

TeraStation WSS 5000

User Manual



Americas: www.buffaloamericas.com Europe: www.buffalo-technology.com Asia Pacific: www.buffalo-asia.com

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For Customers in Europe	
한국 고객 대상	
提供給台灣的客戶	
面向中国用户	

Chapter 1 Installation

Diagrams

WS5600D



WS5400D





WS5200D



WS5400R



1 Power Button

To power on, connect the power cable and wait for 10 seconds, then press the power button. To power off, press the power button.

2 Info LED

If there is a status message, the amber info LED will light up. Check the LCD panel to see the status message.

3 Error LED

If there is an error, the red error LED will light up. Check the LCD panel to see the error message.

4 LAN1 LED

When LAN port 1 is connected, this LED glows green. It blinks when the connection is active.

5 LAN2 LED

When LAN port 2 is connected, this LED glows green. It blinks when the connection is active.

6 LCD Panel

This display shows the status of many TeraStation settings. It also displays errors and messages when available.

7 Display Button

Switches between the different display modes. Also, if the TeraStation is beeping, press this button to stop it.

8 Factory Use Only

9 Drive Lock

Open the front panel with the key to replace hard drives or press the reset button.

10 Reset Button

To shut down and reboot the TeraStation, hold down the reset button.

11 Status LEDs

Normally, these LEDs blink green when hard drives are accessed. If a drive fails, its LED will turn red.

12 VGA Connector

You can connect a VGA monitor to this port. Connecting a monitor directly to the TeraStation is only supported for monitoring the progress of Windows Update.

13 Boot Mode Switch

Leave the switch in the HDD position during normal operation. To recover settings, insert the recovery USB drive into a USB 3.0 or 2.0 port, move the boot switch to the USB position, and press the power button.

14 UPS Port

Connect to a UPS.

15 USB 3.0 Port

Compatible Buffalo USB 3.0 hard drives, USB flash drives, digital cameras, and USB UPSs can be connected. USB hubs are not supported.

16 USB 2.0 Port

Compatible Buffalo USB hard drives, USB flash drives, digital cameras, and USB UPSs can be connected. USB hubs are not supported.

17 LAN Port 1

Use an Ethernet cable to connect this port to your network.

18 LAN Port 2

This second Ethernet port may be used for network redundancy or backup. You may connect a second TeraStation directly to this port for backup.

19 Power Connector

Use the included power cable to connect to an UPS, surge protector, or outlet.

20 Fan

Do not block the fan.

21 Anti-Theft Security Slot

Use this slot to secure your TeraStation with a cable lock (not included).

22 UID Button

Press the UID button on the front or the back of the unit to cycle the blue LED on and off.

23 Serial Number

This sticker shows the TeraStation's serial number.

24 Link LED

Glows orange when the unit is connected to a network.

25 Act LED

This LED shows network activity. It blinks orange when the TeraStation is accessed over the network.

Installation

Note: If using OS X (10.4 or later), download and install "Remote Desktop Connection Client for Mac 2" from http:// www.microsoft.com. For OS X 10.3.9, use version 1.0.3 instead.

- 1 Connect the TeraStation's Ethernet and power cables and turn it on.
- 2 Insert the supplied microSD card into your computer. Open the "TeraNavi" folder and double-click *TSNavi.exe* to launch TeraNavigator. You can also download the latest version of TeraNavigator from Buffalo's website.

Notes:

- If using Windows 2000 or 2000 Server, make sure that write-protection on the USB device is disabled before connecting it. To disable write-protection, slide the switch on the USB device toward the USB connector.
- If "Do you want to allow the following program to make changes to this computer ?" is displayed by Windows 8.1, Windows 8, or Windows 7, click *Yes*. If "A program needs your permission to continue" is displayed by Windows Vista, click *Continue*.
- With Mac OS, double-click the disk image "WS5000-XXX.dmg" (where "XXX" is the software version) from the USB device and double-click *TeraNavigator*.
- Disable your antivirus software firewall before continuing. You may not be able to install Buffalo software if antivirus software or a software firewall are enabled. After you've finished setup, re-enable your firewall or antivirus software.

3 Click *Begin Installation*. The wizard will guide you through installing NAS Navigator2.



- 4 Click Finish. NAS Navigator2 will open.
- 5 Right-click on your TeraStation's icon, then select *Properties*. On a Mac, click the TeraStation's icon while holding down the control key, then select *Configure*.

NAS Navigator2	
🍈 Menu 🐱 🏭 View 🐱 🇀 Browse 🗳 Refresh 🌗 I'm here	
WS: Browse Shares Open Remote Desktop Properties Create Desktop Shortcut I'm here	
WS5400D Series C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.00 MAC Address: AA:BB:CC:DD:EE:FF Firmware: 2.41 NAS Navigator version 2.76

6 Select the *IP Address* tab and check "Use DHCP" (or enter the IP address settings manually). Click *OK*.

WS5200D0A7 Properties
WS5200D Series Remote Desktop IP Address
Renew IP address
IP Address 192 168 11 . Subnet Mask 255 255 255 0
Default Gateway 0 . 0 . 0
Cancel Apply

If you are prompted to enter the administrator password for the TeraStation, it is "password" by default. **Note:** If you change the IP address manually, change the DNS settings in Windows Storage Server also.

Right-click on your TeraStation's icon and choose *Open Remote Desktop*. On a Mac, click the TeraStation's icon while holding down the control key, then select *Open Remote Desktop*.

NAS Navigator2	
🍋 Menu 🐱 🏭 View 🐱 🏠 Browse 🛭 🥱 Refresh 🌗 I'm here	
WS: Browse Shares Open Remote Desktop Properties Create Desktop Shortcut I'm here	
WS5400D Series C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.00 MAC Address: AA:BB:CC:DD:EE:FF Firmware: 2.41 NAS Navigator version 2.76

Notes:

7

- If the message "The publisher of this remote connection cannot be identified. Do you want to connect anyway?" is displayed, click *Connect*.
- If "The identity of the remote computer cannot be verified. Do you want to connect anyway?" is displayed, click *Yes* or *Continue*.



Note: The default username and password are "Administrator" and "password".

9 Go to Server Manager and click *Local Server* to install the Windows Storage Server update program. Under "PROPERTIES", click the status shown in "Windows Update". Click *Check for updates*, then click the available updates.



10 Go back to "Local Server" to set the date and time. Under "PROPERTIES", click the item shown next to "Time zone". In the "Date and Time" tab, click *Change date and time*. Select the current date and time and click *OK*.

📑 Date and T	ime Settings
Set the date and time: Date: Su Mo Tu We Th Fr Sa 28 29 30 31 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8	Time:
Change calendar settings	OK Cancel

Note: In the "Internet Time" tab, click *Change settings*, and check "Synchronize with an Internet time server". The date and time will be updated automatically.

- **11** Create a shared folder. See the "Creating a Shared Folder" section in chapter 7 for more details.
- **12** Change the TeraStation's password. See the "Changing the Password" section in chapter 7 for more details.

13 In NAS Navigator2, double-click your TeraStation's icon. For Mac OS, the TeraStation is mounted as a drive icon on the desktop, or it is displayed in the sidebar of the Finder.

NAS Navigator2		
🎦 Menu 🐱 🔠 View 🐱 🕯	🕑 Refresh	
WS5400D049		
WS5400D Series		Workeroup: WORKGROUP
	C: 12.8 GB/100.0 GB (12.8%)	IP Address: 192.168.11.150
		Subnet Mask: 255.255.255.0
		Default Gateway: 0.0.0.0
		MAC Address: AA:BB:CC:DD:EE:FF
		Firmware: 2.41
		NAS Navigator version 2.76

Note: Never disable the LAN (network device) settings in Windows Storage Server. Disabling the LAN settings will also disable access to the TeraStation.

Turning the TeraStation On and Off

Press the power button on the TeraStation to turn it on and off. Or you can turn off your TeraStation by the following procedure.

Shutting Down Windows Storage Server

1 From the Windows Storage Server Start menu, point the cursor to the upper-right hand corner of the screen, then

click the icon.

