

RackStation

# RS820+

# RS820RP+



## High Performance 1U Rackmount NAS for Effective Data Storage and Management

Synology RackStation RS820+/RS820RP+ is an ideal network-attached storage solution for centralizing data management. Powered by a 4-core processor, RS820+/RS820RP+ provides both high performance and scalable storage, ideal for file sharing across different platforms and data backup. Synology RS820+/RS820RP+ is backed by Synology's 3-year limited warranty<sup>1</sup>.

### Highlights

- 4-core, 2.1 GHz CPU with AES-NI support. 2 GB DDR4 memory expandable up to 18 GB
- Outstanding 10GbE sequential performance at over 1,621 MB/s reading and 599 MB/s writing<sup>2</sup>
- Scale up to 8 drives with Synology Expansion Unit RX418<sup>3</sup>
- One PCIe 3.0 slot for an optional 10GbE add-in network interface card, or an M2D18 M.2 SSD adapter card<sup>4</sup>
- Advanced Btrfs file system offering 65,000 system-wide snapshots and 1,024 snapshots per shared folder
- Synology High Availability (SHA) providing continuous services with seamless transitioning between clustered servers

## High Performance Storage with Scalability

Synology RS820+/RS820RP+ is a 1U rackmount 4-bay network-attached storage solution designed for businesses requiring an effective and centralized data management. It is equipped with a **4-core** processor and **2 GB** DDR4 memory, expandable up to **18 GB**. The **PCIe 3.0 slot** supports an **optional 10GbE** add-in network interface card, or an **M2D18 M.2 SSD adapter card**<sup>4</sup>, where the M.2 NVMe/SATA SSD cache can be used to boost system random IOPS.

With Link Aggregation enabled in a 10GbE environment, RS820+/RS820RP+ delivers high sequential throughput at over **1,621 MB/s reading** and **599 MB/s writing**<sup>2</sup>. Storage capacity of RS820+/RS820RP+ can be further expanded with one **optional Synology Expansion Unit RX418**<sup>3</sup>, providing a raw capacity of up to **128 TB** with 8 drives in total.



### Synology Active Backup Suite

*Integrated, modern, and license-free backup together with an instant recovery solution for business workloads in physical, virtual, and cloud environments.*

## Ultimate Backup Solution

RS820+/RS820RP+ integrates various backup applications to safeguard your important data on any devices with an intuitive user interface and durable storage technologies.

- Workstation/Server/Virtual Machine/SaaS backup: **Active Backup for Business** centralizes backup tasks for virtual machines, Windows PC, servers, and rsync/SMB file servers and offers various recovery options to ensure lowest RTO. **Active Backup for Office 365/G Suite** is an on-premises backup solution for public clouds with a centralized dashboard, optimizing storage efficiency through the single instancing and block-level deduplication technology.
- NAS backup: **Hyper Backup** comprehensively backs up your data to a local shared folder, an external device, another Synology NAS, an rsync server, or Synology public cloud service, **Synology C2 Backup**<sup>5</sup>, to ensure data safety and availability can be achieved when a disaster happens
- Computer backup: **Synology Drive Client** backs up your Windows, Mac, and Linux desktop devices to safeguard important computer files. RS820+/RS820RP+ is also compatible with Time Machine, allowing you to effortlessly back up your Mac to Synology NAS.



## Next-Generation File System

A modern file system designed to address obstacles often encountered in enterprise storage systems, safeguarding data integrity through metadata mirroring, self-healing and snapshot replication.

## Btrfs: Next Generation Storage Efficiency

RS820+/RS820RP+ introduces **Btrfs file system**, bringing the most advanced storage technologies to meet the management needs of modern business:

- **Advanced snapshot technology** provides schedulable and near-instantaneous data protection of share folders and iSCSI LUNs.
- **File and folder level data restoration** brings great convenience and saves time for users who wish to restore only a specific file or folder.
- **Flexible Shared Folder and User Quota System** provide comprehensive quota control on all user accounts and shared folders.
- **File self-healing** allows Btrfs file system to auto-detect corrupted files with mirrored metadata, and to recover broken data using the supported RAID type of volumes, including RAID1, 5, 6, and 10.

