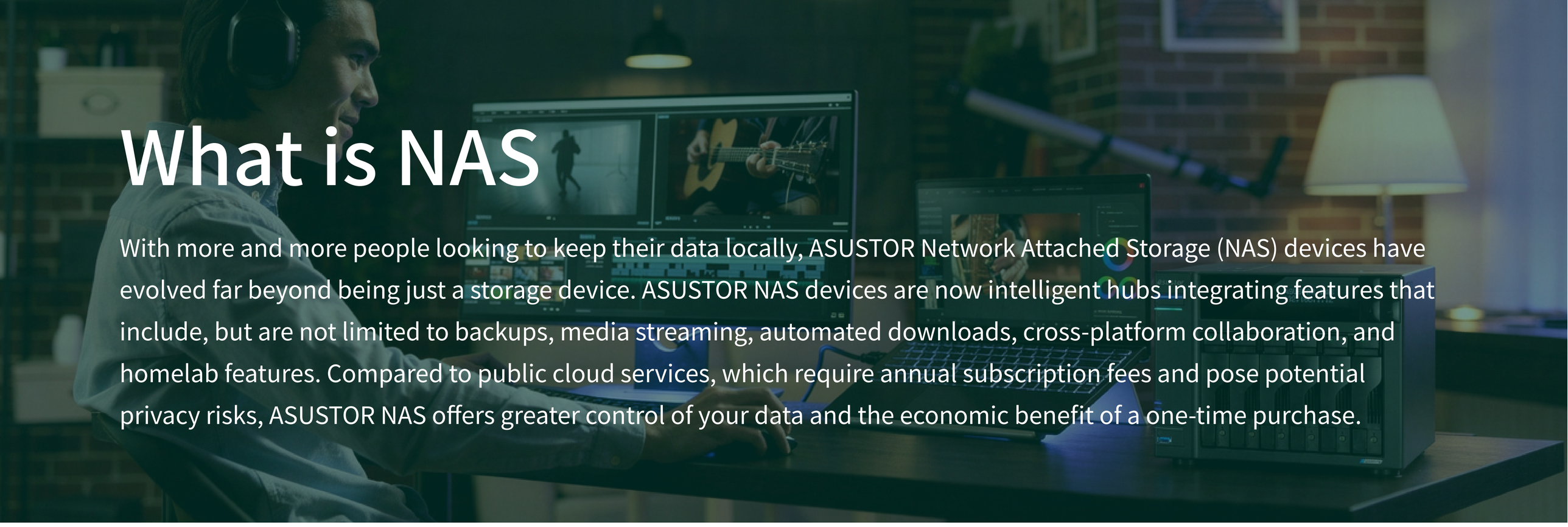
asustor

ASUSTOR NAS Purchase Guide

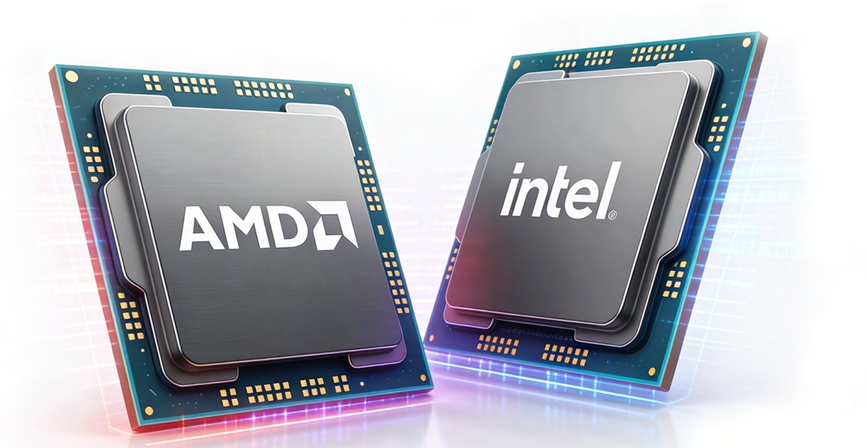


What is NAS

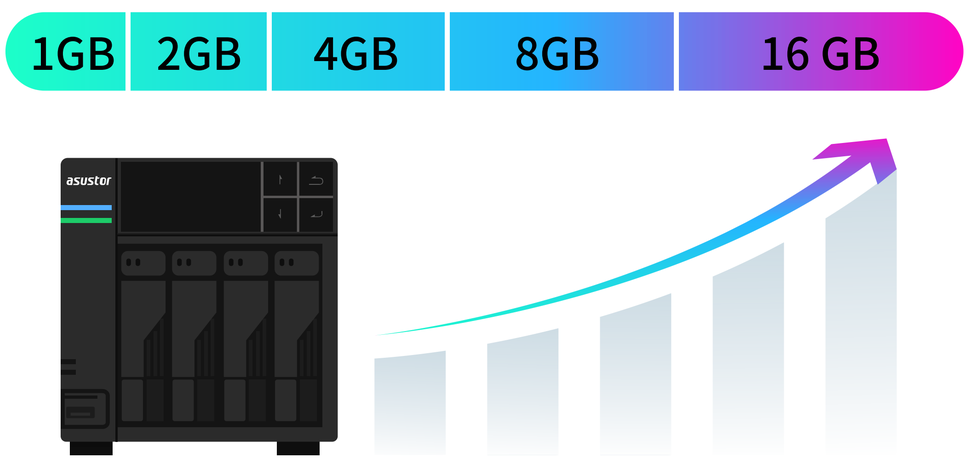
With more and more people looking to keep their data locally, ASUSTOR Network Attached Storage (NAS) devices have evolved far beyond being just a storage device. ASUSTOR NAS devices are now intelligent hubs integrating features that include, but are not limited to backups, media streaming, automated downloads, cross-platform collaboration, and homelab features. Compared to public cloud services, which require annual subscription fees and pose potential privacy risks, ASUSTOR NAS offers greater control of your data and the economic benefit of a one-time purchase.

ASUSTOR NAS CPU Choices

ARM Architecture (Realtek): Offers excellent energy efficiency and low power consumption, designed for efficient file transfers, backups, and light media streaming. Commonly found in the Drivestor series.

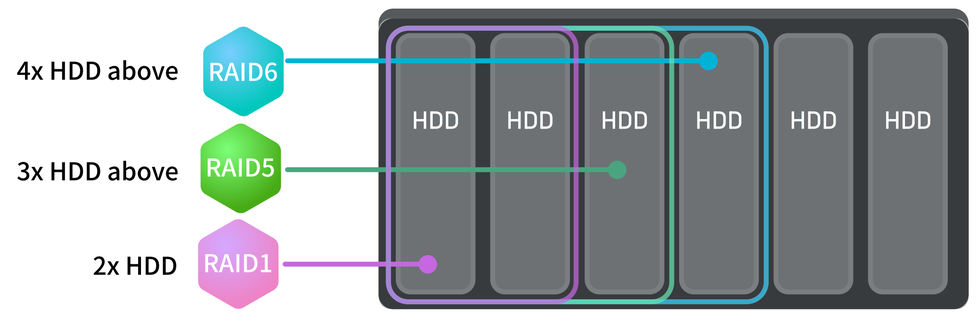


x86 Architecture (Intel or AMD): Provides powerful multitasking capabilities. If you plan to deploy Docker containers, virtual machines (VMs), or require 4K video transcoding on models with an iGPU, an x86 architecture ASUSTOR NAS is essential and found in the flagship AS54, Lockerstor, and Flashstor series.



Memory Size - RAM Capacity

- Basic Capacity (1 GB – 4 GB): Sufficient for general home data backups and access by a few users.