2 Click the icon - Shut down.

3 Select the reason why you want to shut down, then click *Continue*.

When all the LEDs on the front of the TeraStation turn off, the shutdown process is complete.

Note: Always shut down the TeraStation before unplugging it. The TeraStation can be damaged if it is suddenly unplugged without being powered down first.

Installing Antivirus Software

Installing antivirus software on the TeraStation is strongly recommended.

Connect a USB CD/DVD drive to the TeraStation's USB port, load the antivirus software CD into the CD/DVD drive, and install the software.

Chapter 2 Remote Desktop

Opening Windows Storage Server

Note: If using OS X (10.4 or later), download and install "Remote Desktop Connection Client for Mac 2" from http:// www.microsoft.com. If using OS X 10.3.9, use version 1.0.3 instead.

- 1 Double-click the icon to start NAS Navigator2.
- **2** Right-click on your TeraStation's icon and choose *Open Remote Desktop*. For Mac OS, click the TeraStation's icon while holding down the control key, then click *Open Remote Desktop*.

Menu 🗸 🚟 View 👻 💼 Browse 🥱 Refresh 🌗 I'm here	
WS: Browse Shares	
Open Remote Desktop	
Properties	
I'm here	
VS5400D Series	Workgroup: WORKGROUP
/S5400D Series C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150
C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0
C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.0
C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.00 MAC Address: AA:BB:CC:DD:EE:FF
C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.0 MAC Address: AA:BB:CC:DD:EE:FF Firmware: 2.41

Notes:

- If Remote Desktop Connection Software doesn't start on a Mac, exit and re-launch NAS Navigator2. To exit NAS Navigator2, click the NAS Navigator icon while holding down the control key and click *Quit*.
- Click the TeraStation icon to view the IP address and other information for the TeraStation.
- If the message "The identity of the remote computer cannot be verified. Do you want to connect anyway?" is displayed, click *Yes* or *Continue*.
- **3** Enter the admin username and password and press the Enter key. Windows Storage Server will open in the remote desktop.

Note: The default username and password are "Administrator" and "password".

Chapter 3 Windows Update

Windows Update



4 Step through the wizard to install the updates.

Chapter 4 Preinstalled Software

RAID Builder

RAID Builder is used to create RAID arrays. See the "Managing Storage" section in chapter 5 for more details.

To launch RAID Builder, you must be logged in as a member of the Administrators group in Windows Storage Server.

Note: This software cannot be accessed by multiple users at the same time. Before launching it, make sure that it is not being used by another user.

R	RAID Builder	x
Create RAID array		
RAID structure Mirrored (RAID 1 RAID 5 Spanned Striped (RAID 0)	Two drives are combined into one mirrored array. The capacity of the volume is the same as one drive. Data the both drives. If either drive fails, all data can be reco	B C B C total available is written to overed.
Drives Status ✔ Drive1 Normal ✔ Drive2 Normal □ Drive3 Normal □ Drive4 Normal	Model Capa WDC WD20EARX-00PASB0 2000 WDC WD20EARX-00PASB0 2000 WDC WD20EARX-00PASB0 2000 WDC WD20EARX-00PASB0 2000 WDC WD20EARX-00PASB0 2000	zty GB GB GB GB
Refresh	OK Cano	el

Buffalo Dashboard

Buffalo Dashboard displays system information and dismounts hard drives. To launch it, double-click the Buffalo Dashboard icon in the system tray.

6	Buffalo Das	hboard	
BUFFALO		Buffalo Dashboard Version 1.1.1.0	
System Information		Network Information	
Product Name WS52	200	Status LAN Adapter Name IPv4 Addres	
Computer Name WS52	200D0A7	^J ² Up LAN 1 Ethernet 192.168.11. ^J ³ Down LAN 2 Ethernet 2	
Domain Name WORK	KGROUP		
OS Micros 2012	soft Windows Storage Server Standard	< m >	
OS Version 6.2.92	200	I'm here!	
Firmware 2.41		The "I'm here" button will cause your TeraStation to beep.	
Manufacturer Buffal	lo Inc.	I'm here!	
Temperature		O Drive	
✓ System : 36℃ / 97*F		Options	
		Status Drive Name Capacity Physical	
🕏 Fan		✓ Normal 2 Hitachi 931 GB 512 Byte	
✓Fan1 : 1721 RPM			
✓Buffalo Replication : ✓Windows Server Backu	Replication is synchronized. p: No logs available.	Refresh Dismount Drive	
lt	tems	Descriptions	
		Product Name: Displays the model name of the TeraStation.	
		Computer Name: Displays the hostname of the TeraStation.	
System Information		Domain Name: Displays the type of domain that the TeraStation is a	
		member of.	
		OS: Displays the type of Windows installed on the TeraStation.	
		OS Version: Displays the version of the OS.	
		Firmware: Displays the firmware version of the TeraStation.	
		Manufacturer: Displays "Buffalo Inc.".	
Temperature		Displays the temperature of the system.	
Fan		Displays the rom.	
Backup		Displays the status of backup and replication	
Bacilup		Displays IP addresses subnet masks default gateways I AN port	
Network Settings		numbers and status	
l'm horol		Caucas your TaraStation to been	
i i i nere:		Causes your relastation to beep.	

Items	Descriptions
Drive	Displays the status, drive numbers, names, capacity, and physical sector sizes of each drive. Refresh: Updates the displayed drive information. Dismount Drive: Dismounts a drive for safe removal. Select the drive to dismount and click <i>OK</i> . Options: Shut down when the drive's temperature reaches an abnormal value - The TeraStation will automatically shut down if the drive gets too hot. Turn off the drive if an error occurs - The hard drive will automatically be turned off (dismounted) if a drive error occurs.
	Click Dismount Drive, check the drive to dismount, then click OK. After
	the drive is dismounted, unplug the hard drive from the TeraStation.

Note: The following functions are only available when logged in as administrator:

- Refresh
- Dismount drive
- Options

Email Notification

Your TeraStation can send you email reports when settings are changed or an error occurs. See the "Email Notification" section in chapter 7 for more details.

To launch Email Notification, you must be logged in as a member of the Administrators group in Windows Storage Server.

	ification	
ition		
		New
		643
		Cun
	>	Delete
		Port 25
Vone		~
		Port 110
r 🗌	Password	
		~
d or self-signed cer	tificates.	
Station Status Repo	rt.	
Pv4	IPv6	
12 p.m. V	Disk error	
	Fan failure	
	Replication error	
	D PSII Eaikee	
	Ti oo i dixe	
Source	Event ID	New
		Edit
		Delete
	tion Wene F F F F F F F F F F F F F	tion there

Buffalo Replication

Your TeraStation can be synchronized with another TeraStation, replicating most data. See the "Replication" section in chapter 6 for more details.

To launch Buffalo Replication, you must be logged in as a member of the Administrators group in Windows Storage Server.

Note: This software cannot be accessed by multiple users at the same time. Before launching it, make sure that it is not being used by another user.

		Buffalo Replication		×
Replication	List 🛞 Delete	🖒 Sync 🕒 Apply		
	Status	Replication Source	Replication Target	
▶ #1 🗌				
Fol	der Setup		Clos	e

TeraStation Backup and Replication Folder Settings

Before using it as a backup device on the network, configure your TeraStation in "TeraStation Backup and Replication Folder Settings".

To launch TeraStation Backup and Replication Folder Settings, you must be logged in as a member of the Administrators group in Windows Storage Server.

	<u> </u>		
	TeraStation Bac	kup & Replication Folder	Settings X
	Label	Folder	Password
▶* 1			
			Save Close
	ltems		Des
ahel		Enter a n	name for the backup des
		devices	on the network, this nar

Items	Descriptions
Label	Enter a name for the backup destination. When you search for backup devices on the network, this name will appear.
Folder	Specify a shared folder where backup data will be stored.
Password	If you enter a backup password (optional), this backup device will not appear on the list of available devices when people search for it, unless they search for it by the password.

Items	Descriptions
	To remove a folder from the list of available backup targets, select the
	folder and click this button.

Display Settings

TeraStation's LCD panel settings can be changed using this software. See the "LCD Display Settings" section in chapter 7 for more details.

To launch Display Settings, you must be logged in as a member of the Administrators group in Windows Storage Server.

