

Link do produktu: <https://sklepqnap.pl/qnap-tvs-aih1688atx-u7-32g-p-3308.html>



# QNAP TVS-AIh1688ATX-U7-32G

|                  |                        |
|------------------|------------------------|
| Cena             | 26 386,24 zł           |
| Dostępność       | Na zamówienie          |
| Numer katalogowy | QNA_TVSAIh1688ATXU732G |
| Kod producenta   | TVS-AIh1688ATX-U7-32G  |
| Kod EAN          | 4711103089811          |
| Producent        | QNAP                   |
| Pamięć RAM       | 32GB                   |
| Port 2,5 GbE     | 2                      |

## Opis produktu



## QNAP TVS-AIh1688ATX-U7-32G

**TVS-AIh1688ATX AI Serwer NAS** został zaprojektowany z myślą o rozpoznawaniu obrazów opartym na AI oraz zadaniach biznesowych. Napędzany wydajnym procesorem Intel® Core™ Ultra z **zintegrowanymi jednostkami obliczeniowymi, graficznymi i neuronowymi**, zapewnia stabilną wydajność, jednocześnie odciążając CPU od zadań wnioskowania AI. To zmniejsza zużycie energii, poprawia efektywność i przyspiesza inteligentną analizę obrazów. Dzięki połączeniu **solidnej mocy obliczeniowej**, dużej pojemności Pamięć masowa i **elastycznej rozbudowie I/O**, TVS-AIh1688ATX umożliwia firmom wdrożenie niezawodnego rozwiązania Pamięć masowa przy zachowaniu kontroli nad budżetem.

### Cechy wyjątkowe dysku sieciowego QNAP TVS-AIh1688ATX:

- TVS-AIh1688ATX łączy wydajne zasoby CPU, GPU i NPU, zapewniając do 36 TOPS wydajności AI.
- Wyposażony w 12 zatok SATA Dysk twardy oraz 4 gniazda U.2 NVMe / SATA SSD, zapewnia równowagę między dużą pojemnością a wysoką wydajnością.
- Dwa porty 2,5GbE i dwa porty 10GBASE-T, obsługa Trunkingu portów dla większego potencjału przepustowości i nadmiarowość sieciowej.
- Posiada trzy gniazda PCIe Gen 4, zapewniając dwukrotnie większą wydajność we/wy niż PCIe Gen 3.
- Wbudowany USB 4, możliwość rozbudowy do Thunderbolt™ 5.
- TVS-AIh1688ATX integruje silnik wyszukiwania Qsirch z technologią RAG, chmurowymi dużymi modelami językowymi (LLM) oraz generatywną sztuczną inteligencją.
- Wyposażony w pamięć DDR5 ECC zapewniającą stabilność klasy serwerowej.

### Podstawowe funkcje dysku sieciowego QNAP dla domu:

#### Zaawansowana grafika Intel® Arc™

Dzięki wysokowydajnej grafice Intel® Arc™ TVS-AIh1688ATX zapewnia wydajne i mocne przetwarzanie obrazów. Bez problemu obsługuje zadania związane z wysoką rozdzielczością film oraz zdjęciami, wspierając płynną wielozadaniowość.  
**Standardowo 2,5/10GbE, z możliwością rozbudowy do ultraszybkiego 100GbE**



Model TVS-Alh1688ATX obsługuje wieloportowe szybkie łączy sieciowe, aby sprostać wymaganiom przedsiębiorstw w zakresie transferu dużych plików, szybkiego tworzenia kopii zapasowych/przywracania oraz uruchamiania wielu maszyn wirtualnych.

#### **Uruchamianie maszyn wirtualnych i kontenerów**

W modelu TVS-Alh1688ATX można uruchomić wiele maszyn wirtualnych z różnymi systemami operacyjnymi bez ponoszenia dodatkowych kosztów. Pozwala to wdrażać środowiska i aplikacje dla wielu użytkowników, aby zwiększyć wydajność zarządzania i obniżyć koszty sprzętu.

#### **Oparty na ZFS system operacyjny QuTS hero zwiększa wydajność NAS i integralność danych**

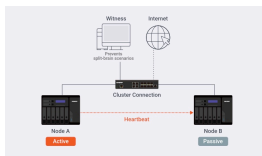
QuTS hero łączy system QTS oparty na aplikacji ze 128-bitowym systemem plików ZFS, aby zapewnić elastyczne zarządzanie pamięcią masową, kompleksową ochronę danych i zoptymalizowaną wydajność, aby sprostać złożoności i wymaganiom wydajności nowoczesnego IT. Od zarządzania pamięcią masową, wirtualizacji po wspólne przepływy pracy w mediach, QuTS hero usprawnia zadania o znaczeniu krytycznym dla firmy.

#### **Bezpieczeństwo danych.**



TVS-Alh1688ATX jest wyposażony w elastyczne ustawienia uprawnień i środki bezpieczeństwa. Oprócz blokowania adresów IP, weryfikacji dwuetapowej i połączenia HTTPS, istnieje więcej aplikacji, które pomagają zapewnić optymalną ochronę NAS przed zagrożeniami, takimi jak złośliwe oprogramowanie i hakerzy.

#### **Wysoka dostępność (HA) i przełączanie awaryjne z architekturą podwójnego NAS**



Utwórz klaster HA z dwoma serwerami TVS-Alh1688ATX — jednym jako serwerem aktywnym, a drugim — pasywnym. Jeśli wystąpi nieoczekiwana awaria lub problem z aktywnym serwerem, serwer pasywny zapewnia natychmiastową ochronę dzięki automatycznemu przełączaniu awaryjnemu. Zapewnia to ciągłą obsługę pamięci masowej i dostępność systemu.

#### **Zaawansowane wyszukiwanie w oparciu o AI**

TVS-Alh1688ATX integruje silnik wyszukiwania Qsirch z technologią RAG, chmurowymi dużymi modelami językowymi (LLM) oraz generatywną sztuczną inteligencją. Pozwala to na precyzyjne wyszukiwanie w języku naturalnym wśród ogromnej zawartości plików na serwerze NAS oraz generowanie podsumowań i praktycznych informacji.

#### **Zabezpieczenie danych NetBak PC Agent.**

NetBak PC Agent **zapewnia tworzenie kopii zapasowych systemu** i pełne przywracanie urządzeń dla aplikacji, ustawień systemowych i danych z komputerów PC i serwerów Windows®. Możesz łatwo połączyć swojego klienta Windows z QNAP NAS za pomocą zaledwie kilku kliknięć i tworzyć zadania tworzenia kopii zapasowych. NetBak PC Agent **obsługuje również przywracanie bez wyłączania**, co zapewnia większą elastyczność użytkowania.



