



**QNAP TVS-h1688X-W1250-32G 96TB (WD RED PRO) 16-Bay TurboNAS (12 x 3.5 HDD + 4 x 2.5 SSD); SATA 6G; Intel Xeon W-1250 6 cores 12 threads 3.3 GHz (boost up to 4.7 GHz); 32GB DDR4 ECC RAM (max. 128GB); 4 x 2.5GbE; 2 x 10GBASE-T 10GbE; 2 x M.2 22110/2280 NV NAS Tower Ethernet LAN Black**



**Brand :** QNAP

**Product code:** TVS-H1688X-W1250-32G/96TB-REDPRO

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- Attain quad-port Thunderbolt™ 3 connectivity by installing two QXP-T32P expansion cards in the PCIe Gen 3 x4 slots
  - Two 10GBASE-T and four 2.5GbE LAN ports accelerate virtualization, intensive file access, large backup/restoration tasks, and media transfer
  - PCIe slots allow for installing 5/10/25/40GbE adapters, QM2 cards, or graphics cards to increase application performance
  - 4K media playback and real-time transcoding; directly output videos to an HDMI display (up to 4K @30Hz)
  - Supports virtual machines and containerized apps, centralized storage, backup, sharing, disaster recovery, and storage expansion
  - Cloud storage gateways realize hybrid cloud applications by working with the cache space reserved on NAS to ensure low-latency data access to the cloud
- Intel Xeon W-1250 6-core (3.3 GHz), Intel UHD Graphics P630, 4 x Long-DIMM DDR4, LCD, 6x USB 3.2 Gen 2, HDMI, 550 W

Storage		Design	
Storage drive interface *	Serial ATA II, Serial ATA III	Cable lock slot	✓
Supported storage drive interfaces	Serial ATA II, Serial ATA III	Cable lock slot type	Kensington
Storage drive sizes supported	2.5,3.5,M.2	<b>Performance</b>	
Number of M.2 (M & B) slots	2	Type *	NAS
RAID support *	✓	Backup function *	✓
RAID levels	0, 1, 5, 6, 10, 50, 60, JBOD	Backup features	Cloud, USB drive, iSCSI LUN
Online RAID migration	✓	Buzzer	✓
Online RAID expansion	✓	Multilingual support	✓
RAID rebuild	✓	Noise level	25.8 dB
Hot-swap drive bays	✓	Third-party support	✓
Supported file systems	FAT32, HFS+, NTFS, ZFS, exFAT, ext3, ext4	Snapshot	✓
Storage drives installed *	✓	Management protocols	SNMP
Total installed storage capacity *	96 TB	Web-based management	✓
Number of storage drives supported *	16	Share folder access right management	✓
Supported storage drive types *	HDD & SSD	Security algorithms	256-bit AES, FIPS 140-2, HTTPS, SSH, SSL/TLS
Auto-rebuild	✓	Access Control List (ACL)	✓
Bad block scan	✓	Reset button	✓
<b>Processor</b>		On/off switch	✓
Processor manufacturer *	Intel	Built-in BitTorrent client	✓
Processor family *	Intel® Xeon®	Built-in FTP server	✓
Processor model *	W-1250	Browser supported	Safari, Google Chrome, Internet Explorer, Mozilla Firefox
Processor frequency *	3.3 GHz	System log	✓
Processor boost frequency	4.7 GHz	Hot spare	✓
Processor cores	6	S.M.A.R.T. support	✓
Processor threads	12	Universal Plug and Play (UPnP)	✓
Processor cache	12 MB		

<b>Processor</b>		<b>Performance</b>	
CPU configuration (max)	1	USB copy function	✓
On-board graphics card model	Intel UHD Graphics P630	<b>Software</b>	
<b>Memory</b>		Operating system installed *	QuTS hero
Internal memory type	DDR4	Operating system version	4.5.0
Maximum RAM supported	128 GB	Windows operating systems supported	Windows 10, Windows 7, Windows 8
Memory slots	4	Linux operating systems supported	✓
Internal memory *	32 GB	Mac operating systems supported	✓
Memory form factor	UDIMM	Server operating systems supported	Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019
ECC	✓	Other operating systems supported	✓
Flash memory	5000 MB	<b>Power</b>	
<b>Network</b>		Power supply location	Built-in
Ethernet LAN *	✓	Power supply unit (PSU) capacity	550 W
Ethernet LAN data rates	100,1000,2500,10000 Mbit/s	Power consumption (typical)	97.492 W
Ethernet LAN data rate supported (max)	10000 Mbit/s	Power consumption (sleep)	91.26 W
DHCP client	✓	AC input voltage	100 - 240 V
DHCP server	✓	Fan voltage	12 V
Jumbo frames support	✓	<b>Weight &amp; dimensions</b>	
iSCSI support	✓	Width *	369.9 mm
Wake-on-LAN ready	✓	Depth *	319.8 mm
Link aggregation	✓	Height *	303.8 mm
Load balancing system	✓	<b>Packaging content</b>	
Dynamic DNS (DDNS)	✓	Cables included	AC, LAN (RJ-45)
WLAN adapter supported	✓	Power cables quantity	1
<b>Ports &amp; interfaces</b>		Number of screws	72
USB port *	✓	<b>Processor special features</b>	
USB 3.2 Gen 2 (3.1 Gen 2) Type-A ports quantity	4	Embedded options available	✗
USB 3.2 Gen 2 (3.1 Gen 2) Type-C ports quantity	2	Enhanced Intel SpeedStep Technology	✓
HDMI ports quantity	1	Execute Disable Bit	✓
HDMI version	1.4b	Idle States	✓
Ethernet LAN (RJ-45) ports *	6	Intel 64	✓
PCI Express x4 (Gen 3.x) slots	2	Intel Clear Video Technology	✓
PCI Express x8 (Gen 3.x) slots	1	Intel Trusted Execution Technology	✓
<b>Design</b>		Intel Virtualization Technology (VT-x)	✓
Chassis type *	Tower	Intel Virtualization Technology for Directed I/O (VT-d)	✓
Cooling type *	Active	Intel VT-x with Extended Page Tables (EPT)	✓
Product colour	Black	<b>Operational conditions</b>	
Number of fans	5 fan(s)	Operating temperature (T-T)	0 - 40 °C
Fan diameter	8 cm	Operating relative humidity (H-H)	5 - 95%
Fan diameter 2	9.7 cm	Storage temperature (T-T)	-20 - 70 °C
LED indicators	HDD, LAN, Status, System, USB		
Built-in display	✓		
Display type	LCD		

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