Synology®

Datasheet

High Scalability

SA6400

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High Scalability

SA6400

Highly Scalable Storage for Enterprises and Studios

Synology SA6400 is a 12-bay rackmount storage server engineered for scalability and performance. The high sustained throughput, the ability to scale up to 108 drive bays, and the comprehensive high-availability and data protection solutions available in Synology DiskStation Manager (DSM) make the SA6400 ideal for large storage deployments requiring lightning-fast data transfer speeds and dependable service uptime.

- **On-Demand Expansion**
  Up to 1.944 PB of storage[1] with up to 8 Synology RX1223RP Expansion Units[2]
- **Accelerated Performance**
  Over 6,400/4,100 MB/s sequential read/write throughput for efficient file transfer operations even in data-intensive scenarios[3]
- **Fast Connectivity**
  Built-in 10GbE RJ-45 ports for easy integration into any environment and support for 25/40GbE or Fibre Channel upgrades[4]
- **Uptime Protection**
  Option to combine two identical devices into a Synology High Availability cluster for maximum service uptime and minute-level failover
- **Long-Term Support**
  Backed by Synology's 5-year limited warranty[5]

Scalable and Reliable Data Management

With the ability to deliver more than 1 petabyte of raw capacity, SA6400 is designed for extensive, on-demand scaling of data storage. The stable high performance makes it ideal for enterprise data centers, large production studios, and growing businesses in the retail and hospitality sectors looking to tackle data-intensive projects while leaving room for future expansion.

- Over **640,000/122,000 iSCSI 4K random read/write IOPS** and over **6,400/4,100 MB/s sequential read/write performance** support both I/O-intensive applications and large file transfers[3]
- Equipped with **dual 10GbE RJ-45 ports** for fast networking out of the box and **2 PCIe 3.0 expansion slots4** to accommodate more streams and tackle specialized applications through 25/40GbE adapter cards[4]
- Dedicated **out-of-band management (OOB) port** helps IT administrators reduce maintenance and troubleshooting efforts, while **redundant power supply units and system fans** eliminate single points of hardware failure
- Maximize your return on investment while accommodating more demanding business needs by flexibly adding **SSD cache** to lower down latency and boost read/write speeds[6]

Engineered for Data and Service Availability

Built-in solutions help maintain high system availability and facilitate fast recovery if a disaster or major outage occurs.

- **Synology High Availability** provides fast failover between two identical SA6400 units to keep services online when disaster strikes
- **Snapshot Replication** provides schedulable, near-instantaneous data protection with version control, ensuring that documents in shared folders and LUNs remain safe and available[1]
- **Hyper Backup** protects your Synology system by backing up data and configurations to multiple destinations, including the secure **C2 Storage** public cloud,[7] with efficiency delivered by built-in deduplication, integrity checks, compression, and versioning
- Protect full VMware® vSphere™ and Microsoft® Hyper-V® deployments with agentless virtual machine backup in **Synology Active Backup for Business**

Seamless Collaboration and Powerful Sharing Tools

Synology's collaboration suite provides a private cloud solution for on-site and remote workers to concurrently edit documents, share files, manage emails, send instant messages, and more.

- **Synology Drive** supports file sharing, remote data access, cross-device and cross-site synchronization, on-demand file restoration, and backup
- **Synology Office** lets users collaborate on documents, spreadsheets, and presentation slides in real time, supported by convenient options such as file versioning for easy restoration and password protection
- **Synology Chat** brings teams together with one-on-one chats, group chats, and encrypted private channels over multiple platforms
- **Synology MailPlus**[8] provides a secure, reliable, and private email server
- **Synology Calendar** helps teams keep track of what is most important with convenient calendar sharing and scheduling
- **Synology Hybrid Share** combines reliable on-premises storage and efficient syncing of shared folders in the cloud to enable seamless cross-site synchronization and local access at LAN speed[7]

Certified Virtualization Storage and Containerization

SA6400 can serve as **virtual machine storage**, VM backup server, and elastic container and VM host. It is fully certified as storage for VMware® vSphere™, Microsoft® Hyper-V®, Citrix® XenServer™, and OpenStack environments.

