



High Performance Capacity Expansion for Turbo NAS

The QNAP RAID Expansion Enclosure is designed to provide a high-density, high-efficiency, and high-scalability storage expansion solution for the QNAP Turbo NAS*. With the plug-and-use design, the RAID Expansion Enclosure delivers a fast way to easily scale up storage capacity of the Turbo NAS. Multiple RAID Expansion Enclosures can be cascaded via the high speed SAS interface to provide over 400TB raw capacity. Coupled with the well designed software and intuitive user interface, the RAID Expansion Enclosure offers a seamless way for capacity expansion.

Whenever short on storage, plug in a RAID Expansion Enclosure to the QNAP Turbo NAS, and expand its capacity right away.

* The RAID Expansion Enclosure works with the TS-x79 series Turbo NAS.

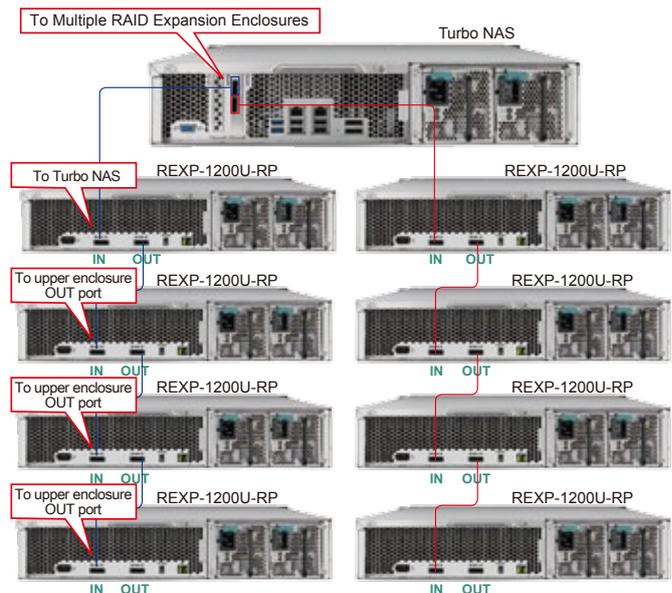
Highlights

- Plug and use, seamless capacity expansion
- Backup storage for the Turbo NAS
- High density, high efficiency, high scalability
- Supports SAS/SATA 6Gbps hard drives and SSD
 - SAS drives for high performance and high reliability
 - SATA drives for low-cost and high-capacity applications
 - SSD for I/O intensive operations



Plug and use, seamless capacity expansion

Simply connect a RAID Expansion Enclosure to a Turbo NAS and power it on, the Turbo NAS will detect the hard drives in the Enclosure as newly installed local drives. With the disk management software provided by the Turbo NAS, the IT administrators can easily expand an existing volume on the NAS. Multiple RAID Expansion Enclosures can also be cascaded to provide massive capacity. The status and health of the Enclosures can be monitored via the web-based management interface of the Turbo NAS.



High density, high efficiency and high scalability

Two RAID Expansion Enclosure models are available. The REXP-1200U-RP supports 12 SAS/SATA 6Gbps hard drives and SSD in 2U rack space, providing up to 36TB raw capacity. The REXP-1600U-RP supports 16 hard drives and 48TB raw capacity in 3U rack space. These RAID Expansion Enclosure units have two SAS wide ports (IN port and OUT port) for host connectivity and

daisy chain respectively. Each SAS wide port combines four SAS channels, with each supporting 6Gbps full duplex speed. The maximum bandwidth per host connection is 24Gbps, which delivers unprecedented performance when daisy-chaining multiple RAID Expansion Enclosures.

Backup storage for Turbo NAS

In addition to expanding an existing volume, the RAID Expansion Enclosure can also be used to host an independent volume. It is an excellent solution for backing up the Turbo NAS. Simply configure the RAID Expansion Enclosure as an independent volume, and start backing up data from the Turbo NAS through blazing fast SAS connection.

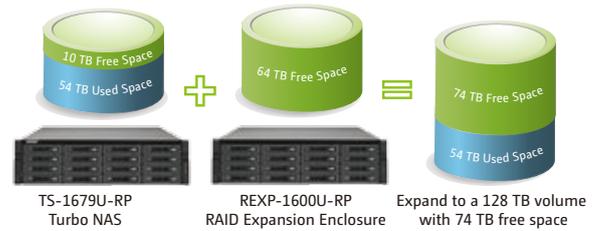
Application Scenarios

Expand existing local volume

When being lack of volume capacity, use the RAID Expansion Enclosure to expand the Turbo NAS capacity. Simply connect the RAID Expansion Enclosure to the storage expansion port on the Turbo NAS and more available hard drives will appear instantly in the NAS. The volume management feature provided by the Turbo NAS allows the IT administrator to create a scalable volume. Wide port SAS connections provide 24Gbps connectivity between hosts and ensure the system performance.

