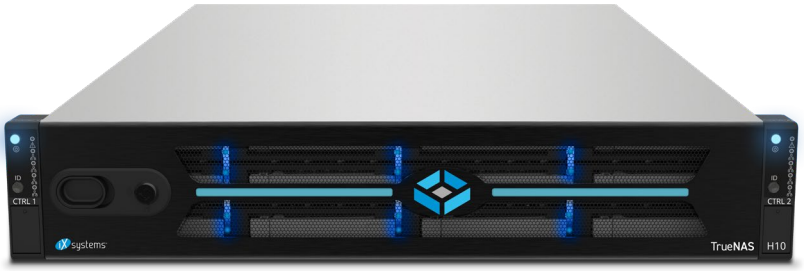
TrueNAS

TrueNAS® H-Series

The Industry's Most Versatile Hybrid Storage



The TrueNAS H-Series brings the full feature set of TrueNAS Open Storage, including High Availability (HA), to an entry-level price point. With optional dual controllers, available all-flash performance, and exceptional reliability, the TrueNAS H-Series delivers big results in a small footprint, making it perfect for small and medium businesses looking to transform and grow their infrastructure.

Available in two models, the TrueNAS H10 (available now) and H20 (available in Q2 2024) provide unified file, block, and object storage, and are available in single or dual-controller, hybrid or all-flash configurations. The TrueNAS H-Series blends performance, reliability, and affordability for small and medium IT environments.

TrueNAS H-Series arrays provide powerful and flexible storage by providing a full suite of features with no additional licensing costs. The simplified web-based interface, robust features, and white-glove enterprise support make it a capable and budget-friendly option for growing organizations. TrueNAS Enterprise inherits the rich functionality and Open Source economics of TrueNAS SCALE and adds Enterprise-class capabilities to protect your data.

Every TrueNAS storage array supports unified block, file, and S3-compliant object storage protocols. Its modular hardware architecture conserves power, space, and cooling while supporting multiple applications with hybrid flash and disk storage pools. Optional HA ensures storage services are not disrupted during maintenance and upgrades, while Intelligent Storage Optimization maximizes storage efficiency with typical data reduction ratios greater than 2.5x.

The TrueNAS H-Series fits a wide range of applications from file and media storage to virtual machine hosting, video surveillance, and many others. The TrueNAS H-Series provides data integrity, reliability, and ease of management for businesses that never sleep.

"ESG has validated that the TrueNAS platform delivers impressive levels of cost-optimized performance."

Tony Palmer

Senior Validation Analyst, Enterprise Strategy Group

H-Series Features

Scalable, Versatile Performance: The TrueNAS H-Series offers solid-state performance at spinning-disk capacity and cost using intelligent adaptive caching with system RAM and flash. System RAM and SSDs are used to cache reads and writes while HDDs store the data. For use cases demanding ultimate performance in a compact package, each bay can be populated with high-performance SSDs, delivering up to 5 GB/s of uncached throughput.

Self-Healing Data Protection: Data integrity is the name of the game, and TrueNAS leaves nothing to chance. In-flight data corruption is automatically detected and repaired before it ever reaches disk. Bit rot and data decay are identified and scrubbed clean. With TrueNAS, your data is always pristine.

Intelligent Storage Optimization: The TrueNAS H-Series maximizes storage efficiency by offering compression, efficient snapshots, clones, and thin provisioning at no extra cost. TrueNAS Adaptive Compression (TAC) efficiently boosts performance while maximizing capacity. TAC intelligently adjusts its compression ratio without wasting system resources. Before data is stored, TrueNAS dynamically detects and compresses what it can and skips over any data too inefficient to be worthwhile.

Unlimited Snapshots & Replication: Most storage appliances require additional licenses for advanced features — but not TrueNAS. Gain unlimited file version retention, restoration, and replication. Data is automatically protected against unintentional alteration, such as from ransomware or malware attacks, with minimal storage consumption. Data can be replicated locally, remotely, or to the cloud for backups or disaster recovery. TrueNAS snapshots can be seamlessly integrated with VMware snapshots for coordinated data protection. With TrueNAS, any data protection or disaster recovery policy is simple to implement and maintain.