🕱 Dis	Display Settings 📃 🗖 🗙		
Show	Scroll Display		
✓ IP Address 1	 Enable 		
✓ Drive Usage	O Disable		
🖌 Date & Time	LCD Brightness		
✓ IP Address 2	5 → Very Bright V		
	✓ Night Mode		
	OK Cancel		

Chapter 5 Managing Storage

Creating Volumes

Volume Types

The features of each volume type are explained below.

Notes:

- Use RAID Builder to create a volume, not the Disk Management options in Windows Storage Server.
- When volumes are deleted or formatted, or the RAID mode is changed, all data stored in that volume is erased. Before executing these operations, back up any important data.
- In this manual, "recover" means reverting the TeraStation (including the data) to its former state prior to the drive failure. It doesn't refer to reading data from a failed hard drive.
- RAID synchronization will run automatically after a volume is created. File transfers will be slower while it is running, which will take about 5 hours per terabyte.
- After a volume is created, unused extra space can't be added to the volume.
- Some space on each drive is not accessible because it is used by the system. The amount used on each drive is below.

Drive 1: 50 MB Drive 2: 50 MB Drive 3 to 6: 100 GB + 150 MB

RAID 5 Volumes*

The unallocated areas of three or more hard drives are used as a single array.

If one drive in a RAID 5 array fails, data on the array can be recovered after the failed drive is replaced. However, if two or more drives fail, all data is lost.

*Available for WS5600D, WS5400D, and WS5400R series TeraStations.

Mirrored Volumes (RAID 1)

The unallocated areas of two drives are combined into a single RAID 1 array.

Because the same data is written to both drives simultaneously, if one drive fails, data can be recovered from the other drive. If both drives in the array fail, data cannot be recovered.

Striped Volumes (RAID 0)

The unallocated areas of two or more drives are combined into a single RAID 0 array. However, data cannot be recovered if even a single drive fails.

Spanned Volumes

The unallocated areas of multiple hard drives are joined to create a single logical volume. This allows various drive spaces to be combined efficiently. However, data cannot be recovered if even a single drive fails.

Simple Volumes (JBOD)

The internal hard drives of the TeraStation are each used as individual drives. If a hard drive fails, the data on the failed hard drive cannot be recovered.

Creating a RAID 5 Volume

- **1** From the Windows Storage Server Start menu, click *RAID Builder*.
- 2 Select "Create RAID array" from the drop-down menu and "RAID 5" under "RAID structure".
- **3** Select at least three drives to create a RAID 5 array.

4 Click OK.

JIEBLE NAID	array		~
RAID struc	ture		
 Mirrore 	ed (RAID 1)		
	-		
• RAID	5		
	ned	E P	
O opun			
O Stripe	d (RAID 0)	P P	- <u>P</u> E
		Panty	
		Multiple drives are combined into a single a	arrav with parity. The t
		multiple unves are combined into a single a	
		available capacity of the volume is equal to	o the sum of the capa
		available capacity of the volume is equal to of all the drives minus one. If any single dri recovered.	o the sum of the capa ve fails, all data can b
		mailable capacity of the volume is equal to of all the drives minus one. If any single dri recovered.	o the sum of the capa ve fails, all data can b
Drives	Status	Malaple drives are combined into a single available capacity of the volume is equal to of all the drives minus one. If any single dri recovered.	o the sum of the capa ve fails, all data can b Capacity
Drives ✔ Drive 1	Status	Malaple drives are contained into a single available capacity of the volume is equal to of all the drives minus one. If any single dri recovered. Model WDC WD20EARX-00PASB0	o the sum of the capa ve fails, all data can b Capacity 2000 GB
Drives ✔ Drive1 ✔ Drive2	Status Normal Normal	Malaple drives active of the volume is equal to of all the drives minus one. If any single dri recovered. Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	c the sum of the capa ve fails, all data can b Capacity 2000 GB 2000 GB
Drives Drive1 Drive2 Drive2 Drive3	Status Normal Normal Normal	Model envice and the volume is equal to of all the drives minus one. If any single dri recovered. Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	b the sum of the capa ve fails, all data can b Capacity 2000 GB 2000 GB 2000 GB
Drives Drive1 Drive2 Drive2 Drive3 Drive4	Status Normal Normal Normal Normal	Model environment of the volume is equal to of all the drives minus one. If any single dri recovered. Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	b the sum of the capa ve fails, all data can t Capacity 2000 GB 2000 GB 2000 GB 2000 GB
Drives Drive1 Drive2 Drive3 Drive4	Status Normal Normal Normal Normal	Model environment of the volume is equal to of all the drives minus one. If any single dri recovered. Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	b the sum of the capa ve fails, all data can b Capacity 2000 GB 2000 GB 2000 GB 2000 GB
Drives Drive1 Drive2 Drive3 Drive4	Status Normal Normal Normal Normal	Model environment of the volume is equal to of all the drives minus one. If any single dri recovered. Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	b the sum of the capa ve fails, all data can the Capacity 2000 GB 2000 GB 2000 GB 2000 GB 2000 GB

Examples:

- For a configuration with drive 1 (50 GB), drive 2 (80 GB), drive 3 (58 GB), and drive 4 (100 GB), the usable space on the RAID volume will be (50 GB x 4 drives) \div 3/4 = 150 GB.
- For "n (1 to 4)" identical hard drives in a RAID 5 array, the available space is (n-1)/n times the total drive space.

A RAID 5 volume will be created. Next, create a shared folder on the volume as described in chapter 7.

Creating a Mirrored Volume (RAID 1)

- **1** From the Windows Storage Server Start menu, click *RAID Builder*.
- 2 Select "Create RAID array" from the drop-down menu and "Mirrored (RAID 1)" under "RAID structure".
- **3** Select at least two drives to create a RAID 1 array.

4 Click OK.

Jeale NAID	array		v
- RAID struc	cture		
 Mirror 	red (RAID 1)		
	5		
0 1000			
O Span	ned		
O Stripe	ed (RAID 0)		
		Two drives are combined into one mirrored	l array. The total avai
		Two drives are combined into one mirrored capacity of the volume is the same as one the both drives. If either drive fails, all data	l array. The total avai drive. Data is written can be recovered.
		Two drives are combined into one mirrored capacity of the volume is the same as one the both drives. If either drive fails, all data	array. The total avai drive. Data is written can be recovered.
		Two drives are combined into one mirrored capacity of the volume is the same as one the both drives. If either drive fails, all data	array. The total avai drive. Data is written can be recovered.
Drives	Status	Two drives are combined into one mirrored capacity of the volume is the same as one the both drives. If either drive fails, all data Model	array. The total avail drive. Data is written can be recovered. Capacity
Drives ✓ Drive1	Status Normal	Two drives are combined into one minored capacity of the volume is the same as one the both drives. If either drive fails, all data Model WDC WD20EARX-00PASB0	array. The total avail drive. Data is written can be recovered. Capacity 2000 GB
Drives ✔ Drive1 ✔ Drive2	Status Normal Normal	Two drives are combined into one mirrorec capacity of the volume is the same as one the both drives. If either drive fails, all data Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	array. The total avaid drive. Data is written can be recovered. Capacity 2000 GB 2000 GB
Drives Drive1 Drive2 Drive3 Drive3	Status Normal Normal Normal	Two drives are combined into one mirrorec capacity of the volume is the same as one the both drives. If either drive fails, all data Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	array. The total avai drive. Data is written can be recovered. Capacity 2000 GB 2000 GB 2000 GB 2000 GB
Drives Drive1 Drive2 Drive3 Drive4	Status Normal Normal Normal Normal	Two drives are combined into one minored capacity of the volume is the same as one the both drives. If either drive fails, all data Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	aray. The total avail drive. Data is written can be recovered. Capacity 2000 GB 2000 GB 2000 GB 2000 GB 2000 GB
Drives Drive1 Drive2 Drive3 Drive4	Status Normal Normal Normal Normal	Two drives are combined into one minored capacity of the volume is the same as one the both drives. If either drive fails, all data Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	aray. The total avail drive. Data is written can be recovered. Capacity 2000 GB 2000 GB 2000 GB 2000 GB

Example:

For a configuration with drive 3 (58 GB) and drive 4 (100 GB), the usable space on the mirrored volume will be 58 GB.