Dowiedz się więcej na temat systemu QNAP QTS:



Produkt posiada dodatkowe opcje:

**Gwarancja QNAP NBD:** Brak NBD , NBD 1 rok (+ 2 202,89 zł )

**Gwarancja QNAP NBD Onsite:** Brak NBD Onsite , NBD Onsite 1 rok (+ 3 280,10 zł )

## Specyfikacja sprzętowa

|                                               |                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procesor                                      | Intel Core Ultra 7, 20 (8P+12E) rdzeni, 20 wątków, do 5,3 GHz                                                                                                                                                                                                                                                                         |
| Architektura procesora                        | 64-bitowy x86                                                                                                                                                                                                                                                                                                                         |
| Procesory graficzne                           | Intel® Graphics                                                                                                                                                                                                                                                                                                                       |
| Koprocesor arytmetyczny FPU                   | Tak                                                                                                                                                                                                                                                                                                                                   |
| Mechanizm szyfrowania                         | Tak (AES-NI)                                                                                                                                                                                                                                                                                                                          |
| Transkodowanie wspomagane sprzętowo           | Tak                                                                                                                                                                                                                                                                                                                                   |
| Jednostka przetwarzania neuronowego (NPU)     | Tak                                                                                                                                                                                                                                                                                                                                   |
| Pamięć systemowa                              | 32 GB ECC UDIMM DDR5 (1 x 32 GB)                                                                                                                                                                                                                                                                                                      |
| Maksymalna pojemność pamięci                  | 192 GB (4 x 48 GB)                                                                                                                                                                                                                                                                                                                    |
| Gniazdo pamięci                               | 4 x UDIMM DDR5                                                                                                                                                                                                                                                                                                                        |
| Pamięć flash                                  | Dla konfiguracji z dwoma modułami DIMM, musisz użyć par 5GB (ochrona systemu operacyjnego przed podwójnym roz                                                                                                                                                                                                                         |
| Wnęka dysków                                  | 12 x 3,5-calowe SATA 6Gb/s, 3Gb/s + 4 x 2,5-calowe U.2 NV                                                                                                                                                                                                                                                                             |
| Kompatybilność dysków                         | Zatoki 3,5 cala:<br>3,5-calowy SATA twarde dyski<br>2,5-calowy SATA twarde dyski<br>2,5-calowy SATA SSD twarde dyski                                                                                                                                                                                                                  |
|                                               | Zatoki 2,5 cala:<br>2,5-calowy U.2/SATA SSD                                                                                                                                                                                                                                                                                           |
| Wymieniany podczas pracy                      | Tak                                                                                                                                                                                                                                                                                                                                   |
| Obsługa przyspieszenia pamięci podręcznej SSD | Tsk                                                                                                                                                                                                                                                                                                                                   |
| Port 2,5 Gigabit Ethernet (2,5G/1G/100M)      | 2 (2,5G/1G/100M/10M)                                                                                                                                                                                                                                                                                                                  |
| Port 5 Gigabit Ethernet (5G/2,5G/1G/100M)     | Opcjonalne przez kartę                                                                                                                                                                                                                                                                                                                |
| Port 10 Gigabit sieci Ethernet                | 2 x 10GBASE-T (10G/5G/2,5G/1G)                                                                                                                                                                                                                                                                                                        |
| Port 25 Gigabit sieci Ethernet                | Opcjonalne przez kartę                                                                                                                                                                                                                                                                                                                |
| Wake on LAN (WOL)                             | Tylko port 2,5GbE                                                                                                                                                                                                                                                                                                                     |
| Ramka Jumbo                                   | Tak                                                                                                                                                                                                                                                                                                                                   |
| Port Thunderbolt                              | Opcjonalnie przez QXP-T52P 2-portowy Thunderbolt 5 adapt<br>Obsługuje tylko połączenia Thunderbolt dla hostów Window<br>USB. Zewnętrzne urządzenia pamięci masowej Thunderbolt                                                                                                                                                        |
| Gniazdo PCIe                                  | 3<br>Slot 1: PCIe Gen 4 x16<br>Slot 2: PCIe Gen 4 x4<br>Slot 3: PCIe Gen 4 x4<br>Wymiary karty dla slotu PCIe 1: 260 x 111.15 x 37.52 mm /<br>Wymiary karty dla slotu PCIe 2: 150 x 68.9 x 18.76 mm / 5.<br>Wymiary karty dla slotu PCIe 3: 150 x 68.9 x 18.76 mm / 5.<br>Szersze karty mogą być zainstalowane, jeśli następny slot F |
| Port USB 3.2 Gen 2 (10 Gb/s)                  | 3 x USB3.2 Gen 2 Type-A<br>2 x USB3.2 Gen 2 Type-C                                                                                                                                                                                                                                                                                    |
| USB 4 port                                    | 2 x USB4 Type-C                                                                                                                                                                                                                                                                                                                       |

|                                            |                                                                              |
|--------------------------------------------|------------------------------------------------------------------------------|
| Wyjście HDMI™                              | 1, HDMI™ 2.1 (up to 4096 x 2160 @ 60Hz)                                      |
| Kształt                                    | Tower                                                                        |
| Wskaźniki LED                              | Status systemu, LAN, USB, Dysk 1~16                                          |
| Wyświetlacz LCD/przycisk                   | Tak                                                                          |
| Przyciski                                  | Zasilanie, reset, automatyczne kopiowanie USB                                |
| Wymiary (wys. x szer. x gł.)               | 294,3 x 369,89 x 319,8 mm                                                    |
| Waga (netto)                               | 13.8 kg                                                                      |
| Temperatura robocza                        | 0~40°C                                                                       |
| Temperatura przechowywania                 | -20~70°C                                                                     |
| Wilgotność względna                        | 5-95% bez kondensacji, temperatura mokrego termometru                        |
| Zasilacz                                   | Zasilacz 750W, 100~240V                                                      |
| Power Consumption: Disk Standby Mode       | 97.036 W                                                                     |
| Pobór mocy: Tryb pracy, typowy             | 130.83 W                                                                     |
| Wentylator                                 | Wentylator systemu: 3 x 80mm, 12VDC<br>Wentylator procesora: 2 x 97mm, 12VDC |
| Ostrzeżenie systemowe                      | Brzęczyk                                                                     |
| Gniazdo bezpieczeństwa Kensington          | Tak                                                                          |
| Standardowa gwarancja                      | 5                                                                            |
| Maks. liczba połączeń współbieżnych (CIFS) | 10000                                                                        |
| — z maks. pojemnością pamięci              |                                                                              |

Uwaga: Używaj tylko modułów pamięci QNAP, aby zapewnić odpowiednią stabilność systemu. Dla urządzeń z dwoma złączami RAM (lub więcej) używaj identycznych modułów pamięci, które są zalecane dla danego modelu NAS.