- Large Capacity & Expandability (8 GB or more): If planning to perform tasks like hosting websites, running multiple services or maintaining databases on an ASUSTOR NAS, memory consumption will be significant. Therefore, choose models that allow for replaceable RAM to retain flexibility for future needs.



Hard Drive Bays: Determining Capacity Limit and Fault Tolerance

ASUSTOR NAS devices come with different numbers of support for storage drives. That is, the number of drives the NAS can physically accommodate. This not only concerns total capacity, but also determines which RAID level you use to help protect your data.

- 2 Bay: Usually compact. Only supports RAID 1, which mirrors two drives. Suitable for budget-conscious individuals or families.
- 4 Bay or more: Supports RAID levels in addition to RAID 1, including, but not limited to RAID 5 and RAID 6, which balance data security with better usable space and read/write performance compared to RAID 1.

What is NAS

Form Factor

Desktop NAS

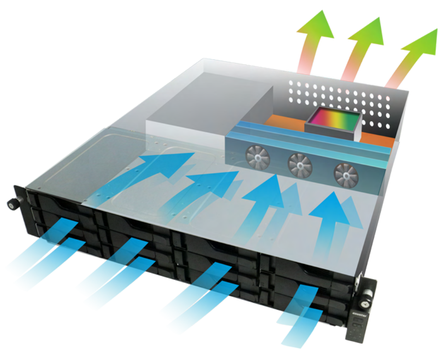
Resembling a small personal computer case or box, desktop NAS devices are the most popular and most familiar configuration on the market. This design allows for the ASUSTOR NAS to be placed directly on desks, shelves, or in office corners without requiring a special environment.

Heat Dissipation & Noise Control: Due to their spacious internal volume, they typically come equipped with large system fans. This enables tower-style NAS devices to maintain good cooling efficiency at lower speeds, resulting in very low operating noise which is ideal for home or office environments where people need to stay for extended periods of time.

