

Enterprise 8 Bay Disk-less Rack-mount NAS



## OVERVIEW

An enterprise-ready performance packed in our smallest eight-bay desktop model ever. Meet HDN-9008-A the enterprise workhorse that simplifies storage needs at the push of a button. The simplicity of the web interface powers you to make most configuration changes with the click of a mouse. Our NAS solutions are powered by the world's #1 storage OS.

### File sharing across platforms

File sharing across platforms empowers you to connect various clients from different architectures. Clients running any enterprise operating system can connect with either SMB/CISF style Windows file shares, Network File System (Unix or Unix-like shares), and Apple File Shares. If that wasn't enough why not also harness the power of FTP, iSCSI (block sharing) and WebDAV? Supporting various platforms is now easy, Windows, Mac OS X, and several Linux distributions can now connect with no additional software or configuration. There's also bundled-in support for Time Machine backups for offices with clients that run Apple OS X.

### Intuitive web interface

We understand our clients and their needs. We understand that simplifying complex administrative tasks is vital to streamlining workflow for system administrators. Every day-to-day administrative task can be done from the convenience of your mouse and a web browser. The step-by-step setup process further simplifies configuration. Tasks such as volume creation or setting devolved permissions for specific shares or updating your system can be done with confidence. For folks who prefer hands-on control, there's also the option to log into the FreeBSD shell prompt. From the software design to feature selection and testing the storage OS is designed with one key goal – ease of use.

### Enterprise-grade ZFS protection

Our storage OS is powered by ZFS which is designed for data integrity inside and out. RAID-Z, the software RAID that is part of ZFS offers single parity protection like RAID 5, but without the “write hole” vulnerability thanks to the copy-on-write architecture of ZFS. The additional levels RAID-Z2 and RAID-Z3 offer double and triple parity protection, respectively. A software mirror option is also available. When creating a new volume the setup wizard form updates with available parity options depending on the number of disks you have selected, thus removing the guesswork from the process. Every ZFS filesystem is also verified with checksums from top to bottom to ensure data integrity. If inconsistencies are found, parity blocks can be used to repair corrupt data. A regular scrub is turned on by default and can be rescheduled or configured from the web interface.

### **On-demand, enterprise-level snapshots make data loss a thing of the past**

Accidents can happen, which is why and thanks to ZFS, snapshots of the entire filesystem can be made and saved at any time. As long as a snapshot exists, administrators can access files as they were when the snapshot was made. Snapshots can be made on a one-off basis or scheduled as a cron job from the web interface. At any time, the entire filesystem can be rolled back to the most recent snapshot. Older snapshots can be cloned and accessed to recover data from that version of the filesystem. From the web interface, users can see how much space a particular snapshot is occupying on the volume and delete, clone, or roll back to individual snapshots as needed.

### **Local and remote replication**

Snapshots aren't just local backups, in fact, they can be saved in remote locations as well. Replicating snapshots of the file system to a remote ZFS file system creates an exact duplicate. Backing up large amounts of data often can consume large bandwidth which is why ZFS snapshots can be sent incrementally, bringing down the size of each backup to just the changes that were made since the last snapshot. When disks fail or data on disk becomes inconsistent or corrupt it is straightforward to restore a remotely saved backup onto a fully functioning machine within minutes.

### **Encryption**

We understand the value of data which is why encryption is at the forefront of our product design. Entire volumes can be encrypted during initialization, providing industry-standard AES-XTS encryption which can be

hardware-accelerated (when the processor has AES-NI capability). Encrypted volumes can only be read by NAS OS systems in possession of the master key for that volume. The user can optionally create a passphrase to add extra protection for their system against loss or theft. Encryption allows for confidence when retiring and recycling hard drives because the drives no longer need to be wiped provided the master keys are obliterated.

## FEATURES

### **ZFS is designed for business**

ZFS is an enterprise-ready file system and volume manager with unprecedented flexibility and an uncompromising commitment to data integrity. ZFS is a truly next-generation file system that eliminates most, if not all of the shortcomings found in legacy file systems and hardware RAID devices. Once you go ZFS, you will never want to go back.

Businesses can not afford data loss and creating snapshots ensures that your data is safe and never lost. ZFS creates a chain of trust for your data by checksumming data when it is written and verifying the checksums when it is read. It even checksums the metadata that describes the file system and allows you to periodically verify all checksums to determine if your infrequently-used data or backups are suffering silent data corruption. By taking these precautions, ZFS will never return you corrupt data from disk.