## Specyfikacja oprogramowania

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating System                   | QuTS hero h5.6.0                                                                                                                                                                                                                                                                                                                                                                                                 |
| Supported Client Operating Systems | <ol style="list-style-type: none"> <li>1. Apple Mac OS 10.10 or later</li> <li>2. Ubuntu 14.04, CentOS 7, RHEL 6.6, SUSE 12 or later Linux</li> <li>3. IBM AIX 7, Solaris 10 or later UNIX</li> <li>4. Microsoft Windows 7, 8, 10, and 11</li> <li>5. Microsoft Windows Server 2008 R2, 2012, 2012 R2, 2016, and 2019</li> </ol>                                                                                 |
| Supported Browsers                 | <ol style="list-style-type: none"> <li>1. Apple Safari (latest version)</li> <li>2. Google Chrome (latest version)</li> <li>3. Microsoft Edge (latest version)</li> <li>4. Mozilla Firefox (latest version)</li> </ol>                                                                                                                                                                                           |
| Supported Languages                | Chinese (Traditional & Simplified), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazil), Romanian, Russian, Spanish, Swedish, Thai, and Turkish                                                                                                                                                                          |
| Storage Pool                       | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| SED Storage Pool                   | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| Maximum Pool size                  | 5 PB                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum number of storage pool     | 128                                                                                                                                                                                                                                                                                                                                                                                                              |
| Shared Folder Type                 | Thick, Thin                                                                                                                                                                                                                                                                                                                                                                                                      |
| Maximum shared folder size         | 5 PB                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum number of shared folder    | 256                                                                                                                                                                                                                                                                                                                                                                                                              |
| JBOD Expansion                     | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| VJBOD / VJBOD Cloud                | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| iSCSI Service                      | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| Fibre Channel Service              | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| LUN Type                           | Thick, Thin                                                                                                                                                                                                                                                                                                                                                                                                      |
| Block-based iSCSI LUN              | Ok                                                                                                                                                                                                                                                                                                                                                                                                               |
| Maximum LUN size                   | 1024 TB                                                                                                                                                                                                                                                                                                                                                                                                          |
| Maximum number of targets LUN      | 256                                                                                                                                                                                                                                                                                                                                                                                                              |
| RAID Type                          | <ol style="list-style-type: none"> <li>1. 8-bay (and more): Single, RAID 0 (Stripe), 1, 5, 6, 10, 50, 60, Triple Mirror, Triple Parity</li> <li>2. 6-bay: Single, RAID 0 (Stripe), 1, 5, 6, 10, 50, Triple Mirror, Triple Parity</li> <li>3. 4-bay: Single, RAID 0 (Stripe), 1, 5, 6, 10, Triple Mirror, Triple Parity</li> <li>4. 3-bay: Single, RAID 0 (Stripe), 1, 5, Triple Mirror, Triple Parity</li> </ol> |

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RAID Group                                    | 5. 2-bay: Single, RAID 0 (Stripe), 1<br>Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                               | To ensure data security, system stability, and storage performance, the maximum number of drives for a single RAID group is now 16 (applicable to RAID 5, RAID 6, RAID TP, and subgroups of RAID 50 and RAID 60). Nevertheless, users can combine multiple RAID groups into a large storage pool that contains more than 16 drives, using RAID 50, RAID 60, or RAID 10 as the RAID configuration. This enhancement will only be applied to new RAID groups. All existing RAID groups and storage systems will not be affected. |
| RAID Expansion (by replacing bigger Disks)    | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Storage Pool Expansion (by adding RAID Group) | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RAID Hot Spare                                | Global, Local                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| RAID Sync/Rebuild/Scrubbing                   | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| End-to-End data integrity                     | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Silent error detection and self-healing       | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Internal drive                                | ZFS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| External drive                                | EXT3, EXT4, NTFS, FAT32, HFS+, and exFAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Disk, Enclosure Locate                        | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk S.M.A.R.T. Scan                          | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk S.M.A.R.T. Data Migration                | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ironwolf Health Management                    | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Secure Erase                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD Trim                                      | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD Life Estimation                           | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk Roaming                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk Standby                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Shared Folder Snapshot                        | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| LUN Snapshot                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum Snapshot (Per System)                 | <a href="#">Check maximum number of snapshots of your NAS</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Maximum Snapshot (Per Volume / LUN)           | <a href="#">Check maximum number of snapshots of your NAS</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Minimum Snapshot Interval                     | 1 minute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Snapshot Retention Policy                     | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Self-serve Snapshot Recovery                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Application Consisted Snapshot                | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Snapshot Full Clone                           | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Snapshot Instant Clone                        | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Snapshot Replica / Vault                      | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD read-only Cache                           | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD read & write log cache                    | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD dedicated ZIL cache                       | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD Cache Maximum Size                        | <a href="#">Check your QNAP NAS cache capacity and RAM requirements</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SSD Cache RAID                                | 0, 1, 10 (journal)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| External Device Management                    | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mount Smart Phone (MTP)                       | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| External RAID Device (QNAP so on)             | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Management (External Device Mode)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| External RAID Device (QNAP so on)             | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Management (NAS Mode)                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| File Server                                   | <ol style="list-style-type: none"> <li>1. File sharing across Windows, Mac, and Linux/UNIX</li> <li>2. Microsoft networking (CIFS/SMB)</li> <li>3. Apple networking (AFP)</li> <li>4. NFS version 3/4 services</li> </ol>                                                                                                                                                                                                                                                                                                      |
| FTP Server                                    | <ol style="list-style-type: none"> <li>1. FTP, SFTP and TFTP protocols</li> <li>2. FTP over SSL/TLS (explicit FTPS)</li> <li>3. FXP support</li> </ol>                                                                                                                                                                                                                                                                                                                                                                         |
| Maximum FTP connection                        | 1024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Shared Folder Data Compression                | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Shared Folder Data Deduplication              | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Shared Folder WORM                            | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| File Station (Web)                            | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Object Storage                                | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Local user account                            | 16,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Local group account                           | 512                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Domain user/group account                     | 200,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Domain Security                               | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                            |                                                                                                             |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Domain Controller                                          | Ok                                                                                                          |
| Shared folder permission                                   | Ok                                                                                                          |
| Windows ACL                                                | Ok                                                                                                          |
| User quota                                                 | Ok                                                                                                          |
| Group quota                                                | Ok                                                                                                          |
| Folder quota                                               | Ok                                                                                                          |
| Home folder                                                | Ok                                                                                                          |
| Resource Monitor                                           | Ok                                                                                                          |
| SNMP                                                       | V2, V3                                                                                                      |
| Network recycle bin                                        | 1. Recover files deleted using AFP, CIFS/SMB, and File Station<br>2. Automatic cleanup and file type filter |
| System Log & Notification Center                           | Log recording: 3,000 event per second                                                                       |
| Smart Fan                                                  | Ok                                                                                                          |
| Schedule on/off                                            | Ok                                                                                                          |
| Internet protocol                                          | IPv4, IPv6                                                                                                  |
| Virtual Switch                                             | Ok                                                                                                          |
| Port trunking                                              | Ok, (7 modes)                                                                                               |
| VLAN                                                       | Ok                                                                                                          |
| DHCP Server                                                | Ok                                                                                                          |
| DDNS (Dynamic Domain Name Service)                         | Ok                                                                                                          |
| Network access protection with auto-blocking               | SSH, Telnet, HTTP(S), FTP, CIFS/SMB, and AFP                                                                |
| Security Counselor                                         | Ok                                                                                                          |
| Malware Remover                                            | Ok                                                                                                          |
| AES 256-bit Folder Encryption validated by FIPS 140-2 CAVP | Ok                                                                                                          |
| 2-step verification                                        | Ok                                                                                                          |
| Allow/Deny List                                            | Ok                                                                                                          |
| Access Protection                                          | Ok                                                                                                          |
| Service binding                                            | Ok                                                                                                          |
| Firewall                                                   | Ok                                                                                                          |
| vSphere Web Client Plug-in                                 | Ok                                                                                                          |
| VMware vSphere VAAI for iSCSI                              | Ok                                                                                                          |
| VMware vSphere VAAI for NAS                                | Ok                                                                                                          |
| Windows ODX                                                | Ok                                                                                                          |
| Windows/VMware Snapshot Agent                              | Ok                                                                                                          |
| HTTP/HTTPS Connections                                     | TLS 1.0/1.1/1.2/1.3                                                                                         |
| Supports WebDAV Connection                                 | Ok                                                                                                          |
| Supports Virtual Hosts                                     | 32                                                                                                          |
| Qsync                                                      | Ok                                                                                                          |
| [Qsync] Management Mode                                    | Note: At least 1 GB RAM is required.<br>User customization, Central                                         |
| [Qsync] Qsync client supported platforms                   | Windows, macOS, Ubuntu, Android, and iOS                                                                    |
| [Qsync] Maximum number of version control                  | 64                                                                                                          |
| HybridMount                                                | Ok                                                                                                          |
| [HybridMount] File Cloud Gateway                           | Note: At least 1 GB RAM is required.<br>Concurrent Connections = 80 Upload & 80 Download                    |
| [HybridMount] Network Drive Mount                          | Ok                                                                                                          |
| [HybridMount] Free cloud gateway sessions                  | 2                                                                                                           |
| HBS (Hybrid Backup Sync)                                   | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] NAS to NAS backup               | Note: At least 1 GB RAM is required.<br>Ok                                                                  |
| [HBS (Hybrid Backup Sync)] Cloud Backup                    | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] Cloud Sync                      | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] 2-way and Active Sync           | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] Backup Deduplication            | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] Apple Time Machine Backup       | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] External drive backup           | Ok                                                                                                          |
| [HBS (Hybrid Backup Sync)] Maximum                         | 400                                                                                                         |

