

QNAP

TL-R1220Sep-RP

TL-R1620Sep-RP



**12/16-bay 12Gb/s SAS
expander JBOD**
for Windows Server and NAS capacity expansion

Windows
Server
2019

Certified



CLI (Command Line)

TL-R1220Sep-RP

TL-R1620Sep-RP



- Multipurpose enterprise SAS 12Gb/s expander JBOD: for Windows/ Linux server and NAS capacity expansion support (QTS / QuTS hero)
 - 4 x SAS 12Gb/s SFF-8644 wide ports
 - Windows Server 2019 Cert.
 - QNAP JBOD Manager utility for Windows – status monitoring
 - Command line interface (CLI) - flexible usage
 - Up to sixteen TL-R1620Sep-RP can be connected
- Flexible daisy chaining modes – performance and security

Windows
Server
2019

Certified

SAS full-duplex 12Gb/s Mini-SAS HD SFF-8644 for max 48Gb/s performance

Single-cable bandwidth

SAS 12Gb/s

4 x 12Gb/s

48Gb/s

SAS 6Gb/s

4 x 6Gb/s

24Gb/s

USB 3.2 Gen 2x2

20Gb/s

USB 3.2 Gen 2

10Gb/s

SATA / eSATA

6Gb/s

USB 3.2 Gen 1

5Gb/s

Cable

QNAP P/N

| | | |
|---|---|--|
|  | SAS 12Gb/s SFF-8644 Mini-SAS HD cable | CAB-SAS05M-8644 CAB-SAS10M-8644 CAB-SAS20M-8644 CAB-SAS30M-8644 |
|  | SAS/ SATA 6Gb/s Mini-SAS SFF-8088 cable | CAB-SAS05M-8088 CAB-SAS10M-8088 CAB-SAS20M-8088 CAB-SAS30M-8088 |
|  | USB 3.2 Gen 1 cable (5Gb/s) | Type A to C: CAB-U35G02MAC CAB-U35G10MAC |
|  | USB 3.2 Gen 2 cable (10Gb/s) | Type A to C: CAB-U310G10MAC Type C to C: CAB-U310G10MCC |

Higher reliability, faster performance, and better availability for SAS drives

| | SAS SSD | SAS HDD | SATA SSD | SATA HDD |
|---------------------|-------------------|-------------------|-----------------|-----------------|
| Price per TB | \$\$\$\$ | \$\$\$ | \$\$ | \$ |
| RPM | --- | Up to 15, 000 | --- | Up to 7, 200 |
| Capacity | Up to 15.36 TB | Up to 18 TB | Up to 4 TB | Up to 18 TB |
| MTBF | 2.5 M hours | 2.5 M hours | 2 M hours | 1.2 M hours |
| Workload | Process-intensive | Process-intensive | Light to normal | Light to normal |
| Speed | 12 Gb/s | 12 Gb/s | 6 Gb/s | 6 Gb/s |
| Latency | Lowest | Lower | Lower | Higher |
| Dual-port | Supported | Supported | - | - |

New generation of 12-bay & 16-bay SAS 12Gb/s JBOD Storage expansion



Built with a Broadcom® SAS expander, capable of connecting many drives with a single SAS cable and SAS JBOD enclosures to expand the NAS storage space.

12 Bay



TL-R1220Sep-RP

16 Bay



TL-R1620Sep-RP

TL-R1220Sep-RP/ TL-R1620Sep-RP SAS JBOD front view



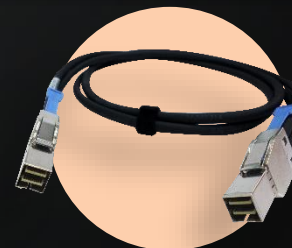
TL-R1620Sep-RP



TL-R1220Sep-RP



2 keys included



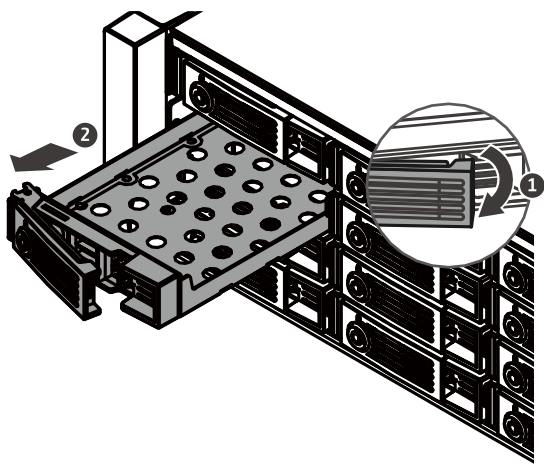
0.5-meter Mini-SAS
HD cable included



Built-in warning
buzzer

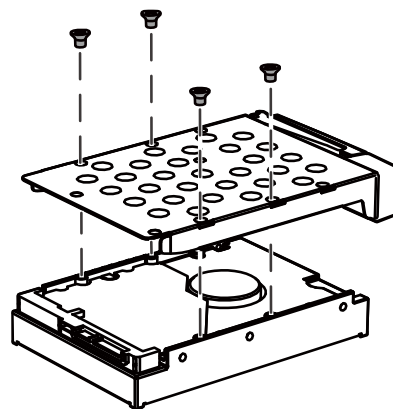
Support 3.5-inch and 2.5-inch SAS & SATA HDD/ SSD

STEP 01

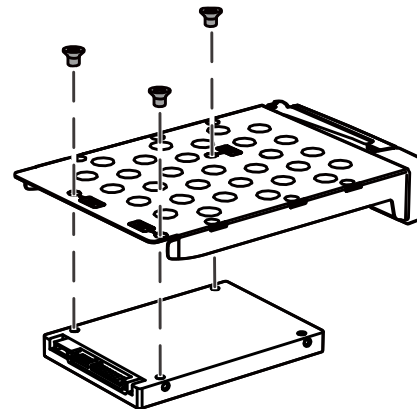


STEP 02

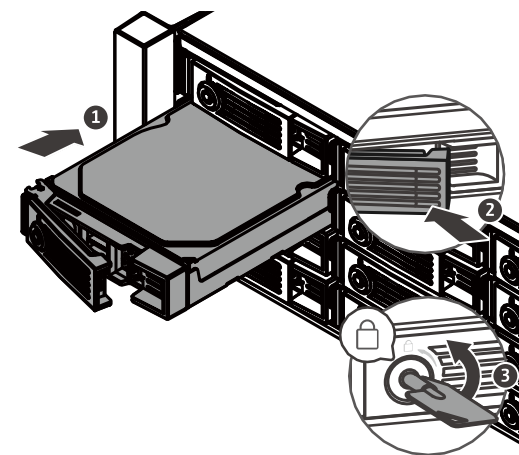
3.5-inch HDD



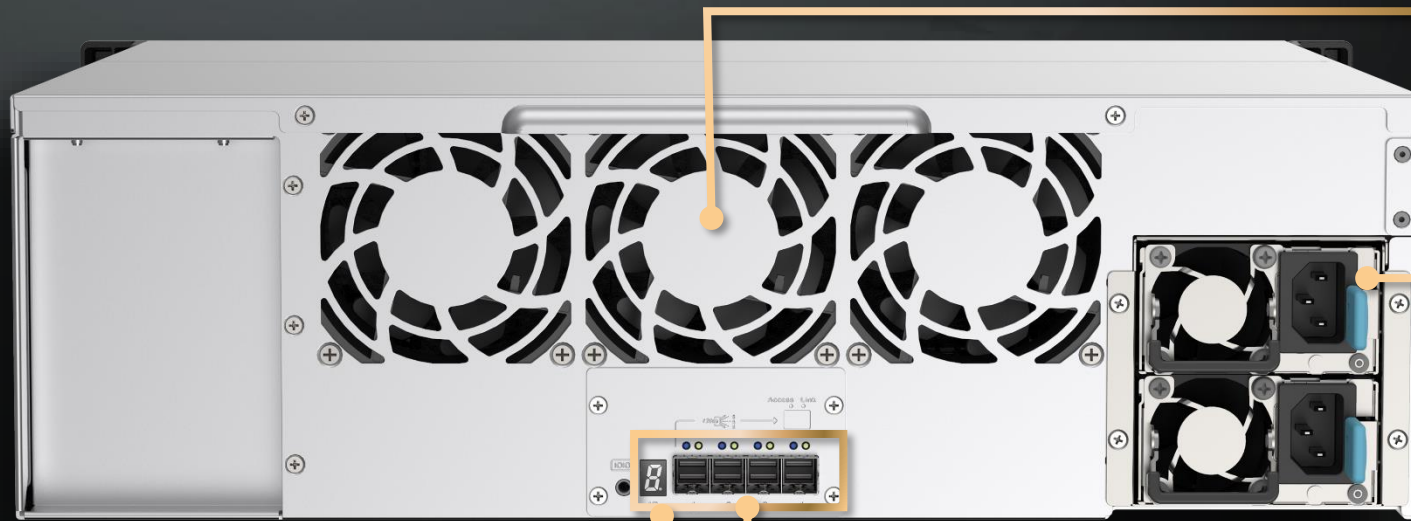
2.5-inch HDD/ SSD



STEP 03



TL-R1220Sep-RP/ TL-R1620Sep-RP SAS JBOD rear view



TL-R1620Sep-RP
HxWxD (131.3x482.2x425.3)



TL-R1220Sep-RP
HxWxD (88.65x482.2x423.8)

8cm Smart Fan
TL-R1620Sep-RP: 3
TL-R1220Sep-RP: 2

Redundant power supplies
TL-R1620Sep-RP: 2 x 550W
TL-R1220Sep-RP: 2 x 300W

4 x Mini-SAS HD
SFF-8644 SAS Wide-port
4 x 48Gb/s = 192Gb/s

JBOD address indicator
(1~9, a~g*)

