

Link do produktu: <https://sklepqnap.pl/serwer-qn timer-tvs-h1677ax-r5-16g-p-3362.html>

## Serwer QNAP TVS-h1677AX-R5-16G

|                  |                            |
|------------------|----------------------------|
| Cena             | <b>19 357,38 zł</b>        |
| Dostępność       | <b>Na zamówienie</b>       |
| Numer katalogowy | <b>QNA_TVSh1677AXR516G</b> |
| Kod producenta   | <b>TVS-h1677AX-R5-16G</b>  |
| Kod EAN          | <b>4711103092651</b>       |
| Producent        | <b>QNAP</b>                |
| Pamięć RAM       | <b>16GB</b>                |
| Port 2,5 GbE     | <b>2</b>                   |

### Opis produktu



### QNAP TVS-h1677AX-R5-16G

QNAP TVS-h1677AX-R5-16G to zaawansowany, 16-zatokowy serwer NAS stworzony dla firm, profesjonalistów oraz wymagających środowisk wirtualizacji i pracy z dużymi zbiorami danych. Wyposażony w AMD Ryzen 5 serii 7000, 16 GB DDR5, 12 zatok SATA oraz 4 gniazda U.2 NVMe Gen4, łączy dużą pojemność z bardzo wysoką wydajnością. Dwa porty 10GbE, dwa 2,5GbE oraz trzy gniazda PCIe Gen4 zapewniają szerokie możliwości rozbudowy infrastruktury

Cechy wyjątkowe dysku sieciowego **QNAP TVS-h1677AX**:

**AMD Ryzen 5 7000** – 6 rdzeni / 12 wątków i taktowanie do 5,1 GHz.

**16 GB DDR5** – szybka pamięć z możliwością rozbudowy aż do 192 GB; obsługiwane są również opcjonalne moduły ECC.

**16 zatok w konfiguracji hybrydowej** – 12 x SATA 3,5" + 4 x U.2 NVMe Gen4 x2, pozwalające połączyć dużą pojemność HDD z wydajnością SSD.

**2 x 10GbE** – szybka transmisja danych idealna do dużych plików, backupu i pracy wielostanowiskowej.

**2 x 2,5GbE** – dodatkowe interfejsy sieciowe zwiększające elastyczność konfiguracji.

**3 x PCIe Gen4** – możliwość instalacji kart sieciowych, rozszerzeń pamięci masowej czy kompatybilnych kart GPU.

**NFS over RDMA** – technologia zaprojektowana z myślą o wysokiej przepustowości i niskich opóźnieniach, szczególnie przydatna w zastosowaniach AI.

**QuTS hero i system plików ZFS** – zaawansowana ochrona integralności danych, migawki, samonaprawianie oraz funkcje klasy enterprise.

**Wirtualizacja i kontenery** – możliwość uruchamiania maszyn wirtualnych i kontenerów oraz wykorzystania NAS jako centralnej platformy dla aplikacji biznesowych.

**Qtier** – możliwość automatycznego wykorzystania różnych poziomów pamięci masowej w celu optymalizacji wydajności i pojemności.

**Duża skalowalność** – możliwość dalszej rozbudowy sieci i funkcjonalności dzięki gniazdom PCIe.

**Szyfrowanie AES-NI** – sprzętowe wsparcie dla operacji szyfrowania danych.

**Konstrukcja Tower** – duża liczba zatok przy zachowaniu formy odpowiedniej do instalacji w biurze lub serwerowni.

**5-letnia gwarancja** – producent oferuje dla tego modelu standardową 5-letnią gwarancję.

Podstawowe funkcje **dysku sieciowego QNAP**:

**Dostęp do danych w domu oraz z dowolnego miejsca na świecie.**



System QNAP zapewnia szybki, a przede wszystkim bezpieczny sposób na udostępnianie danych każdemu i wszędzie. Dzięki aplikacji File Station oraz wbudowanemu **serwerowi VPN** można przeszukiwać, organizować i przenosić pliki pomiędzy QNAP, a dowolnym urządzeniem w sieci. Udostępnianie plików dla każdej platformy Windows, MAC czy Linux.

#### **Możliwość rozbudowy PCIe Gen 4 dla przyszłościowych modernizacji**

TVS-h1677AX jest wyposażony w trzy gniazda PCIe Gen 4, co umożliwia instalację kart sieciowych 25GbE lub dedykowanych kart NVIDIA RTX™ GPU do wnioskowania AI oraz GPU passthrough dla maszyn wirtualnych.

#### **Połącz prędkość U.2 NVMe z pojemnością Dysk twardy. Nadchodzi Qtier**

Maksymalizuj wydajność pamięci masowej bez kompromisów. TVS-h1677AX posiada hybrydowe zatoki obsługujące zarówno U.2 NVMe SSD, jak i tradycyjne dyski HDD, co pozwala połączyć szybkość NVMe z pojemnością twardych dysków.

