DiskStation DS1019+

Expandable 5 hard disk slot NAS for small offices and IT enthusiasts

Hardware	
processor	
Processor model	Intel Celeron J3455
Processor architecture	64-bit
Processor clock	Quad core 1.5 burst up to 2.3 GHz
Hardware Encryption Engine (AES-NI)	
Hardware shift engine	H.264 (AVC), H.265 (HEVC), MPEG-2 and VC-1; Maximum resolution: 4K (4096 x 2160); Maximum picture update rate (FPS): 30
Memory	
System memory	8 GB DDR3L

Pre-installed memory module	8 GB (4 GB x 2)
Total number of memory slots	2
Memory can be expanded to	8 GB (4 GB x 2)
Remarks	Synology reserves the right to replace memory components of the same or higher clocks depending on the supplier's product availability. Its compatibility and stability have been tested by the same rigorous tests, please feel free to use it.

Storage device

Number of disk slots	5
Maximum number of disk slots in which the expansion unit is installed	10
M.2 disk slot	2 (NVMe)
Compatible disk type* (see all supported disks)	3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD - M.2 2280 NVMe SSD
Maximum internal net total storage capacity	70 TB (14 TB drive x 5) (Capacity varies by RAID type)
Maximum net total storage capacity with expansion unit	140 TB (70 TB + 14 TB drive x 5) (Capacity varies by RAID type)
Maximum single storage capacity	108 TB
Disk hot swap support	
Remarks	- The compatible disk type refers to the type of hard disk that is confirmed to be compatible with the product after the actual measurement, and the maximum speed limit of the non-hard disk slot. - The maximum net total storage capacity is not limited by the maximum single storage capacity. Synology NAS can create additional storage space beyond the maximum single storage

	capacity. The maximum capacity depends on the support of each model. (see more)
External connection埠	
RJ-45 1GbE network hole	2 (supports Link Aggregation / fault transfer)
USB 3.0 port埠	2
eSATA port埠	1
File system	
Internal disk	• Btrfs • EXT4
External disk	• Btrfs • EXT4 • EXT3 • FAT • NTFS • HFS+ • exFAT*
Remarks	exFAT Access is purchased separately from the kit center.
Exterior	
Size (height x width x depth)	166 mm x 230 mm x 223 mm
weight	2.54 kg
Remarks	Rack kits need to be purchased separately
other projects	
System fan	92 mm x 92 mm x 2 pcs
Fan mode	• Full speed mode • Low temperature mode • Silent mode
Front panel LED indicator adjusts brightness	
Automatic power reply	
Noise value*	20.8 dB(A)
Timer switch	
Wake on the network	
Power supply / transformer	120W
AC input voltage	100V to 240V AC

Current frequency	50/60 Hz, single frequency
Power consumption*	38.59 W (access) 13.32 W (hard disk hibernation)
British thermal unit	131.67 BTU/hr (access) 45.45 BTU/hr (hard disk hibernation)

Ambient temperature

Working 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 body	- EAC - VCCI - CCC - RCM - FCC - CE - BSMI
Warranty	Hardware warranty for three years, can be extended to 5 years coverage - EW201
Remarks	- The test data for power consumption was tested with a Western Digital 1TB WD10EFRX hard drive. - Noise value test environment: Seagate 2TB ST2000VN000 Hard disk in standby mode, two GRAS Type 40AE microphones are set at 1 meter distance before and after Synology NAS; background noise value: 16.49-17.51 dB(A); Temperature: Celsius 24.25-25.75 degrees; humidity: 58.2-61.8%.

DSM product specifications (see more)

Storage management

Maximum storage space	512
Maximum number of iSCSI targets	128
Maximum number of iSCSI LUNs	256
iSCSI LUN Clone/Snapshot, Windows Uninstall Data Transfer (ODX)	
SSD read/write cache (White Paper)	
SSD TRIM	
Support RAID disk array type	- Synology Hybrid RAID - Basic

	• JBOD • RAID 0 • RAID 1 • RAID 5 • RAID 6 • RAID 10
RAID configuration migration	• Basic to RAID 1 • Basic to RAID 5 • RAID 1 to RAID 5 • RAID 5 to RAID 6
Expand storage with larger hard drives	• Synology Hybrid RAID • RAID 1 • RAID 5 • RAID 6 • RAID 10
Add new hard drive expansion storage	• Synology Hybrid RAID • RAID 5 • JBOD • RAID 6 (with expansion unit)
Global Hot Spare supports RAID types	• Synology Hybrid RAID • RAID 1 • RAID 5 • RAID 6 (with expansion unit) • RAID 10 (with expansion unit)
File service	
File agreement	CIFS/AFP/NFS/FTP/WebDAV
Maximum simultaneous CIFS/AFP/FTP connection number	2,000
Windows Access Control List (ACL) integration	
NFS Kerberos authentication	
Account and shared folders	
Maximum number of local user accounts	2,048
Maximum number of local groups	256
Maximum number of shared folders	512