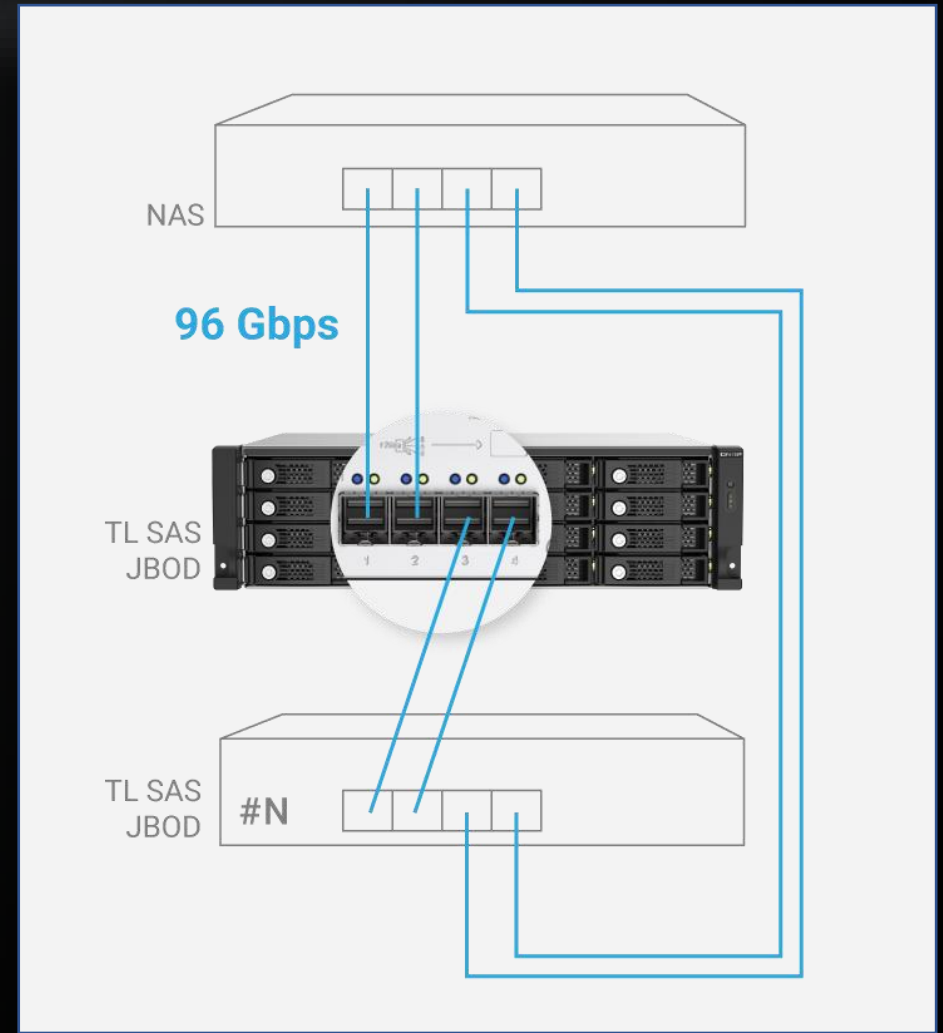
*QTS 4.5.2 / QuTS hero h4.5.2 will support displaying the a to g addresses.

Up to 192Gbps with 4 Mini-SAS HD ports for intensive workloads in business storage

TL-R1220S-RP/ TL-R1620Sep-RP

- Low power Broadcom SAS35x28R SAS Expander IC
- 12 or 16 x 12/ 6Gbps SAS/ SATA HDD or SSD
- 4 x 12 Gb/s SAS 3.0 (x4 Lane) SFF-8644 SAS wide ports, each port maximum 48Gb/s, totaling **192Gbps**

Install 1 or more SAS expansion PCIe cards in the NAS and aggregate two ports for connecting multiple TL SAS JBOD units with up to 96Gbps.



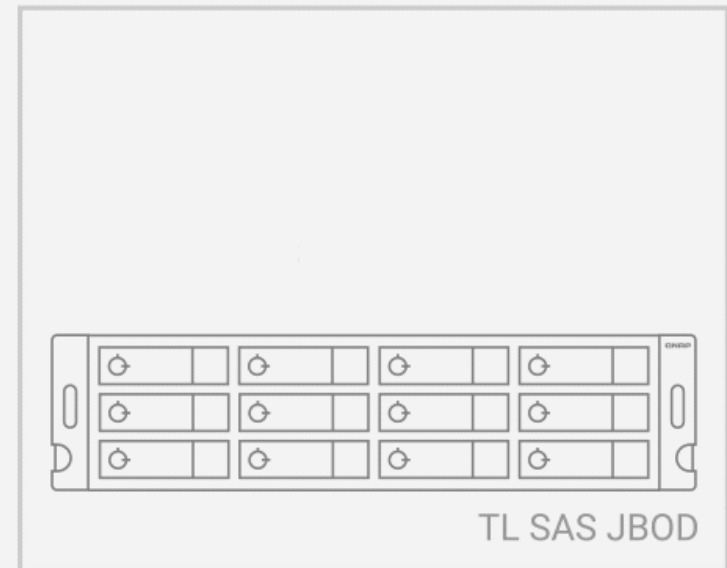
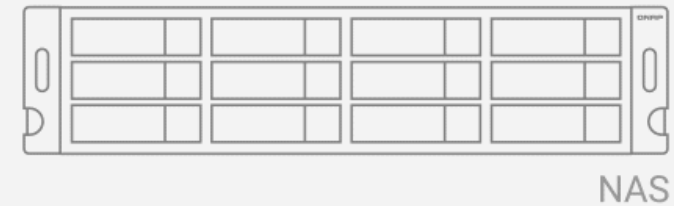
SAS DataBolt™ bandwidth optimizer technology aggregates bandwidth to provide 12Gb/s SAS performance to 6Gbs SSD/HDD

“DataBolt bandwidth optimizer technology aggregates bandwidth to provide 12Gb/s SAS performance to the host when using 6Gb/s and 3Gb/s SATA end devices, making it ideal for high-capacity and other storage applications.”

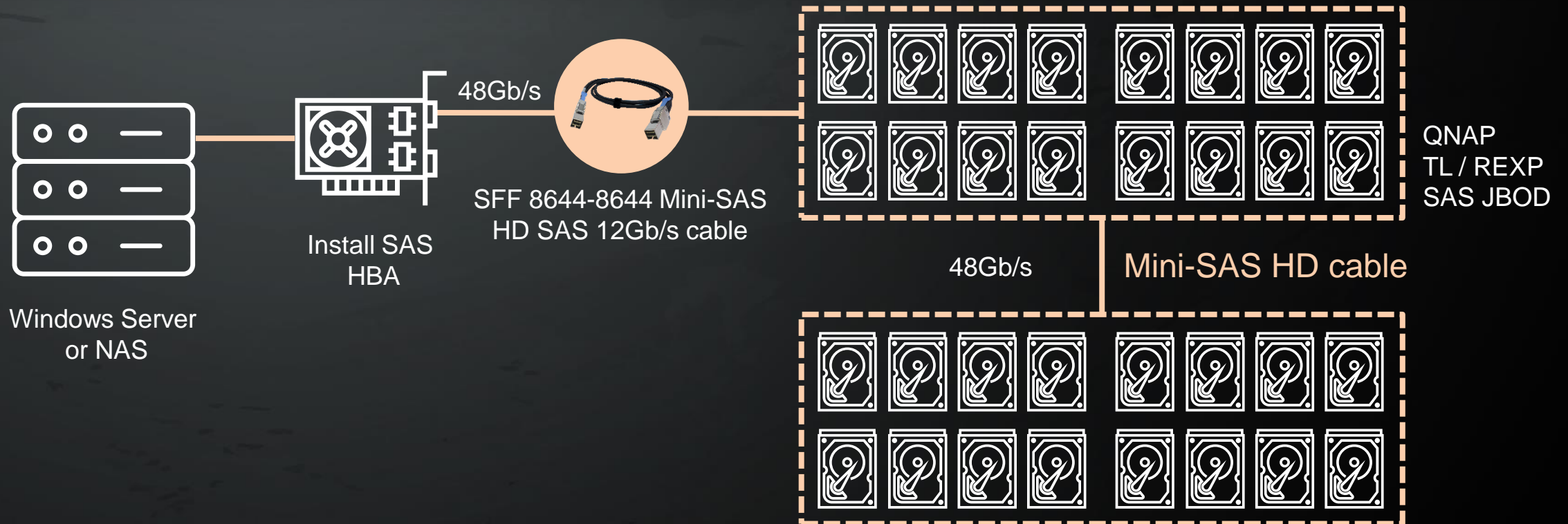
- Broadcom

Broadcom DataBolt™ technology aggregates the performance of two 6Gb/s HDD/SSD and passes the performance back along one 12Gb/s lane.

Note: The QNAP NAS requires QTS 4.5.1 / QuTS hero h4.5.1 (or later) with a PCIe SAS storage expansion card installed.



MiniSAS HD cable 48Gb/s connection, NAS support up to 16 SAS JBOD



*Actual numbers that a system can support depends on OS, cable and JBOD. Please refer to the specifications.

