



Data Storage, Security & Performance

XCubeNAS

XN8016R / XN8024R



- 5th generation Intel® D1500, quad-core processor, up to 128GB RAM
- Scale up solution supports over 2.6PB of raw storage capacity
- QSM 3.0 (QSAN Storage manager), Easy management
- Advanced storage management
 - Pool wise Deduplication
 - SSD cache
 - Auto tiering
 - Compression
- Native snapshot and replication
- Disaster recovery
- Virtualization ready storage



Ingenious NAS Systems

The XN8000R Series are next generation, highly efficient NAS systems which are designed for enterprise applications. The XN8016R and XN8024R are powered by Intel® Xeon processors and up to 128GB of DDR4 ECC RAM.

The PCIe expansion slots give the XN8000R the flexibility to respond to various application demands. 10GbE network adapter card is supported to greatly enhance the data transmission speeds, and two onboard SAS 12Gb/s wide ports are also supported for scalability with our expansion enclosures.



Modulization Hardware Platform Design

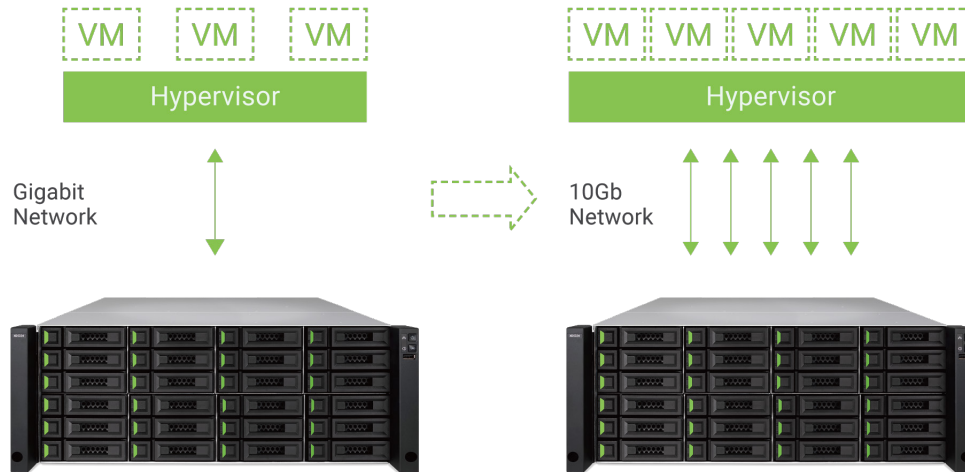
XN8016R and XN8024R are designed in Modular System. All major components are customer replaceable units, providing IT easy upgrade and maintenance. The N+1 System components are fully redundant, cable-less and hot-swappable FRUs (field-replaceable units) design, including controller, power supplies, fans and host cards.

XN8016R and XN8024R have the highest flexibility among XCubeNAS series. Onboard connectivity supports 10GbE port for data service connectivity and 12Gb/s SAS-3 wide ports, the latest 12Gb/s SAS Technology, for capacity expansion. XN8016R and XN8024R equipped two optional host card slots, supporting up to x8 10GbE ports increase flexibility and performance based on your demand.