H-Series Platform

Available Storage Media

- Enterprise Nearline Hard Drives 7200 RPM SAS3:
  - Available from 8 TB to 22 TB
  - SED, FIPS 140-2 options
- Enterprise SSDs:
  - SAS3: from 1.9 TB to 15.36 TB
  - SED and FIPS 140-2 options available

Power Management

- Dual redundant, hot-swappable, high-efficiency (80 Plus Platinum (90%+) power supplies
- Auto-switching 100-240V 50/60Hz input power supported
- Remote power on/off via IPMI (Integrated Platform Management Interface)
- UPS signal response and alerts

Disk Management

- Global hot spares
- Hot-swappable drives
- Corrupted block scan + HDD S.M.A.R.T.
- Hard drive activity/alert LEDs
- Hardware-accelerrated disk encryption (AES-NI)
- Enclosure monitoring and alert LEDs

Physical Parameters

- 2U: 12× 3.5/2.5” hard drive bays (front-loading, hot swap)
- Dimensions (l x w x h):
  - 26.8” x 19” x 3.5” | 681 × 483 × 89 mm
- Rackmount Rails:
  - 23” - 35.75” standard
- Operating temperature: 0°C to 40°C
- Non-operating temperature: -30°C to 60°C
- Humidity: 8% to 80% non-condensing
- Empty weight: 43 lbs | 19.5 kg
- Fully-Loaded weight: 67 lbs | 30.4 kg
- RoHS 6/6 compliant CE, FCC Class A, VCCI, UL

TrueNAS H-Series Rear

TrueNAS H-Series Models

	TrueNAS H10	TrueNAS H20
Hybrid or All-Flash Storage	Optional	Optional
Dual Controller (HA)	Optional	Optional
Controller	Quad-Core	Deca-Core
RAM (Max)	64 - 128 GB	128 - 256 GB
Read Cache (Max)	1600 GB SAS SSD	2× 1600 GB SAS SSD
Write Cache (Max)	16 GB SAS SSD	2× 16 GB SAS SSD
Onboard Networking	4× 1G Base-T (Standard)	
Additional Networking (Optional)	Up to 4× 10/25 GbE	Up to 4× 10/25 GbE or 2× 10/25 GbE + 2× 40/100 GbE
Max Storage (Raw)	1.5 PB	2.5 PB
Expansion Shelves	1x ES24/F, ES60	1x ES24/F, ES60, or ES102
Average Power Draw	200 Watts	300 Watts
Peak Power Draw	250 Watts	350 Watts
Max Heat Output	700 BTU/h	1000 BTU/h

TrueNAS Enterprise Specifications

File-Based Protocols

- SMB v1/2/3
- NFSv3, v4
- AFP, FTP, WebDAV

Block-Based Protocols

- iSCSI
- OpenStack Cinder

Object Protocols

- S3-compliant using MinIO

Directory Services

- Active Directory (AD)
- FreeIPA
- Kerberos
- LDAP, NIS

Networking

- Port Trunking/NIC Teaming
- IEEE 802.3ad link aggregation
- IEEE 802.1q VLAN support

Virtualization

- Supports VMware and VAAI, ESXi snapshot integration, VM Warn/Stun, vCenter
- Supports KVM, Citrix XenServer, Microsoft Hyper-V, and other common hypervisors
- Microsoft VSS, ODX, and CSV
- Integrated Apps

File System

- OpenZFS Self-healing file system
- Immutable Snapshots and clones
- Thin and thick provisioning
- Online capacity expansion
- Virtual block devices
- In-line compression and deduplication
- ZFS Stripe, Mirror, RAID-Z1/Z2/Z3, dRAID

High Availability

- Available dual controller support
- Automated rapid failover without data loss
- Virtual IP address migration
- Online software updates

Data Mobility

- Asynchronous file replication using Syncthing
- Data ingest and export to and from any SMB/NFS server

Backup

- Snapshot-based OpenZFS local/remote replication
- Rsync and cloudsync
- Backup data to public clouds
- Supports Asigra, Acronis, Veeam, Nakivo, NetBackup, and more

Supported Public Cloud Providers

- iX-Storj
- Amazon Simple Storage Service (S3)
- BackBlaze B2 Cloud
- Google Cloud
- Microsoft Azure

TrueSecure Security

- FIPS 140 for Data-at-rest and data-in-flight
- Restricted Admins (Security, Storage, Monitor)
- Auditing of SMB & Admin events (e.g Logins)
- Encrypted Drives and Datasets, KMIP
- NIST 800-209, GP-OS STIG

Remote Administration

- Alert notifications via email, AWS-SNS, Hipchat, InfluxDB, Slack, Mattermost, OpsGenie, PagerDuty, and VictorOps
- SSH, Syslog, Netdata
- Automated backup of system configuration and state
- Graphical reporting, enclosure management
- Signed updates with the ability to rollback
- Out-of-Band Management
- REST APIs and SNMP
- TrueCommand Management