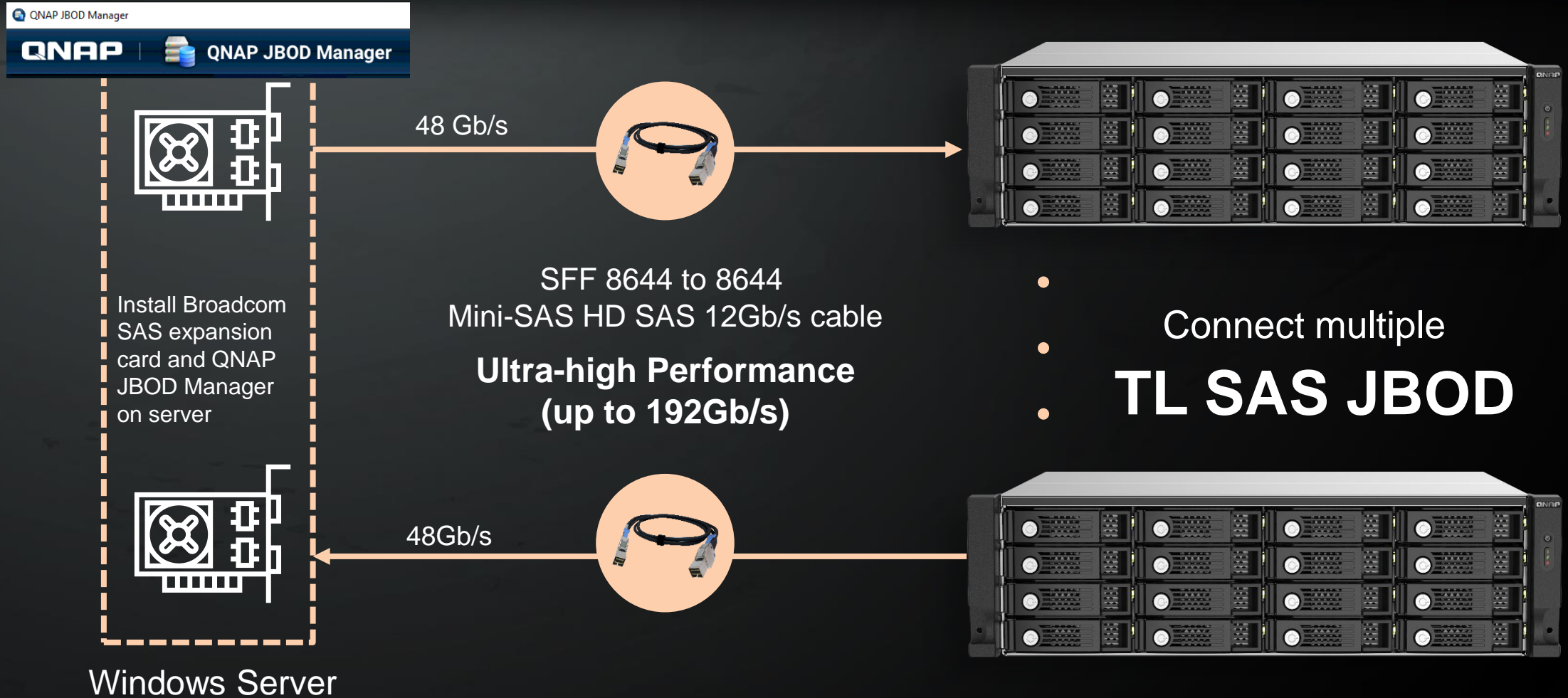
QTS 4.5.1+ /QuTS hero h4.5.1+ up to
16 QNAP SAS JBOD

TL-R1220Sep-RP
TL-R1620Sep-RP



Expand
Windows Server
storage space

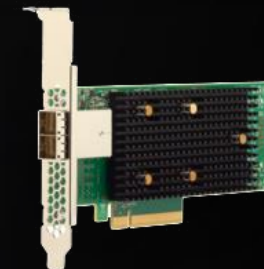
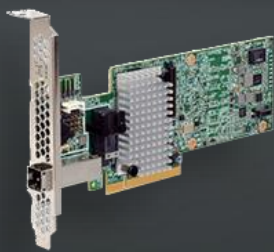
Install Broadcom SAS HBA or SAS RAID card on Windows Server



• Maximum number of JBOD a single unit can support depends on OS

Windows Server paired with QNAP JBOD Manager

Widely support Broadcom SAS expansion card and QNAP TL JBOD



**Broadcom
model**

**MegaRAID
9380-4i4e**

**SAS
9300-8e**

**SAS
9305-16e**

**SAS
9500-8e**

**MegaRAID
9580-8i8e**

**SAS
9400-8e**

RAID support

0, 1, 5, 6, 10,
50, and 60

Non-RAID HBA

Non-RAID HBA

Non-RAID HBA

RAID 0, 1, 5, 6,
10, 50 and 60

Non-RAID HBA

Port

4 + 4 ports
(1 x SFF-8644
1 x SFF-8643)

8 ports
(2 x SFF-8644)

16 ports
(4 x SFF-8644)

8 ports
(2 x SFF-8644)

8 + 8 ports
(2 x SFF-8644
2 x SFF-8643)

8 ports
(2 x SFF-8644)

PCI Express

x8
PCI Express 3.0

x8
PCI Express 3.0

x8
PCI Express 3.0

x8
PCI Express 3.0

x8
PCI Express 4.0

x8
PCI Express 3.1

**Manufacturer
Information**

[Site URL](#)

[Site URL](#)

[Site URL](#)

[Site URL](#)

[Site URL](#)

[Site URL](#)

Windows Server monitoring management tool: QNAP JBOD Manager

The screenshot displays the QNAP JBOD Manager web interface. The top navigation bar includes the QNAP logo and the title 'QNAP JBOD Manager'. Below the navigation bar, there are four main tabs: 'Device Information', 'Zoning Settings', 'Disk Information', and 'Firmware Information'. The 'Device Information' tab is selected, showing details for 'TL-R1220Sep-RP #1'. On the left side, there is a 'Select device:' dropdown menu with 'TL-R1220Sep-RP #1' selected, a device image, and a 'Serial No.: Q209114705'. Below the image is an 'Action' dropdown menu and a tip: 'You can use Windows Server Manager to create a RAID group for data protection.' The main content area displays the following information for 'TL-R1220Sep-RP #1':

| | |
|---------------------|-----------------|
| ID: | 1 |
| Enclosure health: | ✓ Good |
| Firmware version: | 1.0.3 |
| Bus type: | ⌘ SAS |
| PSU 1 status: | ✓ Good |
| PSU 2 status: | ✓ Good |
| System temperature: | ✓ 37°C/98°F |
| System fan 1 speed: | ✓ 1040 rpm |
| System fan 2 speed: | ✓ 1030 rpm |
| Port status: | 1 ⌘ 2 ⌘ 3 ⌘ 4 ✓ |
| Multipath: | ⓘ No |
| Zone Configuration: | -- |

Device status

Get TL-R1220Sep-RP & TL-R1620Sep-RP information in real-time, including device health status, system temperature, system fan speed, connection status, Multipath I/O status and Zone configuration

The 'Device Temperature Threshold' dialog box is shown. It contains the following text: 'Specify a temperature threshold for the device. When the temperature exceeds the threshold, the device will beep and the health status will change to "Warning".' Below this text, there is a field for 'Temperature threshold (°C):' with the value '65' entered, followed by '= 149 °F'. At the bottom right, there are 'Apply' and 'Cancel' buttons.

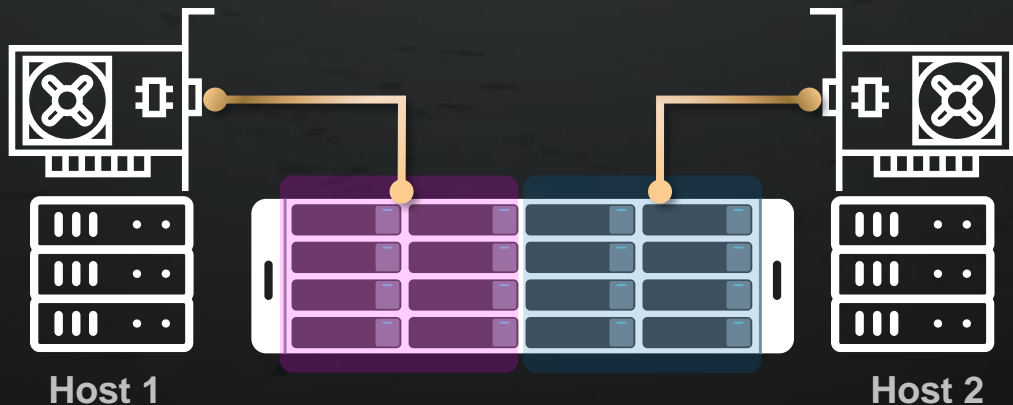
QNAP JBOD Manager support Drive-bay zoning setting - allows single JBOD to serve multiple servers

Zone Setting

SAS Zone setting can divide JBOD into multiple Zones and enable host servers to only access specific zone

Note:

- (1) The utility can only divide the JBOD into 2 zones. For dividing into 4/ 8 zones, you need to configure the device via CLI
- (2) H/W RAID cannot use zone setting



The screenshot displays the QNAP JBOD Manager web interface. The top navigation bar includes the QNAP logo and the title 'QNAP JBOD Manager'. Below the navigation bar, there are four main sections: 'Device Information', 'Zoning Settings', 'Disk Information', and 'Firmware Information'. The 'Zoning Settings' section is active and shows the following information:

- Select device:** TL-R1220Sep-RP #1
- Serial No.:** Q209114705
- Action:** [Dropdown menu]
- Zoning:** [Toggle switch is turned ON]
- Enable zoning to allow host computers to only access a specific group of disks.**
- Zone configuration:** 1 [Gear icon]
- Legend:** Group Number / Color: 0 (purple), 1 (blue)

A note at the bottom of the Zoning Settings section states: "You can use Windows Server Manager to create a RAID group for data protection."