### **Protection and security for your critical data**

The Helios range is designed keeping in mind business needs for maximum uptime. Downtime can reduce productivity and profitability and we wanted to design our NAS products keeping this in mind. The Helios range offers peace of mind to administrators in the form of all the standard RAID options

Mirrored VDEV's (similar to RAID 1)

Striped Mirrored VDEV's (similar to RAID 10)

RAID Z1 (one-disk parity) (similar to RAID 5)

RAID Z2 (two-disk parity) (similar to RAID 6)

RAID Z3 (third-disk parity) (similar to RAID 7)

Nested RAID Z (similar to RAID50 or RAID60)

### **Seamless integration with business processes**

Businesses today are a multi-channel, cross-department, intra-team arrangements of staff working at peak efficiency and this arrangement shouldn't have to change from the introduction of new hardware. The Helios range is designed to adapt to your business processes and not the other way round.

We also take the guesswork out of configuring your NAS. ZFS helps you avoid most storage planning mistakes by pooling together the blocks provided by all of your disks and allowing you to divide the available space into highly-configurable file systems. ZFS includes the permissions and quotas of traditional file systems but also includes transparent compression levels, capacity reservations, and clonable snapshots. This allows administrators to seamlessly integrate their permissions structure in line with their team structure and organized work environment.

## SPECIFICATIONS

Hardware Specifications	
CPU	AMD Ryzen 5 3600 (Hexa Core)
Hardware encryption engine	Yes
Installed memory	16GB (Expandable up to 128 GB)
Memory slots	4
Drive bays	8
3.5"	Yes
2.5"	Yes (add on bracket required)
SSD	Yes
HDD	Yes
Drives supported	SSD, SATA
Physical Interfaces	
USB	2 x USB 2.0 ports and 4 x USB 3.0 ports
Expansion Ports	2 x PCI Express 3.0 x16 Slots
1G RJ45 LAN	1
10G RJ45 LAN	2
Physical Specifications	
Size (DxWxH)	660mm x 430mm x 88mm
Weight	11 kg
System fan	3 (80 x 25/38mm) Hot-Swap
AC input power voltage	100V to 240V AC
Power frequency	50/60Hz, single phase

Redundant Power Supply	550W RPS
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
Maximum operating altitude	5,000 m (16,400 ft)
<b>Software specifications</b>	
<b>Sharing</b>	
Apple Filing Protocol (AFP)	Yes
NFS	Yes
WebDAV	Yes
SMB	Yes
CIFS	Yes
Block (iSCSI)	Yes
<b>REPORTING</b>	
Email alerts	Nightly alerts containing information about the health of disks
CPU usage reporting	Yes (NAS health reports)
Send alerts to	AWS-SNS E-mail InfluxDB Mattermost OpsGenie PagerDuty Slack SNMP Trap VictorOps



<b>Reports available for</b>	
CPU	Yes
Disk	Yes
Memory	Yes
Network	Yes
Partition	Yes
System	Yes
Target	Yes
UPS	Yes
NFS	Yes
ZFS	Yes
<b>Web UI</b>	
Built-in themes	Yes
Custom themes	Yes
<b>Add on features</b>	
Plugins available for	Create real-time local cloud backup Media center Antivirus BitTorrent client Minecraft server
<b>Data Management</b>	
Snapshots	Yes
Replication	Yes
Rollback	Yes
Clones	Yes

Encryption	Yes
Mirroring	Yes
RAID	Yes
<b>Management Protocols</b>	
IPMI	Yes
WebUI	Yes
REST API	Yes
SSH	Yes
Telnet	Yes
SNMP	Yes
NIS	Yes
LDAP	Yes
Kerberos Realms	Yes
Kerberos Keytabs	Yes
Active Directory (ADS)	Yes
Virtualization	Yes
<b>Security</b>	
Firewall	Yes
Encrypted shared folder	Yes
SMB encryption	Yes
FTP over SSL/TLS	Yes
SFTP	Yes
Rsync over SSH	Yes
Login auto block	Yes
Let's Encrypt support	Yes

HTTPS	Yes
<b>FTP Server</b>	
Bandwidth control for TCP connections	Yes
Custom FTP passive port range	Yes
Anonymous FTP	Yes
FTP SSL/TLS and SFTP protocol	Yes
<b>Backup tools</b>	
Windows Backup support	Yes
Apple Time Machine support	Yes
Support for rsync	Yes
TrueOS Life Preserver	Yes
Asigra Backup (Plugin)	Yes
Tarsnap (Plugin)	Yes
BRU Server (Plugin)	Yes
Syncthing (Plugin)	Yes
BackupPC (Plugin)	Yes
<b>Cloud Sync</b>	
One or two-way synchronization	Yes
Amazon Drive	Yes
Amazon S3-compatible storage	Yes
Box	Yes
Dropbox	Yes
Google Cloud Storage	Yes
Google Drive	Yes
Microsoft OneDrive	Yes