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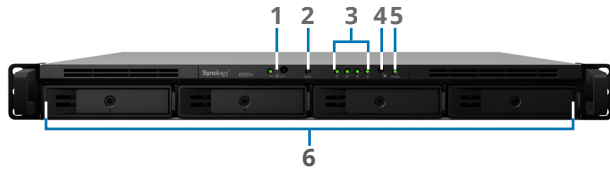
## Reliability, Availability, and Disaster Recovery

System reliability is critical for business everywhere. RS820+/RS820RP+ responds to these concerns with wide-ranging availability and redundancy features:

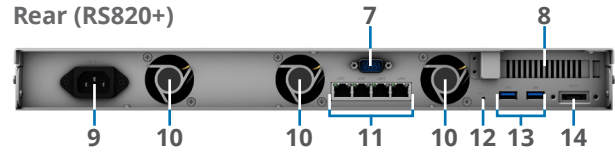
- **Synology High Availability** ensures seamless transitioning between clustered servers in unexpected disasters and ensures that your services remain online.
- **Snapshot Replication** provides schedulable, near-instantaneous data protection, ensuring that your business documents in shared folders, virtual machines in iSCSI LUNs, or dockerized application data remain safe and available in a disaster.
- **Redundant power supplies** (RS820RP+ only), **system fans** and **network ports** with failover support ensure continual service uptime.
- High reliability system design, including **fan-less CPU heat sink** and **passive cooling technology**, prevents single points of failure.
- Optional 5-year warranty<sup>1</sup> is available in select regions.

# Hardware Overview

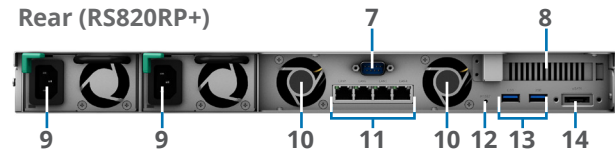
Front



Rear (RS820+)



Rear (RS820RP+)



1	Power button and indicator	2	Alert indicator	3	Drive status indicator	4	Beep off button
5	Status indicator	6	Drive tray	7	Console port	8	PCIe expansion slot
9	Power port	10	System fan	11	1GbE RJ-45 port	12	Reset button
13	USB 3.0 port	14	eSATA port				

## Technical Specifications

### Hardware

CPU	Intel Atom C3538 4-core 2.1GHz
Hardware encryption engine	Yes (AES-NI)
Memory	2 GB DDR4 Non-ECC onboard (expandable up to 18 GB) <sup>6</sup>
Compatible drive type	4 x 3.5" or 2.5" SATA HDD/SSD (drives not included)
Hot swappable drive	Yes
External port	<ul style="list-style-type: none"> <li>• 2 x USB 3.0 port</li> <li>• 1 x Expansion port</li> </ul>
Size (HxWxD)	<ul style="list-style-type: none"> <li>• RS820+: 44 x 430.5 x 457.6 mm / 44 x 480 x 492.6 mm (with server ears)</li> <li>• RS820RP+: 44 x 430.5 x 483.6 mm / 44 x 480 x 518.6 mm (with server ears)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• RS820+: 6.4 kg</li> <li>• RS820RP+: 7.96 kg</li> </ul>
LAN	4 x Gigabit (RJ-45)
Wake on LAN/WAN	Yes
PCIe 3.0 slot	<ul style="list-style-type: none"> <li>• 1 x 4-lane x8 slot</li> <li>• High-performance network interface card support</li> <li>• M.2 NVMe/SATA SSD adapter card support<sup>4</sup></li> </ul>
Scheduled power on/off	Yes
System fan	<ul style="list-style-type: none"> <li>• RS820+: 3 (40 x 40 x 20 mm)</li> <li>• RS820RP+: 2 (40 x 40 x 20 mm)</li> </ul>
AC input power voltage	100V to 240V AC
Power frequency	50/60Hz, single phase
Operating temperature	0°C to 35°C (32°F to 95°F)
Storage temperature	-20°C to 60°C (-5°F to 140°F)
Relative humidity	5% to 95% RH
Maximum operating altitude	5,000 m (16,400 ft)