|                                                                                                        |                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| number of backup job                                                                                   |                                                                                                                                         |
| Hyper Data Protector                                                                                   | Ok                                                                                                                                      |
| Boxafe                                                                                                 | Ok                                                                                                                                      |
|                                                                                                        | Note: At least 4 GB RAM is required.                                                                                                    |
| [Boxafe] Office 365 Backup                                                                             | Ok                                                                                                                                      |
| [Boxafe] Google Workspace Backup                                                                       | Ok                                                                                                                                      |
| [Boxafe] Full-text search                                                                              | Ok                                                                                                                                      |
| Qsirch                                                                                                 | Ok                                                                                                                                      |
|                                                                                                        | Note: This feature is supported by all QNAP NAS devices with at least 2 GB of memory                                                    |
| [Qsirch] Previews                                                                                      | Photos, music, videos, PDFs, Gmail, and others                                                                                          |
| [Qsirch] Integrate Mac Finder                                                                          | Ok                                                                                                                                      |
| [Qsirch] Advanced picture search                                                                       | Ok                                                                                                                                      |
| [Qsirch] Search filters                                                                                | Ok                                                                                                                                      |
| QuMagie                                                                                                | Ok                                                                                                                                      |
|                                                                                                        | Note: At least 1 GB RAM is required.                                                                                                    |
| [QuMagie] Browse photos                                                                                | Ok                                                                                                                                      |
| [QuMagie] Virtual and smart albums                                                                     | Ok                                                                                                                                      |
| [QuMagie] AI-assisted photo management                                                                 | People, things, places, and others                                                                                                      |
| Antivirus (free)                                                                                       | Ok                                                                                                                                      |
| McAfee (License)                                                                                       | Ok                                                                                                                                      |
| QVPN Service                                                                                           | Ok                                                                                                                                      |
|                                                                                                        | Note: At least 1 GB RAM is required.                                                                                                    |
| [QVPN Service] Remote Access                                                                           | PPTP, L2TP/IPSec, OpenVPN, QBelt (QNAP proprietary)                                                                                     |
| [QVPN Service] Supported utility and mobile app                                                        | Windows, macOS, iOS, and Android                                                                                                        |
| [QVPN Service] Supported maximum clients                                                               | 100                                                                                                                                     |
| HD Station                                                                                             | Ok                                                                                                                                      |
| LDAP Server                                                                                            | Ok                                                                                                                                      |
| RADIUS                                                                                                 | Ok                                                                                                                                      |
| SQL server                                                                                             | Ok                                                                                                                                      |
| License Center                                                                                         | Ok                                                                                                                                      |
| Multimedia Console                                                                                     | Ok                                                                                                                                      |
| Photo Station                                                                                          | Ok                                                                                                                                      |
| Music Station                                                                                          | Ok                                                                                                                                      |
| Video Station                                                                                          | Ok                                                                                                                                      |
| Download Station                                                                                       | Ok                                                                                                                                      |
| Notes Station                                                                                          | Ok                                                                                                                                      |
| Qfiling                                                                                                | Ok                                                                                                                                      |
| Media Streaming add-on                                                                                 | Ok                                                                                                                                      |
| QmailAgent                                                                                             | Ok                                                                                                                                      |
| QuWAN                                                                                                  | Ok                                                                                                                                      |
| DA Driver Analyzer                                                                                     | Ok                                                                                                                                      |
| Q'center                                                                                               | Ok                                                                                                                                      |
|                                                                                                        | Note: The application is available in the App Center and in virtual appliance marketplaces (VMware vSphere ESXi and Microsoft Hyper-V). |
| Q'center Server                                                                                        | Ok                                                                                                                                      |
| Q'center Agent                                                                                         | Ok                                                                                                                                      |
| Connect to Q'center                                                                                    | Ok                                                                                                                                      |
| Virtualization Station                                                                                 | Ok                                                                                                                                      |
|                                                                                                        | Note: At least 4 GB RAM is required.                                                                                                    |
| [Virtualization Station] Supports Virtual machine instances                                            | Windows, Linux, Unix, and Android                                                                                                       |
| [Virtualization Station] VM importing, exporting, cloning, snapshot capturing, backup, and restoration | All function is Fine.                                                                                                                   |
| [Virtualization Station] Virtual switches                                                              | Can create a virtual switch                                                                                                             |
| [Virtualization Station] GPU pass-through                                                              | GPU function is fine                                                                                                                    |
| [Virtualization Station] Suggested number of virtual machine instances                                 | 24                                                                                                                                      |
|                                                                                                        | The actual number of virtual machine instances may vary by the memory installed on NAS (e.g. 1 VM= 1 thread for 1 vCPU)                 |

