

Product Specifications

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# RS4021xs+

Synology

# Hardware Specs

CPU	
CPU Model	Intel Xeon D-1541
CPU Quantity	1
CPU Cores	8
CPU Threads	16
CPU Architecture	64-bit
CPU Frequency	2.1 (base) / 2.7 (turbo) GHz
Hardware Encryption Engine	v

Memory	
System Memory	16 GB DDR4 ECC UDIMM
Memory Module Pre-installed	16 GB (16 GB x 1)
Total Memory Slots	4
Maximum Memory Capacity	64 GB (16 GB x 4)
Notes	<ul style="list-style-type: none"> <li>• Synology may revise pre-installed memory module specifications in response to component lifecycle and supply conditions. All revised components undergo the same rigorous validation to ensure equivalent compatibility, stability, and performance.</li> <li>• 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.</li> <li>• For multi-module memory configurations, all modules must be identical and share the same model number. Check the <a href="#">Product Manual</a> of your Synology product for recommended memory configurations.</li> </ul>

Storage	
Drive Bays	16
Maximum Drive Bays with Expansion Unit	40 (RX1217 x 2)
Drive Type ( <a href="#">See all supported drives</a> )	<ul style="list-style-type: none"> <li>• 3.5" SATA HDD</li> <li>• 2.5" SATA SSD</li> </ul>
Hot Swappable Drive*	v
Notes	Synology only guarantees full functionality, reliability, and performance for Synology drives listed on the <a href="#">compatibility list</a> . 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
USB 3.2 Gen 1 Port	2
Expansion Port	2
Expansion Port Type	Infiniband

## PCIe

PCIe Expansion	2 x Gen3 x8 slots (x8 link)
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## Appearance

Form Factor (RU)	3U
Size (Height x Width x Depth)	132.3 mm x 482 mm x 656.5 mm
Weight	17.4 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 3 pcs
Fan Speed Mode	<ul style="list-style-type: none"> <li>• Full-Speed Mode</li> <li>• Cool Mode</li> <li>• Quiet Mode</li> </ul>
Easy Replacement System Fan	v
Power Recovery	v
Noise Level*	44.7 dB(A)
Scheduled Power On / Off	v
Wake on LAN / WAN	v
Power Supply Unit / Adapter	800 watts 550 watts*
Redundant Power Supply	v
AC Input Power Voltage	100 V to 240 V AC
Power Frequency	50/60 Hz, Single Phase
Power Consumption	145.79 watts (Access) 62.68 watts (HDD Hibernation)
British Thermal Unit	497.14 BTU/hr (Access) 213.74 BTU/hr (HDD Hibernation)
Notes	<ul style="list-style-type: none"> <li>• For more information on how power consumption is measured, refer to <a href="#">this article</a>.</li> <li>• Power supply specifications vary by hardware revision. An 800 W PSU is used in devices with serial numbers containing T2R (5th to 7th digits), while a 550 W PSU is in devices with ULR and VR4 serial numbers. For more information, refer to the <a href="#">Product Change Notice</a>.</li> <li>• Noise Level Testing Environment: Fully loaded with Seagate 2TB ST2000VN000 hard drive(s) in the idle state. Two G.R.A.S. Type 40AE microphones, each set up 1 meter away from the Synology NAS at the front and rear. Background noise: 16.49-17.51 dB(A); Temperature: 24.25-25.75°C; Humidity: 58.2-61.8%</li> </ul>

## Temperature

Operating Temperature	0°C to 35°C (32°F to 95°F)
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Storage Temperature	-20°C to 60°C (-5°F to 140°F)
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Operating Humidity	8% to 80% RH
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Storage Humidity	5% to 95% RH
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## Certification

- FCC
- CE
- BSMI
- VCCI
- RCM
- EAC
- CCC
- KC
- BIS
- UL

## Warranty

5 Years

### Notes

The warranty period starts from the purchase date as stated on your purchase receipt. ([Learn more](#))

## Environment

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 UDIMM: [D4EC-2666-16G](#)
- Expansion Units: [RX1217/RX1217RP](#)
- 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

All memory modules will operate at the maximum frequency specified by the CPU manufacturer.

