Product Specifications

DS1821+

Hardware Specs

CPU

CPU Model	AMD Ryzen V1500B
CPU Quantity	1
CPU Core	4
CPU Architecture	64-bit
CPU Frequency	2.2 GHz
Hardware Encryption Engine	v

Memory

System Memory	4 GB DDR4 ECC SODIMM
Memory Module Pre-installed	4 GB (4 GB x 1)
Total Memory Slots	2
Maximum Memory Capacity	32 GB (16 GB x 2)
Notes	• Synology reserves the right to replace memory modules with the same or higher frequency based on supplier's product life cycle status. Rest assured that the compatibility and stability have been strictly verified with the same benchmark to ensure identical performance. • 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. • For more information about the recommended memory configurations, please check the Hardware Installation Guide of your Synology product.

Storage

Drive Bays	8

Maximum Drive Bays with Expansion Unit	18 (DX517 × 2)
M.2 Drive Slots	2 (NVMe)
Compatible Drive Type* (See all supported drives)	• 3.5" SATA HDD • 2.5" SATA HDD • 2.5" SATA SSD • M.2 2280 NVMe SSD
Hot Swappable Drive*	v
Notes	• The hot swappable drive feature is not supported by M.2 SSD slots. • "Compatible drive type" indicates drives that have been tested to be compatible with Synology products. This term does not indicate the maximum connection speed of each drive bay.

External Ports

RJ-45 1GbE LAN Port	4
USB 3.2 Gen 1 Port*	4
Expansion Port	2
Expansion Port Type	eSATA
Notes	The USB 3.0 standard was renamed to USB 3.2 Gen 1 by the USB Implementers Forum (USB-IF) in 2019.

PCIe

PCIe Expansion	1 x Gen3 ×8 slot (x4 link)

Appearance

Size (Height x Width x Depth)	166 mm x 343 mm x 243 mm
Weight	6 kg

Others

System Fan	120 mm x 120 mm x 2 pcs

Fan Speed Mode	• Full-Speed Mode • Cool Mode • Quiet Mode
Easy Replacement System Fan	v
Brightness Adjustable Front LED Indicators	v
Power Recovery	v
Noise Level*	22.2 dB(A)
Scheduled Power On / Off	v
Wake on LAN / WAN	v
Power Supply Unit / Adapter	250 watts
AC Input Power Voltage	100V to 240V AC
Power Frequency	50/60 Hz, Single Phase
Power Consumption	59.8 watts (Access) 26.18 watts (HDD Hibernation)
British Thermal Unit	204.05 BTU/hr (Access) 89.33 BTU/hr (HDD Hibernation)
Notes	• Power consumption is measured when it is fully loaded with Western Digital 1TB WD10EFRX hard drive(s). • 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%

Temperature

Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (-5°F to 140°F)
Relative Humidity	5% to 95% RH

Certification

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

Warranty

3-year hardware warranty, extendable to 5 years with EW201 or Extended Warranty Plus

Notes	- The warranty period starts from the purchase date as stated on your purchase receipt. (Learn more) - Extended Warranty Plus is only available in Europe and North America. EW201/EW202 is only available in Asia, Africa, and Oceania. For exact availability information please visit their respective websites.

Environment

RoHS Compliant

Packaging Content

- Main Unit X 1
- Accessory Pack X 1
- AC Power Cord X 1
- RJ-45 LAN Cable X 2
- Quick Installation Guide X 1

Optional Accessories

- DDR4 ECC SODIMM: D4ES01-4G/D4ES01-8G/D4ECSO-2666-16G
- Expansion Units: DX517
- Enterprise Series 3.5" SATA HDD: HAT5300 Series
- Plus Series 3.5" SATA HDD: HAT3300 Series
- Enterprise Series 2.5" SATA SSD: SAT5200 Series
- Enterprise Series M.2 2280 NVMe SSD: SNV3400 Series
- 25GbE Network Interface Card: E25G30-F2
- 10GbE Network Interface Card: E10G30-F2/E10G30-T2/E10G18-T1

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	108 TB
Maximum Internal Volume Number	64
M.2 SSD Storage Pool Support*	v
SSD Read/Write Cache (Determining cache size)	v
SSD TRIM	v
Supported RAID Type	- Synology Hybrid RAID - Basic - JBOD - RAID 0 - RAID 1 - RAID 5 - RAID 6 - RAID 10
RAID Migration	- Basic to RAID 1 - Basic to RAID 5 - RAID 1 to RAID 5 - RAID 5 to RAID 6
Volume Expansion with Larger HDDs	- Synology Hybrid RAID - RAID 1 - RAID 5 - RAID 6 - RAID 10
Volume Expansion by Adding	Synology Hybrid RAID

a HDD	• JBOD • RAID 5 • RAID 6
Global Hot Spare Supported RAID Type	• Synology Hybrid RAID • RAID 1 • RAID 5 • RAID 6 • RAID 10
Notes	• Creating M.2 storage pools requires the use of Synology-verified SSDs, which are rigorously tested under extreme temperature conditions. Thermal parameters for SSDs and NAS units are fine-tuned to ensure optimal management of thermal conditions under I/O-intensive environments. (Learn more) • 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. • Each internal volume (may consist of multiple drives) is expandable up to 108TB.