- **Synology Storage Console** for VMware or Windows platforms lets you manage VM storage components directly from your hypervisor. VMware VAAI integration and Windows ODX help offload storage operations and speed up data transfer
- **Host lightweight containers and VMs** for testing, sandboxing, and emergency recovery purposes with Container Manager and Synology Virtual Machine Manager, a native hypervisor that supports Windows, Linux, and virtualized versions of DSM[9]

Backed by Synology's 5-Year Limited Warranty

Maximize your return on investment with the comprehensive hardware replacement and premium technical support services offered under Synology's 5-year limited hardware warranty.[5]

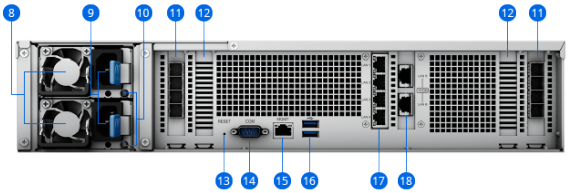
Notes:

1. Volumes between 200 TB and 1 PB make use of the Btrfs (Peta Volume) file system and support a limited selection of applications, services, and configurations. Snapshot Replication, shared folder encryption, file compression, and other functions are not available for volumes over 200 TB. For more information and restrictions, refer to **this article**.
2. Synology SA6400 supports up to 108 drives with eight **Synology RX1223RP** expansion units, sold separately.
3. Performance figures obtained through internal testing by Synology. Actual performance may vary depending on the testing environment, usage, and configuration. See **performance charts** for more information.
4. For the most up-to-date list of compatible NICs, please check our **compatibility list**.
5. The warranty period starts from the date of purchase as stated on your purchase receipt. **Learn more** about our limited product warranty policy.
6. SSD cache can be enabled by using Synology SAT5200 2.5" SSDs in standard drive bays or without occupying drive bays by installing Synology SNV3500 NVMe SSDs using M2D20 or E10M20-T1 adapter cards, sold separately.
7. C2 Storage for Hyper Backup and Hybrid Share requires purchase of an annual or monthly **subscription**. A free trial is available for each newly registered device.
8. Five MailPlus email accounts are included. Additional email accounts can be added with the purchase of Synology MailPlus License Packs. **Learn more**.
9. Certain advanced features require **Virtual Machine Manager Pro**. One Virtual DSM license is included. Additional Virtual DSM instances require the purchase of **Virtual DSM Licenses**.

Hardware Overview

Front

Rear



No.	Name	No.	Name
1.	Power button and indicator	10.	PSU Indicators
2.	Status Indicator	11.	Expansion Ports
3.	Alert Indicator	12.	PCIe Expansion Slots
4.	Mute Button	13.	Reset Button
5.	Drive Status Indicators	14.	Console Port
6.	Drive Trays	15.	Management Port
7.	Rail Kit Release Tabs	16.	USB 3.2 Gen 1 ports
8.	PSU Fans	17.	1GbE RJ-45 ports
9.	Power Ports	18.	10GbE RJ-45 ports

Technical Specifications

Hardware

CPU	
CPU Model	AMD EPYC 7272
CPU Quantity	1
CPU Core	12
CPU Architecture	64-bit
CPU Frequency	2.9 (base) / 3.2 (turbo) GHz
Hardware Encryption Engine	Yes

Memory	
System Memory	32 GB DDR4 ECC RDIMM
Memory Module Pre-installed	32 GB (32 GB x 1)
Total Memory Slots	16
Maximum Memory Capacity	1024 GB (64 GB x 16)
Notes	Please select Synology memory modules for optimum compatibility and reliability. Synology will not provide complete product warranty or technical support if non-Synology memory modules are used for memory expansion.

Storage	
Drive Bays	12
Maximum Drive Bays with Expansion Unit	108 (RX1223RP x 8)
Drive Type	• 3.5" SATA HDD • 2.5" SATA SSD
Hot Swappable Drive	Yes
Notes	Synology only guarantees full functionality, reliability, and performance for Synology drives listed on the compatibility list. The use of non-validated components may limit certain functionality and result in data loss and system instability.

