

## **TerraMaster U12-500 Plus**

# **Integrated Backup Server**

## **Datasheet**



TerraMaster Backup Server is an integrated data backup solution designed for small and medium-sized businesses. With a one-time payment, it eliminates additional software fees and places no limits on backup tasks or storage capacity. This solution combines a professional storage management system, backup software tools, and a hardware platform, offering deep integration and comprehensive backup services. We employ advanced security strategies to ensure system stability and data security across all aspects. TerraMaster Backup Server provides a one-stop enterprise data backup solution for data stored on employee personal computers, physical servers, or virtual machines. With multiple protection mechanisms, including backup, snapshot, synchronization, and remote disaster recovery, we establish a robust data protection barrier to ensure the security of data across various terminals and servers in diverse enterprise application scenarios.



## **Necessity of Data Protection**

Globally, both large and small enterprises are facing the threat of data security incidents every day, such as ransomware attacks, employee's accidental deletion of data, and unexpected server downtime. These incidents will not only have a significant impact on the core information and business continuity of the enterprise, but may even directly threaten the survival and development of the enterprise. Especially in the digital and information age nowadays, data has become the most valuable asset of the enterprise. Once the data is lost or leaked, the consequences will be disastrous.

## **BBS (Business Backup Suite)**

BBS (Business Backup Suite) is a comprehensive commercial backup solution developed by TerraMaster. Its core components include Duple Backup (DB), Centralized Backup (CB), TerraSync (TS), CloudSync, and Snapshot. Duple Backup is designed for off-site disaster recovery of data on TerraMaster backup servers. Centralized Backup handles the centralized backup of data from employee computers, file servers, virtual machines, and more to the local TerraMaster backup server. TerraSync enables data synchronization between multiple backup servers and between backup servers and PCs. CloudSync facilitates cloud-based disaster recovery solutions. The Snapshot feature provides snapshots and restoration of file systems and folders, offering protection against ransomware attacks.

BBS (Business Backup Suite) is specifically designed for business applications, offering complete functionality and meeting the high-performance requirements of enterprise environments. Users can flexibly combine TerraMaster's BBS backup components based on their specific needs to create diverse backup strategies, effectively addressing the majority of backup requirements for small and medium-sized enterprises.

### **Advantages of TerraMaster BBS:**

#### Flexible Combination for Deployment in All Scenarios

Depending on application scenarios, enterprise size, or security level requirements, core applications can be flexibly combined to implement diverse backup strategies. For instance, enterprises with 50 or fewer employees can use a single-server deployment with off-site disaster recovery to save costs. In contrast, enterprises with 100 to 200 or more employees can opt for a dual-server deployment, integrating off-site disaster recovery with cloud disaster recovery solutions.

#### **Simple and Efficient Deployment**

BBS features a fully graphical user interface, simplifying configuration and eliminating the need for coding. This user-friendly design reduces the learning curve, enhances deployment



efficiency, and lowers management and operation costs.

#### **Powerful and Secure**

BBS supports high storage efficiency, capable of handling file backup demands at a scale of tens of millions of files. It employs global LTS encryption technology and offers a variety of security strategies, combining active and passive protection to meet the data security needs of different organizations.

## **Computer Backup of Employees**

The data stored on employees' personal computers, including work results, design plans, and other information, are not only key intellectual properties and compliance elements of an enterprise but also crucial for operational development. For R&D-based enterprises, the R&D materials and innovative ideas within this data are essential for maintaining technological innovation and competitiveness. Thus, ensuring the integrity and security of this data is vital for enterprises.

#### **Challenges in Backing Up Employee Computers**

Backing up data from employee computers in enterprises presents several challenges, including the tedium of manual backups, complexity in data management, human error, cost concerns, and the need for robust security and privacy protections. Additionally, network performance can impact backup processes. To address these challenges, enterprises should implement centralized backup solutions and establish comprehensive backup management systems and strategies.

#### **Active Backup Solution for Employee Computers**

Centralized Backup (CB) is a backup tool developed by TerraMaster that offers a centralized, proactive backup solution tailored to the needs of business users. By deploying CB on an integrated backup server, IT administrators can centrally back up the storage space or even system partitions of employee computers within the enterprise. The backup server initiates the process, eliminating the need for individual configuration on each host.