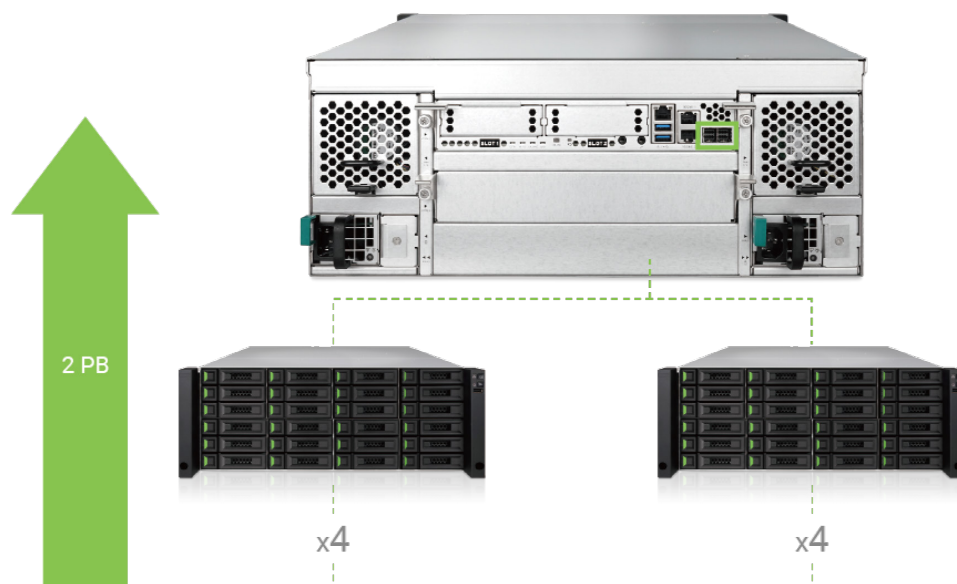
Built-in 10GbE Solution

A 10GbE(10 GigabitEthernet) network is essential for businesses that demand high bandwidth for virtualization, and fast backup and restore for an ever-growing amount of data. The XN8016R/XN8024R are affordable and reliable storage solutions for deploying a 10GbE environment.



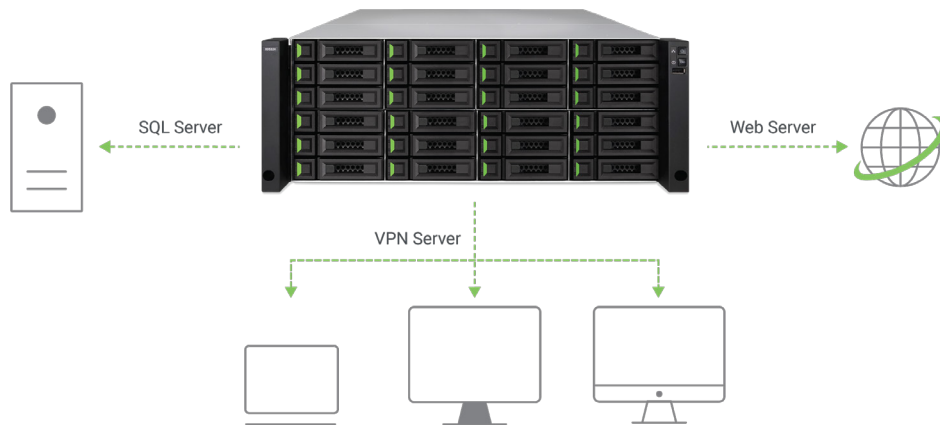
Scale-Up Solution

XN8016R and XN8024R provide massive scale-up capability by connecting any of our expansion enclosures. It can support up to a whopping 232 disk drives or up to 2.5 PB of raw storage space when using 12TB HDD drives.



All-in-One Business Solution

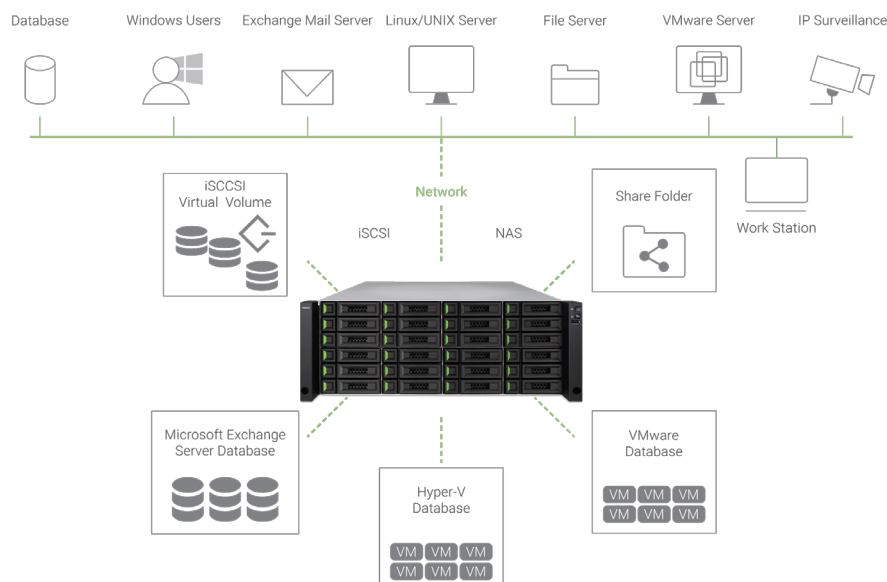
Since having a dedicated machine for each specific task rapidly becomes an expensive and inefficient solution, XN8000R Series allows you to enable comprehensive applications and services on your NAS, whenever you need them. Everything from file sharing to data storage, even hosting a website, the XN8000R can do it all.



