Synology®

High-Availability Cluster
RackStation RC18015xs+ / Expansion Unit RXD1215sas

Synology high-availability cluster integrates two RackStation RC18015xs+ as dual computing nodes and multiple Expansion Unit RXD1215sas as shared storage units, providing the secure, reliable, and superior-performance network attached storage solution for large scale businesses. Synology RC18015xs+ and RXD1215sas are backed with Synology's 5-year limited warranty.

Highlights

- **High-availability cluster[1] powered by dual computing nodes & shared storage**
- **Data protection by snapshot technology**
- **SSD cache support**
- **Scale up to 180 drives with 15 Synology RXD1215sas[2]**
- **Superior performance fueled by quad-core 3.3GHz CPU in each computing node**
- **Optional 10GbE network capability[3]**
- **VMware®, Citrix®, and Microsoft® Hyper-V® certified**
- **Backed with Synology's 5-year limited warranty & Synology Replacement Service (SRS)**

Reliable Active/Passive Failover Cluster

System and service availability is critical for businesses. However, server component, environmental problems, human errors, or system malfunctions happen sometimes that might lead to service interruption and raise the cost of running businesses.

Synology high-availability (HA) cluster solution is born to alleviate this problem by combining two RackStation RC18015xs+ and multiple Expansion Unit RXD1215sas as one HA cluster. The two RC18015xs+ computing nodes provide **Active / Passive automatic failover**. If the active server suffers a malfunction, the passive server is able to provide quick relief by taking over all the running applications and services, ensuring high levels of availability.
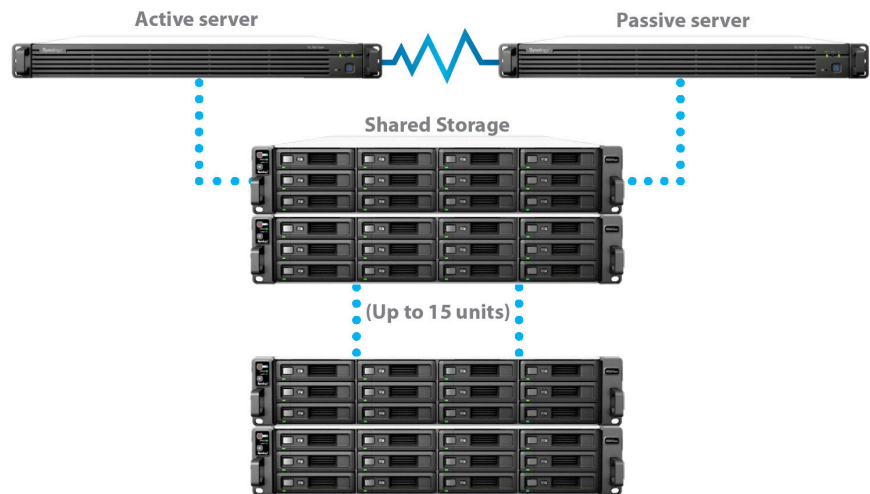
The connected RXD1215sas acts as the shared storage pool of the two servers, so no data replication is required, saving more energy and rack spaces. The storage capacity is expandable by adding more RXD1215sas (up to 15 sets) to the HA cluster, providing the scalability up to 180 HDDs and a maximum raw capacity beyond 1 petabyte.

The Btrfs file system brings storage management to the next level by providing more efficient storage utilization, scheduled shared folder snapshot, and file / folder-level data restoration.

Btrfs: Next Generation Storage Efficiency

RC18015xs+ introduces the **Btrfs file system**, bringing the most advanced storage technologies to meet the management needs of modern large scale businesses:

- **Built-in data integrity check** detects data and file system corruption with data and meta-data checksums and improve overall stability.
- **Flexible Shared Folder/User Quota System** provides comprehensive quota control on all user accounts and shared folders.
- **Advanced snapshot technology** with customizable backup schedule allows up to **256 copies** of shared folder backups without occupying huge storage capacity and system resources.
- **File or folder level data restoration** brings huge convenience and saves time for users who wish to restore only the specific single file or folder.
- **Cloud Station with file versioning** reduces down to half of storage consumption when compared with Ext4 file system.