Windows PC Data Backup	Multi-Version Recovery	MacOS Computer Data
	Management	Backup
Using Centralized Backup (CB),	CB offers multi-version	It offers protection for critical
employees don't need to be	management for backup	data and systems through
involved in the backup	targets. In the event of a	Time Machine Backup. The
process. IT administrators can	disaster, IT administrators	backup server can serve as
initiate backup requests from	can roll back to a specific	the destination for Time
the server using the PC	version in the version	Machine, automatically
backup module of Centralized	library and restore data to	backing up data from
Backup to actively back up	the designated host. Each	multiple Macs. Time
folders, disk partitions, or	CB backup task supports up	Machine Backup also
system partitions on hundreds	to 9,999 backup versions.	includes space quota settings
of employees' computers.		to prevent Mac backups from
Centralized Backup effectively		consuming excessive server
safeguards digital assets		storage.
scattered across employees'		
computers and significantly		
reduces the workload for IT		
administrators.		

#### Passive computer backup solution for employees

In addition to Centralized Backup for IT administrators, TerraMaster backup server offers TerraSync, a computer backup tool that employees can manage independently. TerraSync provides both data synchronization and backup functions, enabling employees to create their own synchronization or backup strategies based on the importance and frequency of data use. Employees can synchronize or back up data from their computers to TerraMaster backup servers. TerraSync also supports data synchronization across multiple devices and platforms, such as Windows computers, macOS computers, and iOS/Android mobile devices, enhancing mobile office convenience and improving employee work efficiency.

Multi-Client Support	Smart and Efficient	Historical Version Recovery
	Synchronization Strategies	Management
The TerraSync service	By monitoring folder and file	TerraSync Server manages
supports a range of	statuses, the TerraSync client	historical versions of
commonly used clients,	can promptly detect changes	synchronized and backup
including backup servers,	and quickly synchronize new	files. In the event of
Windows and macOS	or modified files by	accidental data deletion or a
computers, and iOS/Android	comparing them with the	disaster, users can search
mobile devices. It can	server.	historical version records via
synchronize with up to 2,000		the client and select the
clients.		appropriate version for
		restoration. Each file can
		retain up to 32 versions.



Team Collaboration	Directory Backup Data Security
By configuring personal and	In addition to file To ensure robust data
team folders, users can	synchronization, TerraSync's security, TerraSync employs
protect private data and	Windows and macOS SSL certificate encryption for
create collaboration groups	desktop clients offer the all backup and
with specific permissions for	ability to back up computer synchronization tasks
group members. TerraSync	directories. Users can back between the client and
facilitates file sharing and	up specified folders on their server. Users also have the
teamwork, enhancing overall	computers to your TNAS. In option to import and
team efficiency.	the event of accidental data   configure their own trusted
	deletion or a disaster, users digital certificates.
	can access historical version
	records through the client
	and restore the appropriate
	version.

## **Server Backup Solution**

The server is the central hub for enterprise digital information, running essential applications like OA, CRM, and ERP, and storing crucial business data. TerraMaster Centralized Backup (CB) provides a comprehensive solution by using the backup server to centrally back up storage spaces or system partitions of enterprise computing and file servers.

One Machine, Multiple Uses	Server Backup	File Server Backup
Deploying CB on the	The CB server backup	File servers are central to
TerraMaster backup server	function allows IT	storing an enterprise's digital
enables enterprises to meet	administrators to	assets. Disasters such as power
the backup needs of	simultaneously back up	outages, equipment failures, or
employee computers,	the systems and data of up	system malfunctions can lead
servers, file servers, virtual	to 200 servers to the	to the loss of these valuable
machines, and workstations	backup server. In case of	assets. By using CB's file server
with a single device. It	an incident, they can	backup function, IT
supports backups for up to	quickly restore affected	administrators can back up file
200 devices, significantly	hosts, minimizing the	directories from multiple file
reducing IT investment costs.	impact of equipment	servers simultaneously,
	failures on business	supporting up to 108TB of
	operations.	storage space. This significantly
		mitigates the risk of data loss
	Supported Versions:	due to disasters. CB supports
	Windows Server 2022,	servers running SMB and Rsync
	2019, 2016, 2012	3.0 or above (Linux) protocols.
Multi-Version Recovery	Complete Process Control	
Management		
CB offers multi-version	CB provides detailed	
management for backup	historical records of	



targets. In the event of a disaster, IT administrators can roll back to a specific version in the version library and restore the data to the designated destination host.

backup and restoration configurations and access to millions of logs. This allows users to monitor and backup progress exceptions. detect any With notification the feature enabled, administrators can promptly track the status backups and restorations.

