

## XCubeNAS Overview

The XCubeNAS series is a next generation, high performance, efficiency and security NAS system which is designed for SMB and enterprise applications. The XCubeNAS operating system is the brand new, and entirely reimagined QSM 3 brings the enterprise level features into the Workgroup and SMB storage. QSM 3 supports comprehensive enterprise-level storage features including SSD caching, thin provisioning, auto-tiering, data deduplication and data compression that transforms the efficiency of every resource to bring you commercial value.



N+1 : Tower 2, 4, 8 Bay



N+4+2(NVMe) : 2U8, 2U12

## Innovative (N+E) Hybrid Storage Capacity

Additional 2.5 inch small form factor are provided in order to enable advanced features without sacrificing storage capacity. As well as SATA SSD, we have additional NVMe SSD slots delivering lightning speeds (32Gb/s). In addition to being used for SSD caching for boosting data access performance, our auto-tiering architecture can be utilized to offer a complete ongoing optimization.

## Leading Enterprise-level NAS Operating System

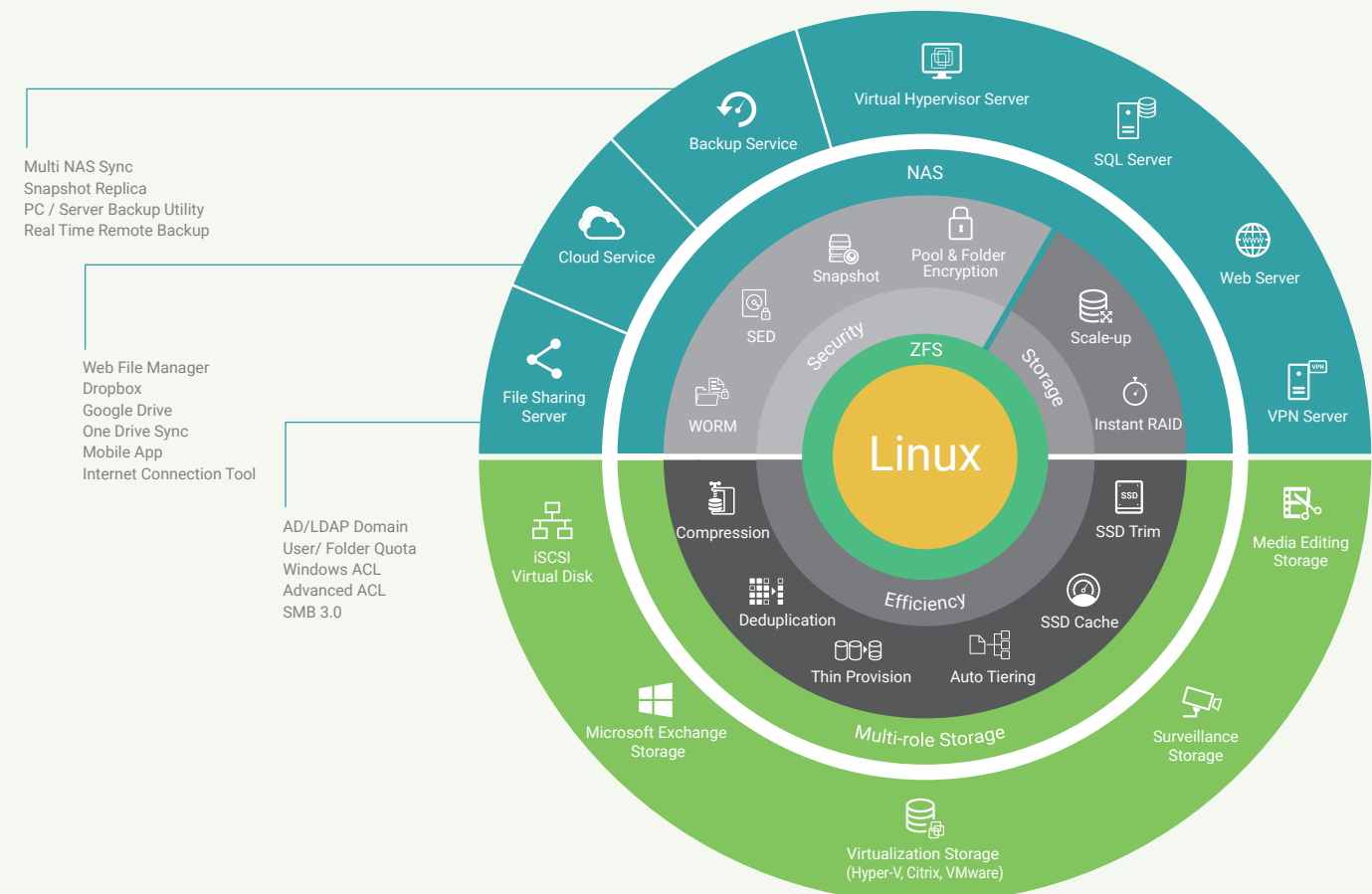
QSM 3 (QSAN Storage Manager 3) is an innovative storage operating system designed for QSAN XCubeNAS products. Based- on Linux and 128-bit ZFS (Zeta-byte File System), QSM 3 not only inherits the outstanding native features of ZFS but also adjust with several bespoke optimization enhancements that make the XCubeNAS series a high-performance, efficient and superior network attached storage device.

