TrueNAS® M-Series

Powerfully-Scalable Enterprise Storage: Open Source Economics

The flagship TrueNAS M-Series line of unified storage arrays are designed with enterprise features, high-availability, and maximum performance in mind. Available in three models; M40, M50, & M60. The TrueNAS M40 and M50 provide unified file, block, and object storage and are available in single or dual-controller, hybrid, or all-flash configurations. The TrueNAS M60 Hybrid or All-Flash storage supports single or redundant storage controllers. Featuring multiple high-speed networking (up to 100Gb/s), system memory up to 768 GB, NVDIMM and NVMe caching, and up to 20 PB capacity, the TrueNAS M-Series is ideally suited for heavy IT storage workloads, including virtualization, media production, high-speed file sharing, and backup.

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

Every TrueNAS Enterprise 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 its hybrid flash and disk storage pools. Optional High Availability 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 M-Series delivers high-performance, scala-bility, data integrity, reliability, and ease-of-management for companies that never sleep.

PERFORMANCE & SCALE WITHOUT COMPROMISE

Hybrid or All Flash Array? With TrueNAS, you can have both. The TrueNAS M-Series leverages industry-leading cache technology along with ZFS by merging DRAM, non-volatile memory, and flash (NVDIMM and NVMe/SSD) with high-density spinning disks to deliver low latency flash performance at disk capacity and cost. With up to four 100Gb/s network ports per controller, the TrueNAS M-Series is designed to move terabytes of data at maximum speed.

SELF-HEALING DATA PROTECTION

Data integrity is the name of the game, and TrueNAS leaves nothing about your data to chance. In-flight data corruption is automatically detected and repaired before it ever reaches disk, and bit rot and data decay are identified and scrubbed clean. This ensures data is always pristine. Simply put, what you store on a TrueNAS storage solution today will remain intact for as long as it's in service.

INTELLIGENT STORAGE OPTIMIZATION

TrueNAS maximizes storage efficiency by offering compression, deduplication, and thin provisioning at no extra cost. The TrueNAS Adaptive Compression (TAC) algorithm efficiently boosts storage performance while maximizing storage 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. Unlimited file version retention, restoration, and replication are at your fingertips. Data is automatically protected locally against unintentional alteration, such as 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 the power of TrueNAS, any data protection or disaster recovery policy is simple to implement and maintain.

SOFTWARE SPECIFICATIONS

FILE-BASED PROTOCOLS
- SMB
- NFSv3, v4
- AFP
- FTP
- WebDAV

BLOCK-BASED PROTOCOLS
- iSCSI
- Fibre Channel
- OpenStack Cinder

OBJECT PROTOCOLS
- S3-compliant

DIRECTORY SERVICES
- Active Directory (AD)
- Kerberos
- Lightweight Directory Access Protocol (LDAP)
- Network Information Service (NIS)

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

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

SUPPORTED PUBLIC CLOUD PROVIDERS
- Amazon Simple Storage Service (S3)
- BackBlaze B2 Cloud
- Google Cloud
- Microsoft Azure

FILE SYSTEM
- Self-healing file system
- Intelligent Storage Optimization including in-line compression and deduplication
- Snapshots and clones
- Thin and thick provisioning
- Online capacity expansion
- Virtual block devices
- In-line deduplication
- ZFS Stripe, ZFS Mirror, RAIDZ(single parity), RAIDZ2 (dual parity), RAIDZ3 (triple parity)
- Compatible with AVID® ISIS® and Nexis®[1]

BACKUP
- Bi-directional snapshot-based OpenZFS local/remote replication
- rsync
- Supports Acronis, Veeam, Nakivo, NetBackup, and other backup products
- Backup data to public clouds

REMOTE ADMINISTRATION
- Graphical administrative interface over HTTP/HTTPS
- Alert notifications via email, AWS-SNS, Hipchat, InfluxDB, Slack, Mattermost, OpsGenie, PagerDuty, and VictorOps
- Ability to send logs to a remote syslog server
- Automated backup of system configuration and state
- Graphical reporting
- Signed updates with the ability to return to the prior version of the operating system
- SNMP MIBs
- IPMI remote console and power management
- REST API

Powerful Enterprise Storage arrays with Simple Management, Intelligent Compression, High Availability, and Flash-based Acceleration.