IP SAN / NAS Unified Storage

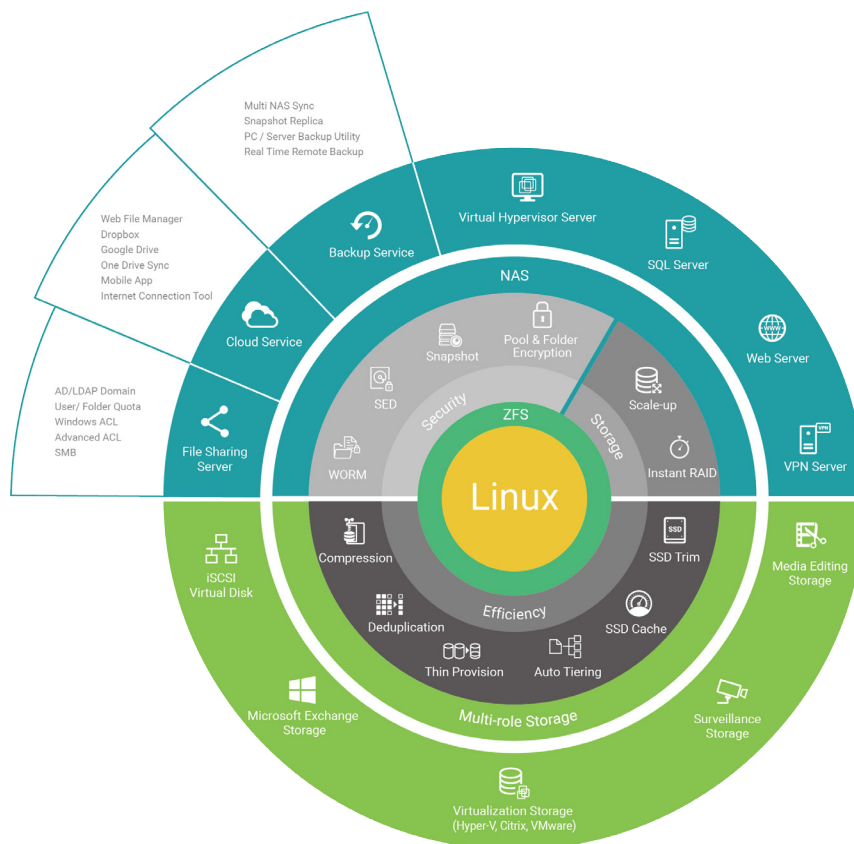
The XN8000R Series are a multi-role storage device that can play a major role in many different applications. In the simplest scenario, the XN8000R can be a file sharing server, a simple storage device for centralized office data sharing. Its high bandwidth network ports ensure that data is quickly read from and written to the NAS. Another scenario in which to use the XN8000R as a media editing platform.

The XN8000R has the performance and the stability for intensive media editing by a single user or by a group of users. A third example for the power of the XN8000R are as IP surveillance storage. In the surveillance world, recording every frame is of utmost importance. The XN8000R have the power and stability to record every frame sent to it without any problems.



