

# DiskStation

# DS1819+



Synology DS1819+ is an 8-bay NAS designed for small and medium-sized businesses, providing outstanding performance with great expandability. With various built-in applications and comprehensive data protection technologies, DS1819+ fulfills different business needs while safeguarding users' valuable digital assets. DS1819+ is backed up by Synology's 3-year limited warranty.<sup>1</sup>

## Scalable Storage with Outstanding Performance

DS1819+ is an 8-bay desktop network attached storage built with great scalability and performance, ideally suitable for growing businesses. You can easily scale it up to 18 drives with two **expansion unit DX517**<sup>2</sup> when needing more storage capacity. In addition, **M.2 SSD adapter M2D18**<sup>3</sup> is available for you to supercharge the random IOPS through SSD cache, while an optional **10Gb Ethernet adapter** escalates data transmission bandwidth to meet intensive workload demands.

DS1819+ is equipped with one **quad-core processor** and **4 GB memory**<sup>4</sup> (**upgradable to 32 GB**), delivering sequential throughput at over **2,045 MB/s reading** and **656 MB/s writing**<sup>5</sup> under aggregated 10Gb Ethernet environment. The built-in **four Gigabit LAN ports** support failover and Link Aggregation. DS1819+ can also be deployed with your existing virtualization environments with its dynamic virtual machine certificates.

## Btrfs: Next Generation Storage Efficiency

DS1819+ introduces the **Btrfs file system**, bringing the most advanced storage technologies to meet the management needs of modern businesses:

- **Advanced snapshot technology** with customizable backup schedule allows shared folders to be backed up in a minimum 5-minute interval, without consuming heavy system resources.
- **File and folder level data restoration** brings huge conveniences and saves time for users who wish to restore only a specific file or folder.
- **Flexible Shared Folder** and **User Quota System** provides comprehensive quota control on all user accounts and shared folders.
- **File self-healing:** Btrfs file system is able to auto-detect corrupted files with mirrored metadata, and recover broken data using the supported RAID volumes, including RAID1, 5, 6, and 10.
- **Advanced LUN** offered by the cutting-edge iSCSI service built for administrators provides lightning-fast snapshot creation, recovery and cloning.

## Highlights

- Quad-core, 2.1 GHz CPU with AES-NI encryption engine
- 4 GB DDR4 memory pre-installed, expandable up to 32 GB<sup>4</sup>
- Superior sequential throughput at over 2,045 MB/s reading and 656 MB/s writing<sup>5</sup>
- Boost IOPS performance with M.2 NVMe/SATA SSD cache through optional M2D18 adapter card<sup>3</sup>
- Four Gigabit LAN ports (RJ-45) with failover and Link Aggregation support; Optional 10GbE add-on card provides high-speed data transfer rate
- Scalable up to 18 drives with two expansion unit DX517 to meet high capacity demands<sup>2</sup>
- Ready for deploying dynamic virtualization environments includes VMware vSphere, Microsoft Hyper-V, Citrix XenServer and OpenStack Cinder

## Ultimate Backup Solution

DS1819+ integrates various backup applications to safeguard your important data on any device with an intuitive user interface and durable storage technologies.

- Desktop backup: **Cloud Station Backup** safeguards your PC, Mac, and other desktop devices. DS1819+ is also compatible with Time Machine, allowing you to effortlessly backup your Mac to Synology NAS.
- NAS backup: **Hyper Backup** comprehensively backs up your data to a local shared folder, an external device, another Synology NAS, an rsync server, or a public cloud service to ensure data safety.
- Server/VMware backup: **Active Backup for Business** centralizes backup tasks for VMware virtual machines, Windows PC, servers, and rsync/SMB file servers. Fast and reliable recovery options ensure running services, VMs and files instantly available when needed.
- SaaS backup: **Active Backup for Office 365/G Suite** is an on-premise backup solution for public clouds with a centralized dashboard, optimizing storage efficiency through the single instancing and block-level deduplication technology.



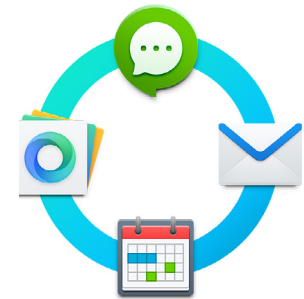
### Synology Active Backup Suite

Integrated, modern, and license-free backup & instant recovery solution for business workloads in physical, virtual, and cloud environments

## Powerful Collaboration Solution

Use the collaboration suite on your Synology NAS to build a private cloud to enhance team cooperation and boost productivity.

