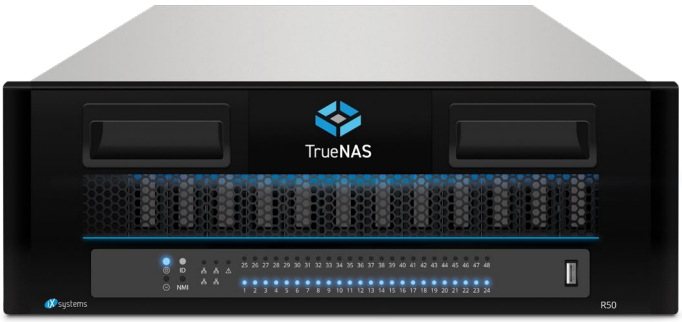
Data Sheet

TrueNAS R-Series

Powerful Single Controller Storage



Features

High-Density Unified Storage
Combines the robust capabilities of OpenZFS with cost-effective, single-controller hardware, available in both all-flash and hybrid models.

Scalable Architecture
Supports scale-up and scale-out S3 configurations, allowing seamless expansion from a single NAS/SAN/object target to clustered deployments, adapting to evolving storage requirements.

Advanced Data Protection
Features self-healing OpenZFS file system with copy-on-write, automatic bit-rot detection, built-in RAID protection, unlimited snapshots, and resilient replication to safeguard data integrity.

Flexible Integration
Compatible with major virtualization hypervisors, backup software, cloud storage services, and offers a fully-featured API for streamlined management, ensuring seamless integration into diverse IT infrastructures.

Benefits

Cost-Effective Performance
Optimizes per-dollar performance and scalability, delivering enterprise-grade storage solutions without compromising on quality or breaking the budget.

Simplified Data Management
Offers powerful features like data protection, snapshots, replication, scrubbing, data reduction, and security, simplifying data management tasks and reducing administrative overhead.

Enhanced Data Integrity
Utilizes self-healing OpenZFS technology to automatically detect and repair data corruption, ensuring that stored data remains accurate and reliable over time.

Unmatched Value

The TrueNAS R-Series offers high-density unified storage solutions that combine the robust features of OpenZFS with cost-effective, single-controller hardware. Available in all-flash and hybrid models, these systems deliver exceptional density and price-performance, making them ideal for organizations seeking scalable and reliable storage without compromising on quality.

Designed to maximize your storage budget, the R-Series appliances cater to environments that prioritize performance and scalability per dollar. Whether deployed as a standalone NAS/SAN/object storage solution or as nodes within a scale-out S3 cluster, the R-Series provides versatile storage options that enhance value and adaptability.

The latest addition to this lineup, the TrueNAS R60, pushes the boundaries of the R-Series by introducing next-generation performance for the most demanding modern workloads. Built with PCIe Gen5 capabilities and DDR5 RAM, the R60 is the first platform in the series to leverage Terabit Ethernet technology, supporting speeds up to 400GbE. This all-flash powerhouse is engineered to deliver up to 60GB/s of throughput with ultra-low latency, providing a high-performance foundation for AI, data science, and high-resolution video production while maintaining the series' signature focus on density and value.

Simplify data management with the R-Series' powerful features, including data protection, snapshots, replication, scrubbing, data reduction, and security. Integrated enclosure management capabilities streamline monitoring, allowing administrators to oversee drive statuses from a single interface, thereby reducing complexity and administrative overhead.

TrueNAS R-Series Models

	TrueNAS R20	TrueNAS R50	TrueNAS R60
Storage	Hybrid	Hybrid	All-Flash
Height	2U - 10U	4U - 12U	1U - 17U
Chassis Depth	26”, 660mm	39”, 990mm	33”, 840mm
Controllers	Single	Single (field-replaceable)	Single
Drive Bays	12 × 3.5”, 2 × 2.5”	48 × 3.5”, 4 × 2.5” (NVMe)	12 x NVMe
CPU per Controller	6 - 16 Cores	6 - 16 Cores	16 - 32 Cores
DRAM per Controller	64 GB - 192 GB	64 GB - 192 GB	192 GB - 384 GB
Read & Write Cache	2 × 800 GB SATA SSDs	4 × 800 GB NVMe SSD	N/A
Networking	2× 10/25/40/100GbE 2 or 6 × 10GBaseT or SR	2× 10/25/40/100 GbE 2 or 4 × 10GBaseT or SR	2× 400 GbE or 4× 25/100/200 GbE 2× 1GBase-T (Management)
Fibre Channel (option)	2 × 32Gb	2 × 32Gb	N/A
Expansion Shelves	2	2	Up to 4
Max Drives Supported	132	256	60
Max Throughput	8 GB/s	10 GB/s	60 GB/s
Max Raw Capacity	3.4 PB	6.5 PB	7 PB
Max Effective Capacity*	7 PB	13 PB	14 PB

** Maximum effective capacity assumes typical data reduction through compression and deduplication.*

TrueNAS Enterprise Specifications

File-Based Protocols

- SMB v1/2/3
- NFSv3, v4, RDMA
- FTP, WebShare

Block-Based Protocols

- iSCSI, iSER
- Fibre Channel
- NVMe-oF
- OpenStack Cinder

Object Protocols

- S3-compliant using MinIO AIStor
- Single node, Clustered

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

Upgrade to F-Series, M-Series, or H-Series for HA Options

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
- 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

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
- REST APIs and SNMP system configuration and state
- Graphical reporting, enclosure management
- Signed updates with the ability to rollback
- Out-of-Band Management
- TrueCommand Management