#### **AMD Ryzen™ 7000 i DDR5: przesuwanie granic wielozadaniowości**

Dzięki najnowszej architekturze Zen 4 TVS-h1677AX zapewnia znaczący wzrost IPC. W połączeniu z pamięcią DDR5 (rozszerzalną do 192 GB) bez wysiłku obsługuje wymagające obciążenia, w tym wiele maszyn wirtualnych (VM), kontenerów i transkodowanie wideo w wysokiej rozdzielczości.

#### **Zbuduj inteligentne centrum wiedzy z wyszukiwania RAG**

TVS-h1677AX integruje silnik wyszukiwania Qsirsch 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.



## Specyfikacja sprzętowa

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procesor                                    | Procesor AMD Ryzen™ 5 serii 7000 6-rdzeniowy/12-wątkowy, zwiększenie taktowania do 5,1 GHz                                                                                                                                                                                                                                                                                                                                                                                             |
|                                             | Grafika AMD Radeon                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                             | Architektura procesora                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                             | Procesory graficzne                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                             | Mechanizm szyfrowania                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                             | Transkodowanie wspomagane sprzętowo                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                             | Pamięć systemowa                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                             | Maksymalna pojemność pamięci                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                             | Gniazdo pamięci                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                             | 16 GB UDIMM DDR5                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                             | 192 GB (4 x 48 GB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                             | 4 x UDIMM DDR5                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                             | Wspiera opcjonalną pamięć ECC                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                             | Dla konfiguracji z dwoma modułami DIMM, musisz użyć par identycznych modułów DDR5.                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                             | 5GB (Ochrona podwójnego uruchamiania systemu operacyjnego)                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Pamięć flash                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Wnęka dysk                                  | 12 x 3,5-calowy SATA 6Gb/s, 3Gb/s + 4 x 2,5-calowy U.2 NVMe Gen 4 x2 gniazda                                                                                                                                                                                                                                                                                                                                                                                                           |
| Kompatybilność dysk                         | Zatoki 3,5-calowe:<br>3,5-calowy dysk SATA twarde dyski<br>2,5-calowy dysk SSD SATA twarde dyski                                                                                                                                                                                                                                                                                                                                                                                       |
|                                             | Zatoki 2,5-calowe:<br>2,5-calowy dysk SSD U.2 twarde dyski<br>Dyski SSD U.2 NVMe są kompatybilne tylko z dyskami SSD PCIe Gen 4 i PCIe Gen 5 .<br>Aby włączyć funkcję hot-swap dla dysków U.2 SSD po uruchomieniu systemu, dysk U.2 SSD musi być zainstalowa przed włączeniem zasilania systemu.                                                                                                                                                                                       |
| Wymieniany podczas pracy                    | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Obsługa przyspieszenia Pamięć podręczna SSD | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| GPU pass-through                            | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Port 2,5 Gigabit Ethernet (2,5G/1G/100M)    | 2(2,5G/1G/100M/10M)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Port 10 Gigabit sieci Ethernet              | 2 x 10GBASE-T (10G/5G/2,5G/1G/100M)                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Port 25 Gigabit Ethernet                    | Opcjonalne przez kartę                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Wake on LAN (WOL)                           | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ramka Jumbo                                 | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Gniazdo PCIe                                | 3<br>Slot 1: Gen 4 x 8 lub Gen 4 x 4*<br>Slot 2: Gen 4 x 4<br>Slot 3: Gen 4 x 4<br>*Slot 1 zapewnia szerokość PCIe Gen 4 x8, gdy Slot 2 nie jest używany, oraz szerokość PCIe Gen 4 x4, gdy Slot 2 jest używany.<br>Wymiary karty dla slotu PCIe 1: 268 x 112 x 40,64 (podwójny slot) mm / 10,5 x 4,4 x 1,6 cala<br>Wymiary karty dla slotu PCIe 2: 150 x 68,9 x 18,76 mm / 5,9 x 2,71 x 0,74 cala.<br>Wymiary karty dla slotu PCIe 3: 150 x 68,9 x 18,76 mm / 5,9 x 2,71 x 0,74 cala. |