A mirrored volume will be created. Next, create a shared folder on the volume as described in chapter 7.

Creating a Striped Volume (RAID 0)

- **1** From the Windows Storage Server Start menu, click *RAID Builder*.
- 2 Select "Create RAID array" from the drop-down menu and "Striped (RAID 0)" under "RAID structure".
- **3** Select at least two drives to create a RAID 0 array.

4 Click OK.

6		RAID Builder	X
Create RAID arra	iy		~
RAID structure Mirrored (F RAID 5 Spanned Striped (R	RAID 1) AID 0)	pace from multiple drives is combined into any drive fails, all data is lost.	o a single RAID 0 volume.
Drives	Status Normal Normal Normal Normal	Model WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0 WDC WD20EARX-00PASB0	Capacity 2000 GB 2000 GB 2000 GB 2000 GB
Refresh		ОК	Cancel

Example:

For a configuration with drive 1 (50 GB), drive 2 (80 GB), drive 3 (58 GB), and drive 4 (100 GB), the usable space on the mirrored volume will be 50 GB x 4 drives = 200 GB.

A striped volume will be created. Next, create a shared folder on the volume as described in chapter 7.

Creating a Spanned Volume

- 1 From the Windows Storage Server Start menu, click RAID Builder.
- 2 Select "Create RAID array" from the drop-down menu and "Spanned" under "RAID structure".
- 3 Select at least two drives to create a spanned array.

4 Click OK.

Create RAID array		¥
RAID structure		
O Mirrored (RAID 1)		
O RAID 5		
 Spanned 		
Striped (BAID 0)		
	Multiple drives are combined into a single a capacity of the volume is equal to the sum	array. The total available of the capacity of all the
	drives. If any single drive fails, all data is lo	st.
Drives Status	Model	Capacity
✓ Drive1 Normal	WDC WD20EARX-00PASB0	2000 GB
✓ Drive2 Normal	WDC WD20EARX-00PASB0	2000 GB
Drive3 Normal	WDC WD20EARX-00PASB0	2000 GB
Drive4 Normal	WDC WD20EARX-00PASB0	2000 GB

Example:

For a configuration with drive 1 (50 GB), drive 2 (80 GB), drive 3 (58 GB), and drive 4 (100 GB), the usable space on the RAID volume will be 50 GB + 80 GB + 58 GB + 100 GB = 288 GB.

A spanned volume will be created. Next, create a shared folder on the volume as described in chapter 7.

Creating Simple Volumes (JBOD)

1 From the Windows Storage Server Start menu, open Administrative Tools, then double-click Computer Management.

2 Click Disk Management.



3 Right-click the unallocated area and select *New Simple Volume*.



4 Click Next.

I	New Simple Volume Wizard	
	Welcome to the New Simple Volume Wizard	
	This wizard helps you create a simple volume on a disk. A simple volume can only be on a single disk. To continue, click Next.	
<pre></pre>		

5 Enter the volume size that you want to create and click *Next*.

New Simp	le Volume Wizard			
Specify Volume Size Choose a volume size that is between the maximum and minimum sizes.				
Maximum disk. space in MB:	953867			
Minimum disk space in MB:	8			
Simple volume size in MB:	e0000			
	< Back Next > Cancel			

6 Select Assign the following drive letter and click Next.

New Simple Volume Wizard	x	
Assign Drive Letter or Path For easier access, you can assign a drive letter or drive path to your partition.		
Assign the following drive letter: D Mount in the following empty NTFS folder: Browse Do not assign a drive letter or drive path		
< Back Next >	Cancel	

Select Format this volume with the following settings and Perform a quick format and click Next.

New Sir	nple Volume Wizard				
Format Partition To store data on this partition, you must format it first.					
Choose whether you want to forma	Choose whether you want to format this volume, and if so, what settings you want to use.				
O Do not format this volume					
 Format this volume with the I 	following settings:				
File system:	NTFS 🗸				
Allocation unit size:	Default 🗸				
Volume label:	Volume label: New Volume				
Perform a quick formal	Perform a quick format				
Enable file and folder of	Enable file and folder compression				
<pre></pre>					

A simple volume will be created. Next, create a shared folder on the volume as described in chapter 7.

Deleting Volumes

7

An unallocated area on a drive is required to create a volume. If there are no unallocated areas, create one by deleting an existing volume.

1 From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.

2 Click Disk Management.



3 Right-click the volume that you want to delete and then select *Delete Volume*.



Formatting Volumes

- **1** From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.
- **2** Click Disk Management.



3 Right-click the volume that you want to format and select *Format*.



Hard Drive Replacement Procedure

Hard drives in the TeraStation show a green status LED during normal operation. If a drive fails, its error LED will glow red.





1 Error LED

Red if a drive has failed.

2 Status LEDs

Green: Normal operation.

Glowing red: If a drive's status LED is glowing red, the drive has malfunctioned. Dismount the drive in Buffalo Dashboard before unplugging it from the TeraStation.

Notes:

• Do not unplug a drive whose status LED is not lit red. If you remove the drive without properly dismounting it, data may be lost or the TeraStation may malfunction.

- When changing drives, the replacement drive should be a Buffalo OP-HDS series drive of the same size.
- The TeraStation is fragile. Handle it with care. Do not drop or bump the TeraStation.
- Use caution when handling the unit in order to avoid personal injury.
- Never disassemble any parts while you are replacing a hard drive unless instructed to do so in this manual. Any malfunction or damage caused by disassembling the TeraStation will void your warranty.
- To avoid damaging the TeraStation with static electricity, ground yourself by touching something made of metal before handling any sensitive electronic parts.
- Do not change the order of the hard drives in the TeraStation. For example, pulling out drive 1 and replacing it with drive 2 may cause data to be corrupted or lost.
- The boot drive (C:) consists of the mirrored volume and a portion of the two drives from the top. Do not replace both of these hard drives at the same time.
- If a hard drive is replaced while saving a file, the file can be corrupted. Be sure that the saving operation is completed before replacing the hard drive.

Hard Drive Replacement Examples

A Drive Failure Occurs in Drive 1 or 2

Notes:

- If one of the drives in the boot drive fails, repair the mirrored volume of the system area first after replacing the drive. Repairing the volume for the data area first may not always succeed.
- If you used Disk Management to mirror the boot drive, the TeraStation will not boot when the drive fails. Follow the procedure below.
- 1 If your TeraStation has a front cover, open it with the included key.



- **2** Make a note of the drive number where the status LED glows red.
- **3** Shut down the TeraStation.

Push the unlock button of the failed hard drive and swing the lock mechanism out.



5 Pull out the drive cartridge and remove it from the TeraStation.



6 Insert the new drive in the empty slot. Slide the drive in with the locking mechanism open.





7 Swing the lock back down until it clicks into place.





8 Close the front cover with the included key. Press the power button on the TeraStation to turn it on.

Note: If drive 1 is being replaced, the red error LED will light up and "POST ERR: 00D9 Boot from HDD x" will be displayed on the LCD panel. Wait for the unit to reboot. When the reboot is finished, go on to the next step.

9 Double-click the icon to start NAS Navigator2.

Right-click on your TeraStation's icon and click *Open Remote Desktop*. For Mac, click the TeraStation icon while holding down the control key and click *Open Remote Desktop*.

😔 NAS Navig	gator2	
📋 Menu 🐱	📰 View 👻 🤣 Refresh	
WS5400	Browse Shares Open Remote Desktop Properties Create Desktop Shortcut I'm here	
WS5400D	Series C: <u>12.8 GB/100.0 GB (12.8%)</u>	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.0.0 MAC Address: AA:BB:CC:DD:EE:FF Firmware: 2.41
		NAS Navigator version 2.76

- 11 Enter the username and password and press the Enter key. Windows Storage Server opens in the remote desktop.
 Note: The default username and password are "Administrator" and "password".
- Click *RAID Builder* from the Start menu of Windows Storage Server.
- Select Create or repair a mirrored volume of the system area, check replaced hard drive, and click OK.

