

TOSHIBA

Keep Business Moving.

Toshiba N300 Pro NAS Internal Hard Drive



Image does not represent actual product.

The Toshiba N300 Pro NAS Internal Hard Drive is designed to provide medium to large businesses a reliable, scalable, and centralized data storage and sharing in a 24/7 multi-user NAS environment. The N300 Pro helps streamline workflows across the business, making it easier for your teams to collaborate.

Offering a higher workload rate of up to 550 TB/yr⁶ and an expanded capacity of up to 24TB¹ (compared to the N300), the N300 Pro is a reliable drive to help you take your business to the next level. Designed for 24/7 operation¹⁰ with a fast 7200 RPM speed, the N300 Pro helps keep your data readily accessible so you can focus on growing your business.

The N300 Pro is designed to work in wide temperature ranges and has built-in RV sensors to mitigate rotational vibration in a multi-bay RAID environment, so you can be confident that this drive will perform wherever and whenever you need it most. This drive is engineered with CMR technology to deliver a consistent performance and broad compatibility¹³. Plus, it offers time-tested quality that is backed by a Toshiba's five-year limited warranty⁸ providing you with peace of mind.

When speed, reliability and performance are critical to your business, the N300 Pro hard drive delivers. Keeping your data safe and accessible, so you can keep your business moving.

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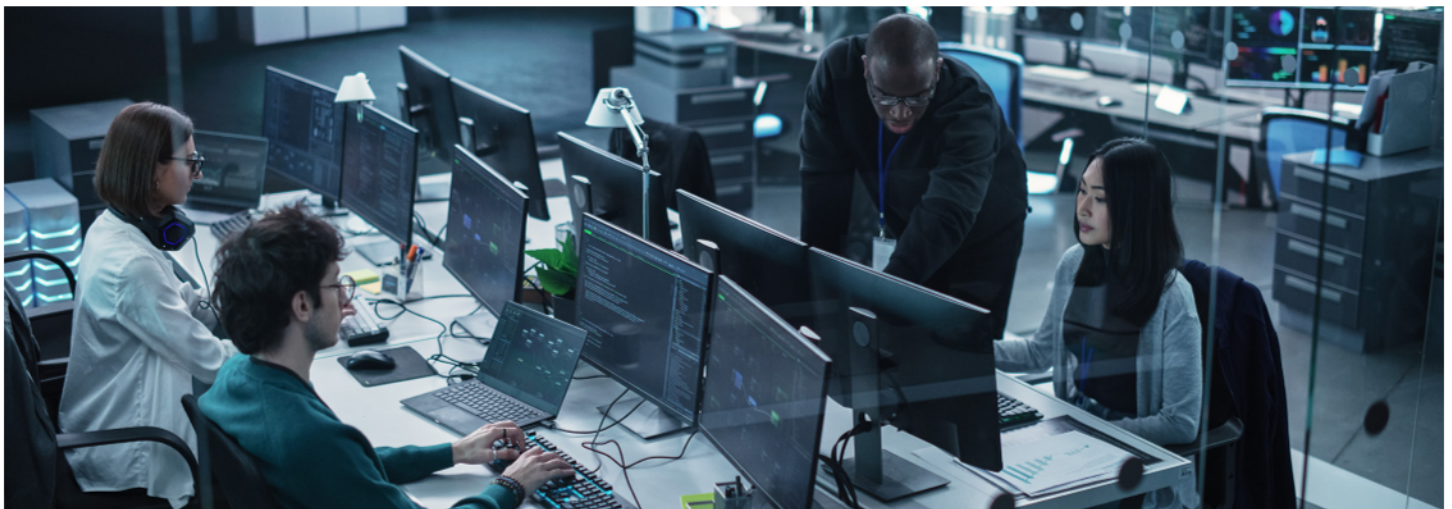
Toshiba N300 Pro NAS Internal Hard Drive

Application¹³

Network Attached Storage for high-intensity workloads
NAS systems for medium or large-sized businesses
RAID-optimized NAS systems with up to 24 bays⁴



Product image may represent a design model.



Operate Around the Clock

Designed for commercial and enterprise NAS systems in 24/7 operating environments¹⁰.



Grow Your Business

Scalable up to 24 drive bays⁴ for medium or large-sized business. CMR technology for broad compatibility¹³.



Powerful Performance

7200 RPM speed with up to 1.0GB cache size. Powered by Toshiba cache technology.



Optimized for RAID Environment

Built-in RV sensors to mitigate rotational vibration. Error Recovery Control technology limits recovery time to help optimize error correction.



Enhanced Reliability

Workload rate up to 550 TB/yr^{6,10}. MTTF up to 2.5 million hours⁷.