|                                |                                                                                        |
|--------------------------------|----------------------------------------------------------------------------------------|
| Port USB 2.0                   | x 2,71 x 0,74 cala.                                                                    |
| Port USB 3.2 Gen 2 (10 Gb/s)   | Szersze karty mogą być zainstalowane, jeśli kolejny slot PC nie będzie używany.        |
| Wyjście HDMI™                  | 2                                                                                      |
| Kształt                        | 2 x typu C USB 3.2 Gen 2 10 Gb/s                                                       |
| Wskaźniki LED                  | 1, HDMI™ 1.4b (up to 4096 x 2160 @ 30Hz)                                               |
| Przyciski                      | Tower                                                                                  |
| Wymiary (wys. x szer. x gł.)   | Status zasilania, HDD 1-8, U.2 SSD 1-4, Status, LAN, status portu rozszerzenia pamięci |
| Waga netto                     | Zasilanie, reset, automatyczne kopiowanie USB                                          |
| Waga (brutto)                  | 294,3 x 369,9 x 319,8 mm                                                               |
| Temperatura robocza            | 10.98 kg                                                                               |
| Temperatura Pamięć masowa      | 12.12 kg                                                                               |
| Wilgotność względna            | 0-40°C                                                                                 |
|                                | -20-70°C                                                                               |
|                                | 5-95% bez kondensacji, temperatura mokrego termometru                                  |
| Zasilacz                       | 27°C                                                                                   |
|                                | 500W(x1), 100-240V                                                                     |
| Pobór mocy: tryb pracy, typowy | 1 x 8 (6+2)-pinowy kabel PCI-e                                                         |
|                                | 164.03 W                                                                               |
| Wentylator                     | Testy wykonane przy całkowicie zapełnionych dyskach.                                   |
|                                | Wentylator systemowy: 3 x 80mm, 12VDC                                                  |
|                                | Wentylator CPU: 2 x 60 mm, 12V DC                                                      |
| Ostrzeżenie systemowe          | Brzęczyk                                                                               |
| Standardowa gwarancja          | 5 years                                                                                |

## Specyfikacja oprogramowania

Operating System

QTS 5.2.9

Supported Client Operating Systems

1. Apple Mac OS 10.10 or later
2. Ubuntu 14.04, CentOS 7, RHEL 6.6, SUSE 12 or later Linux
3. IBM AIX 7, Solaris 10 or later UNIX
4. Microsoft Windows 7, 8, 10 and 11
5. Microsoft Windows Server 2008 R2, 2012, 2012 R2, 2016, 2019 and 2022

Supported Browsers

1. Apple Safari (latest version)
2. Google Chrome (latest version)
3. Microsoft Edge (latest version)
4. Mozilla Firefox (latest version)

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

Tak

SED Storage Pool

Tak

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

Note: At least 4 GB RAM is required.