## General DSM specification

Networking protocol	SMB, AFP, NFS, FTP, WebDAV, CalDAV, iSCSI, Telnet, SSH, SNMP, VPN (PPTP, OpenVPN™, L2TP)
File system	<ul style="list-style-type: none"> <li>Internal: Btrfs, ext4</li> <li>External: Btrfs, ext4, ext3, FAT, NTFS, HFS+, exFAT<sup>7</sup></li> </ul>
Supported RAID type	Synology Hybrid RAID (SHR), Basic, JBOD, RAID 0, RAID 1, RAID 5, RAID 6, RAID 10
Storage management	<ul style="list-style-type: none"> <li>Maximum single volume size: 108TB</li> <li>Maximum system snapshots: 65,536<sup>8</sup></li> <li>Maximum internal volume: 256</li> </ul>
SSD cache	<ul style="list-style-type: none"> <li>Read/write cache support</li> <li>M.2 NVMe/SATA SSD support<sup>4</sup></li> </ul>
File sharing capability	<ul style="list-style-type: none"> <li>Maximum local user account: 2,048</li> <li>Maximum local group: 256</li> <li>Maximum shared folder: 512</li> <li>Maximum concurrent SMB/NFS/AFP/FTP connection: 500</li> </ul>
Privilege	Windows Access Control List (ACL), application privilege
Directory service	Windows® AD integration: Domain users login via SMB/NFS/AFP/FTP/File Station, LDAP integration
Virtualization	VMware vSphere® 6.5, Microsoft Hyper-V®, Citrix®, OpenStack®
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)
Supported client	Windows 7 onwards, Mac OS X® 10.11 onwards
Supported browser	Chrome®, Firefox®, Edge®, Internet Explorer® 10 onwards, Safari® 10 onwards; Safari (iOS 10 onwards), Chrome (Android™ 6.0 onwards) on tablets
Interface language	English, Deutsch, Français, Italiano, Español, Dansk, Norsk, Svensk, Nederlands, Русский, Polski, Magyar, Português do Brasil, Português Europeu, Türkçe, Český, ไทย, 日本語, 한국어, 繁體中文, 简体中文

## Packages and Applications

### File Server & Synchronization

Synology Drive	Provide a universal portal to synchronize your files across various platforms, including Windows, macOS, Linux, Android and iOS. The built-in universal portal allows you to access data anytime and anywhere. <ul style="list-style-type: none"> <li>Maximum number of hosted files: 1,000,000</li> <li>Maximum number of concurrent connections for PC clients: 550</li> </ul>
File Station	Virtual drive, remote folder, Windows ACL editor, compressing/extracting archived files, bandwidth control for specific users or groups, creating sharing links, transfer logs
FTP Server	Bandwidth control for TCP connections, custom FTP passive port range, anonymous FTP, FTP SSL/TLS and SFTP protocol, boot over the network with TFTP and PXE support, transfer logs
Presto File Server <sup>9</sup>	High-speed data transfer over WAN with exclusive SITA technology between Synology NAS and desktop
Cloud Sync	One or two-way synchronization with public cloud storage providers including Alibaba Cloud OSS, Amazon Drive, Amazon S3-compatible storage, Backblaze B2, Baidu Cloud, Box, Dropbox, Google Cloud Storage, Google Drive, hubiC, MegaDisk, Microsoft OneDrive, OpenStack Swift-compatible storage, Tencent COS, WebDAV servers, Yandex Disk
Universal Search	Offer global search into applications and files

### iSCSI Storage & Virtualization

iSCSI Manager	<ul style="list-style-type: none"> <li>Maximum iSCSI target: 128</li> <li>Maximum iSCSI LUN: 256</li> <li>iSCSI LUN clone/snapshot support</li> </ul>
Virtual Machine Manager	Deploy and run various virtual machines on Synology NAS, including Windows, Linux, or Virtual DSM

### Data Protection & Backup Solution

Hyper Backup	Support local backup, network backup, and backup data to public clouds
Backup tools	DSM configuration backup, macOS Time Machine support, Synology Drive Client desktop application Shared folder sync - maximum task number: 16
Snapshot Replication	<ul style="list-style-type: none"> <li>Maximum of shared folder snapshots: 1,024</li> <li>Maximum of Replication: 64</li> </ul>
Synology High Availability	Reduce service downtime by setting up two identical NAS into one high-availability cluster
Active Backup for G Suite	Support G Suite My Drive and Team Drive backup and restoration