ģ	RAID Builder	x
Create or repair a mirrored	volume of the system area	~
RAID structure		
Mirrored (RAID 1)		
O RAID 5		
O Spanned	C B /	ABC
Striped (BAID 0)		
C Striped (NAID 0)		
	Two drives are combined into one mirrored capacity of the volume is the same as one the both drives. If either drive fails, all data	l array. The total available drive. Data is written to can be recovered.
Drives Status	Model	Capacity
✓ Drive1 Normal	WDC WD20EARX-00PASB0	2000 GB
✓ Drive2 Normal	WDC WD20EARX-00PASB0	2000 GB
Drive3 Normal	WDC WD20EARX-00PASB0	2000 GB
Drive4 Normal	WDC WD20EARX-00PASB0	2000 GB
	OK	Canaal

When "When Drive x will be initialized. Continue?" is displayed, click *OK*. It will take about an hour for the mirrored volume to be repaired. You can check the progress of the repair in Disk Management. After creating a mirrored

volume, you will see the message dialogue to restart your TeraStation. Follow the instructions displayed. When the reboot is finished, go to the next step.

15 From the Windows Storage Server Start menu, open *Administrative Tools* and double-click *Computer Management*.

16 Click *Disk Management*.



17 Select the step depending on your purpose for a created volume.

To create a new volume (except for a RAID 5 or mirrored volume):

- (1) Right-click the new dynamic disk and select New Volume.
- (2) Follow the instructions on the screen to create a new volume.

To restore a RAID 5 volume (RAID resynchronization):

- (1) Right-click the volume labeled "Failed Redundancy" and click Restore Volume.
- (2) When "Select the disk from the following list" is displayed, select the drive to restore and click OK.
- Perform steps (1) and (2) for each volume that requires RAID resynchronization.

(3) Right-click the volume labeled "Missing" and select Delete Disk.

To restore a mirrored volume (RAID resynchronization):

- (1) Right-click the volume labeled "Failed Redundancy" and click Remove Mirror.
- (2) When "Remove Mirror" is displayed, select the drive with its status missing and click Remove Mirror.

(3) When "Are you sure you want to remove the mirror?" is displayed, click OK.

Perform steps (1) to (3) for each volume that requires RAID resynchronization.

(4) Select the new volume where mirroring will be performed and select Add Mirror.

(5) When "Add Mirror" is displayed, select the drive where mirroring will be performed with the selected volume and click *Add Mirror*.

If a Mirrored Volume Failed to Restore

If a mirrored volume doesn't restore the first time, try the steps above a second time. If the mirrored volume still cannot be restored, contact Buffalo technical support for assistance.

A Drive Failure Occurs among Drives 3-6

1 Double-click the *icon to start NAS Navigator2*.

2 Right-click on your TeraStation's icon, then click *Open Remote Desktop*. For Mac OS, click the TeraStation's icon while holding down the control key, then click *Open Remote Desktop*.

NAS Navigator2		
🚹 Menu 🐱 🔠 View 🔸	9 G Refresh	
WS5400C Open Re Propertie Create D I'm here	ihares mote Desktop Is esktop Shortcut	

3 Enter the username and password, then press the Enter key. Windows Storage Server will open in the remote desktop.

Note: The default username and password are "Administrator" and "password".

4 The error message (E30) will be displayed in Buffalo Dashboard.

Information	x
Drive 3 has failed and been powered down. Replace drive 3 with a new drive.	^
	~
Dismount Drive 3 Close	

- **5** Click *Dismount Drive X* (where "X" is the number of the failed drive).
- 6

When the message "Removal of the drive completed." is displayed, click OK.



The status LED will stop flashing and glow steadily.

- 7 If your TeraStation has a front cover, open it with the included key.
- 8 Push the unlock button of the failed hard drive and swing the lock mechanism out.
- **9** Pull out the hard drive cartridge and remove it from the TeraStation.
- **10** Insert the new hard drive (sold separately) into the empty slot. Slide the drive in with the locking mechanism open.
- **11** Swing the lock back down until it clicks into place.
- 12 Close the front cover with the included key. If the hard drive was replaced while the TeraStation was off, power it on now.
- Buffalo Dashboard will show the drive status "Getting...".

		Oļ	ptions
Status	Drive	Name	Capacity
 Normal 	1	SAMSU	931 GB
 Normal 	2	SAMSU	931 GB
 Normal 	3	WDC W	931 GB
🗸 Normal	4	SAMSU	931 GB
 Normal 	5	SAMSU	931 GB
✓ Getting	6	Hitachi	931 GB

14 After the drive status changes to "Normal", open *Administrative Tools* and double-click *Computer Management* in Windows Storage Server.

0	Drive			
			Options	
	Status	Drive	Name	Capacity
	✓ Normal	1	SAMSU	931 GB
	🗸 Normal	2	SAMSU	931 GB
	✓ Normal	3	WDC W	931 GB
	🗸 Normal	4	SAMSU	931 GB
	🗸 Normal	5	SAMSU	931 GB
	🗸 Normal	6	Hitachi	931 GB

Click *Disk Management*.

Right-click the new drive and select *Initialize Disk*.



17 Right-click the initialized hard drive and select *Convert to Dynamic Disk*. A RAID array cannot be built unless the hard drive is converted to a dynamic disk.

<		Ш
Disk 1 Dynamic 931.39 GB Online	(F:) New Spanned Volume New Striped Volume	(F:) GB NTFS
G Disk 2 Basic 465.76 GB	New Mirrored Volume New RAID-5 Volume Convert to Dynamic Disk	
Online	Convert to GPT Disk Offline	
Dynamic 931.51 GB Online	Properties Help Heartny	129 MB Unalloca

18 Select the step depending on your purpose for a created volume.

To create a new volume (except for a RAID 5 or mirrored volume):

- (1) Right-click the new dynamic disk and select New Volume.
- (2) Follow the instructions on the screen to create a new volume.

To restore a RAID 5 volume (RAID resynchronization):

(1) Right-click the volume labeled "Failed Redundancy" and click Restore Volume.

(2) When "Select the disk from the following list" is displayed, select the drive to restore and click OK.

Perform steps (1) and (2) for each volume that requires RAID resynchronization.

(3) Right-click the volume labeled "Missing" and select Delete Disk.

To restore a mirrored volume (RAID resynchronization):

(1) Right-click the volume labeled "Failed Redundancy" and click Remove Mirror.

(2) When "Remove Mirror" is displayed, select the drive with its status missing and click Remove Mirror.

(3) When "Are you sure you want to remove the mirror?" is displayed, click OK.

Perform steps (1) to (3) for each volume that requires RAID resynchronization.

(4) Select the new volume where mirroring will be performed and select Add Mirror.

(5) When "Add Mirror" is displayed, select the drive where mirroring will be performed with the selected volume and click *Add Mirror*.

Chapter 6 Backup

To avoid losing data accidentally, back up your data regularly.

Back Up in Windows Storage Server

You can back up TeraStation folders in Windows Storage Server.

Preparing a Backup Destination



In Server Manager, click Tools - Windows Server Backup. Windows Server Backup will start.





Click *Local Backup*. If "Reading data; please wait..." is displayed, please wait until these messages disappear.



3 Right-click on "Local Backup" and select *Backup Schedule*.... The backup schedule wizard will start.



4

Click Next.

Ło	Backup Schedule Wizard			
Getting Started				
Getting Started Select Backup Configurat Specify Backup Time Specify Destination Type Confirmation Summary	You can use this wizard to configure backups to run on a regular schedule. To create a backup schedule, you should first decide: - What to back up (Full Server, System State, selected files, folders or volumes) - When and how often to back up your server - Where to store the backups To continue, click Next.			
	< Previous Next > Einish Cancel			

Select "Custom" and click *Next*.

20	Backup Schedule Wizard	x		
Select Backup Configuration				
Getting Started Select Backup Configurat Select Items for Backup Specify Backup Time Specify Destination Type Confirmation Summary	 What type of configuration do you want to schedule? F<u>ul</u>l server (recommended) I want to back up all my server data, applications and system state. Backup size: 16.30 GB <u>C</u>ustom I want to choose custom volumes, files for backup. 			
	< Previous Next > Einish Cancel			

Click Add Items.