## **Virtual Machine Backup Solution**

Virtual machine backup is crucial for maintaining the integrity and recoverability of critical business systems and data. In the face of risks such as hardware failure, software errors, human mistakes, or natural disasters, backups can swiftly restore the virtual machine to its most recent stable state, minimizing service interruption, ensuring business continuity, and preventing data loss and potential financial impact. Therefore, regular virtual machine backups are an essential component of any enterprise risk management strategy.

TerraMaster Centralized Backup (CB) offers a comprehensive, one-stop solution for virtual machine backup and recovery. It supports backups for VMware vSphere and Windows Hyper-V virtual machines, integrating VMware's Changed Block Tracking (CBT) and Microsoft's Resilient Change Tracking (RCT) to ensure only changed data is transmitted, greatly enhancing backup efficiency. With CB's virtual machine backup functionality, administrators can easily manage backup operations for up to 200 virtual machines from a single backup server.

Centralized Backup excels in disaster recovery as well. In the event of an incident, IT administrators can quickly locate and select the appropriate backup version using the time rollback function in the version library, allowing for swift data restoration to the specified destination host.

Additionally, Centralized Backup is highly compatible with various virtual machine versions, including VMware ESXi 8.0, 7.0, 6.7, and 6.5, VMware vCenter 8.0, 7.0, 6.7, and 6.5, as well as Windows Server Hyper-V 2019 and 2016. This ensures comprehensive backup and protection for all your virtual machine environments.



## **Disaster Recovery Solution**

To safeguard against data threats from hardware failures, system malfunctions, theft, and natural disasters, TerraMaster's enterprise data backup solution includes a secondary layer of protection called Duplicate Backup (DB). DB is a robust disaster recovery tool with a user-friendly interface. It enables IT administrators to back up important folders, entire data volumes, or iSCSI LUNs from the backup server to remote locations such as another backup server, file server, or cloud storage. Supporting various backup strategies, including incremental and multi-version backups, DB ensures a straightforward and efficient backup and restoration process, facilitating rapid data recovery in the event of equipment failure. To prevent data loss in the event of an accident, the 3-2-1 backup strategy is widely used. This approach involves maintaining at least 3 backups of the data, with 2 stored on different devices and at least 1 stored off-site. Duple Backup, a professional tool designed specifically for TerraMaster backup servers, is ideal for implementing the 3-2-1 backup strategy.

Multiple Backup Targets	Multiple Destinations	Diverse Backup Strategies
Duple Backup supports the	Depending on your business	Depending on business
backup of shared folders,	needs, you can choose up to	needs and storage resource
specific file directories, iSCSI	4 different backup	allocation, you can select
LUNs and their	destinations for your data,	incremental backup,
configurations, or entire	including another	multi-version backup, or
volumes on the backup	TerraMaster backup server, a	hybrid-mode backup.
server. It can handle up to 10	file server, a WebDAV server,	TerraMaster's unique
million files and provide up	or multiple mainstream	hybrid-mode strategy offers
to 108TB of storage space for	cloud storage options. Using	data deduplication to
backups.	the Duple Backup Vault	enhance storage space
	client, you can simplify the	utilization and supports up to
	backup configuration process	9,999 backup versions.
	by setting up mutual backups	
	between two TerraMaster	
	backup servers.	
Data Security	Efficient Transmission	Easy Restoration
To ensure data security,	To enhance backup	Duple Backup offers an
Duple Backup uses SSL	efficiency, data is	intuitive graphical interface
certificate encryption	compressed before	that provides tailored
throughout the backup	transmission, achieving up to	restoration methods for
process, protecting data	30% compression. This	various destinations. In the
transmission.	reduces network bandwidth	event of an accident, users
	usage, saves storage space,	can quickly restore data
	and lowers IT investment	using Duple Backup's tool,
	costs for customers.	minimizing losses and
		reducing recovery time.



## **Cloud Data Backup**

By using TerraMaster's CloudSync service with the integrated backup server, enterprises can fully protect their network disk and cloud SaaS data. As an advanced cloud disk synchronization application, CloudSync enables high-speed, real-time synchronization between local backup servers and cloud storage. It efficiently downloads cloud data for easy access, overcomes Internet bandwidth limitations, and significantly boosts work efficiency. This cost-effective solution offers reliable off-site disaster recovery strategies, ensuring data integrity and business continuity.