External Ports	
RJ-45 1GbE LAN Port	4
RJ-45 10GbE LAN Port	2
Out-of-Band Management LAN Port	1
USB 3.2 Gen 1 Port	2
Expansion Port	8

PCIe	
PCIe Expansion	2 x Gen3 ×8 slots (x8 link)

Appearance	
Form Factor (RU)	2U
Size (Height x Width x Depth)	88 mm x 482 mm x 724 mm
Weight	16.5 kg
Rack Installation Support	4-post 19" rack (Synology Rail Kit - RKS-02)
Notes	The rail kit is sold separately

Others	
System Fan	80 mm x 80 mm x 32 mm x 4 pcs
AC Input Power Voltage	100V to 240V AC
Power Frequency	50/60 Hz, Single Phase

Temperature	
Operating Temperature	0°C to 35°C (32°F to 95°F)
Storage Temperature	-20°C to 60°C (-5°F to 140°F)
Operating Humidity	8% to 80% RH
Storage Humidity	5% to 95% RH
Maximum Operating Altitude	5,000 m

General DSM Specifications

Storage Management	
Maximum Single Volume Size	• 1 PB (64 GB memory required, for RAID 6 groups only) • 200 TB • 108 TB
Maximum Internal Volume Number	256
SSD Read/Write Cache (Determining cache size)	Yes
Supported RAID Type	RAID F1,Basic,JBOD,RAID 0,RAID 1,RAID 5,RAID 6,RAID 10
Notes	• Volumes over 108 TB require 32 GB of memory or more. • Actual maximum storage pool and volume sizes depend on drive sizes used, the number of drive bays available, and the RAID configuration. • Usable capacity for each volume will be lower than the maximum volume size and is dependent on the filesystem and the amount of system metadata stored. • When Peta Volume is enabled, validated services and packages are required. Please refer to this article for more information on limitations.

File System	
Internal Drives	Btrfs,ext4
External Drives	Btrfs,ext4,ext3,FAT32,NTFS,HFS+,exFAT

File Services	
File Protocol	SMB,AFP,NFS,FTP,WebDAV,Rsync
Maximum Number of SMB Connections (FSCT-Based)	10,000
Windows Access Control List (ACL) Integration	Yes
NFS Kerberos Authentication	Yes

Account & Shared Folder	
Maximum Local User Accounts	15,360
Maximum Local Groups	512
Maximum Shared Folder	512
Maximum Shared Folder Sync Tasks	32

Virtualization	
VMware vSphere	ESXi 8.0 U2, ESXi 8.0 U1, ESXi 8.0, ESXi 7.0 U3, ESXi 7.0 U2, ESXi 7.0 U1, ESXi 7.0, ESXi 6.7 U3, ESXi 6.7 U2, ESXi 6.7 U1, ESXi 6.7, ESXi 6.5 U3, ESXi 6.5 U2, ESXi 6.5 U1, ESXi 6.5
Microsoft Hyper-V	Windows Server 2022
Citrix XenServer	XenServer 8, Citrix Hypervisor 8.2 LTSR CU1
OpenStack	Cinder

Security
Firewall, encryption shared folder, SMB encryption, FTP over SSL/TLS, SFTP, rsync over SSH, login auto block, Let's Encrypt support, HTTPS (customizable cipher suite)

General Specifications	
Supported Protocols	SMB1 (CIFS), SMB2, SMB3, NFSv3, NFSv4, NFSv4.1, NFS Kerberized sessions, iSCSI, Fibre Channel, HTTP, HTTPs, FTP, SNMP, LDAP, CalDAV
Supported Browsers	Chrome,Firefox,Edge,Safari
Supported Language	English, Deutsch, Français, Italiano, Español, Dansk, Norsk, Svenska, Nederlands, Русский, Polski, Magyar, Português do Brasil, Português Europeu, Türkçe, Český, ภาษาไทย, 日本語, 한국어, 繁體中文, 简体中文
Notes	For an updated list of supported browser versions, check the DSM Technical Specifications.