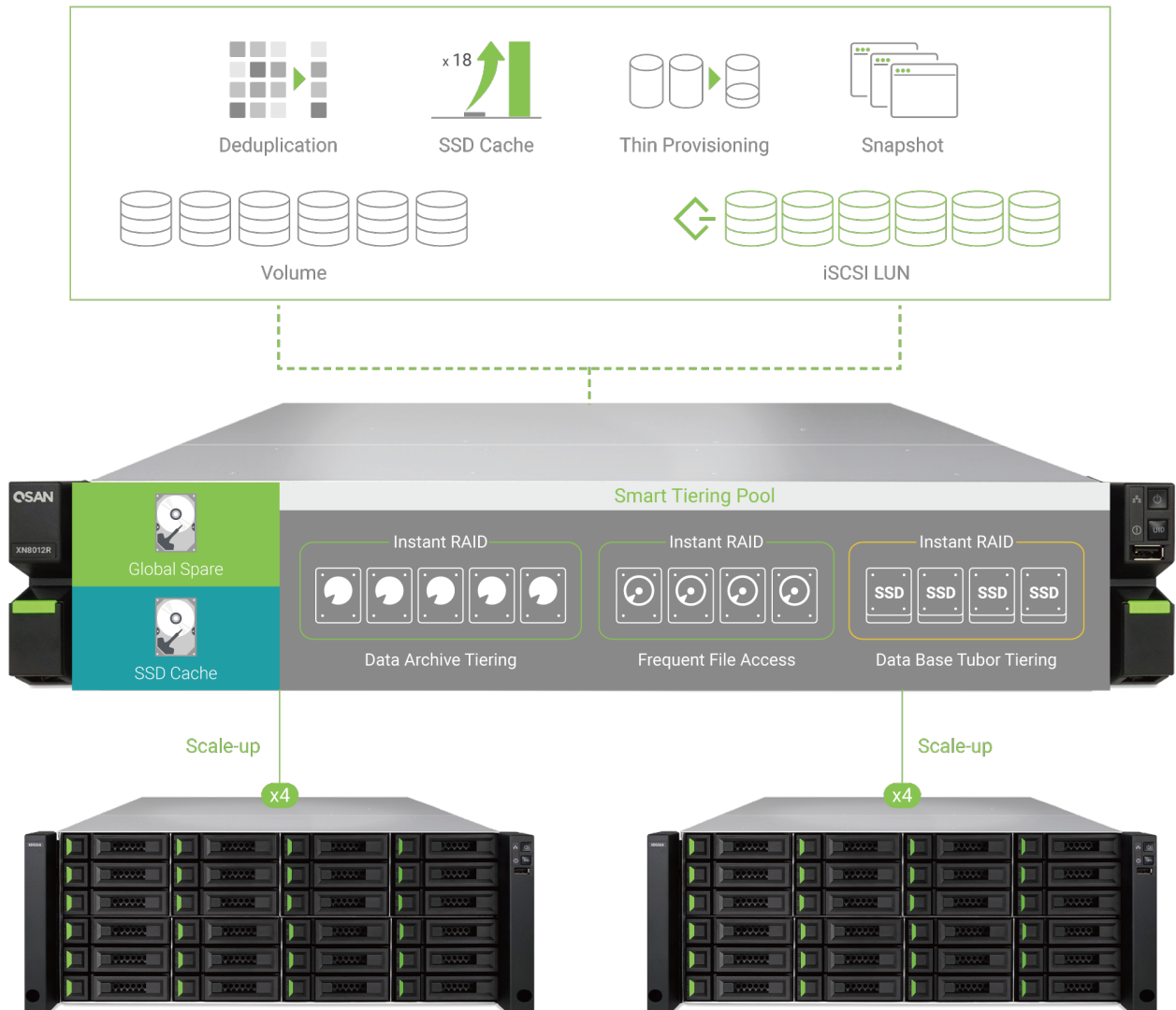
Leading Enterprise-level NAS Operating System

QSM 3.0 (QSAN Storage Management 3.0) is a NAS operation system for QSAN XCubeNAS series. The core of QSM is Linux kernel and in-house fine-tuning 128-bit ZFS (Petabyte File System) file system. QSM's powerful storage features ensure persistent, reliable storage management, protection against data corruption, seamless capacity expansion, several data integrity mechanisms, pool and disk encryption protection, unlimited snapshots, and unlimited clones.



Advanced Storage Technology

XN8000R Series tailor-made storage pool technology effectively caters to diverse storage demands on data integrity, scalability, high performance and availability. Comprehensive RAID levels are supported to ensure data integrity under every application scenario. Pool capacity could be expanded on the fly, rapidly responding to growing needs of for capacity. The design of the XN8000R Series allows for creating customized storage pools and auto categorization of data based on usage. "Hot" data will be moved to front line storage while "cold" data is stored on slower disks. All this is done automatically with the XN8000R.



Wide RAID Type Support And Instant RAID

XCubeNAS provides comprehensive RAID levels, 0, 1, 5, 6, 10, 50, 60, for various application scenarios. Each RAID type can be instantly deployed with no initialization or synchronization phase, delivering safe, protected and high-performance storage space without any delays.