128

Maximum shared folder size

250 TB

Maximum number of shared folder

512

JBOD Expansion

Tak

VJBOD / VJBOD Cloud

Tak

iSCSI Service

Tak

Fibre Channel Service

Tak

LUN Type

Thick, Thin

File-based iSCSI LUN

Tak

Block-based iSCSI LUN

Tak

Maximum LUN size

250 TB

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum number of targets LUN                 | Note: At least 4 GB RAM is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| LUN feature                                   | 128                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                               | <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                                  | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 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                                    | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                               | 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                          | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RAID Expansion (by adding Disk)               | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RAID Expansion (by replacing bigger Disks)    | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Storage Pool Expansion (by adding RAID Group) | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RAID Hot Spare                                | Global, Local                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| RAID Sync/Rebuild/Scrubbing                   | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 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                        | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disk S.M.A.R.T. Scan                          | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disk S.M.A.R.T. Data Migration                | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ironwolf Health Management                    | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Secure Erase                                  | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SSD Trim                                      | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SSD Life Estimation                           | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disk Roaming                                  | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disk Standby                                  | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Volume Snapshot                               | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| LUN Snapshot                                  | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 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                     | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Self-serve Snapshot Recovery                  | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Application Consisted Snapshot                | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Snapshot Full Clone                           | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Snapshot Replica / Vault                      | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SSD read-only Cache                           | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SSD read-write cache                          | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SSD write-only cache                          | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 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                            | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| External Device Management                    | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mount Smart Phone (MTP)                       | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| External RAID Device (QNAP so on)             | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                                                            |                                                                                                                                                                                                                           |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Management (External Device Mode)                          |                                                                                                                                                                                                                           |
| External RAID Device (QNAP so on)                          | Tak                                                                                                                                                                                                                       |
| 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)                                         | Tak                                                                                                                                                                                                                       |
| Object Storage                                             | Tak                                                                                                                                                                                                                       |
| Local user account                                         | 4,096                                                                                                                                                                                                                     |
| Local group account                                        | 512                                                                                                                                                                                                                       |
| Domain user/group account                                  | 200,000                                                                                                                                                                                                                   |
| Domain Security                                            | Tak                                                                                                                                                                                                                       |
| Domain Controller                                          | Tak                                                                                                                                                                                                                       |
| Shared folder permission                                   | Tak                                                                                                                                                                                                                       |
| Advanced folder permission                                 | Tak, (AFP, CIFS/SMB, FTP, and File Station)                                                                                                                                                                               |
| Windows ACL                                                | Tak, (CIFS/SMB)                                                                                                                                                                                                           |
| User quota                                                 | Tak                                                                                                                                                                                                                       |
| Group quota                                                | Tak                                                                                                                                                                                                                       |
| Folder quota                                               | Tak, (Snapshot shared folder)                                                                                                                                                                                             |
| Home folder                                                | Tak                                                                                                                                                                                                                       |
| Resource Monitor                                           | Tak                                                                                                                                                                                                                       |
| 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                                                  | Tak                                                                                                                                                                                                                       |
| Schedule on/off                                            | Tak                                                                                                                                                                                                                       |
| Internet protocol                                          | IPv4, IPv6                                                                                                                                                                                                                |
| Virtual Switch                                             | Tak                                                                                                                                                                                                                       |
| Port trunking                                              | Tak, (7 modes)                                                                                                                                                                                                            |
| VLAN                                                       | Tak                                                                                                                                                                                                                       |
| DHCP Server                                                | Tak                                                                                                                                                                                                                       |
| DDNS (Dynamic Domain Name Service)                         | Tak                                                                                                                                                                                                                       |
| Network access protection with auto-blocking               | SSH, Telnet, HTTP(S), FTP, CIFS/SMB, and AFP                                                                                                                                                                              |
| Security Counselor                                         | Tak                                                                                                                                                                                                                       |
| Malware Remover                                            | Tak                                                                                                                                                                                                                       |
| AES 256-bit Volume Encryption validated by FIPS 140-2 CAVP | Tak                                                                                                                                                                                                                       |
| 2-step verification                                        | Tak                                                                                                                                                                                                                       |
| Allow/Deny List                                            | Tak                                                                                                                                                                                                                       |
| Access Protection                                          | Tak                                                                                                                                                                                                                       |
| Service binding                                            | Tak                                                                                                                                                                                                                       |
| Firewall                                                   | Tak                                                                                                                                                                                                                       |
| vSphere Web Client Plug-in                                 | Tak                                                                                                                                                                                                                       |
| VMware vSphere VAAI for iSCSI                              | Tak                                                                                                                                                                                                                       |
| VMware vSphere VAAI for NAS                                | Tak                                                                                                                                                                                                                       |
| Windows ODX                                                | Tak                                                                                                                                                                                                                       |
| Windows/VMware Snapshot Agent                              | Tak                                                                                                                                                                                                                       |
| HTTP/HTTPS Connections                                     | TLS 1.0/1.1/1.2/1.3                                                                                                                                                                                                       |
| Supports WebDAV Connection                                 | Tak                                                                                                                                                                                                                       |
| Supports Virtual Hosts                                     | 32                                                                                                                                                                                                                        |
| Qsync                                                      | Tak                                                                                                                                                                                                                       |
| [Qsync] Management Mode                                    | Note: At least 1 GB RAM is required.                                                                                                                                                                                      |
| [Qsync] Qsync client supported platforms                   | User customization, Central                                                                                                                                                                                               |
| [Qsync] Maximum number of version control                  | Windows, macOS, Ubuntu, Android, and iOS                                                                                                                                                                                  |
| HybridMount                                                | 64                                                                                                                                                                                                                        |
|                                                            | Tak                                                                                                                                                                                                                       |

Note: At least 1 GB RAM is required.

|                                                                                      |                                                                |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------|
| [HybridMount] File Cloud Gateway                                                     | Concurrent Connections = 20 Upload & 20 Download               |
| [HybridMount] Network Drive Mount                                                    | Tak                                                            |
| [HybridMount] Free cloud gateway sessions                                            | 2                                                              |
| HBS (Hybrid Backup Sync)                                                             | Tak                                                            |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [HBS (Hybrid Backup Sync)] NAS to NAS backup                                         | Tak                                                            |
| [HBS (Hybrid Backup Sync)] Cloud Backup                                              | Tak                                                            |
| [HBS (Hybrid Backup Sync)] Cloud Sync                                                | Tak                                                            |
| [HBS (Hybrid Backup Sync)] 2-way and Active Sync                                     | Tak                                                            |
| [HBS (Hybrid Backup Sync)] Backup Deduplication                                      | Tak                                                            |
| [HBS (Hybrid Backup Sync)] Apple Time Machine Backup                                 | Tak                                                            |
| [HBS (Hybrid Backup Sync)] External drive backup                                     | Tak                                                            |
| [HBS (Hybrid Backup Sync)] Maximum number of backup job                              | 400                                                            |
| Hyper Data Protector                                                                 | Tak                                                            |
| Boxafe                                                                               | Tak                                                            |
| Note: At least 4 GB RAM is required.                                                 |                                                                |
| [Boxafe] Office 365 Backup                                                           | Tak                                                            |
| [Boxafe] Google Workspace Backup                                                     | Tak                                                            |
| [Boxafe] Full-text search                                                            | Tak                                                            |
| Qsirch                                                                               | Tak                                                            |
| 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                                                        | Tak                                                            |
| [Qsirch] Advanced picture search                                                     | Tak                                                            |
| [Qsirch] Search filters                                                              | Tak                                                            |
| QuMagie                                                                              | Tak                                                            |
| Note: At least 1 GB RAM is required.                                                 |                                                                |
| [QuMagie] Browse photos                                                              | Tak                                                            |
| [QuMagie] Virtual and smart albums                                                   | Tak                                                            |
| [QuMagie] AI-assisted photo management                                               | People, things, places, and others                             |
| Antivirus (free)                                                                     | Tak                                                            |
| McAfee (License)                                                                     | Tak                                                            |
| QVPN Service                                                                         | Tak                                                            |
| 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                                                            |
| LDAP Server                                                                          | Tak                                                            |
| RADIUS                                                                               | Tak                                                            |
| SQL server                                                                           | Tak                                                            |
| License Center                                                                       | Tak                                                            |
| Multimedia Console                                                                   | Tak                                                            |
| Photo Station                                                                        | Tak                                                            |
| Music Station                                                                        | Tak                                                            |
| Video Station                                                                        | Tak                                                            |
| Download Station                                                                     | Tak                                                            |
| Notes Station                                                                        | Tak                                                            |
| Qfiling                                                                              | Tak                                                            |
| Media Streaming add-on                                                               | Tak                                                            |
| QmailAgent                                                                           | Tak                                                            |
| QuWAN                                                                                | Tak                                                            |
| DA Driver Analyzer                                                                   | Tak                                                            |
| Q'center                                                                             | Tak                                                            |
| Note: The application is available in the App Center and in                          |                                                                |