Meanwhile, by implying ZFS, QSM guarantees integrity and security of the most valuable asset, data, and the built-in checksum mechanism can automatically correct corrupted data. A wide range of supported RAID types, file and block level snapshots and various backup solution support ensures that data are always well-protected.

By supporting AES-256 pool encryption, WORM, and SED drive, QSM 3 can prevent confidential data from being either stolen or modified. Moreover, QSM 3 utilizes every resource to succeed in data efficiency. Data deduplication and compression technology reduce storing duplicate data blocks and files to maximize storage capacity, making the XCubeNAS capable of storing beyond its raw storage capacity.

QSM 3 effectively addresses the performance demands of various applications. The SSD caching boosts up data access speed. Also, analyzing data by access frequency lets auto-tiering help you fetch frequently used files even faster. Value-added functionalities such as virtualization capability, multiple server center, centralized file station, etc. are also provided making QSM 3 robust and able to carry out dedicated applications.

Value-added functionalits such as virtualization capability, multiple server center, centralized file station etc. are also provided that making QSM 3.0 even robust and being able to carry out dedicated applications.



## Software Specifications

### Unified Storage Server

- NAS application server (Gigabit/10GbE NIC)
- iSCSI storage (Gigabit/10GbE NIC)
- Fibre Channel storage (16Gb)
- Direct-attached storage with Thunderbolt™ 3 (40Gb)

### File Server

- File sharing across Windows/ Mac/ Linux/UNIX and centralized management

### FTP Server

- Supports data access from remote location via FTP
- Bandwidth Control
- Connection control
- FTP with SSL/ TLS (explicit) mode
- FTP supported
- Passive FTP port range control

### Backup Server

- Snapshot and Replication
- Block-Level Snapshot and Replication
- Schedule and manually taking Snapshot
- Snapshot retention policy
- Snapshot Single file restore
- Snapshot lock
- XMirror (Multi-sites Volume and folder backup and synchronization)
- Public Cloud backup: Amazon S3 and S3 compatible.)
- Public Cloud synchronization: Google Drive, Microsoft OneDrive, Dropbox
- Time machine Backup server
- External storage device backup
- 3rd party backup software support: Acronis True Image, CA BrightStor ARCserve Backup, EMC Retrospect, Symantec Backup Exec, LaCie SilverKeeper

### Web Server

- Built-in phpMyAdmin

### SQL Server

- MariaDB database server

### VPN Server

- Supports OpenVPN, PPTP and IPsec+L2TP

### Virtualization Server

- Virtual machine import/export
- Virtual machine backup
- Virtual machine Snapshot
- User-based permissions settings
- Support virtual switch
- Supports access from IE, Safari, Firefox, Chrome
- Windows, Linux, UNIX and Android