Fast Rebuild Technology

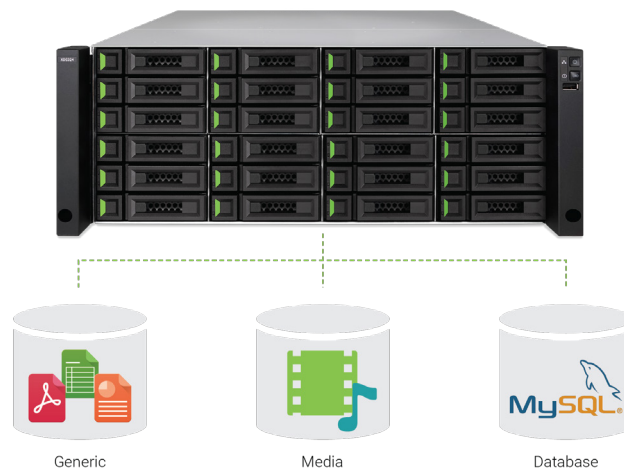
When a drive fails in a RAID set, the XCubeNAS is capable of rebuilding the data blocks that have been used, and not the entire RAID set. This helps reduce the risk of data loss during the rebuilding process.



User Defined Pool

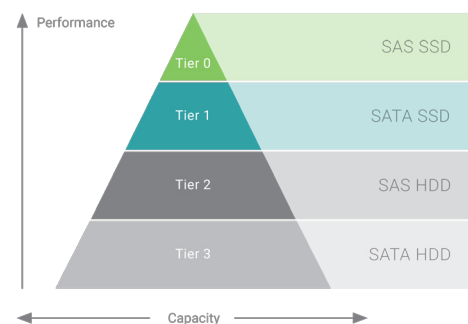
Thinking ahead to common usage situations, the XCubeNAS provides three optimized solutions for pools to achieve high performance and availability for dedicated storage applications:

- Generic: Default type for generic file service or backup usage.
- Media: Optimize IOPS for small packets of sequential RW and throughput for large, random packets.
- Database: Data is synchronized between the memory cache and disks in real time for assurance of database Integrity.



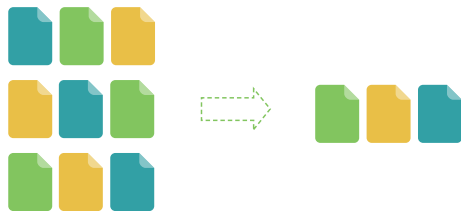
Smart Auto-tiering

Increase the performance of your business related applications by using auto-tiering; without crippling your budget. The XCubeNAS features auto-tiering technology that continuously analyzes how often data has been accessed. Frequently-used data would then be automatically moved to drives with higher access speeds, while rarely-used data would be moved to large capacity, slower drives. Demanding workloads of your business applications could be dramatically reduced and the performance increased without heavy investment in expensive All Flash storage devices – this is all done by the XCubeNAS's intelligent auto-tiering technology.



Data Compression

With compression, data will be compressed into fewer bytes on transmission to ensure the faster transfer speed and save storage space.



Data Deduplication

The data deduplication feature of the XCubeNAS is an in-line, block-level function that checks the block similarity of data as it enters the system. When duplicate blocks are found, they are not written to disk, therefore saving space.

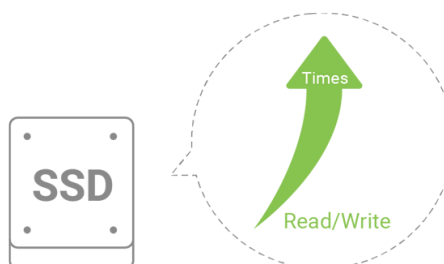
Thin Provisioning

"Take whatever you need." That's the philosophy of thin provisioning. Thin provisioning lets various services and applications use the same storage space without limiting how much of the quota can be used by each. With thin provisioning, space resources are dynamically distributed to the most demanding, responding to your business applications with higher flexibility and promising potentials.



Deep Into SSD Caching

SSD cache is a large secondary cache that boosts data access speed by positioning SSD drives between primary DRAM memory cache and hard disks.



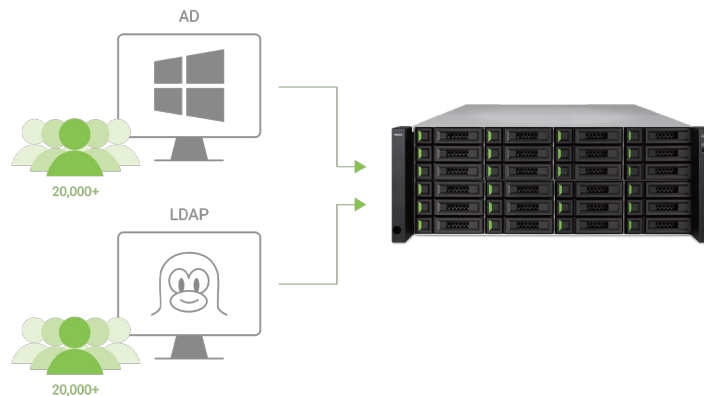
Quota Control On Accounts And Share Folders

Take control of your storage space, by adding quotas (limits) to the amount of data a user can store. Users can be limited on how much data a folder can store or the quota can apply to the entire system, thus empowering the admin with complete control of what is stored on the XCubeNAS.