#### **Advantages of the CloudSync Cloud Disaster Recovery Solution:**

Supports synchronization with major cloud storage services, including Google Drive, OneDrive, Amazon S3, Dropbox, and Baidu Cloud.

- . Offers bidirectional disaster recovery strategies, including cloud-to-local and local-to-cloud.
- . Monitors file changes in real-time and triggers immediate data synchronization.
- . Supports various synchronization strategies to accommodate flexible data utilization needs.
- . Provides data encryption during upload to prevent sensitive data leakage on cloud storage.
- . Offers flexible synchronization options and scheduled tasks to avoid network bandwidth congestion during peak business hours.

### **Avoid Ransomware Attacks**

Ransomware poses a major threat to data security. A single compromised device can swiftly and discreetly infect your entire network, including network-connected backups, often without detection. Ransomware not only encrypts your data but can also delete, overwrite, or destroy it. Failing to pay the ransom risks permanent loss of critical business data. In addition to backup and disaster recovery solutions, TerraMaster Backup Server offers a powerful tool against ransomware attacks: folder and file system snapshots.

### **Folder Snapshot**

- . Leveraging the COW (Copy-on-Write) feature of the Btrfs file system, snapshots are highly efficient and storage space is optimized.
- . The scheduled task can take a snapshot of the folder or iSCSI LUN every hour.
- . Each folder can hold up to 1,024 snapshots.
- . Arranged chronologically, browsing and restoring snapshots are quick and easy.
- . Enhance snapshot security by supporting incremental snapshot replication.
- . When the server goes down, the business can swiftly switch to the backup server and resume operations.

### **File System Snapshot (TFSS)**

. TerraMaster's Unique Snapshot Protection Solution.



- . Minimize human error, create full system or volume snapshots, and enhance data security.
- . Adopt a read-only snapshot storage method to minimize the risk of ransomware affecting snapshots and enhance overall snapshot security.
- . Customizable snapshot scheduling tasks allow for flexible arrangement in alignment with the business operation cycle.
- . One-click activation and restoration simplify IT administrators' tasks.

### **Applications of TerraMaster Backup Servers**

The TerraMaster integrated backup server offers enterprise-grade disaster recovery solutions tailored to meet the demands of freight, efficiency, collaboration, compatibility, and security in a digitally centralized enterprise environment. It is ideal for data disaster recovery in small to medium-sized enterprises, campus cloud disk and backup solutions, document management for design institutions, and PACS digital medical data storage.

Application Case	Usage scenario
Design institution	. Share encrypted drawings and build a file
	server with internal and external network
	isolation;
	. Hierarchical permission design supports
	AD/LDAP to smoothly integrate into the
	enterprise environment;
	. Virtualized deployment improves the
	security of design software and saves IT
	budget;
	. Supervise behavior records and trace
	operation logs;
	. Centrally protect design drawings and
	defend against ransomware threats;
	. Improve the efficiency of massive drawing
	backup and streamline storage space
	utilization;
	. Self-contained disaster recovery to deal
	with ransomware, and off-site backup quickly
	restores business operations;
	. Easy to operate, no need to change existing
	access habits;

## **Powerful Backup Server**

The U12-500 Plus is equipped with an Intel Core i7-1255U processor, featuring 10 cores, 12 threads, and a turbo frequency of up to 4.7GHz. It includes Intel® Iris® Xe Graphics with a



dynamic frequency of 1.25GHz and supports AES NI hardware encryption. With 16GB of DDR5 4800MHz memory and two 10 Gigabit Ethernet ports, it ensures robust performance. Additionally, it has two M.2 NVMe slots for Hyper Cache acceleration, enhancing disk array storage efficiency. This makes it an ideal high-performance backup solution for small to medium-sized businesses.

## **288TB High-Capacity Storage Space**

The U12-500 Plus can accommodate up to 12 3.5-inch SATA hard drives, offering a remarkable maximum storage capacity of up to 288TB (using 22TB HDDs as an example). This is sufficient to meet the backup and storage needs of most small and medium-sized enterprises. Additionally, through the USB3.2 10Gbps interface, the U12-500 Plus can easily connect to external USB storage devices, enabling further storage expansion. For example, when used with the TerraMaster D6-320, it can increase storage capacity by an additional 132TB, meeting your ever-growing data storage demands.