QNAP JBOD Manager Disk Information

QNAP JBOD Manager

Select device: TL-R1220Sep-RP #1

Serial No.: Q209114705

Disks installed: 4

Show: All disks S.M.A.R.T. polling time: 5 mins

| Disk | Manufacturer / Model | Capacity | Status | Action |
|------------|------------------------------|----------|--------|--------|
| Disk 1 HDD | Seagate ST14000VN0008-2KU103 | 12.73 TB | Good | |
| Disk 2 HDD | Seagate ST14000VN0008-2KU103 | 12.73 TB | Good | |
| Disk 3 HDD | Seagate ST14000VN0008-2KU103 | 12.73 TB | Good | |
| Disk 4 HDD | Seagate ST14000VN0008-2KU103 | 12.73 TB | Good | |

Locate Disk: The disk's LED is blinking. Stop Blinking

Disk Information

Provide all disks' model, capacity, basic S.M.A.R.T information and allocation (Flashes for IT to distinguish)

Disk 1

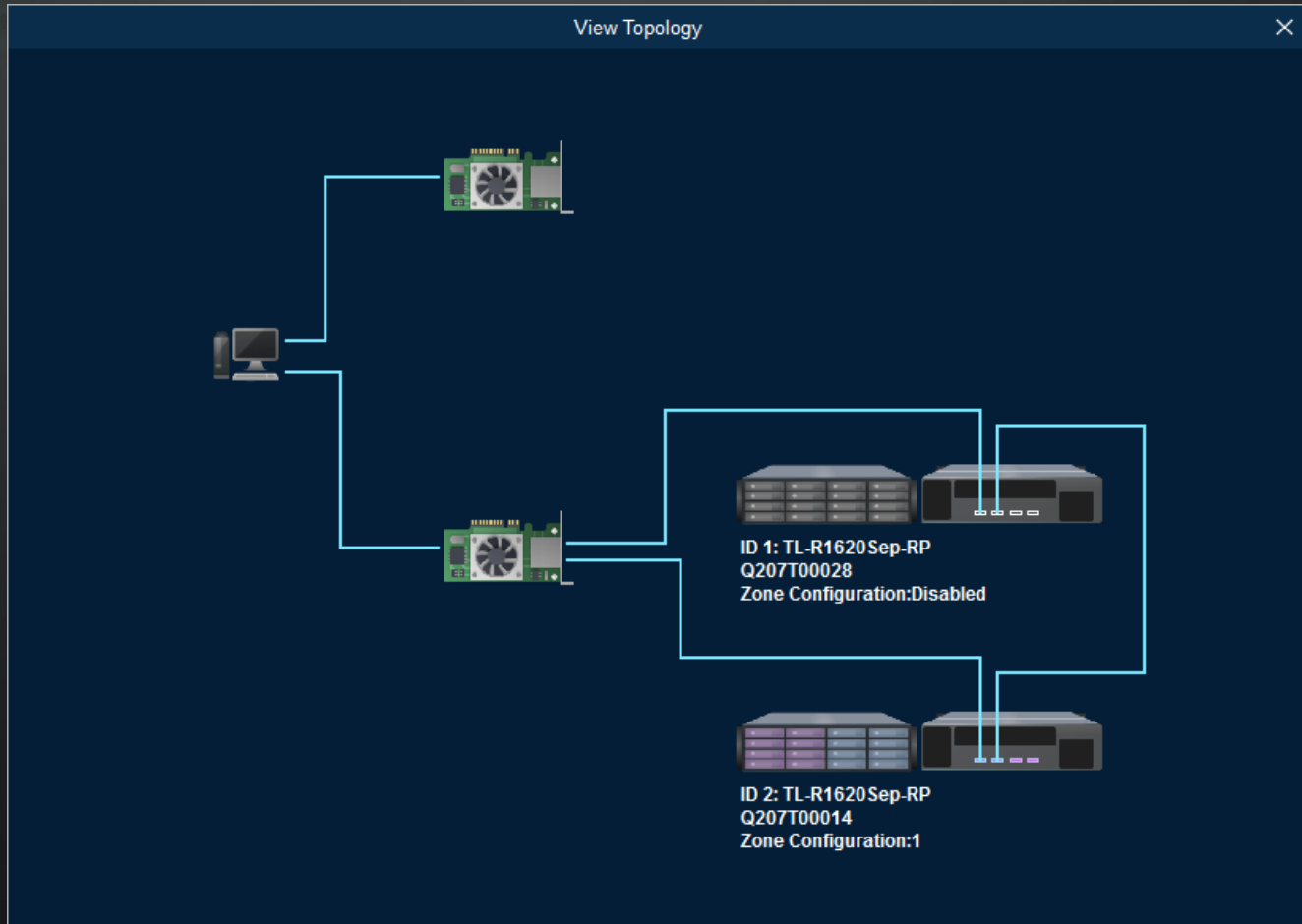
Temperature: 34°C / 93°F

Current Speed: 6 Gbps

Firmware Version: SC60

| ID | Description | Current | Worst | Threshold | Raw Value | Status |
|----|---------------------|---------|-------|-----------|-----------|--------|
| 1 | Raw_Read_Error_Rate | 83 | 64 | 0 | 208150257 | Good |
| 3 | Spin_Up_Time | 91 | 87 | 0 | 0 | Good |
| 4 | Start_Stop_Count | 100 | 100 | 0 | 544 | Good |
| 5 | Retired_Block_Count | 100 | 100 | 0 | 0 | Good |
| 7 | Seek_Error_Rate | 76 | 61 | 0 | 36874492 | Good |
| 9 | Power-On_Hours | 93 | 93 | 0 | 6710 | Good |

QNAP JBOD Manager View Topology



Topology

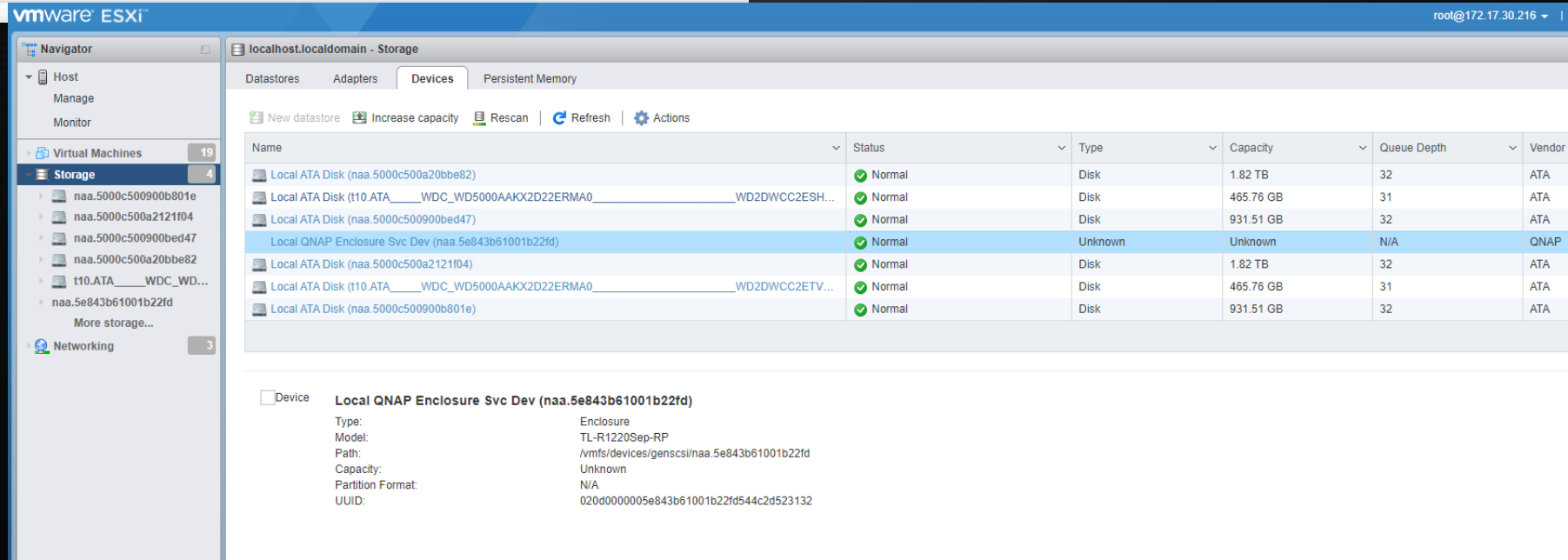
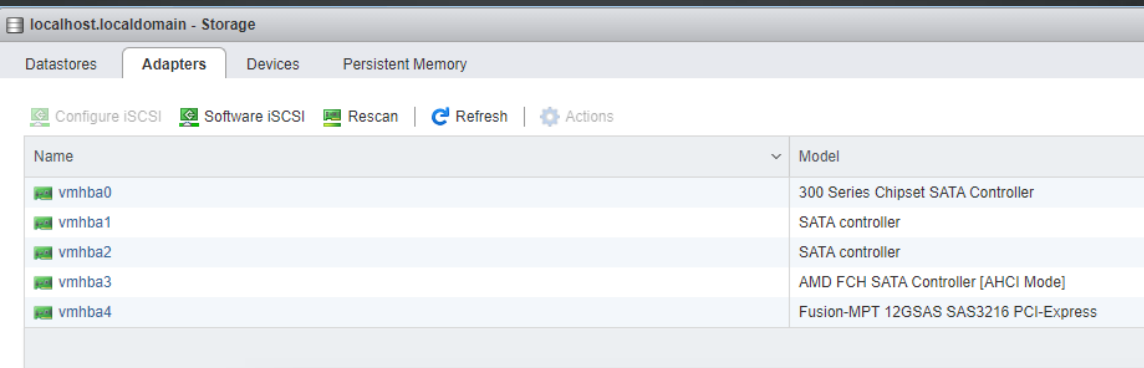
It will automatically generate visual topology and let you stay on top of connected devices and status

Note: This function can only support Broadcom SAS HBA. Broadcom RAID card cannot support topology due to its architecture

Support VMware datastore Significantly expand capacity

VMware datastore

Through Broadcom LSI SAS HBA, you can easily connect SAS JBOD with VMware server, and expand Vmware capacity through VMFS type



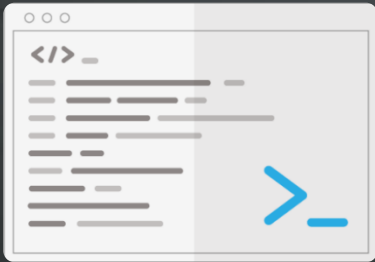
LIVE
DEMO

QNAP

TL-R1220Sep-RP
TL-R1620Sep-RP



Command Line Interface



Command Line Interface

You can connect your computer to the TL-R1220Sep-RP /TL-R1620Sep-RP via the console port, and use the command line interface (CLI) to configure the SAS JBOD (for example: set SAS Zoning to eight zones).