Packages and Applications

Synology AI Console	
Centralize AI management with flexible configurations for AI model integration, user access control, data privacy, usage policies, and resource allocation	
Third-Party AI Model Integration	v
Maximum De-Identification Rate	10,100 words per second
Notes	• De-identification performance measurement: Filters for Credit Card Numbers, IBAN, Individual Taxpayer Identification Number, SSN, and Names applied to a 4,355-word English text. • To enable de-identification, your device must have at least 8 GB of memory and Container Manager installed.

Synology Drive	
Synchronizes files across Windows®, macOS®, Linux®, Android™ and iOS. The built-in cross-platform portal allows access to data anytime and anywhere	
Maximum Number of Users	24,800
Maximum Number of Hosted Files	100,000,000 (applies to files indexed or hosted by Synology Drive. For file access through other standard protocols, refer to the File Services section above)

File Station

Provides virtual drives, remote folders, Windows® ACL editor, compression/extraction of archived files, bandwidth control for specific users/groups, creation of sharing links, and transfer logs

Hybrid Share

Synchronize data across multiple sites for fast and efficient multi-site teamwork. Powered by Synology C2 Storage, Hybrid Share requires purchase of a monthly or annual subscription

SAN Manager

Maximum iSCSI Target Number	256
Maximum LUN	512
LUN Clone/Snapshot, Windows ODX	Yes

Virtual Machine Manager

Recommended Virtual Machine Instances	24 (Learn more)
Recommended Virtual DSM Number (Licenses required)	24 (including 1 Free License)

Hyper Backup

Supports local backup, network backup, and data backup to other servers and public clouds, including C2 Storage

Snapshot Replication

Maximum Snapshots per Shared Folder	1,024
Maximum of System Snapshots	65,536

Synology High Availability

Reduces service downtime by combining two identical NAS into a high-availability cluster

Synology Chat	
Maximum Number of Users	1,500

Synology Office	
Maximum Number of Users	21,300

Synology MailPlus / MailPlus Server	
A secure, reliable, and private mail solution featuring high-availability, load balancing, security, and filtering options	
Free Email Accounts	5 (Additional accounts require purchase of licenses)
Maximum Number of Users	14,500

Surveillance Station	
Default Licenses	2 (Additional cameras require purchase of licenses)
Suggested Maximum IP Cameras and Total FPS (H.264)	• 1080p: 160 channels, 2800 FPS • 3M: 160 channels, 1600 FPS • 5M: 120 channels, 1200 FPS • 4K: 80 channels, 800 FPS
Suggested Maximum IP Cameras and Total FPS (H.265)	• 1080p: 200 channels, 6000 FPS • 3M: 160 channels, 2800 FPS • 5M: 160 channels, 1600 FPS • 4K: 120 channels, 1200 FPS

Central Management System
Provides a single interface to manage and monitor multiple Synology NAS

VPN Server	
Maximum Connections	32

Other packages
Additional 3rd-party packages are available in the Package Center

Environment & Packaging

Environment safety
RoHS Compliant

Packaging Content

- Main Unit X 1
- Accessory Pack X 1
- AC Power Cord X 2
- Quick Installation Guide X 1

Optional Accessories

- DDR4 ECC RDIMM: D4ER01-32G/D4ER01-64G
- Expansion Units: RX1223RP
- Enterprise Series 3.5" SATA HDD: HAT5300 Series
- Enterprise Series 2.5" SATA SSD: SAT5200 Series
- M.2 SSD & 10GbE Combo Adapter Card: E10M20-T1
- M.2 SSD Adapter Card: M2D20
- 25GbE Network Interface Card: E25G30-F2
- 10GbE Network Interface Card: E10G30-F2/E10G30-T2/E10G18-T1
- Rail Kit Sliding: RKS-02

Notes	For multi-module memory configurations, all modules must be identical and share the same model number. Check the Product Manual of your Synology product for recommended memory configurations.

Warranty	
5 Years	
Notes	The warranty period starts from the purchase date as stated on your purchase receipt. (Learn more)

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