<b>Active Backup for Office 365</b>	Support Office 365 OneDrive for Business, mail, contacts, and calendar backup and restoration
<b>Active Backup for Business</b>	All-in-one backup solution designed for heterogeneous business IT environment, enabling IT admins to remotely manage and monitor protection over PC, servers and VM on one centralized console
<b>Productivity &amp; Collaboration</b>	
<b>Collaboration tools</b>	Collaborate with instant message service Synology Chat, online editor Synology Office, and scheduling assistant Synology Calendar <ul style="list-style-type: none"> <li>• Chat maximum user: 1,500</li> <li>• Office maximum user: 1,800</li> <li>• Calendar: support CalDAV and access via mobile devices</li> </ul>
<b>Note Station</b>	Rich-text note organization and versioning, encryption, sharing, media embedding and attachments
<b>Synology MailPlus Server</b>	Secure, reliable, and private mail solution with high-availability, load balancing, security and filtering design (includes 5 free email account licenses; additional accounts require the purchasing of additional licenses)
<b>Synology MailPlus</b>	Intuitive webmail interface for Synology MailPlus Server, customizable mail labels, filters, and user interface
<b>Multimedia</b>	
<b>Moments</b>	Support smart AI album with facial and subject recognition, photo editing and sharing features, similar photo detection, auto-editing functions such as color correction and angle adjustments, and AI selection of the best photos. Mobile applications are available on iOS and Android devices.
<b>Other packages</b>	Video Station, Photo Station, Audio Station, iTunes® Server
<b>Surveillance</b>	
<b>Surveillance Station</b>	Maximum IP camera: 40 (total of 1,200 FPS at 720p, H.264) (including two free camera licenses; additional cameras require the purchasing of additional licenses)
<b>All-in-One Server</b>	
<b>Synology Directory Server</b>	Provide a flexible and cost-effective domain controller solution
<b>Central Management System</b>	Provide a single interface to manage and monitor multiple Synology NAS
<b>VPN Server</b>	Maximum connection: 30, supported VPN protocol: PPTP, OpenVPN™, L2TP/IPSec
<b>Mail Server</b>	Supported Mail Server Protocols: POP3, SMTP, IMAP, Support LDAP/AD account
<b>Mail Station</b>	Webmail interface for Mail Server to receive emails from multiple POP3 mailboxes, customizable SMTP server
<b>Web Station</b>	Virtual host (up to 30 websites), PHP/MariaDB®, third-party applications support
<b>Other packages</b>	DNS Server, RADIUS Server, Log Center
<b>Others</b>	
<b>Storage Analyzer</b>	Volume and quota usage, total size of files, volume usage and trends based on past usage, size of shared folders, large files, most recently modified files, least recently accessed files
<b>Antivirus Essential</b>	Full system scan, scheduled scan, white list customization, virus definition auto update
<b>Other packages</b>	Additional 3rd-party packages available on Package Center

## Environment and Packaging

<b>Environment safety</b>	RoHS compliant
<b>Package content</b>	<ul style="list-style-type: none"> <li>• RS820+/RS820RP+ main unit x 1</li> <li>• Quick Installation Guide x 1</li> <li>• Accessory pack x 1</li> <li>• AC power cord x 1 (RS820+) / 2 (RS820RP+)</li> </ul>
<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>• 4 GB DDR4-2666 SO-DIMM (D4NESO-2666-4G)</li> <li>• 16 GB DDR4-2666 SO-DIMM (D4ECSO-2666-16G)</li> <li>• Synology E10G17-F2/E10G18-T1/E10G18-T2 10Gbps Ethernet adapters</li> <li>• Synology M2D18 M.2 SSD adapter card</li> <li>• Synology Expansion Unit RX418</li> <li>• Synology Rail Kit RKM114-Rail Kit Mounted / RKS1317-Rail Kit Sliding</li> <li>• VisualStation VS360HD, VS960HD</li> <li>• Surveillance Device License Pack</li> <li>• MailPlus License Pack</li> <li>• Virtual DSM License Pack</li> </ul>
<b>Warranty</b>	3 years <sup>1</sup>

\*Model specifications are subject to change without notice. Please refer to [www.synology.com](http://www.synology.com) for the latest information.

1. 5-year warranty is available as an optional bundle with EW202, a 2-year Extended Warranty service add-on. Visit [https://www.synology.com/en-global/products/Extended\\_Warranty](https://www.synology.com/en-global/products/Extended_Warranty) for more information on availability. The warranty period starts from the purchase date as stated on your purchase receipt. Visit <https://www.synology.com/company/legal/warranty> for more information.
2. Performance figures may vary depending on environment, usage, and configuration.
3. RS820+/RS820RP+ supports one Synology Expansion Unit RX418, sold separately.
4. RS820+/RS820RP+ supports M.2 NVMe/SATA SSD cache creation when using with Synology M2D18, sold separately.
5. Synology C2 Backup is purchased separately when you select Synology C2 cloud backup as your destination in Hyper Backup. Synology C2 Backup provides one-time 30-day free-trial for each Synology Account.
6. RS820+/RS820RP+ comes with 2 GB DDR4 Non-ECC onboard and can support up to 18 GB by adding one optional 16 GB SO-DIMM.
7. exFAT Access is purchased separately in Package Center.
8. System snapshot includes snapshots taken by iSCSI Manager, Snapshot Replication, and Virtual Machine Manager. Availability of these packages varies by model.
9. Presto File Server License is purchased separately in Package Center.

## SYNOLOGY INC.

Synology creates network-attached storage, IP surveillance solutions, and network equipment that transform the way users manage data, conduct surveillance, and manage networks in the cloud era. By taking full advantage of the latest technologies, Synology aims to help users centralize data storage and backup, share files on-the-go, implement professional surveillance solutions, and manage networks in reliable and affordable ways. Synology is committed to delivering products with forward-thinking features and the best in class customer services.

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