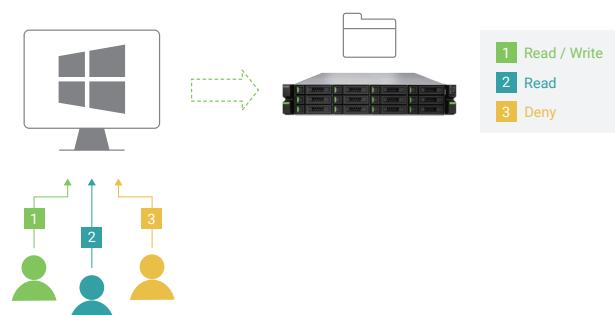
Windows AD and LDAP Directory Services Support

By supporting Windows AD and LDAP, the XCubeNAS enables seamless account integration. Up to 200,000 domain accounts can be joined onto the XCubeNAS and their Home folder is automatically created, helping IT administrators reduce duplicated sets of credentials and minimizing their workload in giving default account settings and new user setup.



Windows ACLs And Advanced ACLs

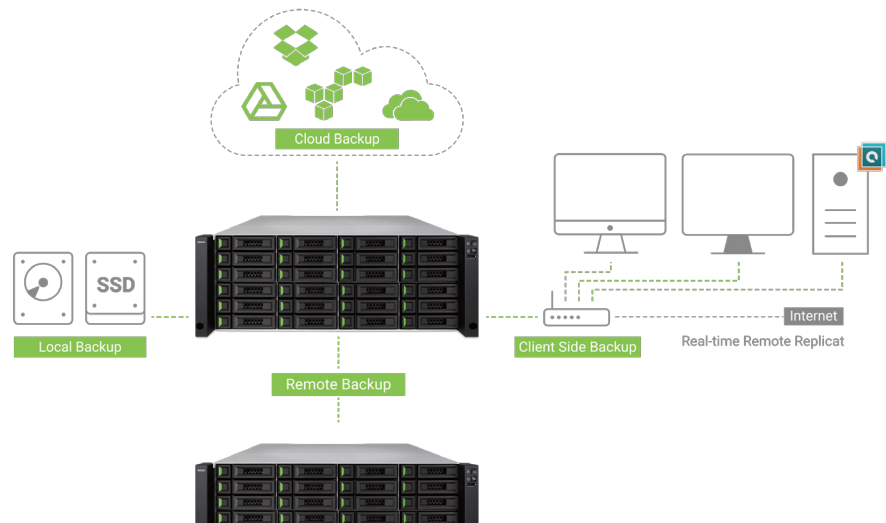
Access Control List (ACL) is a permission list specifying what actions specific accounts take on folders and files. Advanced ACL lets you set permissions on subfolders, whereas Windows ACL enables you to apply Windows file permission mechanisms on files and folders. With both kinds of ACL supported, IT administrators can flexibly regulate file access rules no matter what operating system they use, protecting your data from unauthorized access or theft.



Universal & Efficient Data Backup

The XCubeNAS effectively addresses the above challenges by providing comprehensive and effective backup solutions that assist you design a complete and efficient backup solution to minimize the risk of data loss. Various storage devices, remote servers, public clouds even other XCubeNAS can be seamlessly integrated into your XCubeNAS, achieving an all-encompassing backup solution allowing data to be freely, safely and efficiently preserved.

- Client side backup
- Remote backup
- Cloud backup
- Local backup



Client Backup To Your XCubeNAS

The most common cause of data loss is HDD failure, OS crashes or most commonly, accidental deletion. Comprehensive data backup is the solution to all your data loss woes. Backup all your data on your computer to your XCubeNAS with QSAN's free utility, Xreplicator.



XReplicator

XReplicator is a free utility that's provided to help you easily backup an image of a disk, partition, folder or file. XReplicator is also able to backup an entire PC to the XCubeNAS as a bare metal backup. There is a way to quickly and simply recover your entire system, disk or file when using the XReplicator utility and the XCubeNAS solution.