File System

Internal Drives	• Btrfs • ext4
External Drives	• Btrfs • ext4 • ext3 • FAT • NTFS • HFS+ • exFAT
Notes	exFAT Access can be installed for free from Package Center in DSM 7.0. In DSM 6.2 or earlier versions, exFAT Access needs to be purchased in Package Center.

File Services

File Protocol	• SMB • AFP • NFS • FTP • WebDAV • Rsync

Maximum Concurrent SMB/AFP/FTP Connections	1,000
Maximum Concurrent SMB/AFP/FTP Connections (with RAM expansion)	2,000
Windows Access Control List (ACL) Integration	v
NFS Kerberos Authentication	v
Notes	- Regarding data concerning tests with RAM expansion, all memory slots are installed with the maximum capacity of supported RAM. - The testing standard was based on the maximum number of concurrent connections supported by this model. During the testing, 25% of the connections were used to transfer files concurrently. The transfer process guaranteed that the connections were not interrupted; the minimum transfer speed was not guaranteed.

Account & Shared Folder

Maximum Local User Accounts	2,048
Maximum Local Groups	256
Maximum Shared Folder	512
Maximum Shared Folder Sync Tasks	16

Hybrid Share

Maximum Hybrid Share Folders	10

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

Log Center

Syslog Events per Second	1,000

Virtualization

VMware ESXi 6.5 and VAAI	v
Windows Server 2016	v
Windows Server 2019	v
Windows Server 2022	v
Citrix Ready	v
OpenStack	v

General Specifications

Supported Protocols	SMB1 (CIFS), SMB2, SMB3, NFSv3, NFSv4, NFSv4.1, NFS Kerberized sessions, iSCSI, 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.

Add-on Packages view the complete package list

Central Management System

v

Synology Chat

Suggested Users	150
Notes	Models with expandable memory are tested with their maximum supported memory.

Download Station

Maximum Concurrent Download Tasks	80

SAN Manager

Maximum iSCSI Target Number	128
Maximum LUN	256
LUN Clone/Snapshot, Windows ODX	v
Notes	iSCSI Manager has been renamed to SAN Manager in DSM 7.0.

Synology MailPlus / MailPlus Server

Free Email Accounts	5 (Additional accounts require purchase of licenses)
Suggested Users	750
Maximum Server Performance	1,484,000 emails per day, approx. 45GB
Notes	• Suggested users is derived from testing in an environment with 20% heavy users (each with 20,000 pre-populated emails and receiving 240 emails per day) and 80% light users (each receiving an average of 20 emails per day). Learn more • Models with more than 4 bays were installed with two SSDs for SSD cache. • Models with expandable memory are tested with their maximum supported memory. • The performance of the mail system will slightly decrease in high-availability mode due to data synchronization between the two servers.

- Functions that were enabled in all of the tests above: anti-spam, anti-virus, DNSBL, greylist, content scan, full-text search (English only).

Media Server

DLNA Compliance	v

Synology Photos

Facial Recognition	v
Object Recognition	v

Snapshot Replication

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

Surveillance Station

Default Licenses	2 (Additional cameras require purchase of licenses)
Suggested Maximum IP Cameras and Total FPS (H.264)	720p: 40 channels, 1200 FPS 1080p: 40 channels, 1050 FPS 3M: 40 channels, 600 FPS 5M: 40 channels, 440 FPS 4K: 32 channels, 320 FPS
Suggested Maximum IP Cameras and Total FPS (H.265)	720p: 40 channels, 1200 FPS 1080p: 40 channels, 1200 FPS 3M: 40 channels, 1120 FPS 5M: 40 channels, 600 FPS 4K: 40 channels, 480 FPS
Notes	- 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. - Use NVR Selector to quickly find a suitable model based on your requirements. - The maximum number of camera stream outputs is 2 times the suggested maximum number of IP cameras.

Synology Drive

Recommended Number of Concurrent Sync Clients	550 (the number of connections that can be maintained when the recommended number of hosted files was reached)
Recommended Number of Hosted Files	50,000,000 (applies to files indexed or hosted by Synology Drive. For file access through other standard protocols, refer to the File Services section above)
Notes	- Exceeding the recommended numbers above will not block application operations, but may result in longer response time. - Utilizing SSD cache can significantly improve performance. - Models with expandable memory are tested with their maximum supported memory. - Btrfs file system and non-encrypted shared folders were used during the aforementioned testing.

Synology Office

Suggested Users	4,500
Notes	- Suggested users is derived from testing in an environment with 60% idle users (each logging in and viewing documents) and 40% active users (each executing random actions at intervals of 20 to 40 seconds) operating within documents, each document having 30 users. Learn more - Models with expandable memory are tested with their maximum supported memory. - 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	8 (Learn more)
Recommended Virtual DSM Number (Licenses required)	8 (including 1 Free License)
Notes	The specifications vary depending on system configuration and memory size.

VPN Server

Maximum Connections	40