Capacity for More

Store and access your critical data and important documents with up to 24TB¹ storage capacity.



Peace of Mind

Toshiba Five-year limited warranty⁸.



Capacity ¹	<u>24TB</u>	<u>22TB</u>	<u>20TB</u>
Model Number (Retail Packaging)	HDWG82EXZSTB	HDWG62CXZSTB	HDWG62AXZSTB
Model Number (Bulk)	HDWG82EUVSVB	HDWG62CUZSVB	HDWG62AUZSVB

Basic Specifications

Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor²	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible³	Yes	Yes	Yes
Sector Size	512e	512e	512e

Features

Drive Bays Supported⁴	Up to 24	Up to 24	Up to 24
Rotational Vibration (RV) Sensors	Yes	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes	Yes
Shock Sensor	Yes	Yes	Yes
Toshiba Cache Technology	Yes	Yes	Yes
Ramp Loading Technology	Yes	Yes	Yes
Recording Technology¹¹	CMR	CMR	CMR

Performance

Rotational Speed [RPM]	7,200	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	309	281	281
Cache Size [MB]	1,024	512	512

Reliability

24x7 Operation¹⁰	Yes	Yes	Yes
Maximum Workload Rate [TB/Year] ⁶	550	300	300
MTTF [Hours] ⁷	2,500,000	1,200,000	1,200,000
Unrecoverable Error Rate	1 per 10 ¹⁵	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	600,000	600,000	600,000
Limited Warranty [Years] ⁸	5	5	5

Power Management

Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %
Power Consumption (Operating) ¹⁴ [W]	7.62	8.02	8.02
Power Consumption (Active Idle-A) ¹⁵ [W]	4.35	4.35	4.41

Environmental

Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-40 to 70	-40 to 70	-40 to 70
Vibration (Operating) [m/s ²]	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)
Vibration (Non-Operating) [m/s ²]	29.4 {3.0 G} (5 to 500Hz)	29.4 {3.0 G} (5 to 500Hz)	29.4 {3.0 G} (5 to 500Hz)
Shock (Operating) [m/s ²]	490 {50 G} (2 ms duration)	490 {50 G} (2 ms duration)	490 {50 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	1,960 {200 G} (2 ms duration)	1,960 {200 G} (2 ms duration)	1,960 {200 G} (2 ms duration)
Acoustics Idle Mode [dB]	20	20	20

Physical

Height [mm Max.]	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85
Weight [g Max.]	730	720	720
Bottom Holes Type⁹	TYPE1	TYPE1	TYPE1



Capacity¹

18TB

16TB

14TB

Model Number (Retail Packaging)

HDWG51JXZSTB

HDWG51GXZSTB

HDWG51EXZSTB

Model Number (Bulk)

HDWG51JUZSVB

HDWG51GUZSVB

HDWG51EUZSVB

Basic Specifications

Interface SATA 6.0 Gbit/s

SATA 6.0 Gbit/s

SATA 6.0 Gbit/s

Form Factor² 3.5-inch

3.5-inch

3.5-inch

Advanced Format (AF) Yes

Yes

Yes

RoHS Compatible³ Yes

Yes

Yes

Sector Size 512e

512e

512e

Features

Drive Bays Supported⁴ Up to 24

Up to 24

Up to 24

Rotational Vibration (RV) **Sensors** Yes

Yes

Yes

Native Command Queuing (NCQ) Yes

Yes

Yes

Shock Sensor Yes

Yes

Yes

Toshiba Cache Technology Yes

Yes

Yes

Ramp Loading Technology Yes

Yes

Yes

Recording Technology¹¹ CMR

CMR

CMR

Performance

Rotational Speed [RPM] 7,200

7,200

7,200

Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained) 281

281

281

Cache Size [MB] 512

512

512

Reliability

24x7 Operation¹⁰ Yes

Yes

Yes

Maximum Workload Rate [TB/Year]⁶ 300

300

300

MTTF [Hours]⁷ 1,200,000

1,200,000

1,200,000

Unrecoverable Error Rate 1 per 10¹⁴

1 per 10¹⁴

1 per 10¹⁴

Load/Unload Cycles 600,000

600,000

600,000

Limited Warranty [Years]⁸ 5

5

5

Power Management

Supply Voltage 5 VDC +10 % / -7 %
12 VDC ±10 %

5 VDC +10 % / -7 %
12 VDC ±10 %

5 VDC +10 % / -7 %
12 VDC ±10 %

Power Consumption (Operating)¹⁴ [W] 7.48

7.48

7.38

Power Consumption (Active Idle-A)¹⁵ [W] 4.14

4.14

3.77

Environmental

Temperature (Operating) [°C] 5 to 60 (surface)