## 20Gb Lightning-Fast Throughput Performance

The U12-500 Plus is equipped with two 10GbE copper cable 10 Gigabit Ethernet ports, offering up to 20Gbps of bandwidth for data transmission. In real-world scenarios, combined with SMB multichannel, the U12-500 Plus delivers impressive throughput performance: sequential write speeds up to 2090MB/s and 4K random read/write speeds up to 450MB/s. This exceptional performance ensures smooth image and video read/write capabilities, making it ideal for film and video production, post-production in audio-video studios, and production teams. It also provides outstanding random read/write performance for virtualized environments and database applications.

### Versatile Storage Options, Configure as You Wish

The U12-500 Plus offers a comprehensive range of storage configurations, supporting various RAID types including Single, RAID 0, 1, 5, 6, and 10. It also introduces TerraMaster's innovative flexible array (TRAID/TRAID Plus), which enables online capacity expansion, migration, and redundant disk configuration within the array. Users can create multiple storage spaces and choose between ext4 or Btrfs file systems based on their business needs. For added flexibility, pair the U12-500 Plus Max with the TerraMaster USB DAS disk array to seamlessly expand storage capacity as needed.

## **A New Generation Operating System**

The U12-500 Plusfeatures the latest TOS 6 operating system, introducing over 40 new



features and optimizing more than 370 details for an unparalleled upgrade experience. TOS 6 boasts a completely revamped user interface, transforming the system from the inside out. Enhanced security measures ensure even more secure and reliable data storage. Additionally, TOS 6 is fully compatible with the Ubuntu root file system, making it familiar and easy to maintain for a wide range of users.

#### **Across-Platform File Services**

The U12-500 Plus supports mainstream file services including SMB, SFTP/FTP, iSCSI, NFS, and WebDAV, fully meeting cross-platform file service needs in various network environments. It is compatible with Windows AD domain and LDAP, making it easy to integrate into existing enterprise IT environments and improve management efficiency. Additionally, it offers multi-level permission management for users, user groups, and file directories, addressing comprehensive cross-department collaboration and data security requirements for enterprises.

### **Virtualization Tools to Facilitate Every Project**

Leveraging the virtualization tools and hybrid storage architecture of the Terramaster Operating System (TOS), the U12-500 Plus offers exceptional advantages in virtualization. The Docker Manager visualization tool makes managing containers and projects effortless. Additionally, with VirtualBox support, you can create a highly efficient virtualized environment, enabling your business to launch and become operational in a very short time.

## **System Level Security Protection**

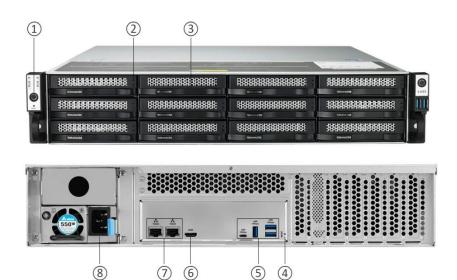
Facing increasingly rampant cyber attacks, network device security encounters unprecedented challenges. TOS offers a comprehensive suite of security measures, including PAM authentication, OTP two-factor authentication, AES 256 encryption, automatic account lockout, anti-DoS attack protocols, firewalls, and security isolation modes, all designed to effectively reduce the risk of malicious attacks. The recently introduced SPC (Security and Privacy Control) module has enhanced system security tenfold. SPC ensures that all executable programs running on the system are authorized and legitimate, further protecting user data from hackers and ransomware.

## **Multiple Commercial Applications**

TNAS allows business users to easily build file servers, mail servers, web servers, FTP servers, MySQL databases, CRM, Node.js, Java VMs, and many other services, thereby satisfying the commercial requirement of various SMBs in such fields as education, consulting, finance, scientific research, and law.