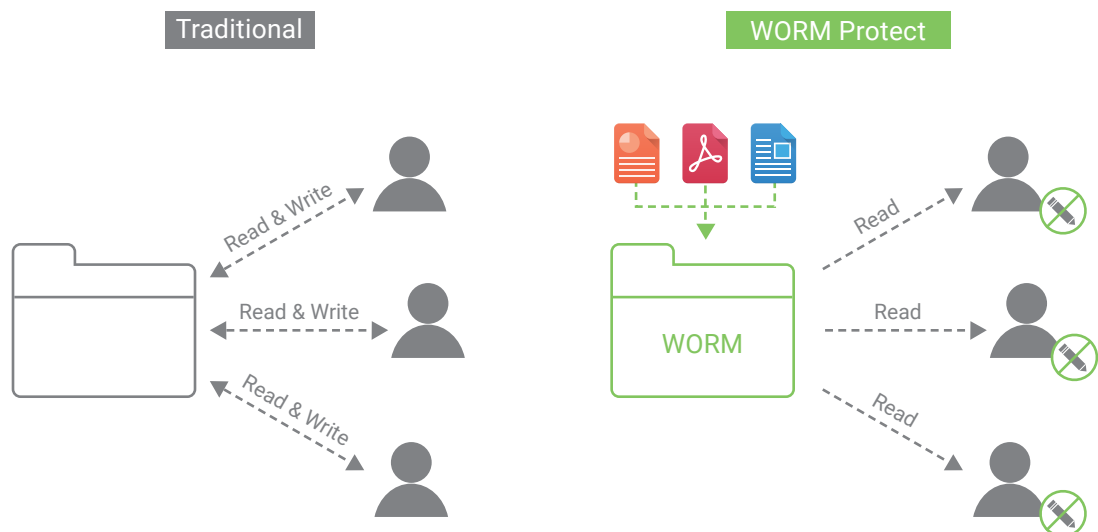
- Supported Windows XP or higher & Win Server 2008 or higher.
- Expert backup solution.
 - Backup image only stored on XCubeNAS.
 - Opened file backup support.
 - Scheduling backup support (Monthly, weekly, daily, automatically).
 - Backup configuration for fast upload speeds (Single version, incremental and differential).
 - Personal key encryption.
 - Version control and clean up.
 - Backup filter.

Security & Data Protection

The growing tide of data breaches, leaks, and malicious software means your data security systems and procedures are vital. Our QSM for XN8000R was built on a security-first ideology, it can offer you full protection of the data within your XN8000R. Tools are provided to prevent protect the system from hacking, and interception of data, theft, and accidental deletion.

Write Once Read Many (WORM)

WORM technology is design to prevent intentional or accidental modification of data in a certain period. Files and folders under WORM's protection can only be read in a user defined period, it's unable to modify any files or folders until the period has expired. WORM it can protect your data from encryption-based ransomware that installs covertly on a victim's system and encrypt their files, making them inaccessible. WORM will protect your confidential data from unauthorized modification and threat, ensuring the correctness and integrity of your data.



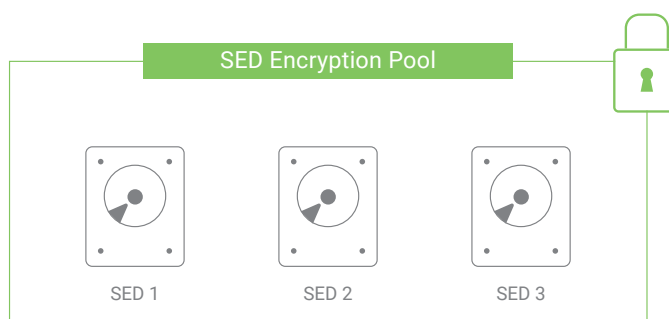
Pool Encryption with AES-256

XCubeNAS pool encryption mechanism ensures secured storage environment any user who wants to modify data must first pass authentication. The XCubeNAS supports up to AES 256-bit encryption for internal drives and external USB/eSATA drives, and adopts a military level FIPS 140-2 validated encryption, which is considered to be the highest security certification for compliance.