|                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Container Station                                                                                                                  | and 1GB memory). Please expend memory if needed.<br>Ok                                                                                                                                                                                                                                                                          |
| [Container Station] Supported type                                                                                                 | Note: At least 1 GB RAM is required.<br>LXC/LXD and Docker                                                                                                                                                                                                                                                                      |
| [Container Station] Docker Hub Registry                                                                                            | Note: LXD has been supported after Container Station 2.4<br>Ok                                                                                                                                                                                                                                                                  |
| [Container Station] Container importing and exporting                                                                              | Ok                                                                                                                                                                                                                                                                                                                              |
| [Container Station] Console mode                                                                                                   | Ok                                                                                                                                                                                                                                                                                                                              |
| Linux Station                                                                                                                      | Ok                                                                                                                                                                                                                                                                                                                              |
| [Linux Station] Supports Ubuntu versions                                                                                           | Notification: At least 4 GB RAM is required.<br>16.04, 18.04, and 20.04                                                                                                                                                                                                                                                         |
| Linux Station Center                                                                                                               | Ok                                                                                                                                                                                                                                                                                                                              |
| QVR Elite                                                                                                                          | Ok                                                                                                                                                                                                                                                                                                                              |
| [QVR Elite] Recording Technique                                                                                                    | Note: At least 1 GB RAM is required. The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information, visit <a href="https://www.qnap.com/go/qvr-nas-selector">https://www.qnap.com/go/qvr-nas-selector</a> .                                                    |
| [QVR Elite] License Type                                                                                                           | Standard MP4 file based                                                                                                                                                                                                                                                                                                         |
| [QVR Elite] User-defined trigger events                                                                                            | Subscription-based                                                                                                                                                                                                                                                                                                              |
| [QVR Elite] QVR Pro Client (Desktop)                                                                                               | Ok                                                                                                                                                                                                                                                                                                                              |
| [QVR Elite] QVR Pro Client (Mobile)                                                                                                | Windows, macOS, and QNAP HybridDesk Station                                                                                                                                                                                                                                                                                     |
| [QVR Elite] Recording camera streams                                                                                               | Android and iOS                                                                                                                                                                                                                                                                                                                 |
| [QVR Elite] Free built-in camera channels                                                                                          | H.264                                                                                                                                                                                                                                                                                                                           |
| [QVR Elite] Expandable camera channels                                                                                             | 2                                                                                                                                                                                                                                                                                                                               |
| [QVR Pro Client] Live 4K H.265 (6M) channel                                                                                        | Developing                                                                                                                                                                                                                                                                                                                      |
| Number @ 8 x 1080P H.264 recording channels (Use HybridDesktop Platform) (Expected)                                                | N/A                                                                                                                                                                                                                                                                                                                             |
| [QVR Pro Client] Live 1080P H.264 (5M) channel Number @ 8 x 1080P H.264 recording channels (Use HybridDesktop Platform) (Expected) | N/A                                                                                                                                                                                                                                                                                                                             |
| [QVR Pro Client] Live 720P (3M) H.264 channel Number @ 8 x 1080P H.264 recording channels (Use HybridDesktop Platform) (Expected)  | N/A                                                                                                                                                                                                                                                                                                                             |
| QVR Center                                                                                                                         | Ok                                                                                                                                                                                                                                                                                                                              |
| [QVR Center] Log management                                                                                                        | Note: At least 4 GB RAM is required.<br>Ok                                                                                                                                                                                                                                                                                      |
| [QVR Center] Central monitoring across multiple servers                                                                            | Ok                                                                                                                                                                                                                                                                                                                              |
| Operating System                                                                                                                   | QTS 5.1.0                                                                                                                                                                                                                                                                                                                       |
| Supported Client Operating Systems                                                                                                 | <ol style="list-style-type: none"> <li>1. Apple Mac OS 10.10 or later</li> <li>2. Ubuntu 14.04, CentOS 7, RHEL 6.6, SUSE 12 or later Linux</li> <li>3. IBM AIX 7, Solaris 10 or later UNIX</li> <li>4. Microsoft Windows 7, 8, 10 and 11</li> <li>5. Microsoft Windows Server 2008 R2, 2012, 2012 R2, 2016, and 2019</li> </ol> |
| Supported Browsers                                                                                                                 | <ol style="list-style-type: none"> <li>1. Apple Safari (latest version)</li> <li>2. Google Chrome (latest version)</li> <li>3. Microsoft Edge (latest version)</li> <li>4. Mozilla Firefox (latest version)</li> </ol>                                                                                                          |
| Supported Languages                                                                                                                | Chinese (Traditional & Simplified), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazil), Romanian, Russian, Spanish, Swedish, Thai, and Turkish                                                                                         |
| Storage Pool                                                                                                                       | Ok                                                                                                                                                                                                                                                                                                                              |
| SED Storage Pool                                                                                                                   | Ok                                                                                                                                                                                                                                                                                                                              |
| Maximum Pool size                                                                                                                  | 308 TB                                                                                                                                                                                                                                                                                                                          |
| Maximum number of storage pool                                                                                                     | 128                                                                                                                                                                                                                                                                                                                             |
| Volume Type                                                                                                                        | Thick, Thin, Static                                                                                                                                                                                                                                                                                                             |