# Software Specs

## DSM Specifications

### Storage Management

Maximum Single Volume Size	<ul style="list-style-type: none"><li>• 1 PB (64 GB memory required, for RAID 6 groups only)</li><li>• 200 TB (32 GB memory required)</li><li>• 108 TB</li></ul>
Maximum Internal Volume Number	256
SSD Read/Write Cache (Determining cache size)	v
SSD TRIM	v
RAID Group	v
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>
RAID Migration	<ul style="list-style-type: none"><li>• Basic to RAID 1</li><li>• Basic to RAID 5</li><li>• RAID 1 to RAID 5</li><li>• RAID 5 to RAID 6</li></ul>
Volume Expansion with Larger HDDs	<ul style="list-style-type: none"><li>• RAID F1</li><li>• RAID 1</li><li>• RAID 5</li><li>• RAID 6</li><li>• RAID 10</li></ul>

Volume Expansion by Adding a HDD	<ul style="list-style-type: none"> <li>• RAID F1</li> <li>• JBOD</li> <li>• RAID 5</li> <li>• RAID 6</li> </ul>
Global Hot Spare Supported RAID Type	<ul style="list-style-type: none"> <li>• RAID F1</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	<ul style="list-style-type: none"> <li>• Btrfs</li> <li>• ext4</li> </ul>
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)	1,500
Windows Access Control List (ACL) Integration	v
NFS Kerberos Authentication	v
Notes	<ul style="list-style-type: none"><li>• Connection value of this model is tested with Synology SATA SSD fully populated and up to four 10GbE network ports</li><li>• Models with expandable memory are tested with the maximum supported quantity installed.</li><li>• SMB performance was evaluated using Microsoft File Server Capacity Tool (FSCT) version 1.3, with the following configuration:<ul style="list-style-type: none"><li>◦ Test workload: HomeFolder scenario provided by the FSCT tool</li><li>◦ Test duration: 600 seconds</li><li>◦ Domain controller &amp; FSCT controller: Windows Server 2022</li><li>◦ FSCT clients: 8 × Windows 10 machines</li><li>◦ SMB feature: Directory leasing enabled</li></ul></li></ul>

### Account & Shared Folder

Maximum Local User Accounts	5,120
Maximum Local Groups	512
Maximum Shared Folder	512
Maximum Shared Folder Sync Tasks	32

### Hybrid Share

Maximum Hybrid Share Folders	15
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### Hyper Backup

Folder and Package Backup	v
Entire System Backup	v
Notes	Full-system backup requires DSM 7.2 or later.

### High Availability

Synology High Availability	v
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### Log Center

Syslog Events per Second	3,000
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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, Windows Server 2019, Windows Server 2016
Citrix XenServer	XenServer 8, Citrix Hypervisor 8.2 LTSR CU1
OpenStack	Cinder

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> .

Add-on Packages [view the complete package list](#)

### Central Management System

v

## Synology AI Console

Third-Party AI Model Integration	v
Maximum De-Identification Rate	1,500 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 Chat

Maximum Number of Users	500
Notes	<ul style="list-style-type: none"><li>Measured with simulated users, each with an average record of 20,000 messages, emojis, or stickers. The required server response time is below ten seconds.</li><li>Models with expandable memory are tested with the maximum supported quantity installed.</li></ul>

## Download Station

Maximum Concurrent Download Tasks	80
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## SAN Manager

Maximum iSCSI Target Number	128
Maximum LUN	256
LUN Clone/Snapshot, Windows ODX	v