Superior Performance

RC18015xs+ delivers superior performance at over **2,270 MB/s throughput** and **355,400 IOPS** with dual 10GbE connection using link aggregation.[4] Through advanced flash technology, the combination of hard drives and SSD cache boosts throughput efficiently while minimizing cost per gigabyte.

In addition to the default 4 Gigabit ports, RC18015xs+ comes with one **PCIe 3.0 x8 slot** (running at x8 mode), allowing installation of one 10GbE network interface card (NIC) for maximized bandwidth.

Equipped with **8GB ECC RAM** and up to **32GB expansion** support, RC18015xs+ ensures data accuracy as well as superior performance to provide a rigorous foundation for the mission-critical tasks of your businesses.

Various Reliability Mechanisms

In addition to the active / passive server design, both RC18015xs+ and RXD1215sas come with redundancy of key system components including **power supply units**, **SAS modules**, **SAS connection cables**, **system fans**, **LAN ports**, even the **Heartbeat link**. In case of failure, the system components are designed for easy replacement and further reduce the chance of system down-time.

Virtualization Certified

RC18015xs+ provides seamless storage solutions for virtualization environments, including **VMware®**, **Citrix®**, and **Hyper-V®**. Being **VMware vSphere® 5** and **VAAI®** integration certified, RC18015xs+ helps offload specific storage operations and optimizes computation power for unparalleled performance and efficiency in VMware environments. As the centralized storage of a virtual environment, RC18015xs+ enables virtual machine migration, allowing movement from server to server whilst eliminating service downtime and disruption to user. **Windows® Offloaded Data Transfer (ODX)** and **Synology Advanced LUN** support extremely improves the efficiency on massive data transfer and migration. **Synology Snapshot Manager** offers better support to servers under VMware vSphere or Windows environment. IT managers can expect guaranteed VM status and data consistency in its highest form.

Comprehensive Business Applications

Powered by the innovative **Synology DiskStation Manager (DSM)**, RC18015xs+ comes fully-equipped with applications and features designed specifically for large-scale business:

- Easy integration with existing business network environments through **Windows® AD** and **LDAP** directory services without recreating user accounts.
- **Windows ACL** support provides fine-grained access control and efficient privilege settings, allowing RC18015xs+ to fit seamlessly into current infrastructure.
- Built-in backup applications protect information assets by regularly backing up files and **iSCSI LUNs** locally and remotely.
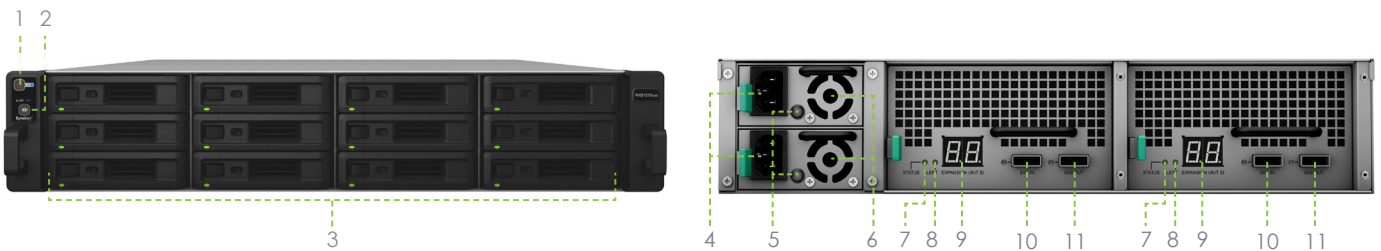
Connections & Buttons

RC18015xs+
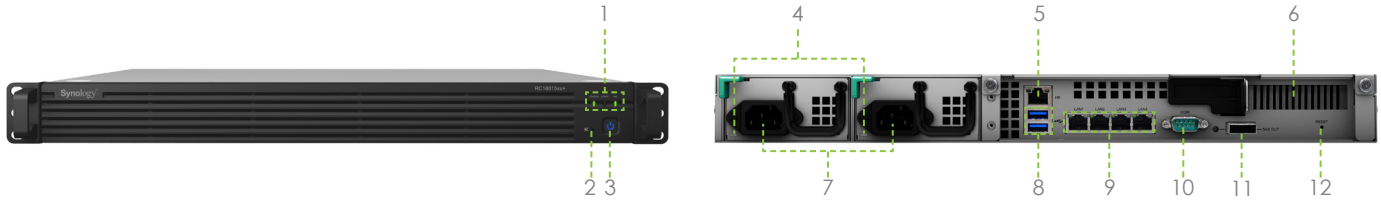
1	LED indicators	2	Beep off button	3	Power button and indicator	4	PSU indicator
5	Heartbeat LAN port	6	PCIe NIC expansion slot	7	Power port	8	USB 3.0 port
9	Gigabit LAN port	10	Console port	11	SAS OUT port	12	RESET button