### **Panel Illustration:**



SN	Item	Description
1)	Power switch	On: Power on; Off: Power off
2	Hard drive indicator	Green: Normal operation status Green (flickering): Reading/writing data Off: No hard drive detected
3	Hard drive tray	3.5" SATA HDD; 2.5" SATA HDD; 2.5" SATA SSD

## **Rear Cover Illustration:**

SN	Item	Description
4	RESET	When the device is powered off, use a pin to continuously press and hold the RESET button on the back of the product. While keeping the RESET button pressed, briefly press the power button to start the device. Wait for approximately 30 seconds until you hear three consecutive "beep beep beep" sounds, then release the pin. Next, use the TNAS PC client software to perform a new search for the TNAS device and follow the client's instructions to restart the TOS system initialization process.
(5)	USB host (×4)	Use to connect USB storage device or USB wireless adaptor
6	HDMI interface	For displaying the software codes or commands, not for video playing.
7	Network interface	10000M/2500M/1000M/100Mbps network interface
8	Power interface	AC 110-240V power input



# **Specifications:**

Processor	
Processor Model	Intel Core i7-1255U
Processor Architecture	X.86 64-bit
Processor Frequency	10-Core (Max burst up to 4.7 GHz)
CPU Single-Core Score	/
Hardware Encryption Engine	√
Hardware Transcoding Engine	H.264, H.265, MPEG-4, VC-1;maximum resolution: 4K (4096 x 2160); maximum frame rate per second (FPS): 60
Memory	
System Memory	16 GB DDR5 non-ECC SODIMM
Pre-installed Memory module	16 GB DDR5 non-ECC SODIMM (1x 16 GB)
Total Memory Slot Number	2 (DDR5 SODIMM)
Maximum Supported Memory	64 GB DDR5 non-ECC SODIMM
Note	TerraMaster reserves the right to replace memory modules with the same or higher frequency based on supplier's product life cycle status. Rest assured that the compatibility and stability have been strictly verified with the same benchmark to ensure identical performance.
Storage	
Disk Slot Number	12
	3.5" SATA HDD
Compatible Drive types	2.5" SATA HDD
	2.5" SATA SSD
Maximum Internal Raw Storage Capacity	264 TB (22 TB x 12) (Capacity may vary by RAID types)
Drive Hot Swap	√
	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.      The maximum single volume size is not directly related to the maximum raw capacity.
Drive Hot Swap	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.  The maximum single volume size is not directly related to the
Drive Hot Swap  Note	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.  The maximum single volume size is not directly related to the
Drive Hot Swap  Note  File System	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.      The maximum single volume size is not directly related to the maximum raw capacity.
Note  File System Internal Drive	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.      The maximum single volume size is not directly related to the maximum raw capacity.  Btrfs, EXT4
Note  File System Internal Drive External Drive	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.      The maximum single volume size is not directly related to the maximum raw capacity.  Btrfs, EXT4
Note  File System Internal Drive External Drive External Ports	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.      The maximum single volume size is not directly related to the maximum raw capacity.  Btrfs, EXT4
Drive Hot Swap  Note  File System Internal Drive External Drive External Ports RJ-45 1GbE Network Jack	Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.      The maximum single volume size is not directly related to the maximum raw capacity.  Btrfs, EXT4
Note  File System Internal Drive External Drive External Ports RJ-45 1GbE Network Jack RJ-45 2.5GbE Network Jack	. Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.  . The maximum single volume size is not directly related to the maximum raw capacity.  Btrfs, EXT4  EXT3, EXT4, NTFS, FAT32, HFS+, BTRFS
Note  File System Internal Drive External Drive External Ports RJ-45 1GbE Network Jack RJ-45 10GbE Network Jack	. Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly.  . The maximum single volume size is not directly related to the maximum raw capacity.  Btrfs, EXT4  EXT3, EXT4, NTFS, FAT32, HFS+, BTRFS



COM	/
HDMI	1
VGA	/
PCIe Slots	1 (PCle 3.0 x4)
M.2 2280 NVMe Slot	2 (PCIe 4.0 x4)
Appearance	
Size (H*W*D)	88 x 440 x 550 mm
Packaging Size (H*W*D)	217 x 580 x 710 mm
Weight	16.0 Kg
Others	
System Fan	80 x 80 x 38mm 3PCS
Fan Mode	Smart, High speed, Middle speed, Low speed
Nata Laval	39.0 dB(A) (Using 2 SATA HDDs/SSDs in standby mode; Test
Noise Level	environment noise: 17.3dB(A); Test distance: 1m )
Power Supply	500 W
Redundancy Power Supply	/
AC Input Voltage	100V - 240V AC
Current Frequency	50/60 Hz, Single frequency
	120.0 W(Fully loaded WD RED WD221KFGX 22TB hard drive(s)
Dower Consumption	in read/write state)
Power Consumption	33.0 W (Fully loaded WD RED WD221KFGX 22TB hard drive(s)
	in hibernation)
Limited warranty	3 years
Certificate	FCC, CE, CCC, KC
Environment	RoHS, WEEE
Temperature	
Working Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-5°F ~ 140°F)
Relative Humidity	5% ~ 95% RH
Package Contents	
	Host unit (x1)
	Power cord (x1)
	RJ-45 network cable (x1)
	Quick Installation Guide (x1)
	Limited Warranty Note(x1)
	Screws(a few)
Storage Temperature Relative Humidity	-20°C ~ 60°C (-5°F ~ 140°F)  5% ~ 95% RH  Host unit (x1)  Power cord (x1)  RJ-45 network cable (x1)  Quick Installation Guide (x1)