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum volume size                           | 250 TB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Maximum number of volume                      | 128                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum shared folder size                    | 250 TB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Maximum number of shared folder               | 512                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| JBOD Expansion                                | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| VJBOD / VJBOD Cloud                           | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| iSCSI Service                                 | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fibre Channel Service                         | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| LUN Type                                      | Thick, Thin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| File-based iSCSI LUN                          | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Block-based iSCSI LUN                         | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum LUN size                              | 250 TB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Maximum number of targets LUN                 | Note: At least 4 GB RAM is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| LUN feature                                   | 256                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                               | <ol style="list-style-type: none"> <li>1. LUN Mapping (LUN can be moved between iSCSI and FC)</li> <li>2. LUN Masking</li> <li>3. WWPN Aliases Import/Export</li> <li>4. FC Port Group</li> </ol>                                                                                                                                                                                                                                                                                                                              |
| Auto Tiering                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RAID Type                                     | Requires minimum 2GB memory. <ol style="list-style-type: none"> <li>1. 8-bay (and more): JBOD, Single, RAID 0, 1, 5, 6, 10, 50, 60</li> <li>2. 6-bay: JBOD, Single, RAID 0, 1, 5, 6, 10, 50</li> <li>3. 4-bay: JBOD, Single, RAID 0, 1, 5, 6, 10</li> <li>4. 2-bay: JBOD, Single, RAID 0, 1</li> </ol>                                                                                                                                                                                                                         |
| RAID Group                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                               | To ensure data security, system stability, and storage performance, the maximum number of drives for a single RAID group is now 16 (applicable to RAID 5, RAID 6, RAID TP, and subgroups of RAID 50 and RAID 60). Nevertheless, users can combine multiple RAID groups into a large storage pool that contains more than 16 drives, using RAID 50, RAID 60, or RAID 10 as the RAID configuration. This enhancement will only be applied to new RAID groups. All existing RAID groups and storage systems will not be affected. |
| RAID Level Migration                          | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RAID Expansion (by adding Disk)               | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RAID Expansion (by replacing bigger Disks)    | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Storage Pool Expansion (by adding RAID Group) | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RAID Hot Spare                                | Global, Local                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| RAID Sync/Rebuild/Scrubbing                   | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Internal drive                                | EXT4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| External drive                                | EXT3, EXT4, NTFS, FAT32, HFS+, and exFAT (optional for ARM model)                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                               | Note: To use exFat in certain models you must purchase an exFAT driver license from License Center.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disk, Enclosure Locate                        | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk S.M.A.R.T. Scan                          | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk S.M.A.R.T. Data Migration                | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ironwolf Health Management                    | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Secure Erase                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD Trim                                      | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SSD Life Estimation                           | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk Roaming                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Disk Standby                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Volume Snapshot                               | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| LUN Snapshot                                  | Ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum Snapshot (Per System)                 | <a href="#">Check maximum number of snapshots of your NAS</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Maximum Snapshot (Per Volume / LUN)           | <a href="#">Check maximum number of snapshots of your NAS</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                              |                                                                                                                                                                                                                           |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minimum Snapshot Interval                    | 5 minutes                                                                                                                                                                                                                 |
| Snapshot Retention Policy                    | Ok                                                                                                                                                                                                                        |
| Self-serve Snapshot Recovery                 | Ok                                                                                                                                                                                                                        |
| Application Consisted Snapshot               | Ok                                                                                                                                                                                                                        |
| Snapshot Full Clone                          | Ok                                                                                                                                                                                                                        |
| Snapshot Replica / Vault                     | Ok                                                                                                                                                                                                                        |
| SSD read-only Cache                          | Ok                                                                                                                                                                                                                        |
| SSD read-write cache                         | Ok                                                                                                                                                                                                                        |
| SSD write-only cache                         | Ok                                                                                                                                                                                                                        |
| SSD Cache Maximum Size                       | <a href="#">Check your QNAP NAS cache capacity and RAM requirements</a>                                                                                                                                                   |
| SSD Cache RAID                               | 0, 1, 5, 6, 10                                                                                                                                                                                                            |
| SSD profiling tool                           | Ok                                                                                                                                                                                                                        |
| External Device Management                   | Ok                                                                                                                                                                                                                        |
| Mount Smart Phone (MTP)                      | Ok                                                                                                                                                                                                                        |
| External RAID Device (QNAP so on)            | Ok                                                                                                                                                                                                                        |
| Management (External Device Mode)            |                                                                                                                                                                                                                           |
| External RAID Device (QNAP so on)            | Ok                                                                                                                                                                                                                        |
| Management (NAS Mode)                        |                                                                                                                                                                                                                           |
| File Server                                  | <ol style="list-style-type: none"> <li>1. File sharing across Windows, Mac, and Linux/UNIX</li> <li>2. Microsoft networking (CIFS/SMB)</li> <li>3. Apple networking (AFP)</li> <li>4. NFS version 3/4 services</li> </ol> |
| FTP Server                                   | <ol style="list-style-type: none"> <li>1. QuFTP</li> <li>2. FTP, SFTP and TFTP protocols</li> <li>3. FTP over SSL/TLS (explicit FTPS)</li> <li>4. FXP support</li> </ol>                                                  |
| Maximum FTP connection                       | 1024                                                                                                                                                                                                                      |
| File Station (Web)                           | Ok                                                                                                                                                                                                                        |
| Object Storage                               | Ok                                                                                                                                                                                                                        |
| Local user account                           | 4,096                                                                                                                                                                                                                     |
| Local group account                          | 512                                                                                                                                                                                                                       |
| Domain user/group account                    | 200,000                                                                                                                                                                                                                   |
| Domain Security                              | Ok                                                                                                                                                                                                                        |
| Domain Controller                            | Ok                                                                                                                                                                                                                        |
| Shared folder permission                     | Ok                                                                                                                                                                                                                        |
| Advanced folder permission                   | Ok, (AFP, CIFS/SMB, FTP, and File Station)                                                                                                                                                                                |
| Windows ACL                                  | Ok, (CIFS/SMB)                                                                                                                                                                                                            |
| User quota                                   | Ok                                                                                                                                                                                                                        |
| Group quota                                  | Ok                                                                                                                                                                                                                        |
| Folder quota                                 | Ok, (Snapshot shared folder)                                                                                                                                                                                              |
| Home folder                                  | Ok                                                                                                                                                                                                                        |
| Resource Monitor                             | Ok                                                                                                                                                                                                                        |
| SNMP                                         | V2, V3                                                                                                                                                                                                                    |
| Network recycle bin                          | <ol style="list-style-type: none"> <li>1. Recover files deleted using AFP, CIFS/SMB, and File Station</li> <li>2. Automatic cleanup and file type filter</li> </ol>                                                       |
| System Log & Notification Center             | Log recording: 3,000 event per second                                                                                                                                                                                     |
| Smart Fan                                    | Ok                                                                                                                                                                                                                        |
| Schedule on/off                              | Ok                                                                                                                                                                                                                        |
| Internet protocol                            | IPv4, IPv6                                                                                                                                                                                                                |
| Virtual Switch                               | Ok                                                                                                                                                                                                                        |
| Port trunking                                | Ok, (7 modes)                                                                                                                                                                                                             |
| VLAN                                         | Ok                                                                                                                                                                                                                        |
| DHCP Server                                  | Ok                                                                                                                                                                                                                        |
| DDNS (Dynamic Domain Name Service)           | Ok                                                                                                                                                                                                                        |
| Network access protection with auto-blocking | SSH, Telnet, HTTP(S), FTP, CIFS/SMB, and AFP                                                                                                                                                                              |
| Security Counselor                           | Ok                                                                                                                                                                                                                        |
| Malware Remover                              | Ok                                                                                                                                                                                                                        |
| AES 256-bit Volume Encryption validated by   | Ok                                                                                                                                                                                                                        |
| FIPS 140-2 CAVP                              |                                                                                                                                                                                                                           |
| 2-step verification                          | Ok                                                                                                                                                                                                                        |
| Allow/Deny List                              | Ok                                                                                                                                                                                                                        |
| Access Protection                            | Ok                                                                                                                                                                                                                        |
| Service binding                              | Ok                                                                                                                                                                                                                        |
| Firewall                                     | Ok                                                                                                                                                                                                                        |
| vSphere Web Client Plug-in                   | Ok                                                                                                                                                                                                                        |
| VMware vSphere VAAI for iSCSI                | Ok                                                                                                                                                                                                                        |
| VMware vSphere VAAI for NAS                  | Ok                                                                                                                                                                                                                        |

