

Datasheet



FlashStation

# FS6420

Synology

# FS6420



## 24-Bay All-Flash Rackmount NAS for Intensive Workloads

The Synology FlashStation FS6420 is a 2U 24-bay all-flash storage system designed for I/O-intensive, latency-sensitive workloads. It offers comprehensive availability safeguards, making it ideal for applications requiring critical uptime. Powered by Synology DSM, the FS6420 provides reliable, easy-to-setup backup, file sharing, synchronization, and virtualization solutions.

- **Blazing-Fast Performance**  
Over 257,000 4K random write IOPS<sup>1</sup>
- **Flexible Virtualization**  
Certified support for VMware® vSphere™, Microsoft® Hyper-V®, Citrix® XenServer™, and OpenStack with Kubernetes CSI driver
- **High-Speed Networking Expansion**  
Built-in dual 10GbE RJ45 ports with expansion via 10/25GbE NICs and Fibre Channel adapters<sup>2</sup>
- **Comprehensive Availability Safeguards**  
Hot-swappable drives, online volume expansion, dual power supplies, and high-availability clustering help keep services online
- **Storage Tiering**  
Automatically offload inactive data to lower-cost tiers to optimize storage ROI and preserve high-performance storage for active workloads

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## Engineered for Intensive Workloads

The 24-bay 2U FS6420 delivers the performance, reliability, and scalability required by enterprise environments.

- **High-speed performance:** Over **257,000 4K random write IOPS** for data-intensive enterprise workloads<sup>1</sup>
- **Versatile networking:** **Dual built-in 10GbE ports** can be supplemented with additional high-speed connectivity via two PCIe 4.0 ×16 expansion slots<sup>2</sup>
- **Maximum uptime:** Hot-swappable drive trays, fans, and dual power supplies, combined with online volume management, allow for maintenance and service continuity without downtime
- **Remote diagnostics:** Out-of-band management enables administrators to control powered-down devices remotely and access critical logs through a dedicated interface for faster issue resolution

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## Reliable and Secure Virtualization and Containerization

Leverage your Synology system as virtual machine storage, VM backup server, and alternative container for VM host, with full certification for VMware<sup>®</sup> vSphere<sup>™</sup>, Microsoft<sup>®</sup> Hyper-V<sup>®</sup>, Citrix<sup>®</sup> XenServer<sup>™</sup>, 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<sup>3</sup>

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## Built-in Data and Uptime Protection Solutions

License-free solutions help protect data and configurations on your Synology system, ensure maximum system uptime, and back up and restore all your devices, VMs, and cloud applications.

- **Synology High Availability** provides fast failover between two identical Synology units to keep services available without interruption
- **Snapshot Replication** provides schedulable, rapid data protection and restoration with version control, ensuring that all shared folders and LUNs on your Synology system remain safe and

available

- **Hyper Backup** protects your Synology system with full-system backups and backups of shared folders and configurations to multiple destinations with deduplication, integrity checks, compression, and versioning
- **Synology Active Backup Suite** lets you consolidate protection of Windows clients and servers, Linux endpoints, Synology systems, VMware® and Hyper-V® VMs, Microsoft 365 and Google Workspace, maximizing storage efficiency with data deduplication technology
- **C2 Storage for Hyper Backup** offers a dedicated secure public cloud destination for Synology NAS backup data<sup>4</sup>

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## Advanced Data Security Measures

Synology offers a multi-layered approach to data security that protects against physical breaches, malicious attacks, and accidental deletions.

- Protect sensitive data against physical data breaches with **full-volume encryption**
- Safeguard your data against accidental or malicious deletion with **WORM-powered immutable snapshots** and **WriteOnce shared folders**
- **Active Insight**, Synology's cloud-based fleet monitoring solution, leverages machine learning to detect malware and other malicious activity and automatically creates immutable snapshots to protect your data

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## Intelligent Storage Optimization

**Synology Tiering** intelligently manages data across performance and capacity tiers to **maximize storage efficiency** and **improve storage economics** by automatically placing colder data on cost-effective tiers. The FS6420 can serve as a high-performance hot tier, offloading infrequently accessed files to a Synology cold tier to preserve resources for critical workloads. Key capabilities include:

- Automatic relocation of infrequently accessed data from local high-performance storage to a remote cold tier
- Tiering policies based on last access time, available capacity, or a defined schedule
- Full data accessibility with frequently used files automatically restored to the hot tier
- Centralized dashboard for monitoring folder status, data distribution, capacity usage, and tiering activity

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## Collaboration in a Secure Cloud, Assisted by AI

Synology provides a private cloud solution for on-site and remote workers, as well as home users, to concurrently edit documents, share files, manage emails, send instant messages, organize media, and more.

