WD Red™ Pro
NAS Storage

Storage for 8 to 16 bay NAS solutions

Joining the original color of NAS, WD Red Pro continues the formula of success that has led the WD Red product family by adding support beyond consumer, SOHO, and small business markets into medium and large 8-16 bay business storage systems. WD Red Pro hard drives integrate WD's exclusive technology, NASware™ 3.0, to provide unparalleled support for drive compatibility, reliability, and performance.

INTERFACE	FORM FACTOR	ROTATIONAL SPEED	CAPACITIES
SATA 6 Gb/s	3.5-inch	7200 RPM	2 TB to 4 TB

MODEL NUMBERS
WD4001FFSX
WD3001FFSX
WD2001FFSX

Product Benefits

Professional solutions
Designed specifically with SMB customers in mind the WD Red family has expanded with the addition of WD Red Pro, which is available for the 8 to 16 bay medium to large-scale NAS environments. With capacities up to 4 TB, WD Red Pro carries a 5-year limited warranty and was engineered to handle the increased workloads from your business.

Exclusive NASware 3.0 technology
Our exclusive advanced firmware technology built into every WD Red Pro drive, NASware 3.0 enables seamless integration, robust data protection and optimal performance for systems operating in the demanding NAS environment.

Experienced in NAS
WD Red is a reflection of the most extensive NAS partner compatibility-testing list that is available on the market.* That means when you buy a NAS enclosure, you can trust that WD Red will be the most compatible drive available. Our pride is in our product and our vision is shared with our customers.

Vibration Protection
In combination with 3D Active Balance™ Plus, WD Red Pro also features hardware vibration compensation technology which monitors the drive to correct both linear and rotational vibration in real time, further increasing drive reliability.

Enhanced Accuracy for NAS
For overall enhanced accuracy for NAS, WD Red Pro is also equipped with dual actuator technology which improves positional accuracy over the data tracks and head positioning. StableTrac™ technology then secures the motor shaft at both ends to reduce system-induced vibration and stabilize the drive platters for accurate tracking during read and write operations. Both technologies are important for larger 8 to 16 bay NAS environments.

8 to 16 Bay Shock Protection
WD Red Pro is equipped with a multi-axis shock sensor that automatically detects subtle shock events and dynamic fly height technology which adjusts each read-write function to compensate and protect the data. This combination of technology further protects the drives in large 8 to 16 bay NAS environments and increases drive reliability.

Extended Drive Testing
The 8 to 16 bay NAS environment is very demanding on a hard drive with added vibration, heat and other factors. This is why every WD Red Pro drive is shipped with extended thermal cycle burn-in testing which ensure each drive for extended reliable operation.

Error Recovery Prevention
Built specifically for RAID and NAS environments, WD Red Pro drives come equipped with error recovery controls as part of NASware 3.0, which prevents the drive from fallout in RAID applications.

Longer warranty coverage
Complimenting WD Red at a 3-year limited warranty, WD Red Pro offers longer warranty coverage with a 5-year limited warranty for an even greater peace of mind.

Need help? We offer premium support
Every WD Red Pro hard drive comes with our world-class professional support services including a premium dedicated 24/7 support line (available in English, other regional support hours vary).**

* WD hard drives are designed and tested for use in specific applications and environments. This ensures that your hard drive is compatible with and functions properly in your application. Our hard drives are warranted against defects in materials and workmanship in the system for which they were designed. Use in systems other than for what the hard drive was designed could result in compatibility problems that affect proper function, unrelated to material and/or workmanship defects. For best results, be sure to select the appropriate product for your application by consulting our product spec sheets on our website at www.wd.com or by calling our customer support line where we would be happy to help you through the selection process.

**Support outside of normal business hours is available in English only Go to http://support.wd.com for further details.

Applications

Specifically targeted at the medium to large business NAS applications with 8-16 bays.

WD Red™ Pro

absolutely™

Specifications	4 TB	3 TB	2 TB
Model number[1]	WD4001FFSX	WD3001FFSX	WD2001FFSX
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[2]	4 TB	3 TB	2 TB
Form factor	3.5-inch	3.5-inch	3.5-inch
Advanced Format	Yes	Yes	Yes
Native command queuing	Yes	Yes	Yes
RoHS compliant[3]	Yes	Yes	Yes
Performance			

Data transfer rate (max)
    Buffer to host
    Host to/from drive (sustained)
	6 Gb/s
	171 MB/s
		6 Gb/s
		168 MB/s
			6 Gb/s
			164 MB/s

Cache (MB)	64	64	64
Rotational speed (RPM)	7200	7200	7200
Reliability/Data Integrity			
Load/unload cycles[4]	600,000	600,000	600,000
Non-recoverable read errors per bits read	<10 in 10^{15}	<10 in 10^{15}	<10 in 10^{15}
MTBF (hours) for 8-16 bay NAS[5]	1,000,000	1,000,000	1,000,000
Limited warranty (years)[6]	5	5	5
Power Management			
12VDC-/+10% (A, peak)	1.9	1.9	1.9

Average power requirements (W)
    Read/Write
    Idle
    Standby/Sleep
	8.6
	6.5
	0.6
		8.6
		6.5
		0.6
			6.5
			4.9
			0.4

Environmental Specifications[7]			

Temperature (°C)
    Operating[8]
    Non-operating
	5 to 60
	-40 to 70
		5 to 60
		-40 to 70
			5 to 60
			-40 to 70

Shock (Gs)
    Operating (2 ms, read/write)
    Operating (2 ms, read)
    Non-operating (2 ms)
	30
	65
	300
		30
		65
		300
			30
			65
			300

Acoustics (dBA)[9]
    Idle
    Seek (average)
	31
	34
		31
		34
			31
			34

Physical Dimensions			
Height (in./mm, max)	1.028/26.1	1.028/26.1	1.028/26.1
Length (in./mm, max)	5.787/147	5.787/147	5.787/147
Width (in./mm, ± .01 in.)	4/101.6	4/101.6	4/101.6
Weight (lb./kg, ± 10%)	1.66/0.75	1.66/0.75	1.55/0.70

[1] Not all products may be available in all regions of the world.

[2] As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabit per second (Gb/s) = one billion bits per second. Effective maximum SATA 6 Gb/s transfer rate calculated according to the Serial ATA specification published by the SATA-IO organization as of the date of this specification sheet. Visit www.sata-io.org for details.

[3] WD hard drive products manufactured and sold worldwide after June 8, 2011, meet or exceed Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the RoHS Directive 2011/65/EU.

[4] Controlled unload at ambient condition.

[5] Based on a typical 8-16 bay tabletop NAS product environment under normal operating conditions.

[6] The term of the limited warranty may vary by region. Visit http://support.wd.com/warranty for details.

[7] No non-recoverable errors during operating tests or after non-operating tests.

[8] On the base casting.

[9] Sound power level.

Windows 8 Compatible — Compatible with Windows 7 — Mac — SERIAL ATA 6 Gb/s — ADVANCED AF FORMAT

TÜV NORD Bauartgeprüft — N3565 — CE — 20 — WD Certified F.I.T. Functional Integrity Testing Lab — S·M·A·R·T SYSTEM

CAN ICES-3 (B) / NMB-3 (B)

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