Note: A password is required to use the CLI. The default password is 00000000 (eight zeros).

| Nickname | [xxx] | Nickname : xxx |
|-----------------------------------|--|---|
| Route table read | rtr [d z dz] | Default display enabled entries with a nonzero SAS address d include disabled entries z include entries with a zero SAS address dz display all entries" |
| Display info for all Phy | phyinfo [help edfb power] [up <PhyNum(D)>] | - no arguments displays default output - 'help' displays detailed help information - 'edfb' subcommand displays EDFB info - 'power' subcommand displays power mgmt info - 'up' filters to display connected phys only - 'cable' subcommand displays cable mgmt info - <PhyNum> is a valid phy index and filters the output to display info about that phy |
| Display or reset all phy counters | counters [config event reset] | - no arguments displays phy error counters and generic broadcast counters - 'config' subcommand displays phy event configuration - 'event' subcommand displays phy event counters - 'reset' subcommand resets all phy counters |

TL-R1220Sep-RP
TL-R1620Sep-RP



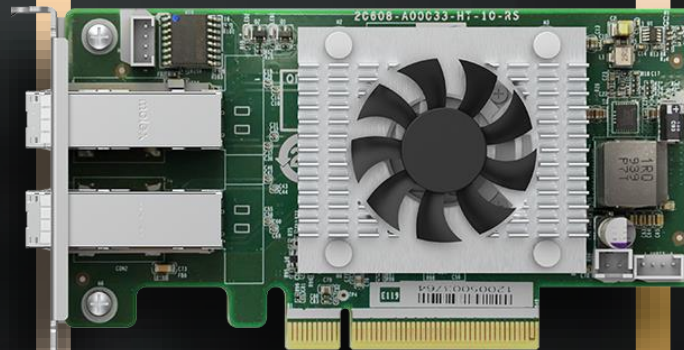
Expand
QNAP NAS
storage space

QNAP dual-port/quad-port SAS 12Gb/s expansion cards



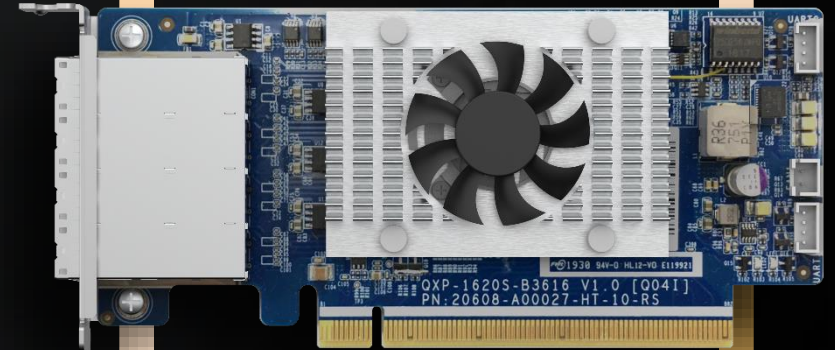
Broadcom®
SAS controller

Dual-port
SAS 12Gb/s



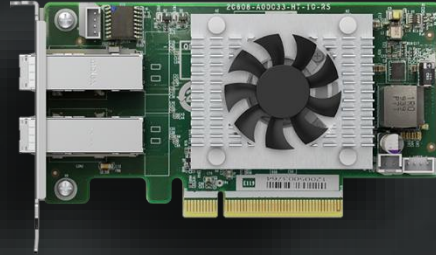
QXP-820S-B3408
PCIe Gen3 x8

Quad-port
SAS 12Gb/s

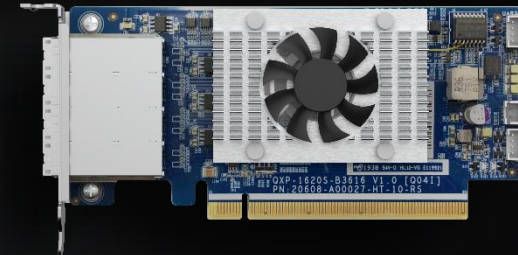


QXP-1620S-B3616W
PCIe Gen3 x16

Dual/Quad-port SAS-3 12Gb/s expansion card specifications



QXP-820S-B3408



QXP-1620S-B3616W

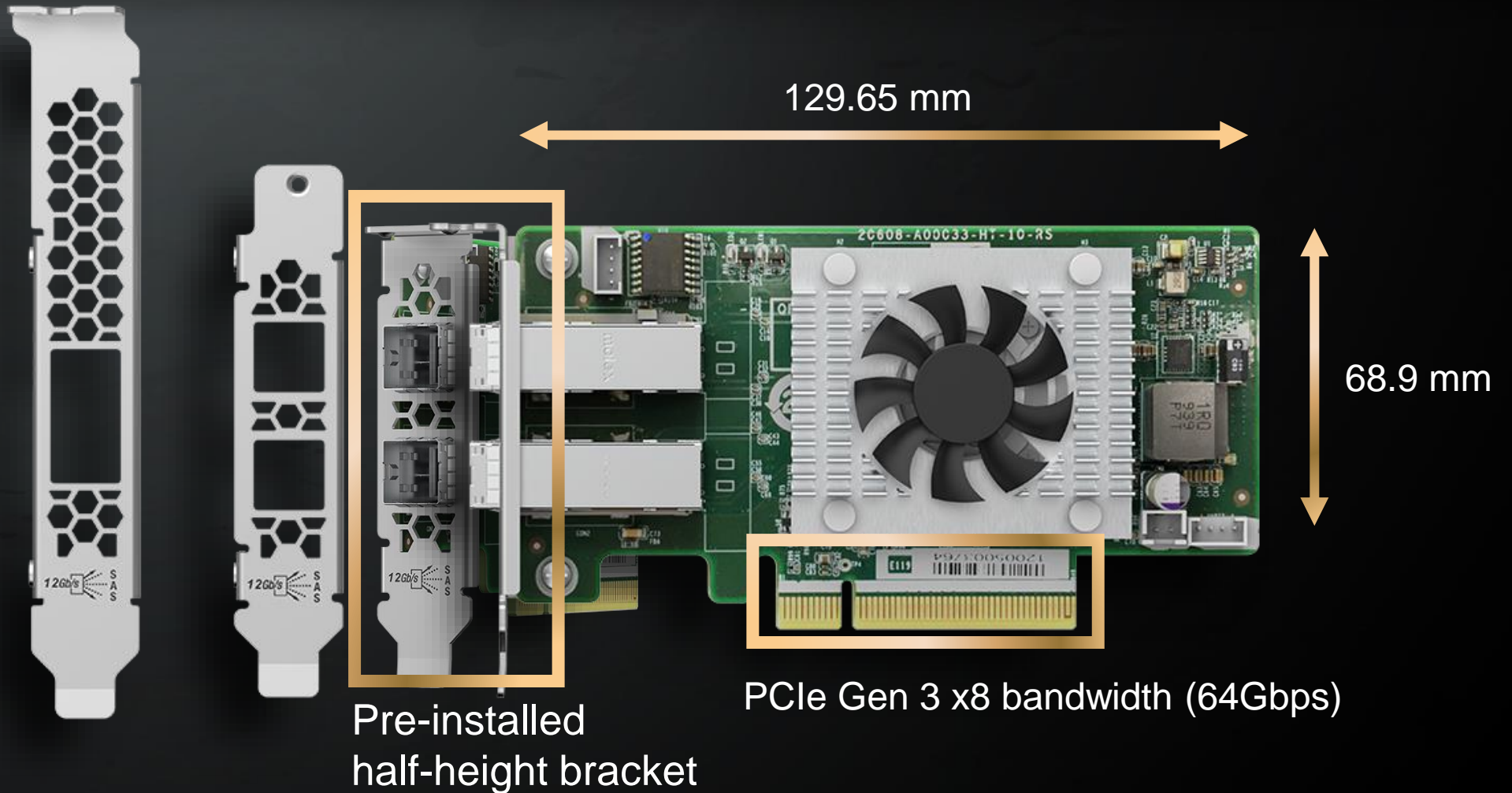
| | | |
|-----------------------------|---------------------------------------|-------------------------------|
| SAS Controller | Broadcom SAS3408 | Broadcom SAS3616W Tri-mode |
| Drive interface | 12Gb/s SAS, 6Gb/s SATA up to 8.0 GT/s | |
| SAS bandwidth | 2 x external Mini-SAS HD | 4 x external Mini-SAS HD |
| Connector interface | SFF-8644 | SFF-8644 |
| Host PCIe band-width | PCIe Gen 3 x8 | PCIe Gen 3 x16 |
| Dimensions | 129.65 x 68.9 mm; Low-profile | 149.65 x 68.9 mm; Low-profile |

*SAS connector is a Wide-port, contain four SAS signals **Only been validated with passive cable, we offer different cable optional purchase selection of 0.5M/1M/2M/3M

Low-profile design for various QNAP NAS models

QXP-820S-B3408

Additional brackets are included for various NAS models



Low-profile design for various QNAP NAS models

QXP-1620S-B3616W

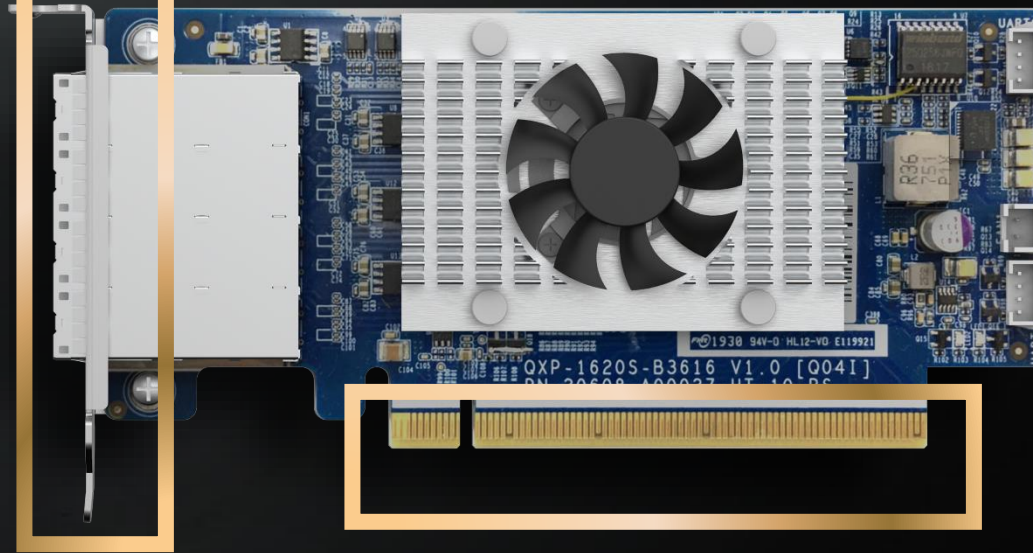
Additional brackets are included for various NAS models