Power Supply: Most use a single external adapter or a built-in single power supply unit.

Rackmount NAS:

Adopting an industrial standard flat design (thickness measured in U units, such as 1U, 2U, 3U, 4U), rackmount NAS devices are designed for high-density IT environments and must be installed within a standard 19-inch server rack. They can be seamlessly integrated and stacked with network switches, UPS (Uninterruptible Power Supplies), firewalls, and other enterprise-grade equipment to achieve extreme space utilization and centralized cable management.

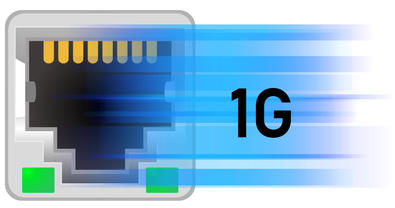


Heat Dissipation & Noise Control: To quickly exhaust the heat from hard drives and CPUs within a flat and cramped chassis, rackmount NAS devices must utilize multiple small, high-speed fans. This means their operating noise is loud and require a dedicated server room with soundproofing and independent air conditioning.

Power Supply: To meet enterprise-level stability requirements, mid-to-high end rackmount NAS devices typically feature redundant power supplies. When one power supply fails, the other seamlessly takes over, ensuring 24/7 uninterrupted operation.

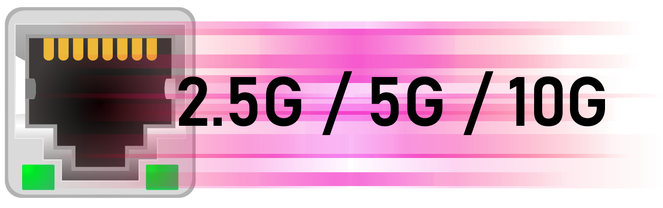
What is NAS

Network Interface:



Gigabit Ethernet

Traditional standard configuration, with a maximum transfer speed of approximately 110 MB/s.



2.5GbE, 5GbE, 10GbE and above can provide extreme speeds.

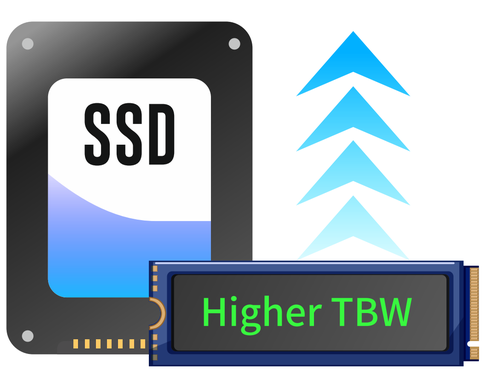
For those who need to edit videos directly on the NAS, transfer large media libraries, or require low latency environments, a high-speed network interface is key to breaking performance bottlenecks.

Compatible Hard Drives Make for a Smooth Experience

Just as buying a camera requires a memory card, hard drives are an essential core component for a NAS to function. Without hard drives, ASUSTOR NAS devices cannot store any data and ASUSTOR NAS devices typically aren’ t sold with hard drives and they must be purchased separately. Retailers may choose to bundle drives with NAS systems, but ASUSTOR ships NAS devices without drives. It is imperative to reference the official compatibility list to purchase hard drives ensure your NAS operates optimally.

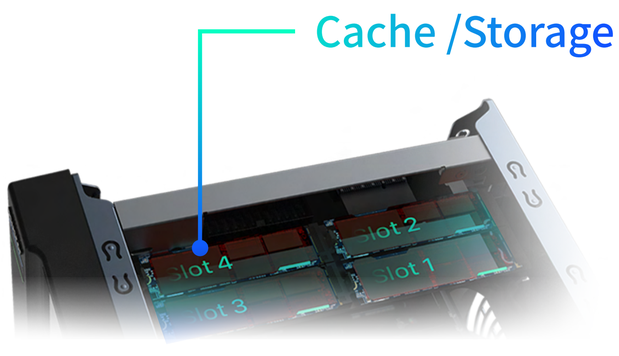
Traditional Hard Drives: Look for NAS Drives

NAS devices typically operate 24/7 without interruption. Standard home computer hard drives cannot withstand prolonged wear and tear. It is highly recommended to purchase hard drives rated at NAS-specific level or higher (typically marked on the packaging), featuring anti-vibration and high durability designs, to safely protect your valuable data.