|                                                                                      |                                                                |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Windows ODX                                                                          | Ok                                                             |
| Windows/VMware Snapshot Agent                                                        | Ok                                                             |
| HTTP/HTTPS Connections                                                               | TLS 1.0/1.1/1.2/1.3                                            |
| Supports WebDAV Connection                                                           | Ok                                                             |
| Supports Virtual Hosts                                                               | 32                                                             |
| Qsync                                                                                | Ok                                                             |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [Qsync] Management Mode                                                              | User customization, Central                                    |
| [Qsync] Qsync client supported platforms                                             | Windows, macOS, Ubuntu, Android, and iOS                       |
| [Qsync] Maximum number of version control                                            | 64                                                             |
| HybridMount                                                                          | Ok                                                             |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [HybridMount] File Cloud Gateway                                                     | Concurrent Connections = 20 Upload & 20 Download               |
| [HybridMount] Network Drive Mount                                                    | Ok                                                             |
| [HybridMount] Free cloud gateway sessions                                            | 2                                                              |
| HBS (Hybrid Backup Sync)                                                             | Ok                                                             |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [HBS (Hybrid Backup Sync)] NAS to NAS backup                                         | Ok                                                             |
| [HBS (Hybrid Backup Sync)] Cloud Backup                                              | Ok                                                             |
| [HBS (Hybrid Backup Sync)] Cloud Sync                                                | Ok                                                             |
| [HBS (Hybrid Backup Sync)] 2-way and Active Sync                                     | Ok                                                             |
| [HBS (Hybrid Backup Sync)] Backup Deduplication                                      | Ok                                                             |
| [HBS (Hybrid Backup Sync)] Apple Time Machine Backup                                 | Ok                                                             |
| [HBS (Hybrid Backup Sync)] External drive backup                                     | Ok                                                             |
| [HBS (Hybrid Backup Sync)] Maximum number of backup job                              | 400                                                            |
| Hyper Data Protector                                                                 | Ok                                                             |
| Boxafe                                                                               | Ok                                                             |
| Note: At least 4 GB RAM is required.                                                 |                                                                |
| [Boxafe] Office 365 Backup                                                           | Ok                                                             |
| [Boxafe] Google Workspace Backup                                                     | Ok                                                             |
| [Boxafe] Full-text search                                                            | Ok                                                             |
| Qsirch                                                                               | Ok                                                             |
| Note: This feature is supported by all QNAP NAS devices with at least 2 GB of memory |                                                                |
| [Qsirch] Previews                                                                    | Photos, music, videos, PDFs, Gmail, and others                 |
| [Qsirch] Integrate Mac Finder                                                        | Ok                                                             |
| [Qsirch] Advanced picture search                                                     | Ok                                                             |
| [Qsirch] Search filters                                                              | Ok                                                             |
| QuMagie                                                                              | Ok                                                             |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [QuMagie] Browse photos                                                              | Ok                                                             |
| [QuMagie] Virtual and smart albums                                                   | Ok                                                             |
| [QuMagie] AI-assisted photo management                                               | People, things, places, and others                             |
| Antivirus (free)                                                                     | Ok                                                             |
| McAfee (License)                                                                     | Ok                                                             |
| QVPN Service                                                                         | Ok                                                             |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [QVPN Service] Remote Access                                                         | PPTP, L2TP/IPSec, OpenVPN, WireGuard, QBelt (QNAP proprietary) |
| [QVPN Service] Supported utility and mobile app                                      | Windows, macOS, iOS, and Android                               |
| [QVPN Service] Supported maximum clients                                             | 100                                                            |
| HD Station                                                                           | Ok                                                             |
| LDAP Server                                                                          | Ok                                                             |
| RADIUS                                                                               | Ok                                                             |