TOS Features	
OS Supported	
Supported Client OS	Windows OS, Mac OS, Linux OS
Supported Web Browsers	Google Chrome 97.0.xxxx, Mozilla Firefox 9.3, Apple Safari 12.1; Microsoft Edge 99.0.xx or later version.
Supported mobile OS	iOS14.0, Android 10.0 or later version
Storage Management	
Supported RAID Types	TRAID, TRAID+, Single, JBOD, RAID 0, RAID 1, RAID5, RAID 6, RAID 10
Maximum Internal Volume Number	256
Maximum iSCSI Target	128
Maximum iSCSI LUN	256
Volume Expansion with Larger HDDs	TRIAD,TRAID+,RAID1,RAID5,RAID6,RAID10
Volume Expansion by Adding a HDD	TRIAD,TRAID+,RAID5, RAID6
RAID Migration	V
SSD Cache	V
Hot Spare	V
SSD TRIM	V
Hard Drive S.M.A.R.T.	√
Seagate IHM	√
NVRAM write cache(BBU-protected)	/
Shared Folder Snapshot	V
LUN Snapshot	V
File Services	
File Protocol	SMB/AFP/NFS/FTP/SFTP/WebDAV
Maximum Concurrent SMB/AFP/FTP/SFTP	512
Connections Windows Access Control List (ACL) Integration	√
NFS Kerberos Authentication	√
Account & Shared Folder	
Maximum local user's account number	2048
Maximum local group number	512
Maximum shared folders number	512
Maximum shared folders syncing tasks	8



Backup	
Rsync Backup	√
Duple Backup	√
Centralized Backup	√
Snapshot	√
USB Backup	√
Cloud Sync	√
Time Machine Backup	√
File System Snapshot	√
TFM Backup	√
Networking	
TCP/IP	IPv4/IPv6
Protocols	CIFS/SMB, NFS, FTP, SFTP, HTTPS, SSH, iSCSI, SNMP
Link Aggregation	√
DLNA Compliance	√
VPN Client	√
VPN Server	√
Proxy Client	√
Proxy Server	/
UPnP/Bonjour Discovery	√
TNAS.online Remote Access	√
DDNS	√
Access Right Management	
Batch users creation	/
Import/Export users	V
User Quota Management	V
Local user access control for	V
CIFS/SAMBA and FTP	V
Domain Authentication	
AD Domain	V
LDAP Client	V
LDAP Server	1
Security	
Firewall Protection	V
Account Auto-block Protection	V
AES Volume and Shared Folder	V
Encryption	•
Importable SSL certificate	√
Instant Alert via email, Desktop	V
Notification, Beep	•
RSA 2048 Encryption (TOS 5.0)	√
PAM (Pluggable Authentication	V
Modules)	-



OTP Authentication (TOS 5.0)	V
HyperLock File System (TOS	-
5.0)	V
Power Management	
Power Resume	V
Scheduled Power On/Off	V
Wake up On LAN (WOL)	V
UPS Supported	V
Administration	
Multi-window, Multi-task	
System Management	V
Custom Desktop	√
Control Panel	V
Resource Monitor	V
Syslog	V
OS UI Language	English, German, French, Spanish, Italian, Magyar, Chinese,
	Japanese, Korean, Turkish, Portuguese, Russian
Applications	
Application Center	V
iSCSI Target	V
Terra Photos	V
TerraSync	V
Duple Backup	V
CloudSync	V
Centralized Backup	V
USB Backup	V
VPN Server	V
Transmission	V
qBittorent	V
Aria 2	V
Terra Search	V
Deduplication	V
Web Server	V
Clam Antivirus	V
EMBY	V
Multi Media Server	V
Plex Media Server	V
Docker Manager	V
Snapshot	V



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