M.2 SSDs: Choose High TBW Specifications:

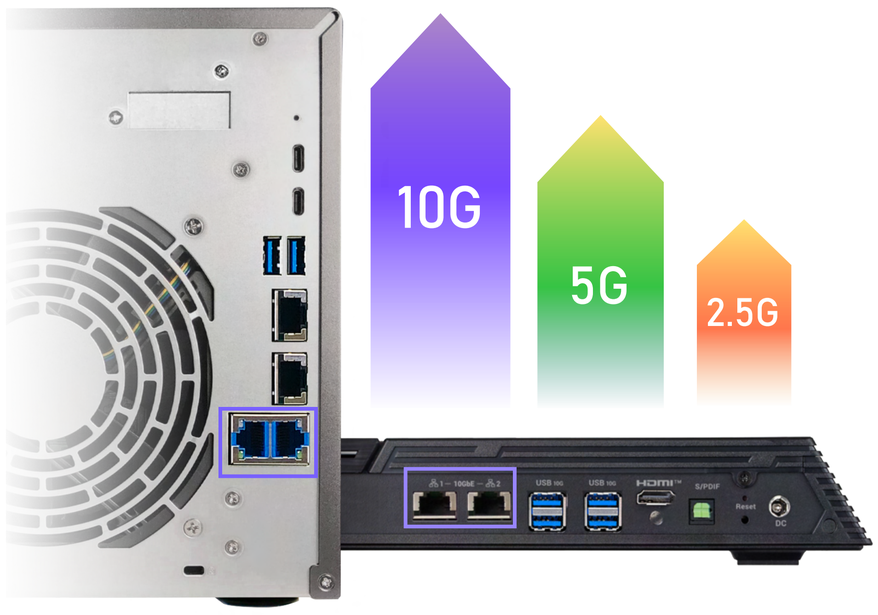
If you are purchasing an Flashstor All-Flash series or plan to add an SSD to a tower NAS to improve system speed, check the specifications for TBW (Total Bytes Written). The higher the TBW value, the longer the SSD’ s durability and lifespan, and the better it can handle the frequent read/write needs of a NAS.



M.2 SSD Expansion Possibilities:

ASUSTOR’ s advanced models not only support high-capacity HDDs but also feature M.2 slots for NVMe SSDs. SSDs can be configured as a cache to significantly accelerate random read/write performance of small files, or used as an independent volume for extreme I/O performance and a near-silent operating experience.

ASUSTOR's Core Advantages:



Completely Upgraded High-Speed Network Interface:

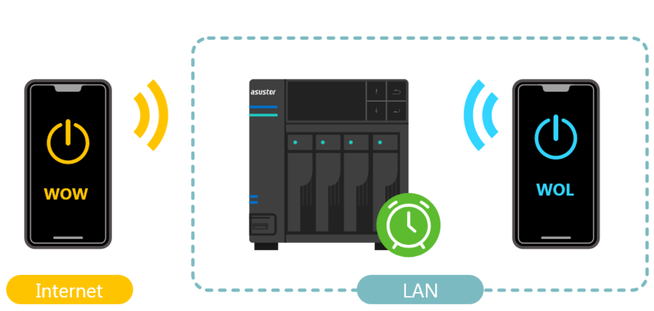
While many entry-level products remain at Gigabit speeds, ASUSTOR includes a minimum of 2.5-Gigabit Ethernet across all current models barring one. Mid-range models step up to 5GbE or even 10GbE. This increases network transfer speeds by multiple factors and makes a noticeable difference when transferring 4K videos or large quantities of photos.

MyArchive Cold Storage Technology

Data backups are most vulnerable to ransomware or hardware failure. ASUSTOR’ s MyArchive technology allows users to turn a NAS drive bay into removable hard drives. Use MyArchive to back up your data to a separate drive, store it safely offline, and plug it back into a NAS where it will be recognized and read.

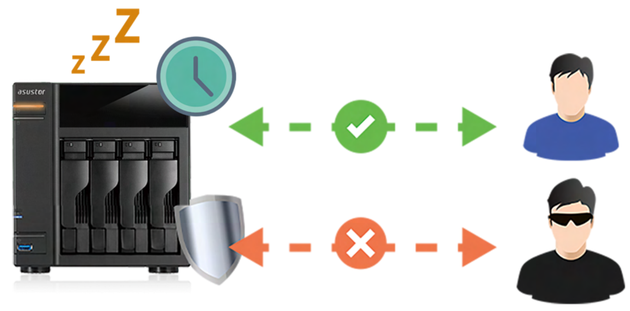
Easy Energy Savings: Wake on WAN

Most NAS devices have WOL (Wake on LAN) for waking up within the same network, but this functionality is limited to when people are within that same network. To further meet the remote access and energy-saving needs of mobile workers, ASUSTOR has WOW (Wake on WAN) on numerous models.



With WOW functionality, wherever you are in the world, as long as your smartphone or laptop has an internet connection, ASUSTOR’ s mobile apps can be used to wake up a NAS that is sleeping or shut down with one click.