### Operating System

- Linux-embedded system

### Connection

- IPv4, IPv6 and DDNS domain name registration (QSAN Cloud)
- Auto port forwarding

### Networking

- VLAN
- Link aggregation (support 11 bonding modes)
- Multi-IP settings
- Gigabit Jumbo Frame

### File System

- ZFS file system
- EXT2 (Virtual Volume)
- EXT3 (Virtual Volume)
- EXT4 (Virtual Volume)
- FAT (Virtual Volume)
- NTFS (Virtual Volume)
- HFS (Virtual Volume)

### Supported Operating Systems

- Windows
- Mac OS X
- Linux (2.6 or later) and UNIX

### Storage Management

- Single disk, RAID 0, 1, 5, 6, Z3, 10, 50, 60 and JBOD
- Global and Dedicated spare disk
- Disk management
- Disk S.M.A.R.T. check
- Instant RAID
- RAID Fast Rebuild
- Pool application mode: General, Media Streaming, and Database
- Multi-pool and volume management
- Storage capacity management
- Pool and Volume thread hole notification
- Online Pool expansion and migration
- Online volume expansion
- Build in iSCSI initiator and Target
- Virtual Volume
- Auto-Tiering
- External storage device management
- Pool Encryption
- Support Disk cache
- Data Scrubbing
- Virtual Volume
- SSD Read and Write cache
- Deduplication (volume and LUN)
- Snapshot (folder and LUN)
- Compression (volume and LUN)
- Thin Provision for LUN
- Self encryption Drive (SED) pool level protection

### User Management

- Local / domain user and group management
- Local / domain application privilege
- User quota for local and domain user
- Home folder
- Windows AD and LDAP support
- Trust domain and support up to 200,000 domain users

### Folder Management

- Advanced ACL
- Windows ACL
- Hide shared folder on Windows network
- Unicode support
- WORM (Write Once Read Many protection)
- Folder usage threshold notification
- Folder quota

### System Tools

- NTP time settings
- Notification: Email alert (SMTP authentication), syslog, and SNMP
- System firmware update
- Back up, restore, reset system settings
- Import system configuration
- Antivirus
- Smart fan
- IP access control
- Policy-based unauthorized IP blocking (QSAN Cloud)
- Secure remote login by SSH connection
- Connection list management
- SNMP UPS support
- Network recycle bin
- Import SSL certificate
- Real-time Resource (CPU, Memory, Storage, Pool, Process) / Hardware/ Service/ Network resource monitor

### Power Management

- HDD Hibernation
- Power schedule
- Wake on LAN
- UPS settings
- Recover from power outage

### System Optimization Settings

- Service binding
- User application mode
- SSD Trim

### Log

- System log
- System connection and data transfer log

### Multilingual Support

- Chinese (Traditional & Simplified), English, French, German, Italian, Japanese, Korean, Russian, Polish)

### File Manager

- File preview
- Embedded file player
- Filter
- Mount Cloud (Google Drive, OneDrive, Dropbox)
- ISO image mount
- CIFS, FTP, SFTP and WebDAV client
- Share link
- Team folder sharing
- Publish to Facebook, twitter, weibo
- Media library
- Media streaming
- Online doc preview and editing
- Transcoding (online/offline), compression

### Service

- Data service: CIFS, AFP, NFS, FTP, WebDAV
- Backup service: Rsync
- Discover service: Bonjour

### Virtualization

- Windows: Hyper-V, storage space
- VMware: VMware 6.7 ready, VAAI, SRM
- Citrix: Citrix 7.0 ready