- **Synology Drive** allows you to access the data and files on Synology NAS through a unified portal and supports cross-platform synchronization to allow anywhere data access. You can also install the online editor **Synology Office** and collaborate with others on **Document, Spreadsheet, and Slides**.
- **Synology MailPlus** allows your business to set up a private and reliable mail server with the support of high-availability design and gives your employees an intuitive web-based client to manage emails and boost productivity.
- **Synology Calendar** enables you to manage team schedules and organize daily tasks effortlessly. Event information can also be synced to your CalDAV clients, allowing you to check schedules anywhere and anytime.
- **Synology Chat** is a web-based application that allows you to start conversations instantly and safely and optimizes companies' internal communications with its powerful information management and interaction features.



### Synology Collaboration Suite

A powerful and secure private cloud solution for business collaboration and organization, offering intuitive and effective management options.

## Effortless Virtualization Deployment

Synology's **Virtual Machine Manager** adds boundless capabilities to your NAS. Set up and run various virtual machines including **Windows, Linux, and Virtual DSM** on your NAS to test new software versions in a sandbox environment, isolate your customers' machines, and increase the flexibility of your DS1819+ with reduced hardware deployment and maintenance costs. **Synology iSCSI storage** fully supports most virtualization solutions to enhance work efficiency with a simple management interface. **VMware vSphere™ 6.5 and VAAI integration** helps to offload storage operations and optimizes computation efficiency. **Windows Offloaded Data Transfer (ODX)** speeds up data transfer and migration rates, while the support for **OpenStack Cinder** transforms your Synology NAS into a block-based storage component.

## Virtual Machine Manager

DS1819+ is designed with virtualization in mind. **Virtual Machine Manager** enables you to test new software in sandboxes, isolate your customers' machines, and increase the flexibility of your server.

- **Virtual DSM** provides an equally intuitive experience as **DiskStation Manager**, offering a reliable storage solution with robust features.
- **Various Operating Systems Supported** lets you run **Windows, Linux, and Virtual DSM** on your Synology NAS in just a few steps.
- **Snapshots for Virtual Machines** is a snapshot technology provided by **Virtual Machine Manager**, allowing you to perfectly clone and restore a virtual machine within seconds.
- **Live Migration** lets you seamlessly migrate Virtual DSM instances from one Synology NAS to another.
- **Flexible IT Resource Management** enables you to allocate hardware resources such as computing power, storage space, or network interfaces across several virtual machines.
- **Multi-Tenant Environments** allow you to create multiple isolated virtual machines for subsidiary business units or departments.
- **Synology iSCSI Storage** fully supports most virtualization solutions to enhance work efficiency with a simple management interface.



### Virtual Machine Manager

Virtual Machine Manager implements various virtualization solutions, allowing you to manage multiple virtual machines on your DS1819+, including **Windows, Linux, and Virtual DSM**.

## Running on Synology DiskStation Manager (DSM)

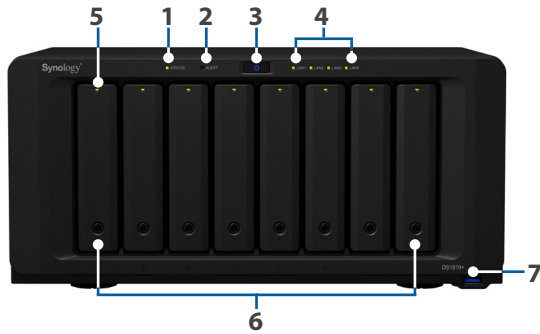
**Synology DiskStation Manager (DSM)** is a web-based operating system tailor-made for every Synology NAS. Featuring an intuitive multitasking user interface, DSM provides simple desktop-like experience to minimize the efforts in exploring and managing your Synology NAS.

The built-in **Package Center** allows you to download and install a variety of packages designed specifically for your unique needs, including file backup, virtualization, productivity, safeguard security and utilities.

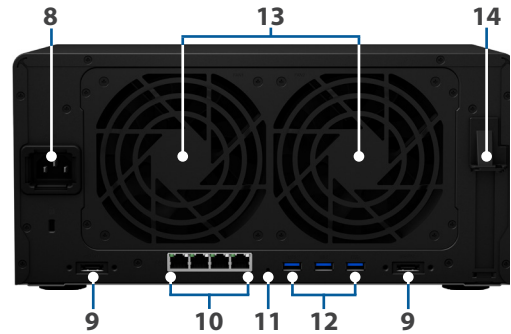
With all the built-in and add-on features, DSM provides you with complete and fine-grained control of your DS1819+, maximizing your productivity and make the best out of your digital assets. All can be done with just a few clicks.