|                                                                                                                                                                                                                                                                              |                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| SQL server                                                                                                                                                                                                                                                                   | Ok                                          |
| License Center                                                                                                                                                                                                                                                               | Ok                                          |
| Multimedia Console                                                                                                                                                                                                                                                           | Ok                                          |
| Photo Station                                                                                                                                                                                                                                                                | Ok                                          |
| Music Station                                                                                                                                                                                                                                                                | Ok                                          |
| Video Station                                                                                                                                                                                                                                                                | Ok                                          |
| Download Station                                                                                                                                                                                                                                                             | Ok                                          |
| Notes Station                                                                                                                                                                                                                                                                | Ok                                          |
| Qfiling                                                                                                                                                                                                                                                                      | Ok                                          |
| Media Streaming add-on                                                                                                                                                                                                                                                       | Ok                                          |
| QmailAgent                                                                                                                                                                                                                                                                   | Ok                                          |
| QuWAN                                                                                                                                                                                                                                                                        | Ok                                          |
| DA Driver Analyzer                                                                                                                                                                                                                                                           | Ok                                          |
| Q'center                                                                                                                                                                                                                                                                     | Ok                                          |
| Note: The application is available in the App Center and in virtual appliance marketplaces (VMware vSphere ESXi and Microsoft Hyper-V).                                                                                                                                      |                                             |
| Q'center Server                                                                                                                                                                                                                                                              | Ok                                          |
| Q'center Agent                                                                                                                                                                                                                                                               | Ok                                          |
| Connect to Q'center                                                                                                                                                                                                                                                          | Ok                                          |
| Virtualization Station                                                                                                                                                                                                                                                       | Ok                                          |
| Note: At least 4 GB RAM is required.                                                                                                                                                                                                                                         |                                             |
| [Virtualization Station] Supports Virtual machine instances                                                                                                                                                                                                                  | Windows, Linux, Unix, and Android           |
| [Virtualization Station] VM importing, exporting, cloning, snapshot capturing, backup, and restoration                                                                                                                                                                       | All function is Fine.                       |
| [Virtualization Station] Virtual switches                                                                                                                                                                                                                                    | Can create a virtual switch                 |
| [Virtualization Station] GPU pass-through                                                                                                                                                                                                                                    | Not support GPU                             |
| [Virtualization Station] Suggested number of virtual machine instances                                                                                                                                                                                                       | 24                                          |
| The actual number of virtual machine instances may vary by the memory installed on NAS (e.g. 1 VM= 1 thread for 1 vCPU and 1GB memory). Please expend memory if needed.                                                                                                      |                                             |
| Container Station                                                                                                                                                                                                                                                            | Ok                                          |
| Note: At least 1 GB RAM is required.                                                                                                                                                                                                                                         |                                             |
| [Container Station] Supported type                                                                                                                                                                                                                                           | LXC/LXD and Docker                          |
| Note: LXD has been supported after Container Station 2.4                                                                                                                                                                                                                     |                                             |
| [Container Station] Docker Hub Registry                                                                                                                                                                                                                                      | Ok                                          |
| [Container Station] Container importing and exporting                                                                                                                                                                                                                        | Ok                                          |
| [Container Station] Console mode                                                                                                                                                                                                                                             | Ok                                          |
| Linux Station                                                                                                                                                                                                                                                                | Ok                                          |
| Notification: At least 4 GB RAM is required.                                                                                                                                                                                                                                 |                                             |
| [Linux Station] Supports Ubuntu versions                                                                                                                                                                                                                                     | 18.04, and 20.04                            |
| Linux Station Center                                                                                                                                                                                                                                                         | Ok                                          |
| QVR Pro                                                                                                                                                                                                                                                                      | Ok                                          |
| Note: At least 4 GB RAM is required. The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information, visit <a href="https://www.qnap.com/go/qvr-nas-selector">https://www.qnap.com/go/qvr-nas-selector</a> . |                                             |
| [QVR Pro] Recording Technique                                                                                                                                                                                                                                                | Index database based                        |
| [QVR Pro] License Type                                                                                                                                                                                                                                                       | Perpetual                                   |
| [QVR Pro] User-defined trigger events                                                                                                                                                                                                                                        | Ok                                          |
| [QVR Pro] Metadata                                                                                                                                                                                                                                                           | Ok                                          |
| [QVR Pro] QVR Pro Client (Desktop)                                                                                                                                                                                                                                           | Windows, macOS, and QNAP HybridDesk Station |
| [QVR Pro] QVR Pro Client (Mobile)                                                                                                                                                                                                                                            | Android and iOS                             |
| [QVR Pro] Recording camera streams                                                                                                                                                                                                                                           | H.264                                       |
| [QVR Pro] Free built-in camera channels                                                                                                                                                                                                                                      | 8                                           |
| QVR Elite                                                                                                                                                                                                                                                                    | Ok                                          |
| Note: At least 1 GB RAM is required. The maximum number of channels supported varies by NAS model, network                                                                                                                                                                   |                                             |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [QVR Elite] Recording Technique                                                                                                                                                                                                                 | configuration, and camera settings. For more information, visit <a href="https://www.qnap.com/go/qvr-nas-selector">https://www.qnap.com/go/qvr-nas-selector</a> . |
| [QVR Elite] License Type                                                                                                                                                                                                                        | Standard MP4 file based                                                                                                                                           |
| [QVR Elite] User-defined trigger events                                                                                                                                                                                                         | Subscription-based                                                                                                                                                |
| [QVR Elite] QVR Pro Client (Desktop)                                                                                                                                                                                                            | Ok                                                                                                                                                                |
| [QVR Elite] QVR Pro Client (Mobile)                                                                                                                                                                                                             | Windows, macOS, and QNAP HybridDesk Station                                                                                                                       |
| [QVR Elite] Recording camera streams                                                                                                                                                                                                            | Android and iOS                                                                                                                                                   |
| [QVR Elite] Free built-in camera channels                                                                                                                                                                                                       | H.264                                                                                                                                                             |
| QVR Pro Client                                                                                                                                                                                                                                  | 2                                                                                                                                                                 |
| [QVR Pro Client] Dynamic View Layout                                                                                                                                                                                                            | Ok                                                                                                                                                                |
| [QVR Pro Client] Windows                                                                                                                                                                                                                        | Ok                                                                                                                                                                |
| [QVR Pro Client] Mac                                                                                                                                                                                                                            | Ok                                                                                                                                                                |
| [QVR Pro Client] HybridDesktop                                                                                                                                                                                                                  | Ok                                                                                                                                                                |
| [QVR Pro Client] iOS                                                                                                                                                                                                                            | Ok                                                                                                                                                                |
| [QVR Pro Client] Android                                                                                                                                                                                                                        | Ok                                                                                                                                                                |
| QVR Center                                                                                                                                                                                                                                      | Ok                                                                                                                                                                |
| Note: At least 4 GB RAM is required.                                                                                                                                                                                                            |                                                                                                                                                                   |
| [QVR Center] Log management                                                                                                                                                                                                                     | Ok                                                                                                                                                                |
| [QVR Center] Central monitoring across multiple servers                                                                                                                                                                                         | Ok                                                                                                                                                                |
| QVR Guard                                                                                                                                                                                                                                       | Ok                                                                                                                                                                |
| Note: At least 4 GB RAM is required.                                                                                                                                                                                                            |                                                                                                                                                                   |
| [QVR Guard] Failover design                                                                                                                                                                                                                     | Ok                                                                                                                                                                |
| [QVR Guard] Viewing task details                                                                                                                                                                                                                | Ok                                                                                                                                                                |
| [QVR Guard] Automatic switch between Standby and Takeover modes                                                                                                                                                                                 | Ok                                                                                                                                                                |
| QVR Human                                                                                                                                                                                                                                       | Ok                                                                                                                                                                |
| QVR Face                                                                                                                                                                                                                                        | Ok                                                                                                                                                                |
| The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information, visit <a href="https://www.qnap.com/solution/qvr-face/en-us/">https://www.qnap.com/solution/qvr-face/en-us/</a> |                                                                                                                                                                   |
| QVR DoorAccess                                                                                                                                                                                                                                  | Ok                                                                                                                                                                |

## Zawartość opakowania

TVS-AIh1688ATX  
 Kabel Ethernet 10GBASE-T x 1  
 Przewód zasilający x 1  
 Śruby z łbem płaskim x 48 (do dysków twardych 3,5")  
 Śruby z łbem płaskim x 36 (do dysków twardych 2,5")  
 Klucze do tac dysków x 2  
 Skrócona instrukcja instalacji (QIG)