### Multi Browser Support

- Internet Explorer
- Safari
- Firefox
- Google Chrome

### Utility

- XFinder
- Web Finder

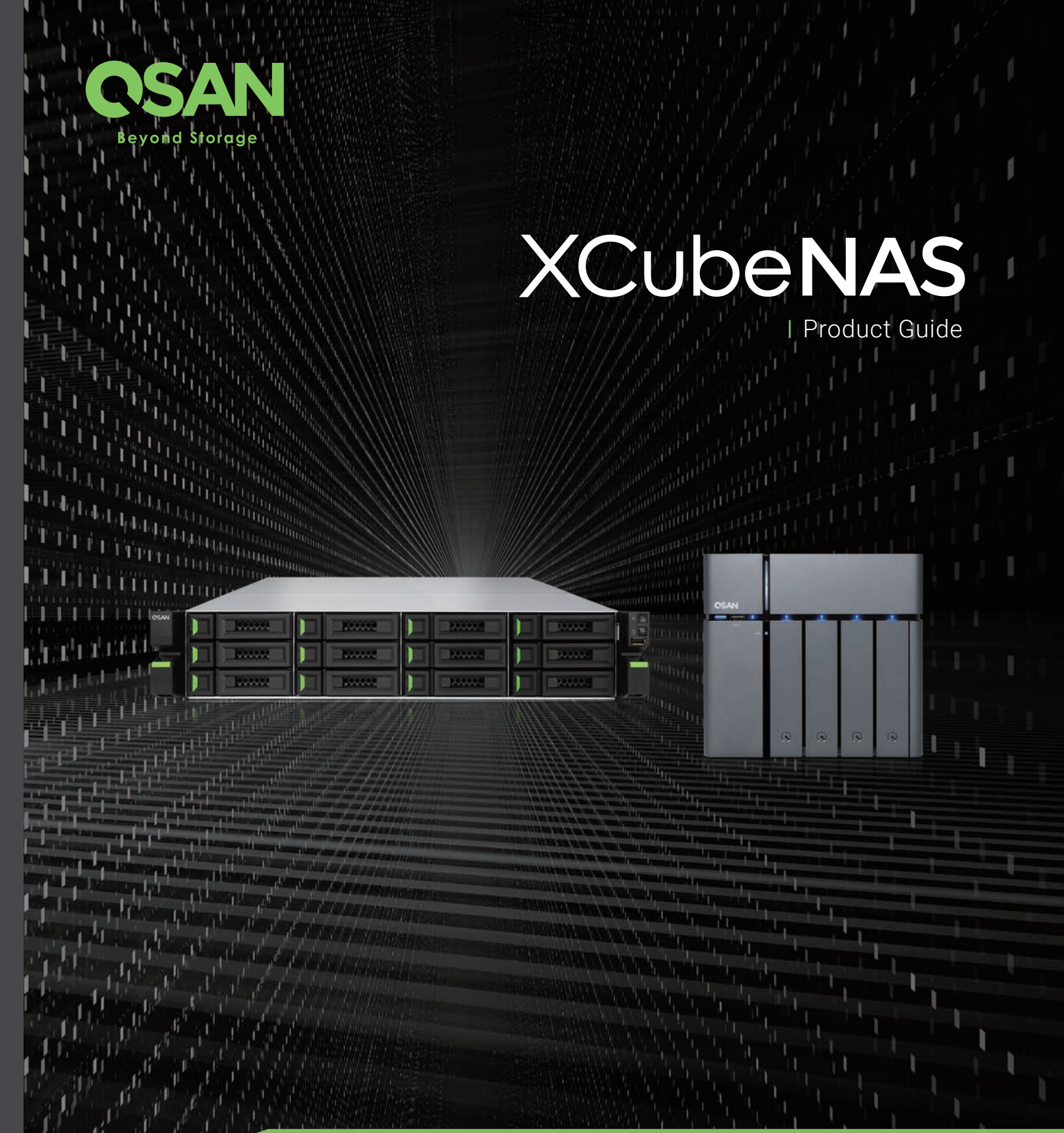
### Mobile App

- Xcess (iOS, Android)



# XCubeNAS

Product Guide



## Product Highlights

- Innovative hybrid hardware architecture
- Standard LFF (Large Form Factor) bays plus exclusive SFF (Small Form Factor) bays
- Brand new enterprise level QSM 3 with all new interface and enterprise features
- Unified storage architecture with full virtualization support
- Completed backup plan for unexpected hardware failure, natural disasters, or simple accidental deletion.