## Synology MailPlus / MailPlus Server

Free Email Accounts	5 ( <a href="#">Additional accounts require purchase of licenses</a> )
Maximum Number of Users	3,200
Notes	<ul style="list-style-type: none"><li>• The suggested maximum number of users is based on the following workload: 20% of users with a 20,000 item mailbox randomly performing actions and receiving 240 emails per day, and 80% of users receiving 20 emails per day. <a href="#">Learn more</a></li><li>• Models with SSD support are tested with a single SSD volume.</li><li>• Models with expandable memory are tested with the maximum supported quantity installed. <a href="#">Learn more about memory requirements.</a></li><li>• Operating in high-availability mode will incur additional overhead.</li><li>• Features enabled during evaluation: anti-spam, anti-virus, DNSBL, greylist, content scanning, and full-text search (English).</li></ul>

## Media Server

DLNA Compliance	v
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## Synology Photos

Facial Recognition	v
Object Recognition	v

## Snapshot Replication

Maximum Snapshots per Shared Folder	512
Maximum Snapshots per LUN	128
Maximum Snapshots per System	16,384
Maximum Replication Tasks for Shared Folders	64
Maximum Replication Tasks for LUNs	32
Maximum Replication Tasks per System	64

## Surveillance Station

Default Licenses	2 (Additional cameras require purchase of licenses)
Maximum IP Cameras and Total FPS (H.264)	<ul style="list-style-type: none"><li>• 1080p: 280 channels, 2800 FPS</li><li>• 3M: 200 channels, 2000 FPS</li><li>• 5M: 120 channels, 1200 FPS</li><li>• 4K: 85 channels, 850 FPS</li></ul>
Maximum IP Cameras and Total FPS (H.265)	<ul style="list-style-type: none"><li>• 1080p: 285 channels, 8550 FPS</li><li>• 3M: 280 channels, 2800 FPS</li><li>• 5M: 200 channels, 2000 FPS</li><li>• 4K: 120 channels, 1200 FPS</li></ul>
Notes	<ul style="list-style-type: none"><li>• Performance figures are obtained from testing conducted with the device fully populated with drives, with their default memory configuration, and under a continuous recording setup. Actual system capabilities may vary based on configuration, drive performance, enabled features, and the presence of additional workloads.</li><li>• Use <a href="#">NVR Selector</a> to quickly find a suitable model based on your requirements.</li><li>• The number of video channels that can be viewed simultaneously is double the maximum number of cameras for the same codec and resolution.</li><li>• Surveillance Station 9.1.3 or above is required to support the maximum IP cameras and FPS figures listed.</li></ul>

## Synology Drive

Maximum Number of Users

2,700

Maximum Number of Hosted Files

25,000,000 (applies to files indexed or hosted by [Synology Drive](#). For file access through other standard protocols, refer to the File Services section above)

Notes

- The suggested maximum number of users is based on the following workload: 20% of users randomly perform file operations (upload, download, move, and delete), and 80% of users are logged in but idle. [Learn more](#)
- Models with SSD support are tested with a single SSD volume.
- Models with expandable memory are tested with the maximum supported quantity installed.
- Exceeding the recommended numbers above will not block application operations, but may result in longer response time.
- Btrfs file system and non-encrypted shared folders were used during the aforementioned testing.

## Synology Office

Maximum Number of Users

2,700

Notes

- The suggested maximum number of users is based on the following workload: 20% of users are executing random actions at an average of 30-second intervals, and 80% of users are logged in and viewing a file. [Learn more](#)
- Models with SSD support are tested with a single SSD volume.
- Models with expandable memory are tested with the maximum supported quantity installed.
- Client performance may affect maximum simultaneous editing users. Client PCs used for testing: Intel Core i3-3220 / 8GB RAM

## Virtual Machine Manager

Recommended Virtual Machine Instances

16 ([Learn more](#))

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

16 (including 1 Free License)

Notes

The specifications vary depending on system configuration and memory size.

## VPN Server

Maximum Connections

32