESX	
Included software features	SANtricity Snapshot SANtricity volume copy SANtricity synchronous and asynchronous mirroring[5] SANtricity SSD cache SANtricity Thin Provisioning with UNMAP Dynamic Disk Pools technology SANtricity Drive Encryption	

Datasheet NEC SNA500 Series

	SNA560 System Shelf SNA060c Disk Shelf 4U/60 drives (both 2.5" and 3.5")	SNA560 System Shelf SNA060c Disk Shelf 2U/24 drives (2.5")
System capabilities	Data Assurance (T10-PI) Dynamic volume expansion Dynamic capacity expansion and contraction Dynamic RAID-level migration Dynamic segment size migration System event monitor NetApp AutoSupport system Online SANtricity OS upgrades and drive firmware upgrades VMware vSphere Storage APIs—Array Integration Microsoft Offloaded Data Transfer	
Application plug-ins[6]	NetApp SANtricity Management Pack for Microsoft System Center Operations Manager NetApp SANtricity Plug-In for VMware vCenter NetApp SANtricity VASA Provider NetApp SANtricity Storage Replication Adapter for VMware vCenter Site Recovery Manager NetApp SANtricity Performance App for Splunk Enterprise NetApp SANtricity Plug-In for Nagios	
Open management	NetApp SANtricity OpenStack Cinder NetApp SANtricity Web Services Proxy (REST and SYMbol Web)	
System maximums	Hosts: 256 Volumes: 512 Snapshot copies: 512 Mirrors: 32	

Table 1) SNA500 technical specifications. All the data in Table 1 applies to dual-controller configurations.

1   All models are capable of reaching 192 drives when they are configured with intermixed disk shelves.
2   12TB NL-SAS drives are expected to be available in December 2017.
3   12TB NL-SAS FIPS drives are expected to be available in January 2018.
4   Synchronous mirroring is supported with FC only, and asynchronous mirroring is supported with FC and iSCSI.
5   Plug-ins can be downloaded at no charge from mysupport.netapp.com.

	SNA500 System Shelf SNA060 Disk Shelf		SNA524 System Shelf SNA024 Disk Shelf	
Height	6.87" (17.46cm)		3.34" (8.48cm)	
Width	17.66" (44.86cm)		19" (48.26cm)	
Depth	37.09" (94.23cm)		19" (48.26cm)	
Weight[1]	E2860 à SNA560: 249.1lb (113kg) DE460C à SNA060c: 247.4lb (112.2kg)		60.5lb (27.44kg)	
	SNA500 System Shelf		**SNA524 System Shelf**	
	Typical[2]	Maximum[3]	Typical[3]	Maximum[4]
kVA8	1.284	1.543	0.503	0.674
Watts8	1,256	1,537	501.4	673.6
BTU8	4,297	5,258	1,715	2,303.7
	SNA060c Disk Shelf		**SNA024c Disk Shelf**	
	Typical[3]	Maximum[3]	Typical[3]	Maximum[4]
kVA8	1.203	1.466	0.302	0.45
Watts8	1,174	1,460	298.8	451.9
BTU8	4,015	4,994	1,022.15	1,545.5

Table 2) Dimensions, weight, and power.

1   The SNA560 and SNA060c weight and power numbers are based on 6TB/8TB NL-SAS drives.
2   The SNA560 and SNA060c nominal voltage range is between 200VAC and 240VAC.
3   The SNA524 and SNA024c nominal voltage range is between 100VAC and 240VAC.X