|                                                                                                        |                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q'center Server                                                                                        | virtual appliance marketplaces (VMware vSphere ESXi and Microsoft Hyper-V).                                                                                                                                                                                                  |
| Q'center Agent                                                                                         | Tak                                                                                                                                                                                                                                                                          |
| Connect to Q'center                                                                                    | Tak                                                                                                                                                                                                                                                                          |
| Virtualization Station                                                                                 | Tak                                                                                                                                                                                                                                                                          |
| [Virtualization Station] Supports Virtual machine instances                                            | Note: At least 4 GB RAM is required. 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                                 | 12                                                                                                                                                                                                                                                                           |
|                                                                                                        | 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                                                                                      | Tak                                                                                                                                                                                                                                                                          |
| [Container Station] Supported type                                                                     | Note: At least 1 GB RAM is required. LXC/LXD and Docker                                                                                                                                                                                                                      |
| [Container Station] Docker Hub Registry                                                                | Note: LXD has been supported after Container Station 2.4                                                                                                                                                                                                                     |
| [Container Station] Container importing and exporting                                                  | Tak                                                                                                                                                                                                                                                                          |
| [Container Station] Console mode                                                                       | Tak                                                                                                                                                                                                                                                                          |
| Linux Station                                                                                          | Tak                                                                                                                                                                                                                                                                          |
| [Linux Station] Supports Ubuntu versions                                                               | Notification: At least 4 GB RAM is required. 18.04, and 20.04                                                                                                                                                                                                                |
| Linux Station Center                                                                                   | Tak                                                                                                                                                                                                                                                                          |
| QVR Pro                                                                                                | Tak                                                                                                                                                                                                                                                                          |
|                                                                                                        | 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                                                                  | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro] Metadata                                                                                     | Tak                                                                                                                                                                                                                                                                          |
| [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                                                                                              | Tak                                                                                                                                                                                                                                                                          |
|                                                                                                        | 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] Recording Technique                                                                        | Standard MP4 file based                                                                                                                                                                                                                                                      |
| [QVR Elite] License Type                                                                               | Subscription-based                                                                                                                                                                                                                                                           |
| [QVR Elite] User-defined trigger events                                                                | Tak                                                                                                                                                                                                                                                                          |
| [QVR Elite] QVR Pro Client (Desktop)                                                                   | Windows, macOS, and QNAP HybridDesk Station                                                                                                                                                                                                                                  |
| [QVR Elite] QVR Pro Client (Mobile)                                                                    | Android and iOS                                                                                                                                                                                                                                                              |
| [QVR Elite] Recording camera streams                                                                   | H.264                                                                                                                                                                                                                                                                        |
| [QVR Elite] Free built-in camera channels                                                              | 2                                                                                                                                                                                                                                                                            |
| QVR Pro Client                                                                                         | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro Client] Dynamic View Layout                                                                   | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro Client] Windows                                                                               | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro Client] Mac                                                                                   | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro Client] HybridDesktop                                                                         | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro Client] iOS                                                                                   | Tak                                                                                                                                                                                                                                                                          |
| [QVR Pro Client] Android                                                                               | Tak                                                                                                                                                                                                                                                                          |