5 to 60 (surface)

5 to 60 (surface)

Temperature (Non-Operating) [°C] -40 to 70

-40 to 70

-40 to 70

Vibration (Operating) [m/s²] 7.35 {0.75 G} (5 to 300 Hz)
2.45 {0.25 G} (300 to 500 Hz)

7.35 {0.75 G} (5 to 300 Hz)
2.45 {0.25 G} (300 to 500 Hz)

7.35 {0.75 G} (5 to 300 Hz)
2.45 {0.25 G} (300 to 500 Hz)

Vibration (Non-Operating) [m/s²] 29.4 {3.0 G} (5 to 500Hz)

29.4 {3.0 G} (5 to 500Hz)

29.4 {3.0 G} (5 to 500Hz)

Shock (Operating) [m/s²] 686 {70 G} (2 ms duration)

686 {70 G} (2 ms duration)

686 {70 G} (2 ms duration)

Shock (Non-Operating) [m/s²] 2,450 {250 G} (2 ms duration)

2,450 {250 G} (2 ms duration)

2,450 {250 G} (2 ms duration)

Acoustics Idle Mode [dB] 20

20

20

Physical

Height [mm Max.] 26.1

26.1

26.1

Length [mm Max.] 147.0

147.0

147.0

Width [mm Max.] 101.85

101.85

101.85

Weight [g Max.] 720

720

705

Bottom Holes Type⁹ TYPE1

TYPE1

TYPE1



Capacity ¹	<u>12TB</u>	<u>10TB</u>	<u>8TB</u>
Model Number (Retail Packaging)	HDWG51CXZSTB	HDWG71AXZSTB	HDWG780XZSTB
Model Number (Bulk)	HDWG51CUZSVB	HDWG71AUZSVB	HDWG780UZSVB

Basic Specifications

Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor²	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible³	Yes	Yes	Yes
Sector Size	512e	512e	512e

Features

Drive Bays Supported⁴	Up to 24	Up to 24	Up to 24
Rotational Vibration (RV) Sensors	Yes	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes	Yes
Shock Sensor	Yes	Yes	Yes
Toshiba Cache Technology	Yes	Yes	Yes
Ramp Loading Technology	Yes	Yes	Yes
Recording Technology¹¹	CMR	CMR	CMR

Performance

Rotational Speed [RPM]	7,200	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	281	281	281
Cache Size [MB]	512	512	512

Reliability

24x7 Operation¹⁰	Yes	Yes	Yes
Maximum Workload Rate [TB/Year] ⁶	300	300	300
MTTF [Hours] ⁷	1,200,000	1,200,000	1,200,000
Unrecoverable Error Rate	1 per 10 ¹⁴	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	600,000	600,000	600,000
Limited Warranty [Years] ⁸	5	5	5

Power Management

Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %
Power Consumption (Operating) ¹⁴ [W]	6.85	9.07	9.07
Power Consumption (Active Idle-A) ¹⁵ [W]	3.30	5.74	5.74

Environmental

Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-40 to 70	-40 to 70	-40 to 70
Vibration (Operating) [m/s ²]	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)
Vibration (Non-Operating) [m/s ²]	29.4 {3.0 G} (5 to 500Hz)	29.4 {3.0 G} (5 to 500Hz)	29.4 {3.0 G} (5 to 500Hz)
Shock (Operating) [m/s ²]	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics Idle Mode [dB]	20	34	34

Physical

Height [mm Max.]	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85
Weight [g Max.]	690	755	755
Bottom Holes Type⁹	TYPE1	TYPE1	TYPE1



Capacity¹

6TB

4TB

Model Number (Retail Packaging)

HDWG760XZSTB

HDWG740XZSTD

Model Number (Bulk)

HDWG760UZSVB

HDWG740UZSVD

Basic Specifications

Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor²	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes
RoHS Compatible³	Yes	Yes
Sector Size	512e	512e

Features

Drive Bays Supported⁴	Up to 24	Up to 24
Rotational Vibration (RV) Sensors	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes
Shock Sensor	Yes	Yes
Toshiba Cache Technology	Yes	Yes
Ramp Loading Technology	Yes	Yes
Recording Technology¹¹	CMR	CMR

Performance

Rotational Speed [RPM]	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	281	281
Cache Size [MB]	512	512

Reliability

24x7 Operation¹⁰	Yes	Yes
Maximum Workload Rate [TB/Year] ⁶	300	300
MTTF [Hours] ⁷	1,200,000	1,200,000
Unrecoverable Error Rate	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	600,000	600,000
Limited Warranty [Years] ⁸	5	5

