TrueNAS

TrueNAS® X-Series

Enterprise Storage for Any Budget

The X-Series is the most affordable TrueNAS unified storage family, designed with enterprise features, high availability (HA), and reliability at an entry-level cost. Available in two models, the TrueNAS X10 and X20 provide unified file, block, and object storage, and are available in single or dual-controller, hybrid or all-flash configurations. The TrueNAS X-Series offers excellent reliability and affordability for small and medium IT environments.

The TrueNAS X-Series arrays combine the flexibility of unified storage, the performance of solid state flash drives, and the capacity of hard disks, the simplified management of a powerful web-based user interface, and white-glove enterprise support. TrueNAS Enterprise inherits the rich functionality and Open Source economics of TrueNAS CORE and adds Enterprise-class capabilities.

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, while Intelligent Storage Optimization maximizes storage efficiency with typical data reduction ratios of greater than 2.5x.

The TrueNAS X-Series fits a wide range of applications from file and media storage to business continuity, video surveillance, and many others. The TrueNAS X-Series provides data integrity, reliability, and ease-of-management for business that never sleeps.

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

Tony Palmer

Senior Validation Analyst, Enterprise Strategy Group

X-Series Features

Flash-assisted Performance: Solid-state performance at spinning-disk capacity and cost. TrueNAS leverages ZFS to merge multi-layer DRAM and flash cache with high-density spinning disks: system RAM and SSDs are used to cache reads and writes while HDDs store the data. RAM and SSD performance is significantly faster than HDDs, while power requirements are much lower. TrueNAS lets you increase performance and scale capacity while conserving power and saving money.

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: TrueNAS X-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, with minimal storage consumption. Data can be replicated locally, remotely, or to the cloud for backups or disaster recovery. TrueNAS snapshots can also be coordinated with VMware snapshots. With TrueNAS, any data protection or disaster recovery policy is simple to implement and maintain.

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X-Series Platform

Available Storage Media

- Enterprise Nearline Hard Drives 7200 RPM SAS3:
  - Capacities from 4 TB to 18 TB
  - SED, FIPS 140-2 options
- Enterprise SSDs:
  - SAS3: from 1.92 TB to 7.68 TB
  - RI, SED, FIPS 140-2 options

Power Management

- Dual redundant, hot-swappable, high-efficiency (90%+) power supplies
- Auto-switching 100-240V 50/60Hz input power supported
- IPMI Remote power on/off
- 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 alerts

Physical Parameters

- 2U: 12× 3.5/2.5” hard drive bays (front-loading, hot swap)
- Dimensions (l x w x h):
  - 21” x 19” x 3.5” | 531 × 447 × 89 mm
- Rackmount Rails:
  - 23.5” - 29.5” standard
  - up to 36” with included extenders
- Operating temperature: 0°C to 40°C
- Non-operating temperature: -30°C to 60°C
- Humidity: 8% to 80% non-condensing
- Empty weight: 26 lbs | 12 kg
- Fully-Loaded weight: 44 lbs | 20 kg
- RoHS 6/6 compliant, CE, FCC Class A, VCCI, UL, BSMI

TrueNAS X20 Rear

TrueNAS X-Series Models

	TrueNAS X10	TrueNAS X20
Hybrid or All-Flash Storage	Optional	Optional
Dual Controller (HA)	Optional	Optional
Controller:		
RAM (Max)	32 GB	64 GB
Read Cache (Max)	400 GB SSD	800 GB SSD
Write Cache (Max)	16 GB SSD	16 GB SSD
Networking	4× 1 GbE (optical) or 2× 10/25 GbE (optical) 2× 1G Base-T (standard)	4× 1/10 GbE Base-T or 2× 10/25/40 GbE (optical) 2× 1G Base-T (standard)
Fiber Channel	2× 8 Gb	2× 8 Gb
Max Storage	648 TB	1.29 PB
Expansion Shelves	1x ES24/F or 2x ES12	1x ES60 or 2x ES24/F
Maximum Power Draw:		
Single Controller	138 Watts	140 Watts
Dual Controller (HA)	198 Watts	200 Watts
Heat Output	471/676 BTU/h	478/682 BTU/h

TrueNAS Enterprise Specifications

File-Based Protocols

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

Block-Based Protocols

- iSCSI
- Fibre Channel
- OpenStack Cinder

Object Protocols

- S3-compliant
- Minio Management

Directory Services

- Active Directory (AD)
- 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, bhyve, and other common hypervisors
- Microsoft VSS, ODX, and CSV
- Integrated Jails and Plugins

File System

- OpenZFS Self-healing file system
- 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

High Availability

- Dual controller support
- Automated failover without data loss
- Virtual IP address migration
- Online software updates

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

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

Remote Administration

- Alert notifications via email, AWS-SNS, Hipchat, InfluxDB, Slack, Mattermost, OpsGenie, PagerDuty, and VictorOps
- SSH, Syslog
- Automated backup of system configuration and state
- Graphical reporting, enclosure management
- Signed updates with the ability to rollback
- IPMI Remote Management with iKVM HTML5
- REST APIs and SNMP
- TrueCommand Single Pane of Glass