20	Backup Schedule Wizard		
Select Items for Backup			
Getting Started Select Backup Configurat Select Items for Backup Specify Backup Time Specify Destination Type Confirmation Summary	Select the items that you want to back up. Selecting bare metal recovery will provide you with the most options if you need to perform a recovery.		
	< Previous Next > Einish Cancel		

7 Select the backup source folders or drives and click *OK*.

Select Items X
Specify items to include in the backup by selecting or clearing the associated check boxes. The items that you have included in the current backup are already selected.
Bare metal recovery System state EFI System Partition B- two Local disk (C:)
<u>O</u> K <u>C</u> ancel

8 Click Next.

20	Backup Schedule Wizard X
Select Item	s for Backup
Getting Started Select Backup Configurat Select Items for Backup Specify Backup Time Specify Destination Type Confirmation Summary	Select the items that you want to back up. Selecting bare metal recovery will provide you with the most options if you need to perform a recovery.

9 Specify the schedule to run the backup and click *Next*.

20	Backup Schedule Wizard X
Specify Bac	kup Time
Getting Started Select Backup Configurat	How often and when do you want to run backups? Once a day Select time of day:
Specify Backup Time	O More than once a day
Specify Destination Type Confirmation Summary	Click an available time and then click Add to add it to the backup schedule. Available time: Cheduled time: Cheduled time: Scheduled time:
	< Previous Next > Einish Cancel

10 Select the backup destination and click *Next*.

20	Backup Schedule Wizard	x		
Specify Destination Type				
Getting Started Select Backup Configurat Select Items for Backup Specify Backup Time Select Destination Type Select Destination Disk Confirmation Summary	Where do you want to store the backups? Back up to a hard disk that is dedicated for backups (recommended) Choose this option for the safest way to store backups. The hard disk that you us will be formatted and then dedicated to only store backups. Back up to a yolume Choose this option if you cannot dedicate an entire disk for backups. Note that 1 performance of the volume may be reduced by up to 200 percent while it is used to store backups. We recommend that you do not store other server data on the same volume. Back up to a shared ngtwork folder Choose this option if you do not want to store backups locally on the server. No that you will only have one backup at a time because when you create a new backup it overwrites the previous backup. 	se d te		

11 Step through the wizard to finish.

Recovering Backup Data

Recover the backup data to the TeraStation.

1 In Server Manager, click *Tools - Windows Server Backup*. Windows Server Backup will start.



2 Click *Local Backup*. If "Reading data; please wait..." is displayed, please wait until these messages disappear.

a	
File Action View Help	
🔶 🖄 📰 👔	
Windows Server Backup (I	Local Backup
	You can perform a single
	Messages (Activity from last week, do
	Reading data; please wait

- 3
 - Right-click on "Local Backup" and click *Recover...*. The recovery wizard will start.



4 Click Next.

10	Recovery Wizard	x
Getting Star	rted	
Getting Started Select Backup Date Select Recovery Type Select Items to Recover Specify Recovery Options Confirmation Recovery Progress	You can use this wizard to recover files, applications, volumes, or the system state from a backup that was created earlier. Where is the backup stored that you want to use for the recovery? ① This server (WS5200D0A7) ① A backup stored on gnother location To continue, click Next. <pre> Vervious</pre> Next > Becover Cancel]

5 Select the date when backing up the data and click OK.

10	Recovery Wizard	x
Select Back	up Date	
Getting Started Select Backup Date Select Recovery Type Select Items to Recover Specify Recovery Options Confirmation Recovery Progress	Oldest available backup: 12/5/2013 12:59 AM Available backup: 12/5/2013 12:59 AM Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Backups are available for dates shown in bold. Image: Select the date of a backup to use for recovery. Image: Select the date of a backup to use for recovery. Image: Select the date of a backup to use for recovery. Image: Select the date of a backup to use for recovery. Image: Select to use for recovery. Image: Select to use for recovery. Image: Select to use for recovery. Image: Sele	•••

6 Select the recovery targets and click *Next*.

8	Recovery Wizard
Select Rec	overy Type
Getting Started Select Backup Date Select Recovery Type Select Items to Recover Specify Recovery Options Confirmation Recovery Progress	What do you want to recover? Image: Split is and folders You can browse volumes included in this backup and select files and folders. Hyper-V You can restore virtual machines to their original location, another location or copy the virtual hard disk files of a virtual machine. Youms You can restore an entire volume, such as all data stored on Ct. Applications You can restore applications that have registered with Windows Server Backup. System state You can restore just the system state.

7

Step through the wizard to finish.

Replication

Buffalo Replication

Replication copies all data from a share to a share on a different TeraStation. This is an easy way to configure a reliable system to provide data protection in the event your main TeraStation fails. To configure replication, connect an Ethernet cable to the LAN port of each TeraStation and follow the steps below.

Notes:

- For best results, use static IP addresses for both replication TeraStations (source and target).
- Replication source data is copied to the replication target folder with a differential overwrite. Data that is not in the replication source will not be overwritten. Access attributes for the folders and files in the replication source will not be copied to the replication target.

If you use Buffalo WS5000 or WS5000R2 series TeraStations for the replication source and target, start from step 1. If you use a different TeraStation as the replication target, refer to that TeraStation's user manual to configure as a replication target. When you finish configuring, go to step 3.

1 Click *TeraStation Backup & Replication Folder Settings* in the Start menu on Windows Storage Server.

2 Double-click the blank space under "Label" and enter a label for the folder. Click under "Folder" and select the folder as a replication target. If you enter a backup password, the new folder will not be listed as a target folder for backup. Click *OK* when finished.

TeraStation Backup & Replication Folder Settings					×	
		Label		Folder	Password	
▶*	1		I			
					Save	Close

- **3** Click *Buffalo Replication* in the Start menu on Windows Storage Server.
- 4 Click the blank space under "Replication Target" and click . Select a folder from the list for replication target and click *OK*. Click the blank space under "Replication Target" and select the folder from the list. Then click *Select*.

		Buffalo Replica	ition		X
Replication	Replication List 🛞 Delete 🖒 Sync 🕥 Apply				
	Status	Replication Source		Replication Target	
H#1		1			
6	older Setun				Close
· · ·	and a coup				0,000

Note: Folders with backup passwords configured will not be displayed in the list.

5 When the setting is done, click *Apply*. If you configure the backup password for a folder, entering password dialog box will be displayed.

To delete the settings from the list, check the task and click *Delete*. If you click *Sync*, the task will start differential overwrite from the replication source data to the replication target.

6 Click Close.

Replication is configured.

Note: The following files and folders will not be replicated:

- Files with periods (.) or underscores (_) as the first character in their name.
- Folders with periods (.) or underscores (_) as the first character in their name.
- .AppleDesktop/
- Network Trash Folder/
- TheVolumeSeHngsFolder/
- .DS_Store/
- .AppleDouble/

• .AppleDB/

DFS Replication

DFS (Distributed File System) is a set of client and server services that allows Windows users to organize many distributed SMB file shares into a distributed file system. Follow the steps below to enable DFS on the TeraStation.

Note: To use DFS replication with Windows Storage Server, the TeraStation must join Active Directory domain.

Joining an Active Directory

1 In Control Panel, go to System and click Change settings under "Computer name, domain, and workgroup settings".

Computer name, domain, and workgroup settings			
Computer name:	WS5200D0A7	🚱 Change settings	
Full computer name:	WS5200D0A7		
Computer description:			
Workgroup:	WORKGROUP		

2 Click Change.



3 Select "Domain", enter a domain name, and click *OK*.

Computer Name/Domain Changes
You can change the name and the membership of this computer. Changes might affect access to network resources.
Computer name:
WS5200D0A7
Full computer name: WS5200D0A7
<u>M</u> ore
Member of
<u>D</u> omain:
nas.buffalo.local
○ <u>W</u> orkgroup:
WORKGROUP
OK Cancel

4 Enter a administrator username and password for the Active Directory domain controller.

Windows Security	x
Computer Name/Domain Changes Enter the name and password of an account with permission to join th domain.	ie
Password Domain: nas.buffalo.local	
Connect a smart card	
OK Cano	el



Click OK when the following message is displayed.