# Hardware Overview

Front



Rear



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

# Technical Specifications

## Hardware

CPU	Intel Atom C3538 quad-core 2.1GHz
Hardware encryption engine	Yes (AES-NI)
Memory	4 GB DDR4 Non-ECC SO-DIMM <sup>1</sup> (expandable up to 32 GB with 16 GB ECC SO-DIMM x 2)
Compatible drive type	<ul style="list-style-type: none"> <li>• 8 x 3.5" or 2.5" SATA HDD/SSD (drives not included)</li> <li>• 2 x M.2 2280/2260/2242 NVMe/SATA SSD<sup>3</sup> (drives not included)</li> </ul>
Hot swappable drive	Yes
External port	<ul style="list-style-type: none"> <li>• 4 x USB 3.0 port</li> <li>• 2 x eSATA port</li> </ul>
Size (HxWxD)	166 x 343 x 243 mm
Weight	6 kg
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>• 10GbE network interface card support</li> <li>• M.2 NVMe/SATA SSD adapter card support<sup>3</sup></li> </ul>
Scheduled power on/off	Yes
System fan	2 (120 x 120 x 25 mm)
AC input power voltage	100V to 240V AC
Power frequency	50/60Hz, single phase
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
Maximum operating altitude	3,048 m (10,000 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>6</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 of system snapshots: 65,536<sup>7</sup></li> <li>• Maximum internal volumes: 512</li> </ul>

SSD cache	<ul style="list-style-type: none"> <li>Read-write cache support</li> <li>M.2 SSD support (M.2 NVMe/SATA SSD)<sup>3</sup></li> </ul>
File sharing capability	<ul style="list-style-type: none"> <li>Maximum local user accounts: 2,048</li> <li>Maximum local groups: 256</li> <li>Maximum shared folders: 512</li> <li>Maximum concurrent SMB/NFS/AFP/FTP connections: 1,000</li> </ul>
Privilege	Windows Access Control List (ACL), application privileges
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 autoblock, Let's Encrypt support, HTTPS (customizable cipher suite)
Supported client	Windows 7 and 10, Mac OS X 10.11 onwards
Supported browser	Chrome®, Firefox®, Internet Explorer® 10 onwards, Safari® 10 onwards; Safari (iOS 10 onwards), Chrome (Android™ 6.0 onwards)
Interface language	English, Deutsch, Français, Italiano, Español, Dansk, Norsk, Svensk, Nederlands, Русский, Polski, Magyar, Português do Brasil, Português Europeu, Türkçe, Český, ภาษาไทย, 日本語, 한국어, 繁體中文, 简体中文

## Packages and Applications

File Server & Synchronization	
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 drives, remote folders, Windows ACL editor, compressing/extracting archived files, bandwidth control for specific users/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	High-speed data transfer over WAN with exclusive SITA technology between Synology NAS and desktop <sup>8</sup>
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 data backup to public clouds
Backup tools	DSM configuration backup, macOS Time Machine support, Cloud Station Backup 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: 32</li> </ul>
High Availability Manager	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
Active Backup for Office 365	Support Office 365 OneDrive for Business, mail, contacts, and calendar backup and restoration
Active Backup for Business	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
Productivity & Collaboration	
Collaboration tools	Collaborate with instant message service Chat, online editor Office, and scheduling assistant 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>
Note Station	Rich-text note organization and versioning, encryption, sharing, media embedding and attachments
MailPlus Server	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)
MailPlus	Intuitive webmail interface for MailPlus Server, customizable mail labels, filters, and user interface
Multimedia	
Moments	Support smart AI album with facial and subject recognition, photo editing and sharing features, and iOS and Android mobile applications
Other packages	Video Station, Photo Station, Audio Station, iTunes® Server