Energy Savings and Longer Lifespans: For individuals or families who don't require their NAS to operate 24/7, your device can enter deep sleep mode when unneeded. This not only significantly reduces standby power consumption but also minimizes the physical wear and tear on hard drives from prolonged



Enhancing Network Security Protection: Keeping your NAS powered on only when needed effectively reduces the amount of time the device is exposed to public networks, significantly lowering the risk of attacks by hackers or ransomware.

註：WOW 功能為硬體深度整合技術，支援狀況依各機型規格為準，建議選購前可參考官方規格表。

ASUSTOR's Core Advantages:

Market-Leading Storage Density

Most NAS products on the market typically offer only two M.2 SSD slots, which limits flexibility in creating volumes with M.2 SSDs. In our mid-range to high end models, four M.2 slots for NVMe SSDs. This allows for SSDs to be configured as a large cache for corresponding HDDs, a large SSD storage volume, or both. With four SSDs, RAID 5 and 6 is even supported for maximum redundancy and storage capacity, ensuring your storage architecture won't face arbitrary limits due to expansion bottlenecks.

PQC Ready:

Facing the challenges of the quantum computing era, ASUSTOR is leading the industry by introducing a PQC Ready (Post-Quantum Cryptography) architecture. By proactively deploying advanced encryption protocols, confidential data transmission during remote access to your NAS can be defended against future quantum-level decryption threats, achieving the highest privacy protection for your data and immediately upgrading your remote connections to future security standards.

How to Choose a Model?

Step 1: Look at the prefix letters (Determines form factor and storage type)

AS67 Series

AS (Traditional Tower): The most mainstream desktop model, designed for installing traditional high-capacity hard drives.

FS67 Series

FS (Flashstor All-Flash Series): An innovative, slim chassis that exclusivelyuses M.2 SSDs, seamlessly blending into living rooms and TV cabinets.

Step 2: Look at the middle two digits (Determines core performance)

AS1202T AS3302T AS1204T AS3304T

12 / 33 Series: Entry-level models (Power-efficient with a high cost-performance ratio, ideal for basic backup and home use).

AS5402T AS5404T

54 / 67 Series: Mainstream performance models (Smooth computing apabilities, suitable for multimedia enthusiasts and studio use).

AS68 Series

68 / 72 Series: Flagship models (Ultimate fluidity, designed for small and medium-sized enterprises).

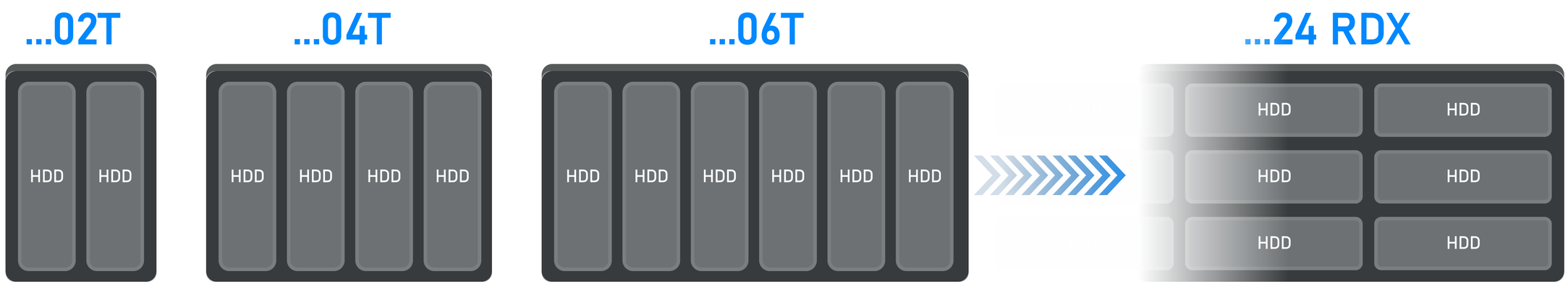
Step 3: Look at the last digits (Determines the number of drive bays)

02: 2 drive bays (Suitable for budget-conscious users and two-person households).

04: 4 drive bays (A favorite among advanced users, offering the best balance between capacity and budget).

06: 6 drive bays (The top choice for high-capacity creator collaboration).

And so on, scaling up to a maximum of 24 bays.



How to Choose a Model?