TrueNAS unified storage appliances offer storage flexibility, performance, reliability, and management simplicity.

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UL CE FC

"Storage this powerful should have another zero in the price tag."

Terry Rataiczak, CEO, Kinetic Networking

HARDWARE SPECIFICATIONS

AVAILABLE STORAGE MEDIA
- Enterprise Nearline Hard Drives (7200 RPM SAS3 - 12 Gb/s):
  - Capacities available from 2 TB to 18 TB
  - (Self-Encrypting Drives (SED) Available)
- Enterprise Solid State Drives (SAS3 - 12 Gb/s):
  - Capacities available from 800 GB to 7.68 TB
  - (Self-Encrypting Drives (SED) Available)
- NVMe Solid State Drives:
  - Capacities available from 800 GB to 3.2 TB

POWER MANAGEMENT
- Dual redundant, hot-swappable, high-efficiency (80+) Platinum power supplies
- 100-240V 50/60Hz input power on TrueNAS M40/M50 (Auto-Switching)
- High-line (200-240V 50/60HZ) input power only on TrueNAS M60
- Remote power on/off
- UPS signal response and alerts

DISK MANAGEMENT
- Hot spares
- Hot-Swappable drives
- Corrupted sata/bad block scan + HDD S.M.A.R.T.
- Hard drive activity/alert LEDs
- Hardware-Accelerated disk encryption (AES-NI)

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

TRUENAS M40
- Hybrid or All-Flash Storage
- Supports single or redundant storage controllers
  - Second storage controller can be added later to upgrade to HA
- 128 GB RAM per storage controller
- Up to 2.4 TB SSD-based read cache
- 16 GB NVDIMM-based write cache per storage controller
- Networking:
  - 2× 40 GbE (or 4× 10 GbE) + 2× 10GBase-T interfaces per storage controller
- Fiber Channel: Up to 4× 16 Gb interfaces per controller
- Maximum storage capacity: Up to 2 PB
  - Number of expansion shelves supported: Up to 2
  - Available expansion shelf models: ES12, ES24, ES60
- Maximum power draw**
  - Dual storage controller (HA): 779 Watts
  - Single storage controller: 404 Watts
  - BTU: 1377/2647 BTU/h

TRUENAS M50
- Hybrid or All-Flash Storage
- Supports single or redundant storage controllers
  - Second storage controller can be added later to upgrade to HA
- 256 GB - 348 GB RAM per storage controller
- Up to 12.8 TB of NVMe-based read cache
- 16 GB NVDIMM-based write cache per storage controller
- Networking:
  - Standard: 2× 40/50/100 GbE (optical) + 2× 10GBase-T per controller
  - Fiber Channel: 4×16Gb or 2×32Gb interfaces per controller
- Maximum storage capacity: up to 9 PB
  - Number of expansion shelves supported: up to 8
  - Available expansion shelf models : ES12, ES24, ES60
- Maximum power draw*
  - Dual storage controller (HA): 905 Watts
  - Single storage controller: 471 Watts
  - BTU: 1607/3089 BTU/h

TRUENAS M60
- Hybrid or All-Flash storage
- Supports single or redundant storage controllers
  - Second storage controller can be added later to upgrade to HA
- 768 GB RAM per storage controller
- Up to 12.8 TB of NVMe-based read cache
- 2 × 32 GB NVDIMM-based write cache per storage controller
- Networking:
  - Standard: 4× 100 GbE (optical) + 2× 10GBase-T per controller
- Fiber Channel: Up to 4× 32 Gb interfaces per controller
- Maximum storage capacity: up to 20 PB
  - Number of expansion shelves supported: up to 12
  - Available expansion shelf models : ES12, ES24, ES60, ES102
  - All-Flash storage capacity of 4 PB
- Maximum power draw*
  - Dual storage controller (HA): 1306 Watts
  - Single storage controller: 634 Watts
  - BTU: 2163/4845 BTU/h

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