Surveillance	
Surveillance Station	Maximum IP camera: 40 (total of 1200 FPS at 720p, H.264) (including two free camera licenses; additional cameras require the purchasing of additional licenses)
All-in-One Server	
Synology Directory Server	Provide a flexible and cost-effective domain controller solution
CMS	Provide a single interface to manage and monitor multiple Synology NAS
VPN Server	Maximum connection: 30, supported VPN protocol: PPTP, OpenVPN™, L2TP/IPSec
Mail Server	Supported Mail Server protocol: POP3, SMTP, IMAP, support LDAP/AD account
Mail Station	Webmail interface for Mail Server to receive emails from multiple POP3 mailboxes, customizable SMTP server
Web Station	Virtual host (up to 30 websites), PHP/MariaDB®, 3rd-party applications support
Other packages	DNS Server, RADIUS Server, Log Center
Others	
Storage Analyzer	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
Antivirus Essential	Full system scan, scheduled scan, white list customization, virus definition auto update
iOS/Android™ applications	Synology Drive, DS audio, DS photo, DS video, DS cam, DS cloud, DS file, DS finder, DS note, Moments, MailPlus
Other packages	Additional 3rd-party packages available on Package Center

## Environment and Packaging

Environment safety	RoHS compliant
Package content	<ul style="list-style-type: none"> <li>• DS1819+ main unit x 1</li> <li>• Quick Installation Guide x 1</li> <li>• AC power cord x 1</li> <li>• Accessory pack x 1</li> <li>• RJ-45 LAN cable x 2</li> </ul>
Optional accessories	<ul style="list-style-type: none"> <li>• 4GB DDR4-2133 Non-ECC SO-DIMM (D4NS2133-4G)</li> <li>• 16GB DDR4-2133 ECC SO-DIMM (RAMEC2133DDR4SO-16G)</li> <li>• Synology E10G18-T1 / E10G18-T2 / E10G15-F1 / E10G17-F2 10Gbps Ethernet adapters</li> <li>• Synology M2D18 M.2 SSD adapter card</li> <li>• Synology Expansion Unit DX517</li> <li>• VisualStation VS360HD, VS960HD</li> <li>• Surveillance Device License Pack</li> <li>• MailPlus License Pack</li> <li>• Virtual DSM License Pack</li> </ul>
Warranty	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. Up to 5 years of warranty are available as an additional bundle with Extended Warranty Plus or Extended Warranty, both 2-year extended warranty service add-ons available in select regions. Check availability for Extended Warranty EW201 or Extended Warranty Plus. Different terms and conditions may apply to Synology Certified Refurbished Products. For details, please check corresponding product specification pages or visit <https://www.synology.com/company/legal/warranty> for more information.
2. DS1819+ supports two Synology DX517, sold separately.
3. DS1819+ supports dual M.2 SSDs through M2D18 adapter card, sold separately.
4. DS1819+ comes with 4GB DDR4 Non-ECC SO-DIMM and can support up to 32GB with optional ECC SO-DIMM.
5. Performance figures may vary depending on environment, usage, and configuration. Visit <https://www.synology.com/products/performance> for more information.
6. exFAT Access is purchased separately in Package Center.
7. System snapshot includes snapshots taken by iSCSI Manager, Snapshot Replication, and Virtual Machine Manager. Availability of these packages varies by model.
8. 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.

Copyright © 2019, Synology Inc. All rights reserved. Synology, the Synology logo are trademarks or registered trademarks of Synology Inc. Other product and company names mentioned herein may be trademarks of their respective companies. Synology may make changes to specification and product descriptions at anytime, without notice.

DS1819+-2019-ENU-REV004

### **Headquarters**

Synology Inc. 9F., No.1, Yuandong Rd., Banqiao Dist., New Taipei City 220, Taiwan Tel: +886 2 2955 1814 Fax: +886 2 2955 1884

#### **China**

Synology Shanghai  
200070, Room 201, No. 511, Tianmu W. Rd.,  
Jingan Dist. Shanghai, China

#### **France**

Synology France SARL  
102 Terrasse Boieldieu (TOUR W)  
92800 Puteaux, France  
Tel: +33 147 176288

#### **North & South America**

Synology America Corp.  
3535 Factoria Blvd SE,  
Suite #200, Bellevue, WA 98006, USA  
Tel: +1 425 818 1587

#### **United Kingdom**

Synology UK Ltd.  
Unit 5 Danbury Court, Linford Wood,  
Milton Keynes, MK14 6PL, United Kingdom

#### **Germany**

Synology GmbH  
Grafenberger Allee 125 40237 Düsseldorf  
Deutschland  
Tel: +49 211 9666 9666

#### **Japan**

Synology Japan Co., Ltd  
4F, 3-1-2, Higashikanda, Chiyoda-ku,  
Tokyo, 101-0031, Japan