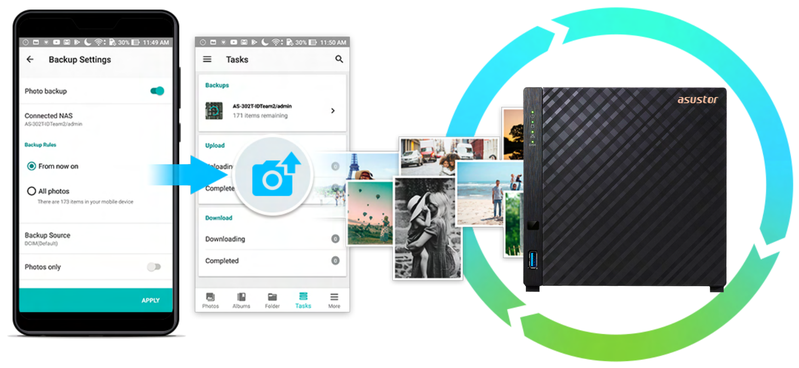
Drivestor Gen2 Series: Excellent Value NAS, Ideal Entry Point with 2.5 GbE

Photo / File Storage Capacity: ★★★★

Backup & Data Protection Capabilities: ★★★

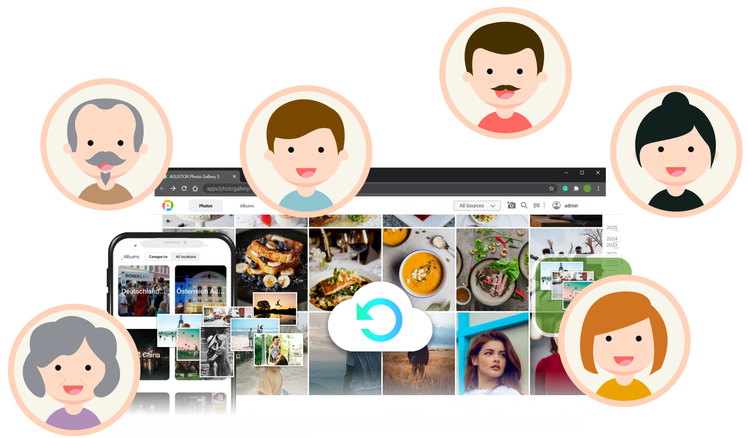
Performance / Transfer Speed: ★★★

Expandability: ★★



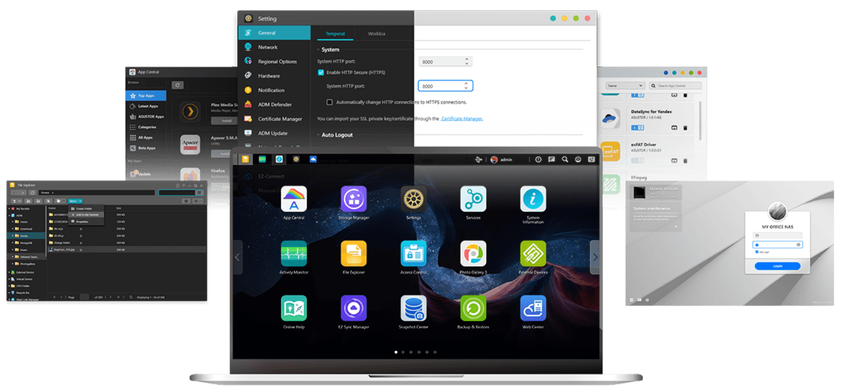
Easily Back Up All Your Mobile Photos & Videos:

Running out of space on your phone? Stop deleting photos one by one! The Drivestor Gen2 series lets you centrally back up all the photos and videos from your mobile devices to your home NAS, keeping precious memories safe and making organization/sharing easier.



Keep Everyone's Files in One Place

Travel photos, videos, documents, and family records - everything can be stored in one central location. Each family member can have their own storage space, eliminating files scattered across phones, computers, and external hard drives.



Easy to Get Started with NAS

The Drivestor Gen2 series is perfect for first-time NAS users. Photo backups, file storage, and home sharing are all simple and intuitive to understand. Build your own family data center in a user-friendly way and move away from relying solely on cloud storage.

How to Choose a Model?

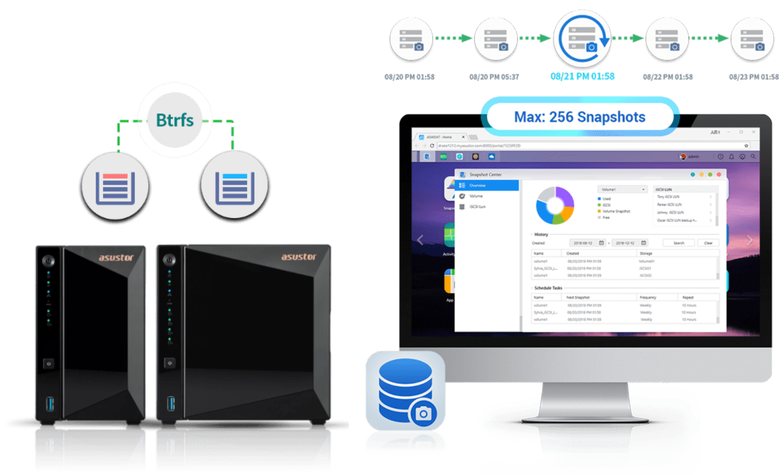
Drivestor Pro Gen2 Series: Essential Multi-Tasking NAS for SOHO Studios