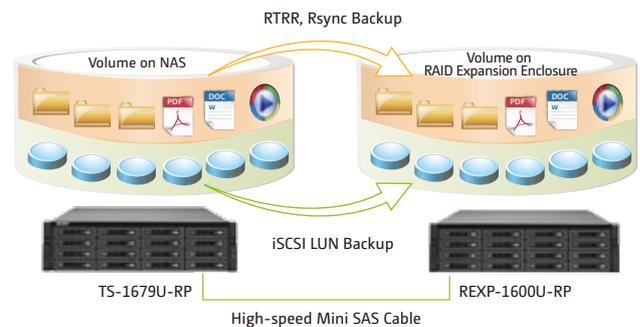
Flexible drive type and capacity

The RAID Expansion Enclosure offers flexibility in drive choices which include low-cost, high-capacity SATA hard drives for data archiving, enterprise-level SAS hard drives for mission critical applications, and solid-state drives (SSD) for I/O intensive operations.



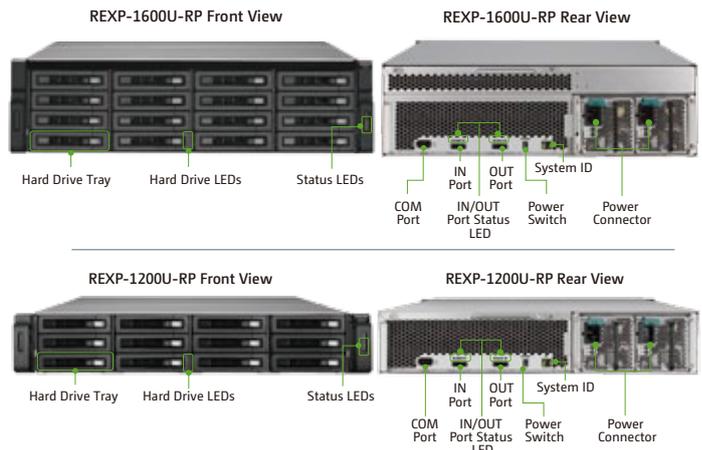
Backup to the RAID Expansion Enclosure

Create an independent volume on the RAID Expansion Enclosure and use the backup features provided by the Turbo NAS such as RTRR, rsync, or iSCSI LUN backup to back up the Turbo NAS data to the Enclosure. Data is backed up to an independent file system and device, and therefore protected from file system corruptions as well as hardware failures of the original Turbo NAS. Compared with backing up to another Turbo NAS via network, backing up to the RAID Expansion Enclosure offers a relatively higher transfer rate at a lower cost. Backing up to the RAID Expansion Enclosure offers redundancy, speed, and flexibility at an affordable cost.



Hardware Specification

	REXP-1600U-RP	REXP-1200U-RP
Host Interface	Two SAS 6Gbps wide port (IN port, OUT port)	
Hard Drive	16 x 3.5-inch SAS/SATA 6Gb/s, SAS/SATA 3Gb/s hard drive or 2.5-inch SAS/SATA, SSD hard drive	12 x 3.5-inch SAS/SATA 6Gb/s, SAS/SATA 3Gb/s hard drive or 2.5-inch SAS/SATA, SSD hard drive
LED Indicators	Front panel: Status, fault, system over heat, fan error Rear panel: SAS link, SAS error, enclosure ID	
Form Factor	3U, rackmount	2U, rackmount
Dimensions	130(H) x 442.4(W) x 528.3(D) mm 5.12(H) x 17.42(W) x 20.80(D) inch	88(H) x 439(W) x 520(D) mm 3.46(H) x 17.28(W) x 20.47(D) inch
Weight	Net weight: 18.14 kg/39.99 lb Gross weight: 25.92 kg/57.14 lb	Net weight: 14.8 kg/32.63 lb Gross weight: 21.99 kg/48.48 lb
Sound Level	Standby: 30.1 dB In operation: 41.5 dB (with 16 x 1TB hard drive installed)	Standby: 43.3 dB In operation: 44.1 dB (with 12 x 1TB hard drive installed)
Power Supply	600W Redundant Power Supply	
Power Consumption	Idle mode: 199W In operation: 289W (with 16x 2TB hard drive installed)	Idle mode: 105W In operation: 147W (with 12 x 500GB hard drive installed)
Temperature	0-40°C	
Relative Humidity	0-60%	
COM Port	Reserved for system maintenance	
Fan	3 x smart cooling fan (hot-swappable fan module)	
Management (via QNAP Turbo NAS)	<ol style="list-style-type: none"> Supports disk S.M.A.R.T. information RAID expansion enclosure identifier Locate RAID expansion enclosures Locate hard disks on RAID expansion enclosures Smart fan control In-band SAS firmware update In-band SAS firmware update 	
NAS Models Supported	TS-879 Pro, TS-1079 Pro, TS-879U-RP, TS-EC879U-RP, TS-1279U-RP, TS-EC1279U-RP, TS-1679U-RP, TS-EC1679U-RP, TS-EC1279U-SAS-RP, TS-EC1679U-SAS-RP	



Accessories

Items	Order number	Descriptions
	SAS-6G2E-D	Dual-wide-port storage expansion card, SAS 6Gbps, for tower model, desktop bracket
	SAS-6G2E-U	Dual-wide-port storage expansion card, SAS 6Gbps, for rackmount model, low-profile bracket
	RAIL-A01-35	A01 series rail kit, max. load 35 kg
	CAB-SAS10M-8088	MiniSAS external cable (SFF-8088 to SFF-8088), 1.0 m
	CAB-SAS05M-8088	MiniSAS external cable (SFF-8088 to SFF-8088), 0.5 m