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QVR Center                                                         | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| [QVR Center] Log management                                        | Note: At least 4 GB RAM is required.<br>Tak                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| [QVR Center] Central monitoring across multiple servers            | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| QVR Guard                                                          | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| [QVR Guard] Failover design                                        | Note: At least 4 GB RAM is required.<br>Tak                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| [QVR Guard] Viewing task details                                   | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| [QVR Guard] Automatic switch between Standby and Takeover modes    | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| QVR Human                                                          | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| QVR Face                                                           | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| QVR DoorAccess Operating System Supported Client Operating Systems | 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><br>Tak<br>QuTS hero h5.2.9                                                                                                                                                                                                  |
| Supported Browsers                                                 | <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> </ol> <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                                                       | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| SED Storage Pool                                                   | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 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                                                     | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| VJBOD / VJBOD Cloud                                                | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| iSCSI Service                                                      | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Fibre Channel Service                                              | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| LUN Type                                                           | Thick, Thin                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Block-based iSCSI LUN                                              | Tak                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 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                                                         | 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                                                                                                                                                                       |

|                                                                     |                                                                                                                                                                                                                                 |
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|                                                                     | 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)                          | Tak                                                                                                                                                                                                                             |
| Storage Pool Expansion (by adding RAID Group)                       | Tak                                                                                                                                                                                                                             |
| RAID Hot Spare                                                      | Global, Local                                                                                                                                                                                                                   |
| RAID Sync/Rebuild/Scrubbing                                         | Tak                                                                                                                                                                                                                             |
| End-to-End data integrity                                           | Tak                                                                                                                                                                                                                             |
| Silent error detection and self-healing                             | Tak                                                                                                                                                                                                                             |
| Internal drive                                                      | ZFS                                                                                                                                                                                                                             |
| External drive                                                      | EXT3, EXT4, NTFS, FAT32, HFS+, and exFAT                                                                                                                                                                                        |
| Disk, Enclosure Locate                                              | Tak                                                                                                                                                                                                                             |
| Disk S.M.A.R.T. Scan                                                | Tak                                                                                                                                                                                                                             |
| Disk S.M.A.R.T. Data Migration                                      | Tak                                                                                                                                                                                                                             |
| Ironwolf Health Management                                          | Tak                                                                                                                                                                                                                             |
| Secure Erase                                                        | Tak                                                                                                                                                                                                                             |
| SSD Trim                                                            | Tak                                                                                                                                                                                                                             |
| SSD Life Estimation                                                 | Tak                                                                                                                                                                                                                             |
| Disk Roaming                                                        | Tak                                                                                                                                                                                                                             |
| Disk Standby                                                        | Tak                                                                                                                                                                                                                             |
| Shared Folder Snapshot                                              | Tak                                                                                                                                                                                                                             |
| LUN Snapshot                                                        | Tak                                                                                                                                                                                                                             |
| 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                                           | Tak                                                                                                                                                                                                                             |
| Self-serve Snapshot Recovery                                        | Tak                                                                                                                                                                                                                             |
| Application Consisted Snapshot                                      | Tak                                                                                                                                                                                                                             |
| Snapshot Full Clone                                                 | Tak                                                                                                                                                                                                                             |
| Snapshot Instant Clone                                              | Tak                                                                                                                                                                                                                             |
| Snapshot Replica / Vault                                            | Tak                                                                                                                                                                                                                             |
| SSD read-only Cache                                                 | Tak                                                                                                                                                                                                                             |
| SSD read & write log cache                                          | Tak                                                                                                                                                                                                                             |
| SSD dedicated ZIL cache                                             | Tak                                                                                                                                                                                                                             |
| 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                                          | Tak                                                                                                                                                                                                                             |
| Mount Smart Phone (MTP)                                             | Tak                                                                                                                                                                                                                             |
| External RAID Device (QNAP so on) Management (External Device Mode) | Tak                                                                                                                                                                                                                             |
| External RAID Device (QNAP so on) Management (NAS Mode)             | Tak                                                                                                                                                                                                                             |
| 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 2/3/4/4.1 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                                      | Tak                                                                                                                                                                                                                             |
| Shared Folder Data Deduplication                                    | Tak                                                                                                                                                                                                                             |
| Shared Folder WORM                                                  | Tak                                                                                                                                                                                                                             |
| File Station (Web)                                                  | Tak                                                                                                                                                                                                                             |
| Object Storage                                                      | Tak                                                                                                                                                                                                                             |
| Local user account                                                  | 16,000                                                                                                                                                                                                                          |
| Local group account                                                 | 512                                                                                                                                                                                                                             |
| Domain user/group account                                           | 200,000                                                                                                                                                                                                                         |
| Domain Security                                                     | Tak                                                                                                                                                                                                                             |
| Domain Controller                                                   | Tak                                                                                                                                                                                                                             |
| Shared folder permission                                            | Tak                                                                                                                                                                                                                             |
| Windows ACL                                                         | Tak                                                                                                                                                                                                                             |
| User quota                                                          | Tak                                                                                                                                                                                                                             |
| Group quota                                                         | Tak                                                                                                                                                                                                                             |
| Folder quota                                                        | Tak                                                                                                                                                                                                                             |
| Home folder                                                         | Tak                                                                                                                                                                                                                             |
| Resource Monitor                                                    | Tak                                                                                                                                                                                                                             |