Photo / File Storage Capacity: ★★★★

Backup & Data Protection Capabilities: ★★★★

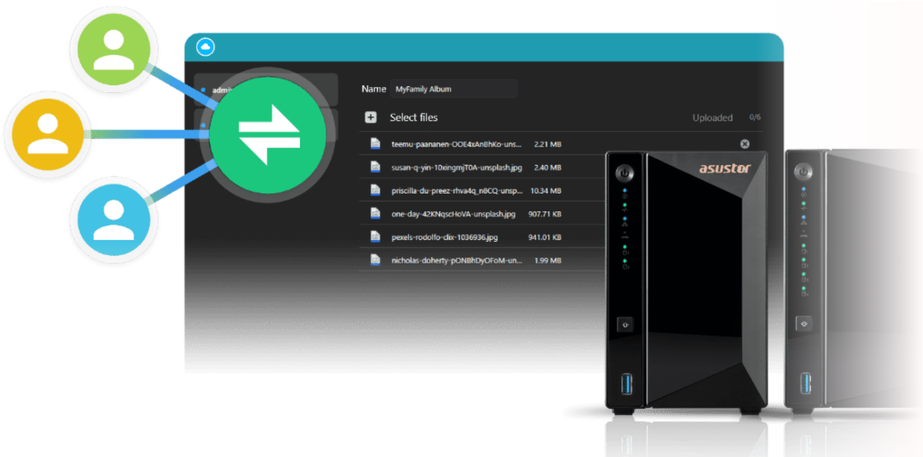
Performance / Transfer Speed: ★★★★

Expandability: ★★



More Than Just Storage. Secure Backup Included

The Drivestor Pro Gen2 series is ideal for preserving family photos, video collections, and personal work files. With backup and snapshot protection mechanisms, you gain an extra layer of recovery options if a file is accidentally deleted or the wrong version is used, providing peace of mind for your important data.



Centralized Management of Family Entertainment & Work Files

Photos, videos, music, documents, and project data can all be stored in one place on the NAS, eliminating fragmentation across different devices. Whether it's for family sharing, personal work, or long-term data organization, the Drivestor Pro Gen2 can become your reliable personal cloud center.

High Value Personal Cloud Creation with MyArchive Cold Storage

The Drivestor Pro Gen2 series offers a wider variety of backup options compared to entry-level models. The MyArchive cold storage feature is ideal for users who want to upgrade from simple file storage to long-term data management. You can create your own private cloud space within a reasonable budget.

How to Choose a Model?

AS54 Series: Dual 2.5 GbE and Four M.2 SSD Slots for Lightning-Fast Performance

Photo / File Storage Capacity: ★★★★

Backup & Data Protection Capabilities: ★★★★

Performance / Transfer Speed: ★★★★

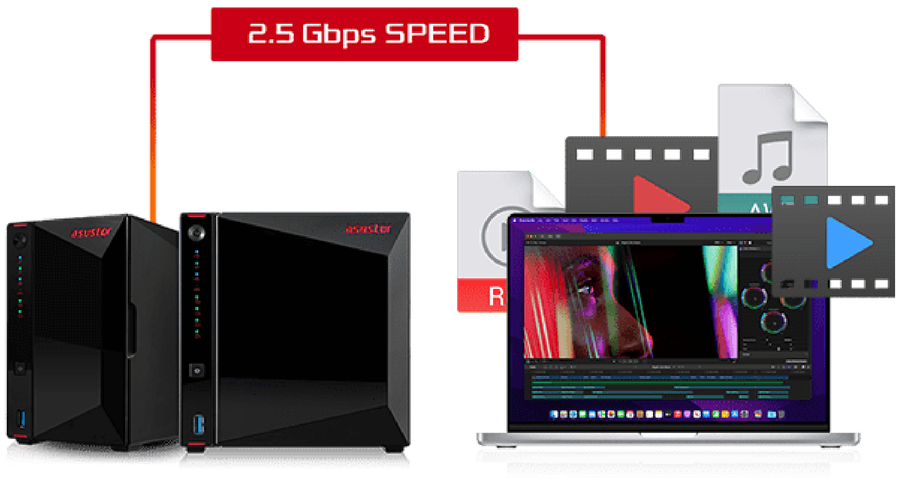
Expandability: ★★

High-Capacity Storage for All Your Video Assets

The AS54 series is ideal for storing large amounts of photos, 4K videos, game recordings, live stream content, and video collections. Whether it's for home entertainment or personal creation, you can centrally manage your data and avoid scattering files across multiple external hard drives.