- Optimized storage features : Auto Tiering, Thin Provision, Data deduplication and SSD cache.
- Security enhancement : Pool and disk encryption, WORM technology, Antivirus, VPN service and IP connection filter



QSAN Technology, Inc. | Learn more by visiting [www.qsan.com](http://www.qsan.com)

Address : 4F., No.103, RuiHu Street, NeiHu District, Taipei, Taiwan 114 Email : [sales@qsan.com](mailto:sales@qsan.com) Telephone : +886-2-7720-2118 Fax : +886-2-7720-0295

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January 2019



# Hardware Specifications

Comparison Table	XN3000T Series		XN5000T Series		XN7000T Series		XN8000T Series	
	XN3002T	XN3004T	XN5004T	XN5008T	XN7004T	XN7008T	XN8004T	XN8008T
Form Factor	Tower, 2+1 Bay	Tower, 4+1 Bay	Tower, 4+1 Bay	Tower, 8+1 Bay	Tower, 4+1 Bay	Tower, 8+1 Bay	Tower, 4+1 Bay	Tower, 8+1 Bay
CPU	Intel® Celeron® 1.1GHz Quad-Core Processor		Intel® Celeron® 2.9GHz Dual-Core Processor		Intel® Core™ i3 3.9GHz Dual-Core Processor		Intel® Core™ i5 2.7 GHz Quad-Core Processor	
RAM	4GB DDR3L SO-DIMM (Max 8GB)		8GB DDR4 SO-DIMM (Max 32GB)		8GB DDR4 SO-DIMM (Max 32GB)		8GB DDR4 SO-DIMM (Max 32GB)	
USB	USB 3.0: 3 (Front: 1, Rear: 2) USB 2.0: 2 (Rear)		USB 3.0: 5 (Front: 1, Rear: 4)		USB 3.0: 5 (Front: 1, Rear: 4)		USB 3.0: 5 (Front: 1, Rear: 4)	
Flash	8GB USB DOM		8GB USB DOM		8GB USB DOM		8GB USB DOM	
HDMI	1		1		1		1	
Drive Type	3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD		3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD		3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD		3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD	
No. of Disks	2 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD (Front)	4 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD	4 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD	8 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD	4 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD	8 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD	4 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD	8 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 1 x 2.5" SATA SSD
Max. Raw Capacity	30TB	58TB	58TB	114TB	58TB	114TB	58TB	114TB
Hard Drive Interface	SATA 6Gb/s (backward compatible with SATA 3Gb/s)		SATA 6Gb/s (backward compatible with SATA 3Gb/s)		SATA 6Gb/s (backward compatible with SATA 3Gb/s)		SATA 6Gb/s (backward compatible with SATA 3Gb/s)	
Connectivity Port	2 x GbE LAN (RJ45) ports		4 x GbE LAN (RJ45) ports Optional: 2 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 2 x Thunderbolt™ 3 ports		4 x GbE LAN (RJ45) ports Optional: 2 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 2 x Thunderbolt™ 3 ports		4 x GbE LAN (RJ45) ports Optional: 2 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 2 x Thunderbolt™ 3 ports	
Expansion Port	-		-		-		-	
PCIe Expansion	-		1 x Gen3x8 slot		1 x Gen3x8 slot		1 x Gen3x8 slot	
PSU	External Power Adapter, 65W	External Power Adapter, 90W	FLEX ATX 200W	FLEX ATX 200W	FLEX ATX 200W	FLEX ATX 200W	FLEX ATX 200W	FLEX ATX 200W
Dimension (H x W x D) (mm)	160 x 119 x 216	177 x 190 x 235	177 x 190 x 235	177 x 310 x 235	177 x 190 x 235	177 x 310 x 235	177 x 190 x 235	177 x 310 x 235
Warranty	2 years		2 years		2 years		2 years	
Temperature	Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C		Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C		Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C		Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C	
Relative Humidity	Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%		Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%		Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%		Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%	
Regulatory	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC, CCC	CE, FCC, BSMI, VCCI, RCM, KCC, CCC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC, CCC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC

Comparison Table	XN5000R Series			XN7000R Series				XN8000R Series					
	XN5004R	XN5008R	XN5012R	XN7004R	XN7008R	XN7012R	XN7016R	XN7024R	XN8008R	XN8012R	XN8016R	XN8024R	
Form Factor	Rackmount 1U 4+2 Bay	Rackmount 2U 8+6 Bay	Rackmount 2U 12+6 Bay	Rackmount 1U 4+2 Bay	Rackmount 2U 8+6 Bay	Rackmount 2U 12+6 Bay	Rackmount 3U 16 Bay	Rackmount 4U 24 Bay	Rackmount 2U 8+6 Bay	Rackmount 2U 12+6 Bay	Rackmount 3U 16 Bay	Rackmount 4U 24 Bay	
CPU	Intel® Celeron® 2.9GHz Dual-Core Processor			Intel® Core™ i3 3.9GHz Dual-Core Processor				Intel® Pentium® 1.6GHz Quad-Core Processor		Intel® Xeon® 3.3GHz Quad-Core Processor		Intel® Xeon® 2.2GHz Quad-Core Processor	
RAM	4GB DDR4 U-DIMM (Max 64GB)		8GB DDR4 U-DIMM (Max 64GB)		8GB DDR4 U-DIMM (Max 64GB)				8GB DDR4 ECC U-DIMM (Max 128GB)		8GB DDR4 ECC U-DIMM (Max 128GB)		
USB	USB 3.0: 4 (Rear) USB 2.0: 1 (Front)			USB 3.0: 4 (Rear) USB 2.0: 1 (Front)				USB 3.0: 2 (Rear) USB 2.0: 1 (Front)		USB 3.0: 4 (Rear) USB 2.0: 1 (Front)		USB 3.0: 2 (Rear) USB 2.0: 1 (Front)	
Flash	8GB USB DOM			8GB USB DOM				8GB SATA DOM		8GB USB DOM		8GB SATA DOM	
HDMI	1			1				-		1		-	
Drive Type	3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD		3.5" SATA HDD 2.5" SATA HDD 2.5" NVMe SSD		3.5" SATA HDD 2.5" SATA HDD 2.5" SATA SSD		3.5" SAS HDD 3.5" SATA HDD 2.5" SAS SSD 2.5" SATA HDD 2.5" SATA SSD		3.5" SATA HDD 2.5" SATA HDD 2.5" NVMe SSD		3.5" SAS HDD 3.5" SATA HDD 2.5" SAS SSD 2.5" SATA HDD 2.5" SATA SSD		
No. of Disks	4 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 2 x 2.5" SATA SSD (Front)	8 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 4 x 2.5" SATA SSD (Rear) 2 x 2.5" NVMe SSD (Rear)	12 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 4 x 2.5" SATA SSD (Rear) 2 x 2.5" NVMe SSD (Rear)	4 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 2 x 2.5" SATA SSD (Front)	8 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 4 x 2.5" SATA SSD (Rear) 2 x 2.5" NVMe SSD (Rear)	12 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 4 x 2.5" SATA SSD (Rear) 2 x 2.5" NVMe SSD (Rear)	16 x 3.5"/2.5" SAS/NL-SAS/SATA HDD or 2.5" SAS/SATA SSD	24 x 3.5"/2.5" SAS/NL-SAS/SATA HDD or 2.5" SAS/SATA SSD	8 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 4 x 2.5" SATA SSD (Rear) 2 x 2.5" NVMe SSD (Rear)	12 x 3.5"/2.5" SATA HDD or 2.5" SATA SSD 4 x 2.5" SATA SSD (Rear) 2 x 2.5" NVMe SSD (Rear)	16 x 3.5"/2.5" SAS/NL-SAS/SATA HDD or 2.5" SAS/SATA SSD	24 x 3.5"/2.5" SAS/NL-SAS/SATA HDD or 2.5" SAS/SATA SSD	
Max. Raw Capacity	60TB	122TB	178TB	60TB	122TB	178TB	224TB	336TB	122TB	178TB	224TB	336TB	