RXD1215sas

1	Power button and indicator	2	Beep off button	3	Drive tray	4	Power port
5	PSU indicator and beep off button	6	PSU fan	7	STATUS indicator	8	ALERT indicator
9	Expansion unit ID indicator	10	SAS IN port	11	SAS OUT port		

Technical Specifications

Hardware - RC18015xs+

CPU	Intel Xeon E3 quad-core 3.3GHz
Hardware encryption engine	Yes (AES-NI)
Memory	8GB ECC RAM (expandable, up to 32GB)
Internal drive	N/A (pairing with RXD1215sas is required)
External port	USB 3.0 x 2, SAS OUT port x 1
Size (HxWxD)	44mm x 430mm x 480mm
Weight	7.3 Kg
System fan	Dual fan (40mm x 40mm x 28mm) module x 3
LAN	Gigabit x 5 (including 1 for Heartbeat connection)
PCIe 3.0 x8 slot	Add-on network interface card x 1 (optional)
Wake on LAN/WAN	Yes

Hardware - RXD1215sas

Compatible drive type	3.5" or 2.5" SAS x 12 (SATA drive is not supported)
Maximum internal raw capacity	144 TB (12 TB HDD X 12)[5] (Actual capacity differs according to volume types)
External ports	SAS IN x 2, SAS OUT x 2
Hot swappable drive	Yes
Size (HxWxD)	88mm x 430mm x 692mm
Weight	18 Kg
System fan	4 (60mm x 60mm)
Power recovery	Synchronized with RC18015xs+

Hardware - Common Specifications

AC input power voltage	100V to 240V
Power frequency	50 to 60Hz, single phase
Operating temperature	5°C to 35°C (40°F to 95°F)
Storage temperature	-20°C to 60°C (-5°F to 140°F)
Relative humidity	5% to 95% RH

General

Networking Protocols	CIFS, AFP, NFS, FTP, WebDAV, CalDAV, iSCSI, Telnet, SSH, SNMP, VPN (PPTP, OpenVPN ™ , L2TP)
File System	Internal: Btrfs, ext4 External: Btrfs, ext4, ext3, FAT, NTFS, HFS+
Storage Management	Maximum single volume size: 108TB/200TB (32GB RAM required, for RAID 5 or RAID 6 groups only); Maximum internal volume #: 1024; Maximum iSCSI Target #: 128; Maximum iSCSI LUN#: 512; RAID clone/snapshot support; RAID Group support; Supported RAID Type : Basic, JBOD, RAID 0, RAID 1, RAID 5, RAID 6, RAID 10
File Sharing Capability	Maximum user account: 16000; Maximum user group: 512; Maximum shared folder: 512; Maximum concurrent CIFS/AFP/FTP connections: 2048
Privilege	Windows Access Control List (ACL)
Virtualization	VMware vSphere® 5, Microsoft Hyper-V®, Citrix® certified
Directory Service	Windows® AD integration: Domain users login via Samba (CIFS)/AFP/FTP/File Station, LDAP integration
Security	FTP over SSL/TLS, IP auto-block, firewall, encrypted network backup over Rsync, HTTPS connection
Utilities	Cloud Station, Evidence Integrity Authenticator, Photo Station Uploader, Snapshot Manager for VMware, Snapshot Manager for Windows, NFS Plug-in for VMware VAAI
Supported Clients	Windows XP onward, Mac OS X® 10.5 onward, Ubuntu 9.04 onward
Supported Browsers	Chrome®, Firefox®, Internet Explorer®: 8 or onward, Safari® 5 or onward, Safari (iOS 5 or later on iPad®), Chrome (Android™ 4.0 on tablets)
Language	English, Deutsch, Français, Italiano, Español, Dansk, Norsk, Svensk, Nederlands, Русский, Polski, Magyar, Português do Brasil, Português Europeu, Türkçe, Český, 日本語, 한국어, 繁體中文, 简体中文