|                                                            |                                                                                                                                                                     |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                  | Tak                                                                                                                                                                 |
| Schedule on/off                                            | Tak                                                                                                                                                                 |
| Internet protocol                                          | IPv4, IPv6                                                                                                                                                          |
| Virtual Switch                                             | Tak                                                                                                                                                                 |
| Port trunking                                              | Tak, (7 modes)                                                                                                                                                      |
| VLAN                                                       | Tak                                                                                                                                                                 |
| DHCP Server                                                | Tak                                                                                                                                                                 |
| DDNS (Dynamic Domain Name Service)                         | Tak                                                                                                                                                                 |
| Network access protection with auto-blocking               | SSH, Telnet, HTTP(S), FTP, CIFS/SMB, and AFP                                                                                                                        |
| Security Counselor                                         | Tak                                                                                                                                                                 |
| Malware Remover                                            | Tak                                                                                                                                                                 |
| AES 256-bit Folder Encryption validated by FIPS 140-2 CAVP | Tak                                                                                                                                                                 |
| 2-step verification                                        | Tak                                                                                                                                                                 |
| Allow/Deny List                                            | Tak                                                                                                                                                                 |
| Access Protection                                          | Tak                                                                                                                                                                 |
| Service binding                                            | Tak                                                                                                                                                                 |
| Firewall                                                   | Tak                                                                                                                                                                 |
| vSphere Web Client Plug-in                                 | Tak                                                                                                                                                                 |
| VMware vSphere VAAI for iSCSI                              | Tak                                                                                                                                                                 |
| VMware vSphere VAAI for NAS                                | Tak                                                                                                                                                                 |
| Windows ODX                                                | Tak                                                                                                                                                                 |
| Windows/VMware Snapshot Agent                              | Tak                                                                                                                                                                 |
| HTTP/HTTPS Connections                                     | TLS 1.0/1.1/1.2/1.3                                                                                                                                                 |
| Supports WebDAV Connection                                 | Tak                                                                                                                                                                 |
| Supports Virtual Hosts                                     | 32                                                                                                                                                                  |
| Qsync                                                      | Tak                                                                                                                                                                 |
| [Qsync] Management Mode                                    | Note: At least 1 GB RAM is required.                                                                                                                                |
| [Qsync] Qsync client supported platforms                   | User customization, Central                                                                                                                                         |
| [Qsync] Maximum number of version control                  | Windows, macOS, Ubuntu, Android, and iOS                                                                                                                            |
| HybridMount                                                | 64                                                                                                                                                                  |
| [HybridMount] File Cloud Gateway                           | Note: At least 1 GB RAM is required.                                                                                                                                |
| [HybridMount] Network Drive Mount                          | Concurrent Connections = 80 Upload & 80 Download                                                                                                                    |
| [HybridMount] Free cloud gateway sessions                  | Tak                                                                                                                                                                 |
| HBS (Hybrid Backup Sync)                                   | 2                                                                                                                                                                   |
| [HBS (Hybrid Backup Sync)] NAS to NAS backup               | Note: At least 1 GB RAM is required.                                                                                                                                |
| [HBS (Hybrid Backup Sync)] Cloud Backup                    | Tak                                                                                                                                                                 |
| [HBS (Hybrid Backup Sync)] Cloud Sync                      | Tak                                                                                                                                                                 |
| [HBS (Hybrid Backup Sync)] 2-way and Active Sync           | Tak                                                                                                                                                                 |
| [HBS (Hybrid Backup Sync)] Backup Deduplication            | Tak                                                                                                                                                                 |
| [HBS (Hybrid Backup Sync)] Apple Time Machine Backup       | Tak                                                                                                                                                                 |
| [HBS (Hybrid Backup Sync)] External drive backup           | Tak                                                                                                                                                                 |
| [HBS (Hybrid Backup Sync)] Maximum number of backup job    | 400                                                                                                                                                                 |
| Hyper Data Protector                                       | Tak                                                                                                                                                                 |
| Boxafe                                                     | Tak                                                                                                                                                                 |
| [Boxafe] Office 365 Backup                                 | Note: At least 4 GB RAM is required.                                                                                                                                |
| [Boxafe] Google Workspace Backup                           | Tak                                                                                                                                                                 |
| [Boxafe] Full-text search                                  | Tak                                                                                                                                                                 |