Power Management

Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %
Power Consumption (Operating) ¹⁴ [W]	8.19	7.43
Power Consumption (Active Idle-A) ¹⁵ [W]	4.92	4.14

Environmental

Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-40 to 70	-40 to 70
Vibration (Operating) [m/s ²]	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)
Vibration (Non-Operating) [m/s ²]	29.4 {3.0 G} (5 to 500Hz)	29.4 {3.0 G} (5 to 500Hz)
Shock (Operating) [m/s ²]	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics Idle Mode [dB]	34	34

Physical

Height [mm Max.]	26.1	26.1
Length [mm Max.]	147.0	147.0
Width [mm Max.]	101.85	101.85
Weight [g Max.]	730	710
Bottom Holes Type⁹	TYPE1	TYPE1



Toshiba Consumer Internal Hard Drives.

A drive for every storage application.



Image does not represent actual product.

To see our full line of consumer HDD storage products, visit: storage.toshiba.com/consumer-hdd

¹ One Gigabyte (1GB) means $10^9 = 1,000,000,000$ bytes and One Terabyte (1TB) means $10^{12} = 1,000,000,000,000$ bytes using powers of 10. A computer operating system, however, reports storage capacity using powers of 2 for the definition of $1\text{GB} = 2^{30} = 1,073,741,824$ bytes and $1\text{TB} = 2^{40} = 1,099,511,627,776$ bytes, and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system and other factors. Actual formatted storage capacity may vary.

² 2.5-inch and 3.5-inch mean the form factor of HDDs. They do not indicate drive's physical size.

³ Toshiba Electronic Devices & Storage Corporation defines "RoHS-Compatible" products as products that either (i) contain no more than a maximum concentration value of 0.1% by weight in Homogeneous Materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) and of 0.01% by weight in Homogeneous Materials for cadmium; or (ii) fall within any of the application exemptions set forth in the Annex to the RoHS Directive (Directive 2011/65/EC of the European Parliament and of the Council of 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment). "Homogeneous Material" means a material of uniform composition that cannot be mechanically disjointed (meaning separated, in principle, by mechanical actions such as unscrewing, cutting, crushing, grinding and/or abrasive processes) into different materials. Examples of "Homogeneous Materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.

⁴ As for "Drive Bays Supported", please contact your Solutions Provider because the compatibility with the host device will vary based on the system.

⁵ The maximum sustained data rate and interface speed may be restricted to the response speed of host system and by transmission characteristics. Read and write speed may vary depending on the host device, read and write conditions, and file size. Transfer speed varies by capacity.

⁶ Annual Workload Rating: HDDs keep track of various drive usage such as power on hours, lifetime writes and lifetime reads from the host computer. With this data we calculate an Annualized Workload Rate, under 40 deg. C ambient environments, $\text{Annualized Workload Rate} = (\text{Lifetime Writes} + \text{Lifetime Reads}) * (8760 / \text{Lifetime Power On Hours})$ in case Power On time is 8760h or longer. Otherwise (i.e. Power On time is shorter than 8760h), $\text{Annualized Workload Rate} = (\text{Lifetime Writes} + \text{Lifetime Reads})$ Each drive is designed to perform up to the Annualized Workload Rate stated, after which the drive may be expected to decline. The Annualized Workload Rate in no way alters the warranty policy for such drive. Workload is defined as the amount of data written, read or verified by commands from host system.

⁷ MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF. MTTF (Mean Time to Failure) of the HDDs during its life time is 1.0 million hours and AFR (Annualized Failure Rate) is 0.88%, or 1.2 million hours and AFR is 0.73%, or 2.5 million hours and AFR is 0.35% (depending on HDD models). This assumes power-on hours are 24 x 7 in normal usage (8760 h/year power on hours, up to 180TB/year, or up to 300TB/year, or up to 550TB/year total data transfers (depending on HDD models), and average HDA surface temperature: 40°C or less). Use at case HDA surface temperature above 40°C may degrade product reliability and reduce warranty period.

⁸ Standard limited warranty applies. The warranty brochure can be viewed online at <http://storage.toshiba.com/consumer-hdd/warranty-info>.

⁹ Location of bottom mounting hole is different from product. For more information, please see the following page. <https://toshiba.semicon-storage.com/us/design-support/faq/storage-holes.html>

¹⁰ Drive life may vary depending on usage and workload. See also MTTF and Annual Workload Rating for more detail.

¹¹ CMR is Conventional Magnetic Recording technology.

¹² Product prices, specifications, configurations, colors, components, features, and availability are subject to change without notice.

¹³ Compatibility may vary depending on user's hardware configuration and operating system.

¹⁴ Operating watt is measured using 80 % random read/write and 20 % performance idle.

¹⁵ Idle is active idle.

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