- **Synology Office Suite AI** accelerates workflows by embedding generative capabilities directly into productivity apps to assist with drafting, summarizing, and analyzing data. It ensures data privacy through a centralized management console that locally masks sensitive information before it reaches third-party AI providers
- **Synology Drive** serves as a centralized hub to keep your files labeled and organized for easy access, offering granular file sharing permissions and customizable security features to ensure file safety
- **Synology Office** enables users to collaborate on documents, spreadsheets, and presentation slides in real time, with support for universal file formats and unlimited file versioning for easy restoration
- **Synology Chat** brings teams together with one-on-one conversations, group channels, and encrypted private channels
- **Synology MailPlus<sup>5</sup>** provides a secure, reliable, and private email server with advanced admin tools to simplify troubleshooting and increase server security
- **Synology Calendar** helps teams keep track of priorities with convenient calendar sharing and scheduling
- **Synology Contacts** enables organizations to manage and update address books with minimal effort
- **Synology Hybrid Share** enhances multi-site teamwork with a global hybrid cloud file system which combines the scalability of the cloud with the fast local access provided by Synology systems<sup>4</sup>

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## Backed by Synology's 5-Year Limited Warranty

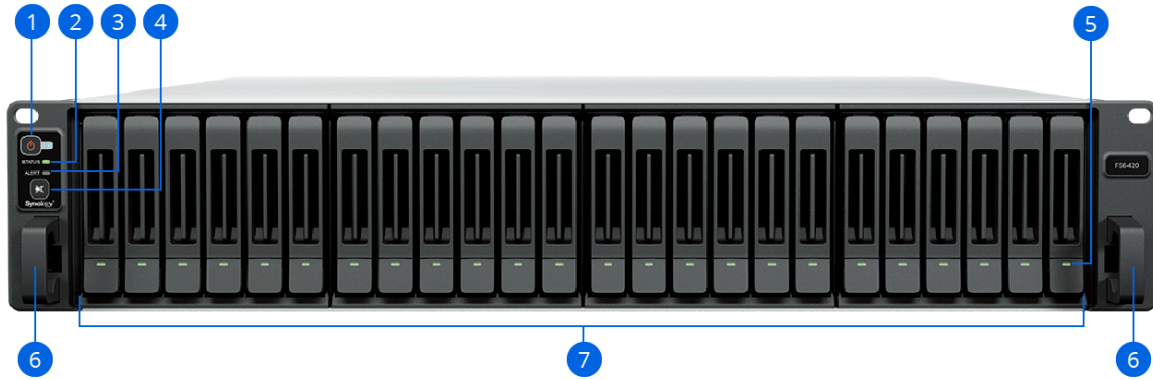
Maximize your return on investment with the **comprehensive hardware replacement** and **premium technical support services** offered under Synology's five-year limited warranty.<sup>6</sup>

**Notes:**

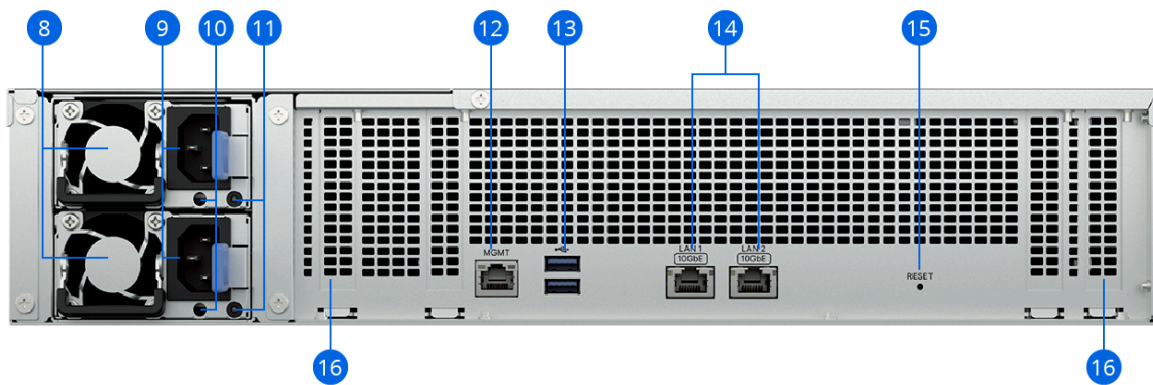
1. Performance figures obtained through internal testing by Synology. Actual performance may vary depending on the testing environment, usage, and configuration. See [performance charts](#) for more information.
2. For the complete and most up-to-date list of compatible NICs, HBAs, and other accessories, please check our [compatibility list](#).
3. 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](#).
4. 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.
5. Five MailPlus email accounts are included. Additional email accounts can be added with the purchase of Synology MailPlus License Packs. [Learn more](#)
6. The warranty period starts from the date of purchase as stated on your purchase receipt. Visit <https://www.synology.com/company/legal/warranty> for more information.