Maximum shared folder synchronization task	32
High Availability Administrator	
Log center	
Log receipts per second	800
Virtualization support	
VMware vSphere 6 with VAAI	
Windows Server 2016	
Citrix Ready	
OpenStack	
Additional kits (learn more about the complete add-on kit list)	
Antivirus by McAfee (Trial)	
Central Management System	
Chat	
Maximum number of users	1,500
Remarks	• The maximum number of simultaneous HTTP connections has been adjusted to the maximum value when testing Chat. • When the maximum number of users is reached, the CPU and memory usage are both less than 80%.
Cloud Station Server	
Maximum number of simultaneous devices	2,000
Maximum number of files carried (btrfs)	500,000
Maximum number of files carried (ext4)	500,000
Remarks	• The maximum number of simultaneous connections represents the number of devices that can be connected at the same time. • The maximum number of hosted files represents the maximum number of files that can be indexed and loaded in the Cloud Station Server service. The expansion memory was not loaded during the test. • The above test uses a non-encrypted shared folder.
Document Viewer	

Download Station	
Maximum number of download tasks	80
exFAT Access (optional)	
MailPlus / MailPlus Server	
Number of free email accounts	5 (If you want to have more email accounts, you need to purchase additional licenses)
Maximum simultaneous number of people on the line	Up to 100
Maximum server performance	1,052,000 emails per day, approximately 32GB
Remarks	- When the maximum number of users is reached, the CPU and memory usage are both less than 80%. - The read and write SSD cache has been started on NAS models with 5 hard disks (and above) and 2 SSDs. - In high-availability mode, the performance of the mail system is slightly reduced due to data synchronization between the two servers. - In all of the above tests, the launched features include: anti-spam, antivirus, DNSBL, greylisting, content scanning, full-text search (English only).
Media Server	
DLNA compatible	
Moments	
Face recognition	
Subject identification	
Automatic color correction and angle correction	
Moments carefully selected	
Snapshot Replication	
Maximum number of snapshots supported by a single shared folder	1024
Maximum number of system snapshots	65536
Surveillance Station	
Maximum camera support number(camera license required)	40 (with 2 free camera licenses) (View compatible webcam)

Frames per second (FPS) (H.264)*	1200 FPS @ 720p (1280x720) 840 FPS @ 1080p (1920×1080) 550 FPS @ 3M (2048x1536) 300 FPS @ 5M (2591x1944) 180 FPS @ 4K (3840x2160)
Frames per second (FPS) (H.265)*	1200 FPS @ 720p (1280x720) 1200 FPS @ 1080p (1920×1080) 900 FPS @ 3M (2048x1536) 550 FPS @ 5M (2591x1944) 300 FPS @ 4K (3840x2160)
Frames per second (FPS) (MJPEG)*	720 FPS @ 720p (1280x720) 500 FPS @ 1080p (1920×1080) 330 FPS @ 3M (2048x1536) 200 FPS @ 5M (2591x1944)
Remarks	The Surveillance Station uses an Axis camera; the video schedule is continuous; the Surveillance Station is used as the source of the live image; the motion detection source is set to the camera; the live image and the video use the same set of video streams.
Synology Drive	
Recommended number of files to store	500,000 (for archives or files belonging to Synology Drive , please refer to the file service in the above fields for files accessed through other agreements)
Recommended number of current client PC connections	450 (can continue to maintain the number of connections when the number of files is limited)
Remarks	• Exceeding the quantity limit may result in a longer response time for the file operation. • The Btrfs file system and the non-encrypted shared folder were used in the above tests.
Synology Office	
Maximum number of users	1,800
Remarks	• The test opens multiple files and each file is edited simultaneously by 30 users. • When the maximum number of users is reached, the CPU and memory usage are both less than 80%. • For models with expandable memory, the maximum amount of memory is installed during the test. • Client performance may affect the maximum number of simultaneous edits. Client test computer specifications: Intel Core i3-3220 / 8GB memory
Video Station	
Video transcoding	4K Group 1 (see more)
Supports the maximum number of conversion channels	2 channels, 30 FPS @ 4K (4096 x 2160), H.264 (AVC)/H.265 (HEVC) or 2 channels, 30 FPS @ 1080p (1920×1080), H.264 (AVC)/H.265 (HEVC)/MPEG-2/VC-1

Virtual Machine Manager	
Recommended number of virtual machines	4 (see more)
Recommended number of Virtual DSMs (purchase authorization)	4 (including 1 free license)
Remarks	• The host that implements Synology High Availability does not support Virtual Machine Manager. • This specification varies depending on the system configuration and the amount of memory.
VPN Server	
Maximum number of connections	30
Environment and packaging	
surroundings	RoHS compliant
Package contents	• Host X 1 • Kit X 1 • Transformer X 1 • Power cord X 1 • RJ-45 web route X 2 • Quick Installation Guide X 1
Optional accessories	• Monitoring device authorization • D3NS1866L-4G DDR3 non-ECC SO-DIMM • Expansion unit: DX517 X 1 • VS360HD • VS960HD