Pre-installed half-height bracket



149.65 mm



68.9 mm



PCIe Gen 3 x16 bandwidth (128Gbps)

Compatible with QNAP REXP SAS JBOD series

NAS supports connecting multiple TL and REXP SAS JBOD enclosures together

SAS 6Gb/s JBOD enclosures

REXP-1210U-RP



REXP-1610U-RP



SAS 12Gb/s JBOD enclosures

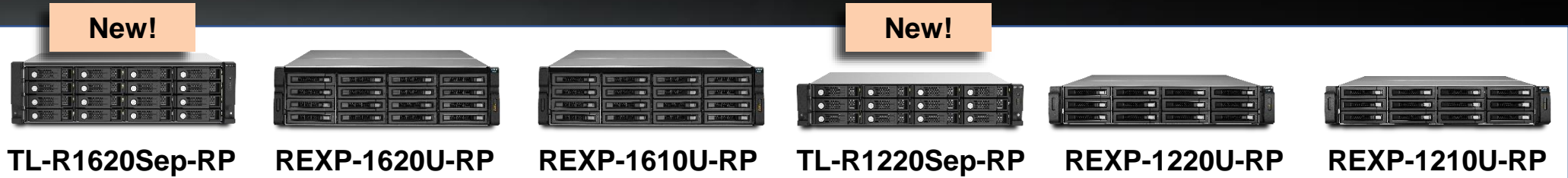
REXP-1220U-RP



REXP-1620U-RP



Comparing the QNAP SAS JBOD generations



| | TL-R1620Sep-RP | REXP-1620U-RP | REXP-1610U-RP | TL-R1220Sep-RP | REXP-1220U-RP | REXP-1210U-RP |
|-------------------|--|--|---|--|--|---|
| # of bays | 16 | 16 | 16 | 12 | 12 | 12 |
| Drive interface | 2.5"/3.5" SAS 12Gbps, SAS/SATA 6Gbps | 2.5"/3.5" SAS 12Gbps, SAS/SATA 6Gbps | 2.5"/3.5" SATA 6Gbps | 2.5"/3.5" SAS 12Gbps, SAS/SATA 6Gbps | 2.5"/3.5" SAS 12Gbps, SAS/SATA 6Gbps | 2.5"/3.5" SATA 6Gbps |
| SAS ports | 4 x SAS 12Gbps wide ports (Mini-SAS HD SFF-8644) | 3 x SAS 12Gbps wide ports (Mini-SAS HD SFF-8644) | 3 x SAS 6Gbps wide ports (Mini-SAS HD SFF-8644) | 4 x SAS 12Gbps wide ports (Mini-SAS HD SFF-8644) | 3 x SAS 12Gbps wide ports (Mini-SAS HD SFF-8644) | 3 x SAS 6Gbps wide ports (Mini-SAS HD SFF-8644) |
| Dimension (HxWxD) | 3RU, 131.3 x 482.2 x 425.3 mm | 3RU, 130 x 442.4 x 528.3 mm | 3RU, 130 x 442.4 x 528.3 mm | 2RU, 88.65 x 482.2 x 423.8 mm | 2RU, 88 x 439 x 520 mm | 2RU, 88 x 439 x 520 mm |
| Key-lock tray | Key lock | Click latch | Click latch | Key lock | Click latch | Click latch |
| Optional rail kit | RAIL-B02 | RAIL-A03-57 | RAIL-A03-57 | RAIL-B02 | RAIL-A03-57 | RAIL-A03-57 |

QTS 4.5.1/ QuTS hero h4.5.1 are required for NAS to support TL SAS JBOD

TL SAS JBOD can be monitored and managed in the Storage & Snapshots manager. Advanced QTS / QuTS hero local disk management features are supported.

Enclosure & QTS Disk related features:

- S.M.A.R.T test
- Seagate IHM
- Disk Scan
- Disk Erase
- Disk Performance Test

Compatible NAS for TL SAS JBOD
<https://www.qnap.com/compatibility-expansion>

The screenshot displays the 'Storage & Snapshots' management interface. The left sidebar shows navigation options: Overview, Storage, Snapshot, Storage/VJBOD (selected), Storage/Snapshots, Cache Acceleration, External Storage, Snapshot Backup, Snapshot Replica, Snapshot Vault, iSCSI & Fibre Channel, and HybridMount. The main area shows a tree view of storage components under 'NAS Host', including several RAID groups and a selected 'TL-R1620Sep-RP-N422' enclosure. Below the tree, a legend identifies disk types (SSD, Disk, Adapter) and usage (Data, Spare, Free, Cache). The right panel provides detailed information for the selected enclosure, including 'Disk Information' (Manufacturer: SEAGATE, Model: XS1920SE70004, Disk Capacity: 1.75 TB (1.9 TB), Bus Type: SAS, Status: Ready) and performance/health metrics (Current Speed: 12 Gbps, Maximum Speed: 12 Gbps, Temperature: 33°C / 91°F, Disk Access History (I/O): Good, Disk SMART Information: Good, Estimated Life Remaining: Not Supported).

Connect up to 16 JBOD to NAS

For expanding storage pool capacity

RAID & Storage Pool

All disks of TL SAS JBOD would be identified by Storage & Snapshots, and then configure as a RAID within a storage pool.

Note: Maximum capacity of single folder is 1PB

The screenshot displays the 'Storage & Snapshots' management console. The main view shows 'Storage Space Storage Pool 2, Volume 2: LUN 0'. A 'Storage Pool 2 Management' dialog box is open, providing details for 'Storage Pool 2'.

Storage Pool 2 Management

Storage Pool

Name/Alias: Storage Pool 2

Capacity: 338.71 GB

Allocated: 338.71 GB

Unallocated: 0 MB

Status: Ready

Snapshot used: 0.00% (0 MB)

Guaranteed Snapshot Space: 0.00% (0 MB)

Volume/LUN: 100.00% (338.71 GB) // Unallocated: 0.00% (0 MB)

Alert Disabled

RAID Group of Storage Pool 2

| Name/Alias | Capact. | Status | Hot | Hotspg | RAID Type | Reync Speed | Priority |
|--------------|---------|--------|-----|----------|-----------|---------------|----------|
| RAID Group 2 | 338.71 | Ready | No | Disabled | RAID-0 | Not Supported | - |
| TL-0800-0206 | 238.47 | Good | | | | | |
| TL-0800-0206 | 118.24 | Good | | | | | |



Easily create storage in QTS / QuTS hero

Different from the TR USB RAID series, TL SAS JBOD series is based on QNAP software RAID: supports all local RAID operations as well as RAID migration and RAID expansion. TL-R1220Sep-RP/TL-R1620Sep-RP can even be configured as RAID 50 / 60.

01 [Storage & Snapshot Manager] > [Storage / Snapshots]

02 Create or Expand the [Storage Pool]

03 Select TL JBOD and set up the RAID type



TL SAS JBOD allows you to create pool across NAS and JBOD.

The screenshot displays the QNAP Storage & Snapshots management interface. The main window shows 'Storage Space' with 'Storage Pool 1' and 'DataVault (System)' listed. A 'Create Storage Pool Wizard' dialog is open, showing the 'Select Disk(s)' step. The wizard lists four disks for selection:

| Disk | Manufacturer | Model | Type | Bus Type | Capacity | Status |
|--------|--------------|---------------|-----------|----------|-----------|--------|
| Disk 1 | INTEL | SSDSC2KW... | SSD | SATA | 238.47 GB | Good |
| Disk 2 | 2.5" | SATA SSD 3... | SSD | SATA | 119.24 GB | Good |
| Disk 3 | Samsung | SSD 850 EV... | SSD(SSED) | SATA | 232.89 GB | Good |
| Disk 4 | - | OCZ-VECTO... | SSD | SATA | 223.57 GB | Good |

The wizard also shows 'Selected: 4' disks and an 'Estimated Capacity' of 329.22 GB. The 'RAID Type' is set to 'RAID 5' and 'Hot Spare Disk' is set to 'None'. The 'Use Smart RAID Rebuild' option is checked.

Flexibly expand NAS storage, or use it to store backups

TL SAS JBOD enclosure series can expand QNAP NAS storage capacity. The JBOD enclosures support either the application data storage or the snapshots storage from volumes and LUNs.