OpenStack Swift-compatible storage	Yes
WebDAV servers	Yes
<b>Access</b>	
Supports creating user accounts	Yes
Supports creating user groups	Yes
Supports assigning permissions to groups	Yes
Supports assigning permissions to users (User access rights)	Yes
User/Folder Quota	Yes
Manageability through remote access	Yes
<b>Cloud sync</b>	
Compatible cloud services	<p>Amazon S3</p> <p>Backblaze B2</p> <p>Box</p> <p>Dropbox</p> <p>FTP</p> <p>Google Cloud Storage</p> <p>Google Drive</p> <p>HTTP</p> <p>hubiC</p> <p>Mega</p> <p>Microsoft Azure Blob Storage</p> <p>Microsoft OneDrive</p> <p>pCloud</p> <p>SFTP</p> <p>WebDAV</p> <p>Yandex</p>

Supports SSH connections	Yes
<b>Automation</b>	
Supports CRON jobs	Yes
Init and shutdown scripts	Yes
Rsync scheduled tasks	Yes
Rsync Module mode	Yes
Rsync over SSH	Yes
Scheduling S.M.A.R.T tests	Yes
Periodic snapshots	Yes
Snapshot auto removal	Yes
Periodic replication	Yes
Scrub tasks	Yes
Cloud sync task	Yes
Setting Resilver priority	Yes
Background services	Yes
AFP configuration service	Yes
Dynamic DNS service	Yes
FTP access (incoming connections)	Yes
Anonymous FTP	Yes
iSCSI service	Yes
LLDP service	Yes
NFS service	Yes
Rsync service	Yes
S3 configuration service	Yes
S.M.A.R.T monitoring service	Yes

SMB service	Yes
SNMP service	Yes
SSH (incoming connections)	Yes
TFTP service	Yes
Network UPS service	Yes
WebDAV access service	Yes
<b>RAID Levels / volume layouts</b>	
Stripe	Supported with at least one disk
Mirror	Supported with at least two disk
Z1	Supported with at least three disk, allows for one disk to fail
Z2	Supported with at least four disk, allows for two disks to fail
Z3	Supported with at least five disk, allows for three disks to fail
Log device	Supported with at least one dedicated device
Cache device	Supported with at least one dedicated device
<b>Data Reduction</b>	
Thin Provisioning	Yes
Compression	Yes
Clones	Yes
Deduplication	Yes
<b>Storage management</b>	
Maximum internal volumes	1024
Maximum iSCSI targets	512

Maximum iSCSI LUNs	1024
iSCSI LUN	Clone/snapshot support
<b>File sharing capability</b>	
Recommended local user accounts:	3072 (Max is unlimited, no license required)
Recommended local groups:	1024
Recommended shared folders:	1024
Recommended concurrent SMB/NFS/AFP/FTP connections:	2500
<b>Compatible OS and Browser</b>	
UNIX	Yes
Linux	Yes
Windows 7 Desktop and above	Yes
Windows Server 2008 and above	Yes
FreeBSD	Yes
macOS	Yes
Supported browser	Mozilla Firefox, Google Chrome, Microsoft Internet Explorer, Apple Safari
<b>Surveillance Station</b>	
Maximum IP cameras:	No Limit. Maximum depends on hardware configuration, camera resolution, number of streams, and stream bandwidth.
<b>Virtual Machine Manager</b>	
Run various virtual machines on NAS, including Windows, Linux, or Virtual DSM	Yes
<b>High Availability Manager</b>	

Support for snapshots	Yes
<b>High performance</b>	
Intelligent read and write caches	Yes, (HDD supported, recommended SSD)
<p><b>* Specifications above are subject to change without notice. Actual product specifications may vary. Raw capacity estimated when used with 16TB disks.</b></p> <p><b>* The hardware comes with open license (no limit on usage and number of users)</b></p> <p><b>* The hardware is compatible with Linux, Windows OS</b></p>	





**HELIOS : HEN-9008-A**  
CATEGORY: RACKMOUNT NAS, NETWORK ATTACHED  
STORAGE, ENTERPRISE

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