Click *OK* again.



7 Click Close.

8 Click *Restart Now* and restart your computer to apply settings.

Installing DFS

1 In Server Manager, click Dashboard - Add roles and features.



2 Click Next.

B	Add Roles and Features Wizard	_ 🗆 X
Before you begin		DESTINATION SERVER WS5200D0A7
Before You Begin Installation Type	This wizard helps you install roles, role services, or features. You determine which features to install based on the computing needs of your organization, such as sh hosting a website.	roles, role services, or aring documents, or
Server Selection Server Roles	To remove roles, role services, or features: Start the Remove Roles and Features Wizard	
Features Confirmation Results	Before you continue, verify that the following tasks have been completed: • The Administrator account has a strong password • Network settings, such as static IP addresses, are configured • The most current security updates from Windows Update are installed	
	If you must verify that any of the preceding prerequisites have been completed, complete the steps, and then run the wizard again.	lose the wizard,
	to continue, click rext.	
	Skip this page by default	
	< Previous Next > Ins	tall Cancel

3 Select "Role-based or feature-based installation" and click *Next*.

Ъ.	Add Roles and Features Wizard	_ D X
Select installatio	n type	DESTINATION SERVER WS5200D0A7
Before You Begin	Select the installation type. You can install roles and features on a run machine, or on an offline virtual hard disk (VHD).	ining physical computer or virtual
Server Selection	Role-based or feature-based installation Configure a single server by adding roles, role services, and feature	es.
Features Confirmation	Remote Desktop Services installation Install required role services for Virtual Desktop Infrastructure (VDI or session-based desktop deployment.	l) to create a virtual machine-based
Results	· · · · · · · · · · · · · · · · · · ·	
	< Previous Next >	Install Cancel

4 Click Next.

Ъ.	Add R	toles and Features W	Vizard	- 🗆 X
Select destination	on server		DESTINA	TION SERVER WS5200D0A7
Before You Begin	Select a server or a vir	tual hard disk on which t	to install roles and features.	
Server Selection	 Select a virtual har 	rd disk		
Server Roles	Server Pool			
Features Confirmation	Filter:			
Results	Name	IP Address	Operating System	
	WS5200D0A7	192.168.11.150	Microsoft Windows Storage Server 2012 St	tandard
	1 Computer(s) found This page shows serve Add Servers comman collection is still incom	ers that are running Winc d in Server Manager. Offi nolete are not shown.	sows Server 2012, and that have been added line servers and newly-added servers from wh	by using the hich data
		< <u>P</u> rev	vious Next > Install	Cancel

5 Select "DFS Namespaces" and "DFS Replication" in "File and Storage Services" - "File and iSCSI Services".

elect server role	25	DESTINATION SERVER WS5200D0A7
Before You Begin	Select one or more roles to install on the selected server.	
Installation Type	Roles	Description
Server Selection	Active Directory Lightweight Directory Services	DFS Replication is a multimaster
Server Roles	DHCP Server	replication engine that enables you to synchronize folders on multiple
Features	DNS Server	servers across local or wide area
Confirmation	File and Storage Services (4 of 12 installed)	network (WAN) network connections. It uses the Remote
	 File and iSCSI Services (3 of 11 installed) 	Differential Compression (RDC)
	✓ File Server (Installed)	protocol to update only the portions of files that have changed since the
	Data Deduplication	last replication. DFS Replication can
	✓ DFS Namespaces	Namespaces, or by itself.
	DFS Replication	
	File Server Resource Manager	
	File Server VSS Agent Service	
	✓ iSCSI Target Server (Installed)	
	Scall larget storage Provider (VDS and VS	
	< III >	

6 Select "Include management tools (if applicable)" and click *Add Features*.

Þ	Add Roles and Features Wizard	x
	Add features that are required for DFS Replication?	
	The following tools are required to manage this feature, but do not have to be installed on the same server.	
	▲ Remote Server Administration Tools	
	 A Role Administration Tools 	
	▲ File Services Tools	
	[Tools] DFS Management Tools	
	Include management tools (if applicable)	
	Add Features Cancel	

7 Click Next.

elect features		DESTINATION SERVE WS5200D0A
Before You Begin Installation Type	Select one or more features to install on the selected server. Features	Description
Before You Begin Installation Type Server Roles Features Confirmation Results		.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.

8 Click Install.

2	Add Roles and Features Wizard		
Confirm installa	tion selections		
Before You Begin	To install the following roles, role services, or features on selected server, click Install.		
Installation Type	Restart the destination server automatically if required		
Server Selection	Optional features (such as administration tools) might be displayed on this page because they have		
Server Roles	been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.		
Features			
Confirmation	File And Storage Services		
Results	File and iSCSI Services DFS Namespaces DFS Realization		
	UPS Replication		
	Remote Server Administration Loois		
	File Services Tools		
	DFS Management Tools		
	Export configuration settings Specify an alternate source path		
	< Previous Next > Install Cancel		

9 Click *Close* to finish.

Creating Namespaces

1 In Server Manager, click Tools - DFS Management.



2 Click Namespaces - New Namespace.



3 Enter a hostname for the namespace server and click *Next*.

	New Namespace Wizard	_ 🗆 X
Namespace Se	erver	
Steps:	Enter the name of the server that will host the namespace. The server you specify	
Namespace Server	will be known as the namespace server.	
Namespace Name and Settings	Server:	
Namespace Type	WS5200D0A7 Browse	
Review Settings and Create Namespace		
Confirmation		
	< Previous Next >	Cancel

4 Enter a name for the namespace and click *Next*.



5 Select Domain-based namespace and click Next.

6	New Namespace Wizard				
Namespace Ty	уре				
Steps:	Select the type of namespace to create.				
Namespace Server Namespace Name and Settings	Domain-based namespace Adomain-based namespace is stored on one or more namespace servers and in Active Directory				
Namespace Type	multiple servers. When created in Windows Server 2008 mode, the namespace supports				
Review Settings and Create Namespace	increased scalability and access-based enumeration.				
Confirmation	✓ Enable Windows Server 2008 mode				
	Preview of domain-based namespace:				
	¥¥nas.buffalo.local¥ReplicationDst				
	Stand-alone namespace Astand-alone namespace is stored on a single namespace server. You can increase the availability of a stand-alone namespace by hosting it on a failover cluster. Preview of stand-alone namespace: \\\WS5200D0A7\ReplicationDst				
	< Previous Next > Cancel				

6 Click Create.

7 Click *Close* when the New Namespace Wizard finishes.

8 In DFS Management, click *Namespaces* and the name you created through the wizard. Then click *New Folder*.





Enter a folder name and click OK.

New Folder	x
Name:	
buffalo-share	
Preview of namespace:	
¥¥nas.buffalo.local¥Public¥buffalo-share	
Folder targets:	
Add Edit Remove	
ОК	Cancel

10 Enter a path to the folder or select from the list by clicking *Browse*. Click *OK*.



Configuring DFS Replication

1

In Server Manager, click Tools - DFS Management.



Click *Replication - New Replication Group*.

