TrueNAS M-Series

Powerful, Scalable Enterprise Storage

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Features

Performance & Scale Without Compromise
The TrueNAS M-Series combines DRAM, TrueCache® NVDIMM, and NVMe/SSD with high-density disks for low-latency flash performance at disk capacity and cost. It supports up to four 100 Gb/s network ports per controller for maximum data throughput.

TrueCache® NVDIMM Technology
Found in the M40, M50, and M60, TrueCache® NVDIMM delivers fast, reliable, low-latency write caching. It stores data before writing to the ZFS pool, ensuring protection and mirroring for high availability.

Self-Healing Data Protection
Utilizing the OpenZFS file system, the M-Series automatically detects and repairs in-flight data corruption before it reaches the disk. It identifies and scrubs bit rot and data decay, ensuring data integrity and reliability.

Intelligent Storage Optimization
The M-Series optimizes storage with compression, snapshots, clones, and thin provisioning—all at no extra cost. TrueNAS Adaptive Compression (TAC) dynamically adjusts compression to enhance performance and maximize capacity efficiently.

Benefits

Unmatched Data Integrity
The self-healing capabilities of the OpenZFS file system ensure that data remains pristine, automatically correcting any corruption and preventing data loss.

Cost-Effective Scalability
With intelligent storage optimization features like TAC, organizations can efficiently utilize storage resources, reducing the need for additional hardware investments as data grows.

Enhanced Data Protection
Unlimited snapshots and replication protect against accidental changes, ransomware, and malware. Data can be replicated locally, remotely, or to the cloud for backup and disaster recovery, ensuring business continuity.

Capacity Powerhouse

The TrueNAS M-Series stands as the cornerstone of enterprise storage solutions, offering unparalleled performance and reliability for mission-critical operations. Designed with high-availability in mind, it seamlessly integrates open-source economics with enterprise-grade hardware, providing organizations with the flexibility and scalability they demand.

Available in four versatile models—M30, M40, M50, and M60—the M-Series delivers unified file, block, and S3-compliant object storage. These systems support configurations ranging from hybrid to all-flash setups, featuring impressive specifications such as up to 1.5 TB of system memory, TrueCache NVDIMM and NVMe caching, and scalability reaching up to 30 PB of capacity. With networking capabilities that include multiple high-speed connections (up to 4× 100 GbE), the M-Series is adept at handling intensive IT workloads, from virtualization and media production to high-speed file sharing and backup operations.

Built to conserve power, space, and cooling, the M-Series employs a modular hardware architecture that supports diverse applications through its hybrid flash and disk storage pools. High Availability (HA) configurations ensure continuous storage services, while Intelligent Storage Optimization achieves data reduction ratios exceeding 2.5x, maximizing storage efficiency. Coupled with simplified management via a robust web-based interface and comprehensive enterprise support, the TrueNAS M-Series offers a seamless blend of performance, scalability, and data integrity, catering to the needs of organizations that operate around the clock.

TrueNAS
OPEN ENTERPRISE STORAGE

M-Series Platform

Available Storage Media

- Enterprise Nearline Hard Drives 7200 RPM SAS3:
  - Capacities from 4 TB to 22 TB
  - SED, FIPS 140-2 options
- Enterprise SSDs
  - SAS3: from 1.92 TB to 15.3 TB
  - RI, SED, FIPS 140-2 options
- NVMe SSDs:
  - From 1.6 TB to 30.7 TB
  - SED, FIPS 140-3 options

Power Management

- Dual redundant, hot-swappable, high-efficiency (80%+) power supplies
- Auto-switching 100-240V 50/60Hz input power on TrueNAS M30/M40/M50
- High-line 200-240V 50/60Hz input power on TrueNAS M60
- IPMI Remote power on/off

Disk Management

- Global hot spares
- Hot-swappable drives
- Corrupted block scan + HDD S.M.A.R.T.
- Hard drive activity/alert LEDs
- Local and remote (KMIP) key management
- Enclosure monitoring and alerts

Physical Parameters

- 4U: 24× 3.5/2.5” hard drive bays (front-loading, hot swap)
- Dimensions (l x w x h):
  - 27” x 19” x 7” | 686 × 483 × 178 mm
- Rackmount rails 26” - 36.5”
- Operating temperature: 0°C to 35°C
- Non-operating temperature: -10°C to 70°C
- Humidity: 5% to 95% non-condensing
- Empty weight: 75 lbs | 34 kg
- Fully-Loaded weight: 114 lbs | 52 kg
- RoHS 6/6 compliant, CE, FCC Class A, UL, BSMI

TrueNAS® M60 Rear

TrueNAS M-Series Models

	TrueNAS M30	TrueNAS M40	TrueNAS M50	TrueNAS M60
Hybrid or All-Flash Storage	Optional			
Dual Controller (HA)	Optional			
Controller	8 Cores (8 Threads)	10 Cores (20 Threads)	20 Cores (40 Threads)	32 Cores (64 Threads)
RAM (Max)	96 GB	192 GB	384 GB	768 GB
Read Cache (Max)	800 GB SAS	2.4 TB SAS or 3.2 TB NVMe	6.4 TB NVMe	12.8 TB NVMe
Write Cache	16 GB SAS	16 GB TrueCache® NVDIMM	16 GB TrueCache® NVDIMM	2× 16 GB TrueCache® NVDIMM
Networking	2× 10/25/40 GbE (optical) 2× 10GBase-T (standard)	2× 10/25/40/100GbE (optical) 2× 10GBase-T (standard)	2× 10/25/40/100GbE (optical) 2× 10GBase-T (standard)	4× 10/25/40/100GbE (optical) 2× 10GBase-T (standard)
Fibre Channel	2× 16 Gb	4× 16 Gb	4× 16 Gb or 2× 32 Gb	4× 32 Gb
Max Storage	1.5 PB	3 PB	10 PB	30 PB
Max Expansion Shelves	2 x ES24, 1 x ES60	2	8	12
Maximum Power Draw:				
Single Controller	450 Watts	825 Watts	975 Watts	1225 Watts
Dual Controller (HA)	600 Watts	950 Watts	1150 Watts	1450 Watts
Heat Output	1535/2047 BTU/h	2815/3241 BTU/h	3327/3924 BTU/h	4180/4947 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 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
- 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
- TrueCache® NVDIMM sync between controllers

Backup

- Snapshot-based OpenZFS local/remote replication
- Rsync and cloudsync
- Truecloud backup to Storj
- Supports Asigra, Acronis, Veeam, Nakivo, NetBackup, and more

Supported Public Cloud Providers

- iX-Storj
- Amazon 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, Netdata
- REST APIs and SNMP
- Automated backup of system configuration and state
- Graphical reporting, enclosure management
- Signed updates with the ability to rollback
- Out-of-band Remote Management
- TrueCommand Management

Data Mobility

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

TrueSecure Security

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