M.2 SSD Acceleration for Smoother Performance

With four built-in M.2 SSD slots, you can use them as a cache to improve the read speed of frequently used files, or simply add more storage space. Browsing large numbers of photos, opening video assets, and accessing work files will be smoother, transforming your NAS from just a backup tool into a daily creation and entertainment center.



An Advanced Option for Video Enthusiasts and Creators with Dual 2.5GbE

The AS54 series features dual 2.5GbE high-speed transmission, making it suitable for advanced video enthusiasts, gamers, and entry-level creators. From data backups to 4K video collections, you can handle everything with a single device.

How to Choose a Model?

Lockerstor Gen2+ Series: Blazing Speed Upgrade – New Benchmark with Dual 5GbE

Photo / File Storage Capacity: ★★★★

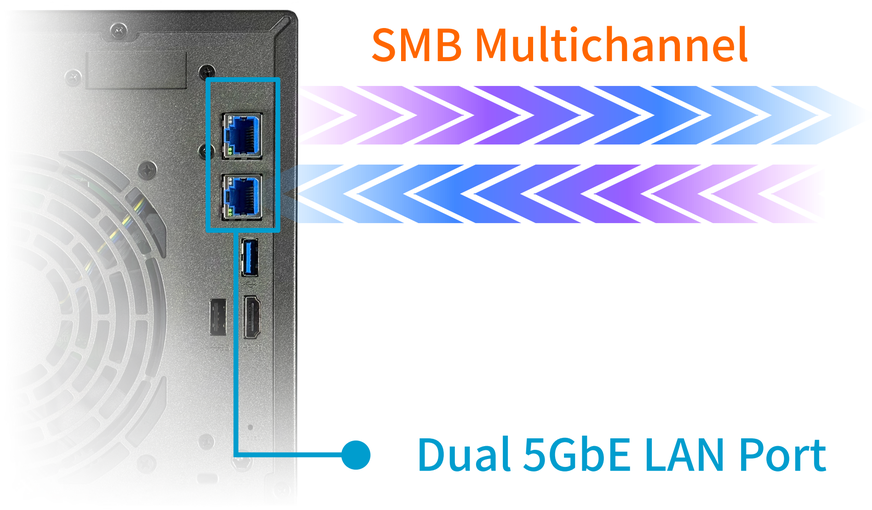
Backup & Data Protection Capabilities: ★★★★

Performance / Transfer Speed: ★★★★

Expandability: ★★★

Efficient Collaboration and Large File Access

The Lockerstor Gen2+ series is ideal for SOHO businesses, small companies, design teams, and video studios. Project files, designs, video assets, and company data can all be stored centrally, eliminating the need for team members to constantly transfer files between different computers and hard drives.



Dual 5GbE: Born for High-Speed Workflows

Equipped with dual 5GbE networking, it supports SMB multi-channel and network aggregation features, significantly improving large file transfer efficiency. Whether dealing with video assets, design files, backup data, or multiple users accessing simultaneously, it provides a smoother workflow experience.

Expandability

The Lockerstor Gen2+ series offers high I/O performance and upgrade flexibility. You can replace the small board in the M.2 SSD slot with the AS-T10G3 to gain a high-speed 10GbE network port and two additional M.2 SSD slots, allowing it to grow alongside your team's needs. Suitable for professional users who need centralized data management, enhanced collaboration efficiency, and room for future expansion.

How to Choose a Model?

Flashstor Series: All-SSD NAS for Quiet and High-Speed Storage

Photo / File Storage Capacity: ★★★★

Backup & Data Protection Capabilities: ★★★★

Performance / Transfer Speed: ★★★★

Expandability: ★★

All-SSD NAS – Noticeably Faster Access

The Flashstor series utilizes an all-M.2 SSD storage architecture, delivering noticeably faster read/write speeds compared to traditional HDD NAS devices. It’ s ideal for users who need to quickly open asset files and manage high-resolution photos and project data.

Quiet & Compact – Perfect for Desktop Use

Without the vibrations and operating noise of traditional hard drives, the Flashstor series is more suitable for placement in studies, studios, editing desks, or recording spaces. Its compact design paired with high-speed storage creates a quieter and cleaner desktop work environment.

Designed for 4K Editing and High-Speed Asset Libraries

Flashstor series is ideal for photographers, editors, advanced gamers, and creative studios. RAW photos, 4K videos, project assets, and large files can all be centrally stored on a high-speed SSD NAS for direct access, streamlining the creative process and making it faster, smoother, and more focused.