# Hardware Overview

Front



Rear



No.	Name	No.	Name
1.	Power button and indicator	9.	Power ports
2.	Status indicator	10.	Mounting holes
3.	Alert indicator	11.	PSU indicators
4.	Alarm silence button	12.	Management port
5.	Drive status indicators	13.	USB 3.2 Gen 1 ports
6.	Rail kit release tabs	14.	10GbE RJ-45 ports
7.	Drive trays	15.	Reset button
8.	PSU fans	16.	PCI Express expansion slots

# Technical Specifications

## Hardware

CPU	
CPU Model	AMD EPYC 7303
CPU Quantity	1
CPU Cores	16
CPU Threads	32
CPU Architecture	64-bit
CPU Frequency	2.4 (base) / 3.4 (turbo) GHz
Hardware Encryption Engine	Yes

Memory	
System Memory	16 GB DDR4 ECC RDIMM
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	24
Drive Type	2.5" SATA SSD
Hot Swappable Drive	Yes
Notes	Compatible drives are mandatory. Please consult our <a href="#">compatibility list</a> before purchasing hard drives. For more details, please refer to <a href="#">this article</a> .

## External Ports

RJ-45 10GbE LAN Port	2
Out-of-Band Management LAN Port	1
USB 3.2 Gen 1 Port	2

## PCIe

PCIe Expansion	2 x Gen4 ×16 slot (x16 link)
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## Appearance

Form Factor (RU)	2U
Size (Height x Width x Depth)	88 mm x 482 mm x 724 mm
Weight	15.5 kg
Rack Installation Support	4-post 19" rack (Synology Rail Kit - <a href="#">RKS-02</a> )
Notes	The rail kit is sold separately

## Others

System Fan	80 mm x 80 mm x 38 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	<ul style="list-style-type: none"> <li>• 1 PB (for RAID 6 groups only)</li> <li>• 200 TB</li> <li>• 108 TB</li> </ul>
Maximum Internal Volume Number	32
SSD Read/Write Cache ( <a href="#">Determining cache size</a> )	Yes
Supported RAID Type	<ul style="list-style-type: none"> <li>• RAID F1</li> <li>• Basic</li> <li>• JBOD</li> <li>• RAID 0</li> <li>• RAID 1</li> <li>• RAID 5</li> <li>• RAID 6</li> <li>• RAID 10</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• Volumes over 108 TB require 32 GB of memory or more.</li> <li>• Certain conditions are required to support a 1 PB volume. Please refer to <a href="#">this article</a> for more information.</li> <li>• Actual maximum storage pool and volume sizes depend on drive sizes used, the number of drive bays available, and the RAID configuration.</li> <li>• 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.</li> </ul>

## File System

Internal Drives	Btrfs
External Drives	<ul style="list-style-type: none"><li>• Btrfs</li><li>• ext4</li><li>• ext3</li><li>• FAT32</li><li>• NTFS</li><li>• HFS+</li><li>• exFAT</li></ul>

## File Services

File Protocol	<ul style="list-style-type: none"><li>• SMB</li><li>• AFP</li><li>• NFS</li><li>• FTP</li><li>• WebDAV</li><li>• Rsync</li></ul>
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	<ul style="list-style-type: none"><li>• Chrome</li><li>• Firefox</li><li>• Edge</li><li>• Safari</li></ul>
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 <a href="#">DSM Technical Specifications</a> .

## 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	12,000 words per second
Notes	<ul style="list-style-type: none"> <li>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.</li> <li>To enable de-identification, your device must have at least 8 GB of memory and Container Manager installed.</li> </ul>

### 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	45,500
Maximum Number of Hosted Files	100,000,000 (applies to files indexed or hosted by <a href="#">Synology Drive</a> . 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

32 ([Learn more](#))

Recommended Virtual DSM Number  
([Licenses required](#))

32 (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 Snapshots per LUN

256

Maximum Snapshots per System

65,536

Maximum Replication Tasks for Shared Folders

128

Maximum Replication Tasks for LUNs

64

Maximum Replication Tasks per System

128

## 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

39,600

## Synology MailPlus / MailPlus Server

A secure, reliable, and private mail solution featuring high-availability, load balancing, security, and filtering options

Free Email Accounts	5 ( <a href="#">Additional accounts require purchase of licenses</a> )
Maximum Number of Users	25,000

## Surveillance Station

Default Licenses	2 ( <a href="#">Additional cameras require purchase of licenses</a> )
Maximum IP Cameras and Total FPS (H.264)	<ul style="list-style-type: none"><li>• 1080p: 485 channels, 4850 FPS</li><li>• 3M: 450 channels, 4500 FPS</li><li>• 5M: 300 channels, 3000 FPS</li><li>• 4K: 220 channels, 2200 FPS</li></ul>
Maximum IP Cameras and Total FPS (H.265)	<ul style="list-style-type: none"><li>• 1080p: 520 channels, 15600 FPS</li><li>• 3M: 485 channels, 4850 FPS</li><li>• 5M: 450 channels, 4500 FPS</li><li>• 4K: 300 channels, 3000 FPS</li></ul>

## Central Management System

Provides a single interface to manage and monitor multiple Synology NAS

## VPN Server

Maximum Connections	32
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## 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
- C13 to C14 power cord X 2
- Front Cover X 1

## Optional Accessories

- DDR4 ECC RDIMM: D4ER02-64G
- Enterprise Series 2.5" SATA SSD: [SAT5200 Series](#)
- 25GbE Network Interface Card: [E25G30-F2](#)
- 10GbE Network Interface Card: [E10G30-F2/E10G30-T2/E10G30-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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