Applications

File Station	Virtual drive, remote folder, Windows ACL Editor, Compress/Extract Archived Files, Bandwidth Control for Specific Users or Groups, Create Sharing Links, Transfer Logs
Backup Solutions	Network backup; local backup; desktop backup; configuration backup; OS X Time Machine; Backup data to Amazon Glacier; shared folder sync - maximum task number: 32
Mail Server	Supported Mail Server protocols: POP3, SMTP, IMAP, Support LDAP/AD account
FTP Server	Bandwidth control for TCP connections, custom FTP passive port range, anonymous FTP, FTP SSL/TLS and SFTP protocols, boot over the Network with TFTP and PXE support, transfer log
Web Station	Virtual host (up to 30 websites), PHP/MySQL®, 3rd-party applications support
High Availability Manager	Combines two RC18015xs+ and multiple RXD1215sas into one high-availability cluster
Storage Analyzer	Volume and quota usage, total size of files, volume usage and trends based on past usage, size of shared folders, largest/most/least frequently modified files
Security Advisor	Malware detection/removal, user account/password, network, system-related security scan
Log Center	SSL connection, log rotation: 6 months, 1 year, 2 years, 3 years, email notification
iOS/Android™ Applications	DS cloud, DS file, DS finder, DS cam, DS note, DS audio, DS download, DS photo, DS video
Windows Phone® Applications	DS file, DS finder, DS audio, DS download, DS photo, DS video

Add-on Packages

Surveillance Station	Maximum IP camera #: 90 (total of 2700 FPS at 720p, H.264) (Including two free camera licenses. Procurement of additional licenses is required.)
VPN Server	Maximum connections : 30; supported VPN protocols: PPTP, OpenVPN™, L2TP
Mail Station	Webmail interface for Mail Server; receiving mails from multiple POP3 mailboxes, customizable SMTP server
Antivirus Essential	Full system scan, scheduled scan, white list customization, virus definition auto update
Cloud Station	Maximum concurrent file transfers: 1024, retain historical and deleted file versions
Cloud Sync	Data sync with public cloud services: Dropbox, Google Drive, Baidu, Microsoft OneDrive, Box and hubiC
Note Station	Rich-Text note organization with versioning, encryption, sharing, media embedding and attachments
Other packages	Photo Station, Audio Station, Download Station, iTunes® Server, 3rd-party packages

Environment and Packaging

Environment	RoHS compliant
Package Content	**RC18015xs+**: RC18015xs+ main unit x 1, AC power cord x 2, accessory pack x 1, quick installation guide x 1 **RXD1215sas**: RXD1215sas main unit x 1, AC power cord x 2, accessory pack x 1, Mini-SAS cable x 2, quick installation guide x 1
Optional Accessories	Camera License Pack, 8GB (4GB x 2) / 16GB (8GB x 2) ECC RAM Module Kit, Synology RKS1314 - Rail Kit Sliding, Synology Ethernet Adapter E10G15-F1, Expansion Unit (RXD1215sas x 14)
Warranty	5 years[6]

*Model specifications are subject to change without notice. Please refer to www.synology.com for the latest information.

1. RC18015xs+ is designed to work as a high-availability (HA) cluster. Two RC18015xs+ and at least one RXD1215sas expansion unit are required to configure and set up the whole system and make it operate normally.
2. RC18015xs+ comes with one PCIe 3.0 x8 slot running at x8 mode, allowing installation of one add-on 10GbE network interface card (NIC). Please visit www.synology.com for supported NIC models.
3. RC18015xs+ supports up to 15 Synology RXD1215sas, sold separately.
4. Performance figures could vary on different environments.
5. The maximum internal raw capacity is subject to change based on the capacity of the newest drive that RS18015xs+/RXD1215sas supports. Please refer to www.synology.com for the latest information.
6. The warranty period starts from the purchase date as stated on your purchase receipt. Visit http://www.synology.com for more information.

SYNOLOGY INC.

Synology is dedicated to taking full advantage of the latest technologies to bring businesses and home users reliable and affordable ways to centralize data storage, simplify data backup, share and sync files across different platforms, and access data on-the-go. Synology aims to deliver products with forward-thinking features and the best in class customer services.

RC18015xs+/RXD1215sas-2019-ENU-REV005

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