|                                                                                                        |                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Qsirch                                                                                                 | Tak                                                                                                                                                                     |
|                                                                                                        | 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                                                                          | Tak                                                                                                                                                                     |
| [Qsirch] Advanced picture search                                                                       | Tak                                                                                                                                                                     |
| [Qsirch] Search filters                                                                                | Tak                                                                                                                                                                     |
| QuMagie                                                                                                | Tak                                                                                                                                                                     |
|                                                                                                        | Note: At least 1 GB RAM is required.                                                                                                                                    |
| [QuMagie] Browse photos                                                                                | Tak                                                                                                                                                                     |
| [QuMagie] Virtual and smart albums                                                                     | Tak                                                                                                                                                                     |
| [QuMagie] AI-assisted photo management                                                                 | People, things, places, and others                                                                                                                                      |
| Antivirus (free)                                                                                       | Tak                                                                                                                                                                     |
| McAfee (License)                                                                                       | Tak                                                                                                                                                                     |
| QVPN Service                                                                                           | Tak                                                                                                                                                                     |
|                                                                                                        | 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                                                                                                                                                                     |
| LDAP Server                                                                                            | Tak                                                                                                                                                                     |
| RADIUS                                                                                                 | Tak                                                                                                                                                                     |
| SQL server                                                                                             | Tak                                                                                                                                                                     |
| License Center                                                                                         | Tak                                                                                                                                                                     |
| Multimedia Console                                                                                     | Tak                                                                                                                                                                     |
| Photo Station                                                                                          | Tak                                                                                                                                                                     |
| Music Station                                                                                          | Tak                                                                                                                                                                     |
| Video Station                                                                                          | Tak                                                                                                                                                                     |
| Download Station                                                                                       | Tak                                                                                                                                                                     |
| Notes Station                                                                                          | Tak                                                                                                                                                                     |
| Qfiling                                                                                                | Tak                                                                                                                                                                     |
| Media Streaming add-on                                                                                 | Tak                                                                                                                                                                     |
| QmailAgent                                                                                             | Tak                                                                                                                                                                     |
| QuWAN                                                                                                  | Tak                                                                                                                                                                     |
| DA Driver Analyzer                                                                                     | Tak                                                                                                                                                                     |
| Q'center                                                                                               | Tak                                                                                                                                                                     |
|                                                                                                        | Note: The application is available in the App Center and in virtual appliance marketplaces (VMware vSphere ESXi and Microsoft Hyper-V).                                 |
| Q'center Server                                                                                        | Tak                                                                                                                                                                     |
| Q'center Agent                                                                                         | Tak                                                                                                                                                                     |
| Connect to Q'center                                                                                    | Tak                                                                                                                                                                     |
| Virtualization Station                                                                                 | Tak                                                                                                                                                                     |
|                                                                                                        | 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                                 | 16                                                                                                                                                                      |
|                                                                                                        | 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                                                                                      | Tak                                                                                                                                                                     |
|                                                                                                        | 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                                                                | Tak                                                                                                                                                                     |
| [Container Station] Container importing and                                                            | Tak                                                                                                                                                                     |

|                                                                                                                                                                                                                                                                              |                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| exporting                                                                                                                                                                                                                                                                    |                                             |
| [Container Station] Console mode                                                                                                                                                                                                                                             | Tak                                         |
| Linux Station                                                                                                                                                                                                                                                                | Tak                                         |
| Notification: At least 4 GB RAM is required.                                                                                                                                                                                                                                 |                                             |
| [Linux Station] Supports Ubuntu versions                                                                                                                                                                                                                                     | 16.04, 18.04, and 20.04                     |
| Linux Station Center                                                                                                                                                                                                                                                         | Tak                                         |
| QVR Elite                                                                                                                                                                                                                                                                    | Tak                                         |
| 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] Recording Technique                                                                                                                                                                                                                                              | Standard MP4 file based                     |
| [QVR Elite] License Type                                                                                                                                                                                                                                                     | Subscription-based                          |
| [QVR Elite] User-defined trigger events                                                                                                                                                                                                                                      | Tak                                         |
| [QVR Elite] QVR Pro Client (Desktop)                                                                                                                                                                                                                                         | Windows, macOS, and QNAP HybridDesk Station |
| [QVR Elite] QVR Pro Client (Mobile)                                                                                                                                                                                                                                          | Android and iOS                             |
| [QVR Elite] Recording camera streams                                                                                                                                                                                                                                         | H.264                                       |
| [QVR Elite] Free built-in camera channels                                                                                                                                                                                                                                    | 2                                           |
| [QVR Elite] Expandable camera channels                                                                                                                                                                                                                                       | Developing                                  |
| [QVR Pro Client] Live 4K H.265 (6M) channel 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                                                                                                                                                                                                                                                                   | Tak                                         |
| Note: At least 4 GB RAM is required.                                                                                                                                                                                                                                         |                                             |
| [QVR Center] Log management                                                                                                                                                                                                                                                  | Tak                                         |
| [QVR Center] Central monitoring across multiple servers                                                                                                                                                                                                                      | Tak                                         |

## Zawartość opakowania

TVS-h1677AX  
 Kabel Ethernet 10GBASE-T x 1  
 Przewód zasilający x 1  
 Śruby z łbem płaskim x 48 (do dysku twardego 3,5  
 Śruby z łbem płaskim x 24 (do dysku twardego 2,5  
 Klucze do tacki dysku x 2  
 Skrócona instrukcja instalacji (QIG)