Hard Drive Interface	SATA 6Gb/s (backward compatible with SATA 3Gb/s)			SATA 6Gb/s (backward compatible with SATA 3Gb/s)				SAS 12Gb/s and SATA 6Gb/s (backward compatible with SAS 6Gb/s and SATA 3Gb/s)		SATA 6Gb/s (backward compatible with SATA 3Gb/s)		SAS 12Gb/s and SATA 6Gb/s (backward compatible with SAS 6Gb/s and SATA 3Gb/s)	
Connectivity Port	4 x GbE LAN (RJ45) ports Optional: 2 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 2 x Thunderbolt™ 3 ports			4 x GbE LAN (RJ45) ports Optional: 2 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 2 x Thunderbolt™ 3 ports				1 GbE LAN (RJ45) x1 10 GbE LAN (RJ45) x2 Optional: 4 x 16Gb FC (SFP+) ports 2 x 16Gb FC (SFP+) ports 4 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 4 x 1GbE (RJ45) ports		4 x GbE LAN (RJ45) ports Optional: 2 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 2 x Thunderbolt™ 3 ports		1 GbE LAN (RJ45) x1 10 GbE LAN (RJ45) x2 Optional: 4 x 16Gb FC (SFP+) ports 2 x 16Gb FC (SFP+) ports 4 x 10GbE (SFP+) ports 2 x 10GbE (RJ45) ports 4 x 1GbE (RJ45) ports	
Expansion Port	Optional: 2 x 12Gb/s SAS wide ports			Optional: 2 x 12Gb/s SAS wide ports				Built-in 2 x 12Gb/s SAS wide ports (SFF-8644)		Optional: 2 x 12Gb/s SAS wide ports		Built-in 2 x 12Gb/s SAS wide ports (SFF-8644)	
PCIe Expansion	1 x Gen3x8 slot	1 x Gen3x8 slot 1 x Gen3x4 slot		1 x Gen3x8 slot	1 x Gen3x8 slot 1 x Gen3x4 slot		-		1 x Gen3x8 slot 1 x Gen3x4 slot		-		
PSU	250W 1+1 redundant			250W 1+1 redundant				770W/850W 1+1 redundant 80 PLUS Platinum		250W 1+1 redundant		770W/850W 1+1 redundant 80 PLUS Platinum	
Dimension (H x W x D) (mm)	19" Rackmount 44 x 438 x 510	19" Rackmount 88.5 x 438 x 510		19" Rackmount 44 x 438 x 510	19" Rackmount 88.5 x 438 x 510		19" Rackmount 130.3 x 438 x 515	19" Rackmount 170.3 x 438 x 515	19" Rackmount 88.5 x 438 x 510		19" Rackmount 130.3 x 438 x 515	19" Rackmount 170.3 x 438 x 515	
Warranty	3 years			3 years				3 years		3 years		3 years	
Temperature	Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C			Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C				Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C		Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C		Operating temperature: 0 to 40°C Shipping temperature: -10°C to 50°C	
Relative Humidity	Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%			Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%				Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%		Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%		Operating relative humidity: 20% to 80% non-condensing Non-operating relative humidity: 10% to 90%	
Regulatory	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI		CE, FCC, BSMI, VCCI, RCM, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, RCM, KCC, SASO, EAC	CE, FCC, BSMI, VCCI, KCC	