Be the Snapshot
Vault



TL-R1620Sep-RP

QuTS hero
edition
TS-h1683XU-RP



TS-h1683XU-RP

Be the Storage
Expansion



LIVE
DEMO

QNAP

TL-R1220Sep-RP
TL-R1620Sep-RP



TL-R1220Sep-RP

TL-R1620Sep-RP



Cabling Suggestion

Optional QNAP Mini-SAS HD SAS 12Gb/s cables of different lengths

Mini-SAS HD SFF-8644 to 8644 SAS 12Gb/s cable



CAB-SAS05M-8644

- SFF 8644-8644
- 0.5 meter
- SAS 12Gb/s



CAB-SAS10M-8644

- SFF 8644-8644
- 1 meter
- SAS 12Gb/s



CAB-SAS20M-8644

- SFF 8644-8644
- 2 meters
- SAS 12Gb/s



CAB-SAS30M-8644

- SFF 8644-8644
- 3 meters
- SAS 12Gb/s

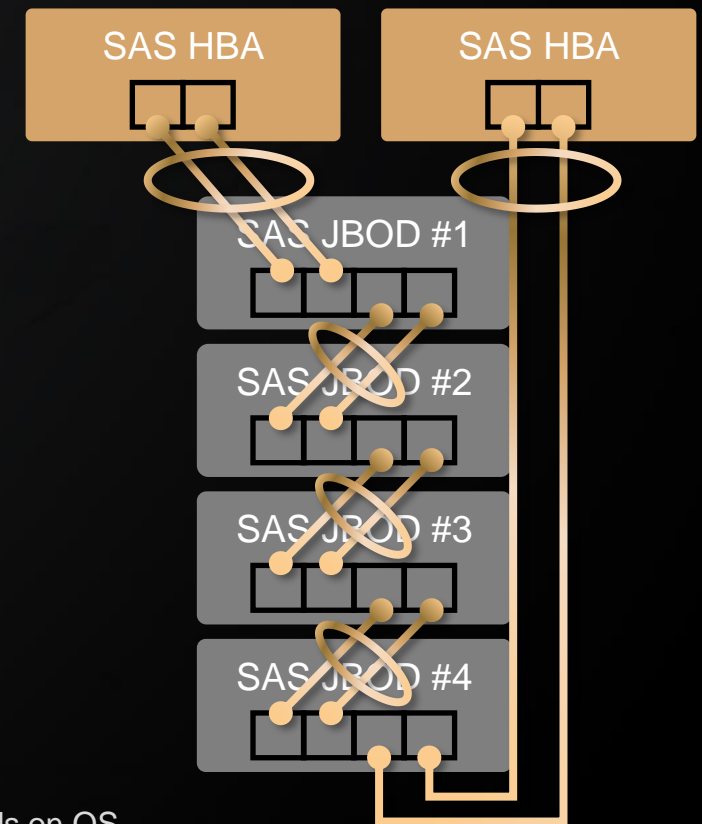
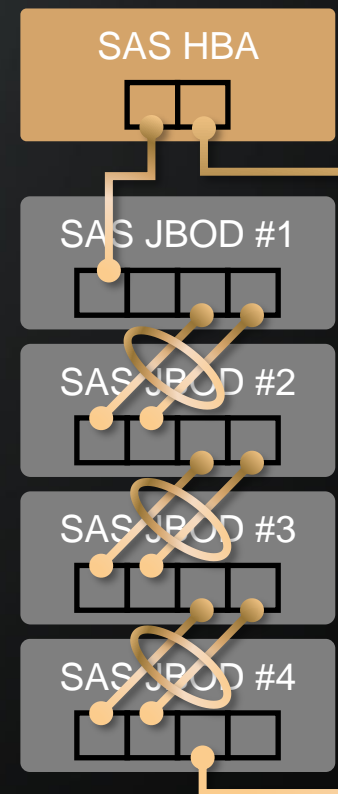
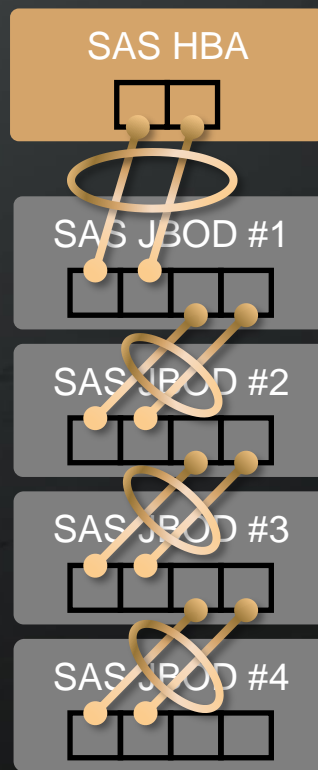
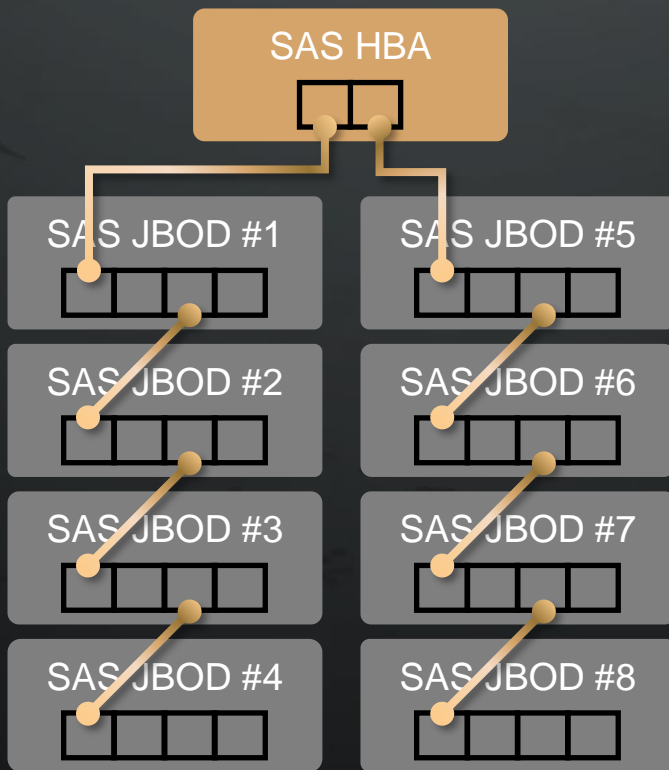
TL SAS JBOD with 2 wide-port SAS-12G2E expansion cabling suggestion for multi-path & aggregation

X Multi-path
X Aggregation

X Multi-path
V Aggregation

V Multi-path
V Aggregation

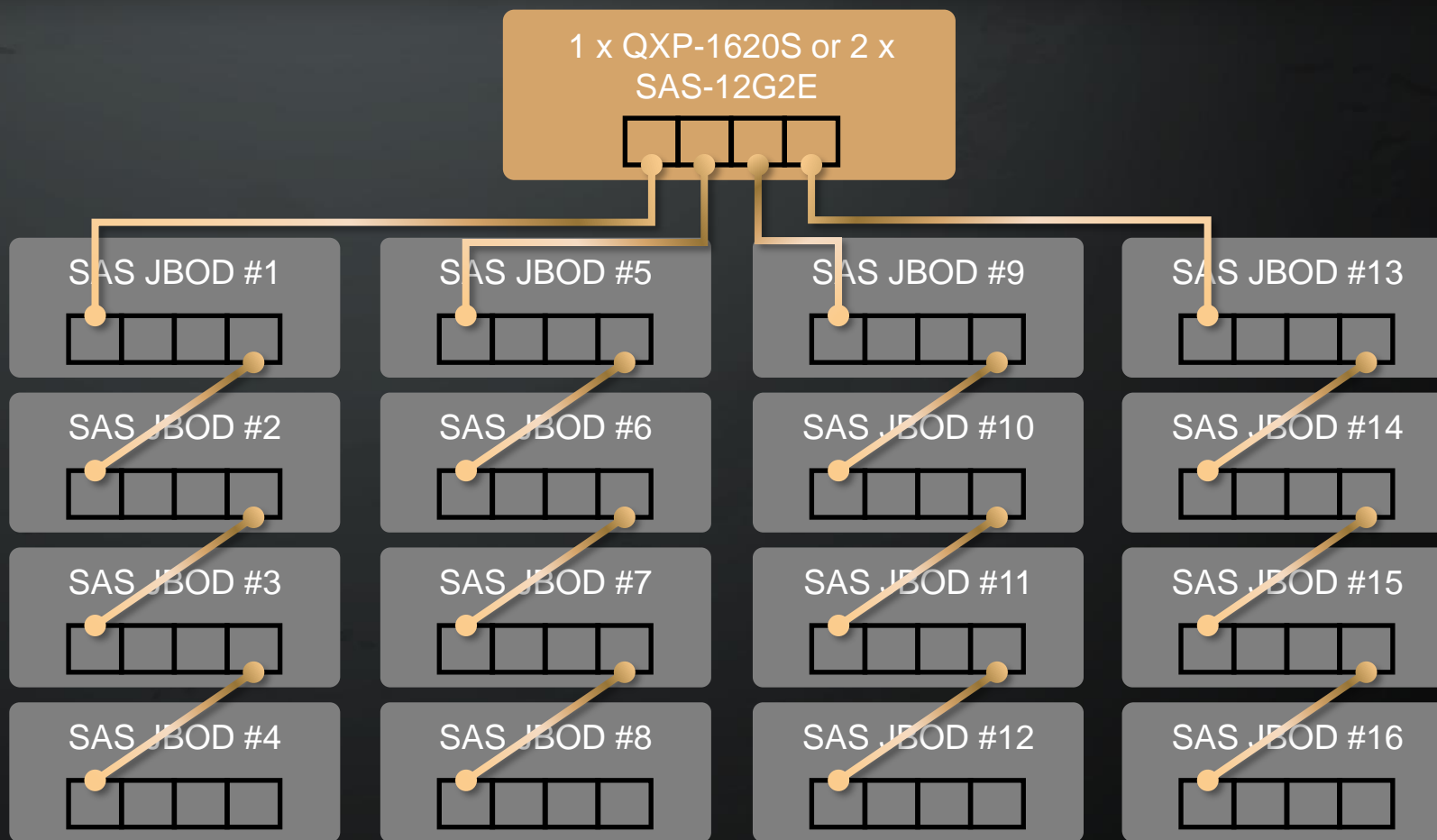
V Multi-path
V Aggregation



• *QTS/QuTS hero only support 4-layers vertically

• Maximum number of JBOD a single unit can support depends on OS

With a QXP-1620S or two SAS-12G2E, connect up to 16 JBODs for 4.6 PB raw capacity



X Multi-path X Aggregation

QNAP NAS can connect up to **16 JBODs** with a QXP-1620S-B3616W or two SAS-12G2E for maximum **4.6 PB** of raw capacity