Self-Encrypting Drive (SED)

XCubeNAS can be much safer more than you can image with the disk self-encrypting technology called SED (Self-Encrypting Drive). With the technology, even if the physical drive is stolen or misplaced, the data on it remains protected against data breach by generating the authentication key (AK) to prevent the unauthorized access. However, the SED offered by QSAN provides the secured pools migration between different XCubeNASs and easy to manage the key by exporting AK for more efficient.



| Hardware Specifications

NAS Technology	XN8000R Series	
	XN8016R	XN8024R
		
Form Factor	Rackmount 3U 16-bay	Rackmount 4U 24-bay
CPU	Intel® Xeon® 2.2GHz Quad-Core Processor	
RAM	8GB DDR4 ECC U-DIMM (Max 128GB)	
USB	USB 3.0: 2 (Rear) USB 2.0: 1 (Front)	
Flash	8GB SATA DOM	
Tray Type	3.5" LFF 16	3.5" LFF x24
Max. Raw Capacity	224TB	336TB
Hard Drive Interface	SAS 12Gb/s and SATA 6Gb/s (backward compatible with SAS 6Gb/s and SATA 3Gb/s)	
Ethernet Ports	1 GbE LAN (RJ45) x1 10 GbE LAN (RJ45) x2	
Expansion Slot	Built-in 2 x 12Gb/s SAS wide ports (SFF-8644) Optional: 4 x 10GbE iSCSI (SFP+) ports 2 x 10GbE iSCSI (RJ45) ports 4 x 1GbE iSCSI (RJ45) ports	
Dimension (H x W x D)	19" Rackmount 130.3 x 438 x 515 mm	19" Rackmount 170.3 x 438 x 515 mm
LCM	USB LCM (optional)	
PSU	80 PLUS Platinum, two redundant 770W (1+1) AC Input 100 - 127V 10A, 50-60Hz 200 - 240V 5A, 50-60Hz DC Output +12V 63.4A +5VSB 2.0A	
Fan Module	2 x hot pluggable/redundant fan module	
Warranty	System : 3 year	
Regulatory	CE, FCC, BSMI, VCCI, KCC	
Temperature	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%	

Slot 2 provides 20Gb bandwidth

| Software Specifications

Unified Storage Server

- NAS application server (Gigabit/10GbE/40GbE NIC)
- iSCSI storage (Gigabit/10GbE/40GbE NIC)

File Server

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

FTP Server

- Supports data access from remote location via FTP
- FTP with SSL/ TLS (explicit) mode
- FXP supported
- FTP bandwidth control and connection control
- Passive FTP port range control

Backup Server

- 3rd party backup software support: Acronis True Image, CA Brightstor ARCserve Backup, EMC Retrospect, Symantec Backup Exec, LaCie Silverkeeper
- Snapshot replica
- Time machine backup server
- External storage device backup
- Block-level real time remote replication supports instant, schedule backup management
- XMirror (Multi-side data synchronization)
- Cloud backup: Amazon S3
- Cloud synchronization: Google Drive, Windows OneDrive, Dropbox

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

NAS Discovery

- Utility
- Cloud web page

Connection

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

Networking

- VLAN
- Link aggregation (support 7 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)

Supported Operating Systems

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

Disk Management

- Single disk, RAID 0 (Disk Striping), RAID 1 (Disk Mirroring), RAID 5, RAID 5 + hot spare, RAID 6, RAID 10, RAID 50, RAID 60 and JBOD (Linear Disk Volume)
- Multiple volume and storage pool
- Pool type : Generic, Media streaming, Database
- Online pool/ volume Capacity Expansion
- Pool/ volume usage threshold notification
- Self-encrypting drives (SED) pool level protection
- Pool write cache
- Scrub pool
- Convert cloned volume
- Virtual volume (mount disk from remote iSCSI target)
- Set free and replace disk
- HDD S.M.A.R.T.
- Built-in iSCSI target and initiator service
- External device management
- Global and dedicate hot spare disk
- Zero time RAID creation and quick rebuilding
- Auto Tiering
- SSD read / write cache
- Deduplication (volume and LUN)
- Snapshot (folder and LUN)
- Compression (volume and LUN)
- Thin Provision for LUN

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
- 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
- Secure remote login by SSH connection
- Connection list management
- USB, 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 6.0 ready, VAAI, SRM
- Citrix: Citrix 7.0 ready

Multi Browser Support

- Internet Explorer
- Safari
- Firefox
- Google Chrome

Utility

- XFinder
- XReplicator (Windows backup utility)

Mobile App

- Xccess (iOS, Android)



QSAN Technology, Inc. | Learn more by visiting www.qsan.com

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

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