*raw capacity is calculated with 18TB x 16JBOD x 16bay = 4.6PB

- *QTS/QuTS hero only support maximum 4-layer vertically.
- Maximum number of JBOD a single unit can support depends on OS

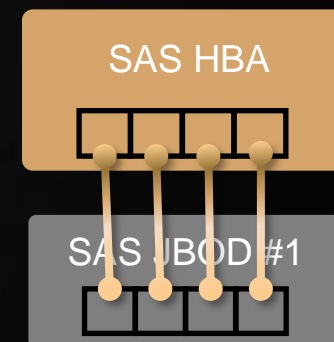
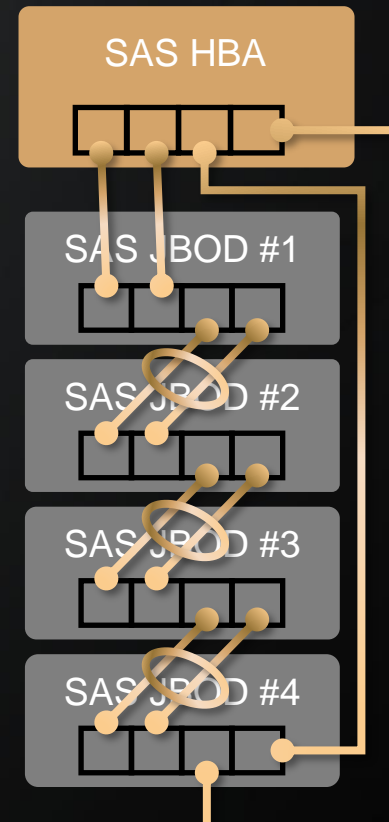
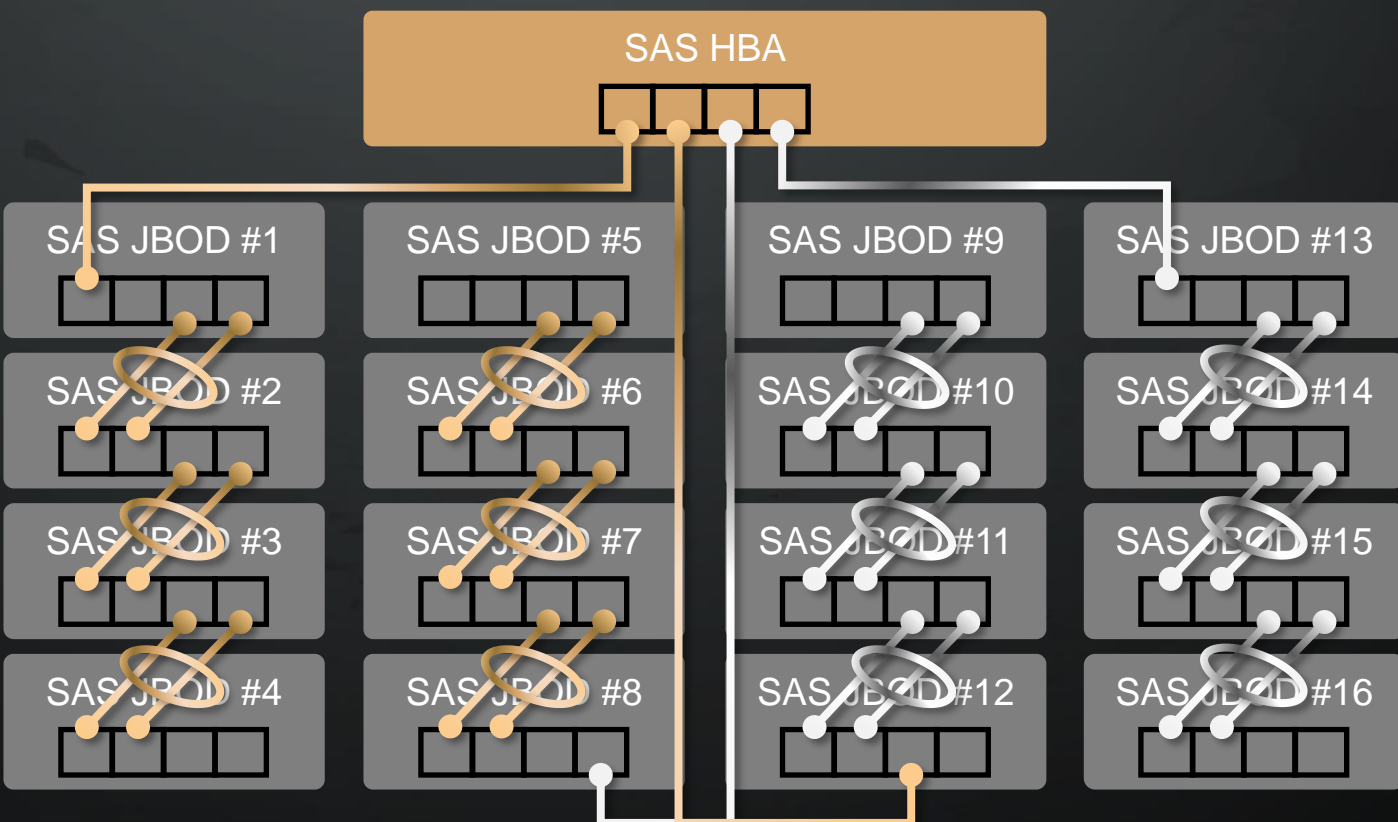
TL SAS JBOD with QNAP SAS HBA

expansion cabling suggestion for multi-path & aggregation

V Multi-Path
 V Aggregation

V Multi-Path
 V Aggregation

V Multi-Path
 V Aggregation



Maximum Bandwidth
4 x 48Gb/s
=192Gb/s

- Maximum number of JBOD a single unit can support depends on OS

*QTS/QuTS hero only support maximum 4-layer vertically.

TL-R1220Sep-RP

TL-R1620Sep-RP

5-year standard warranty included!



5-Year Standard Warranty

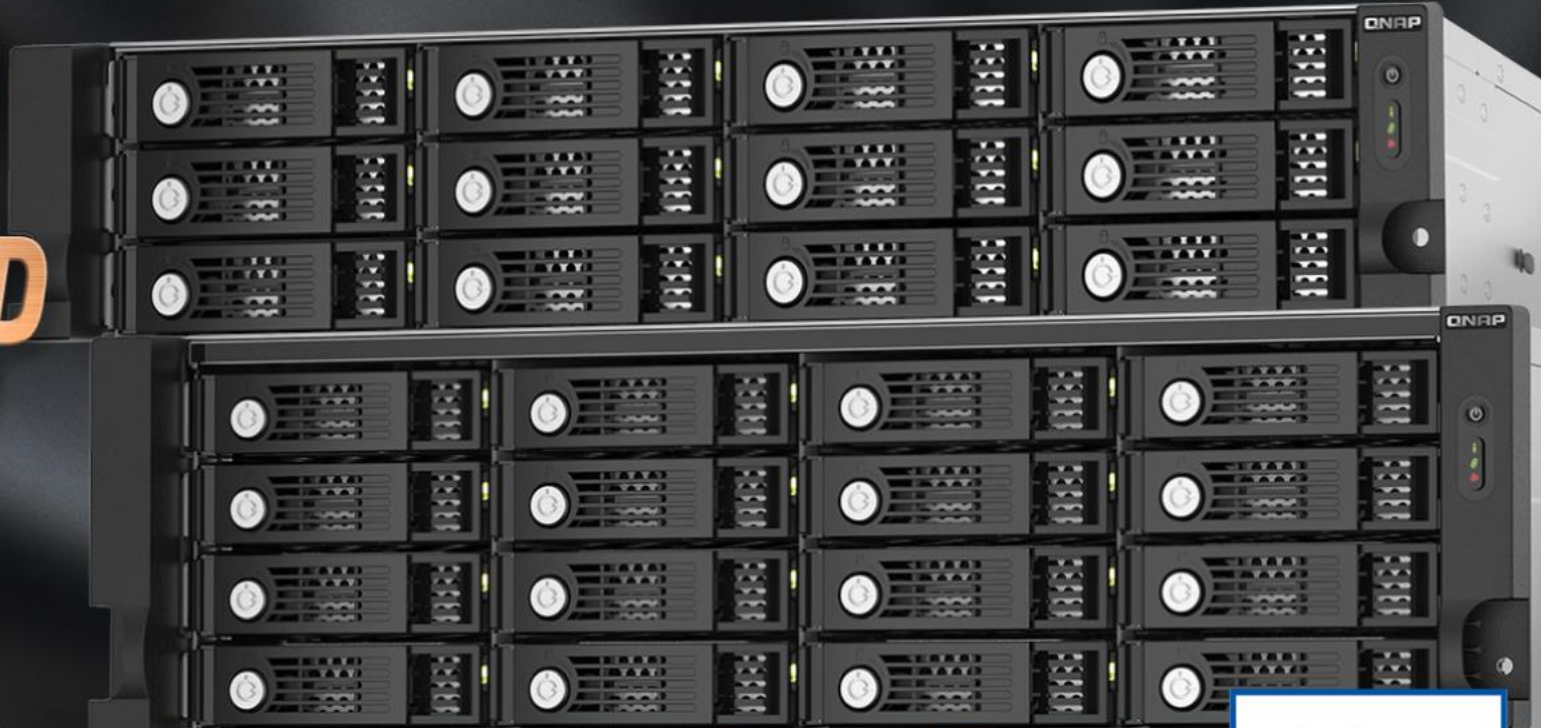
- TL-R1220Sep-RP & TL-R1620Sep-RP include 5-Year Standard warranty.
- Warranty service that comes in effect at the time of purchase.
- Free repair and part replacement for products under normal use during warranty period. (Spare parts and consumables are excluded)



QNAP

SAS JBOD

TL-R1220Sep-RP
TL-R1620Sep-RP



Expand NAS
capacity flexibly
with ease.

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