	DFS Management	X
💁 File Action View W	indow Help	_ 6
 DFS Management Mamespaces Replication 	Replication Name	Actions Replication
	There are no items to show in this view.	Rev Replication Groups. Rig New Replication Groups to Display Delegate Management Permission Disable Topology Verification View
		New Window from Here Refresh Sport List
		E rep
		A. Gr

3 Select the type of replication group and click *Next*.

	New Replication Group Wizard				
Replication Group Type					
Steps:	Select the type of replication group to create.				
Replication Group Type	O Multipurpose replication group				
Name and Domain	This option configures replication between two or more servers for publication,				
Branch Server	content sharing, and other scenarios.				
Replicated Folders	<u>Replication group for data collection</u>				
Hub Server	This option configures two-way replication between two servers, such as a				
Target Folder on Hub Server	the hub server and a hub (destination) server. This allows you to collect data at the hub server. You can then use backup software to back up the data on the				
Replication Group Schedule and Bandwidth	hub server.				
Review Settings and Create Replication Group					
Confirmation					
	< Previous Next > Cancel				

4 Enter a name for the replication group and click *Next*.

	New Replication Group Wizard	•	x		
Name and Domain					
Steps: Replication Group Type Name and Domain	Type a name and domain for the replication group. The name of the replication group must be unique in the domain that hosts the replication group. Name of replication group:				
Branch Server Replicated Folders Hub Server Target Folder on Hub Server Replication Group Schedule	Buffalo-DFS Optional description of replication group:				
and sandwidth Review Settings and Create Replication Group Confirmation	Domain: nas buffalo local Browse				
	< Previous Next > C	ancel			

5 Enter the hostname of the file server for the replication source and click *Next*.

	New Replication Group Wizard
Branch Server	n de la companya de l
Steps: Replication Group Type Name and Domain	Enter the name of the branch (source) server that contains the content you want to replicate to a hub (destination) server. Name:
Branch Server Replicated Folders Hub Server Target Folder on Hub Server Replication Group Schedule and Bandwidth Review Settings and Create Replication Group Confirmation	The branch server will be the primary member during initial replication. This means that the folders and files on the branch server will be authoritative during initial replication.
	For more information about the primary member and authoritative content, see <u>DFS Management Help</u> . <previous next=""> Cancel</previous>

6 Click Add.

<u>~</u>	New Replication Group Wizard		
Replicated Fo	Iders		
Steps: Replication Group Type	Specify the replicated folders you want to replicate from the branch (source) server to the hub (destination) server. Replicated folders:		
Branch Server	Local Path Replicated Folder Name		
Replicated Folders			
Hub Server			
Target Folder on Hub Server			
Replication Group Schedule and Bandwidth			
Review Settings and Create Replication Group			
Confirmation			
	Add Edt Remove		
	< Previous Next >	Can	cel

7 Enter the path of the replication source and click *OK*.

Add Folder to Replicate	x
Member:	
WS5200D0A7.nas.buffalo.local	
Local path of folder to replicate:	
D:¥REP-DATA	Browse
Example: C:¥Documents	
Select or type a name to represent this folder on all m replication group. This name is known as the replicat Use name based on path: REP-DATA Use custom name:	nembers of the ted folder name.
Example: Documents	
ОК	Cancel

8 Click Next.

	New Rep	_ □ ×	
Replicated Fo	blders		
Steps: Replication Group Type	Specify the replicated folders to the hub (destination) serve Replicated folders:	you want to replicate from the branch (source) server $\vec{\pi}$.	
Name and Domain	Local Path	Replicated Folder Name	
Branch Server	D:¥REP-DATA	REP-DATA	
Replicated Folders			
Hub Server			
Target Folder on Hub Server			
Replication Group Schedule and Bandwidth			
Review Settings and Create Replication Group			
Confirmation			
	Add Edit	Remove	
		- Berter - H	
		< Previous Ne	xt > Cancel

9 Enter the hostname of the file server for the replication target and click *Next*.

	New Replication Group Wizard	 ×
Hub Server		
Steps: Replication Group Type Name and Domain Branch Server Replicated Folders Hub Server Target Folder on Hub Server Replication Group Schedule and Bandwidth Review Settings and Create Replication Group Confirmation	Enter the name of the destination server where you will collect the replicated folders for backup or other purposes. This server is typically a hub server in a datacenter or other central location. Name:	ncel

10 Enter the path of the replication target. Alternatively, click *Browse* and select the folder from the list. Click *Next*.

	New Re	eplication Group Wiza	ard			x
Target Folder	on Hub Server					
Steps: Replication Group Type Name and Domain Branch Server Replicated Folders Hub Server	Enter the local path of the treplicated folders. Target folder: C:#DFS	target folder on the hub (desti	nation) server that will cont	tain the Browse]	
Target Folder on Hub Server Replication Group Schedule	Source and target location	s:				
and Bandwidth	Replicated Folder Name	Source on Branch Server	Target on Hub Server		1	
Review Settings and Create Replication Group Confirmation	Fyou do not want the Replication Group Typ multipurpose replicatio	D.¥REP-DATA target folders to be in the sam e page in this wizard and sele n group.	C-WDFSWREP-DATA	o the		
			< Previous	Next >	Cance	1

11 Click *Next* again.

<u>^</u>	New Replication Group Wizard	_		x
Replication G	roup Schedule and Bandwidth			
Steps: Replication Group Type Name and Domain Branch Server Replicated Folders Hub Server Target Folder on Hub Server Replication Group Schedule and Bandwidth Review Settings and Create Replication Group Confirmation	Select the replication schedule and bandwidth to be used by default for all new connections in the replication group. Replicate continuously using the specified bandwidth Use this option to enable replication 24 hours a day, seven days a week using the following bandwidth: Bandwidth: Full Replicate during the specified days and times Use this option to specified days and times Use this option to specified days and times at which replication necurs by default. The initial replication schedule has no replication intervals; you must create at least one replication intervals before replication can occur. Edit Schedule			
	< Previous Next >		Cancel	

Note: You have options to specify the network band and the date and time. To configure bandwidth, select *Replicate continuously using the specified bandwidth* and the bit rate from the drop-down list. To configure the schedule time,

select *Replicate during the specified days and times* and click *Edit Schedule*. You can select the date and time in the displayed window.

12 Click Create.

	New Replication Group Wizard	_ _ ×
Review Sett	ings and Create Replication Group	
Steps: Replication Group Type Name and Domain	You selected the following settings for the new replication group. If the settings are correct, click Create to create the new replication group. To change a setting, click Previous, or select the appropriate page in the orientation pane.	
Branch Server	Replication group settings:	
Replicated Folders Hub Server Target Folder on Hub Server	Preprication Group for Data Collection	
Replication Group Schedule and Bandwidth	Paths to Replicate: D:#REP-DATA	
Review Settings and Create Replication Group	Hub (Destination) Server: WS5400D980	
Confirmation	Target Folder on Hub Server: CWDFS Default Connection Schedule: Replicate continuously with Full bandwidth	
	< Previous Const	Cancel

13 Click *Close* when finished. DFS replication is now configured.

Note: It may take some time before actual replication is caught up.

Back Up with NovaBACKUP

NovaBACKUP is a Windows utility that lets you back up the data on your computer or TeraStation.

Installation

- 1 Connect the supplied USB device to your computer. Open the USB device and double-click *TSNavi.exe*. TeraNavigator will launch.
- 2 Click Options Additional Software Installation.
- **3** Select "NovaBackup" and click *Install*.
- **4** Click *Install* again.
- **5** Check "Backup Client" and click *Install* on the NovaBACKUP installation wizard.
- **6** Select the installation language and click *Next* twice.
- 7 Check on "I accept the terms in the License Agreement", then click *Next*.
- 8 Select "Typical" and click *Next*.
- 9 Enter your name, company name, and email address. Select "I have a license key" and click Next.

Notes:

- Name, company name, and email address are required.
- Don't change the license key which is displayed on the screen.

10 Click Finish.

NovaBACKUP is now installed. To launch NovaBACKUP, click the icon on your computer's desktop. For more detail information, click *View Help* in the NovaBackup Express Wizard or click *Help Topics* at the upper right of the NovaBACKUP home screen.

Chapter 7 Settings

Date and Time

1 Click the time in the system tray of Windows Storage Server.



2 Click Change date and time settings - Change date and time, select the current date and time, and click OK.

n ^e				Da	te a	nd 1	Time Settings	x
Set 1 Data 4 11 18 25 2	Mo 29 5 12 19 26 3	te ar Nove Tu 30 6 13 20 27 4	mbe We 31 7 14 21 28 5	ne: r 2011 Th 15 22 29 6	2 Fr 2 9 16 23 30 7	► Sa 3 10 17 24 1 8	Time:	
<u>Cha</u>	nge c	alen	dar si	etting	12		OK Cancel	

Note: In the *Internet Time* tab, click *Change settings*, then select *Synchronize with an Internet time server*. The date and time can be obtained automatically.

Server Name, Workgroups, and Domains

- 1 In Control Panel, go to System and click Change settings under "Computer name, domain, and workgroup settings".
- **2** Click Change settings under Computer name, domain, and workgroup settings.

Computer name, domain, an	d workgroup settings	
Computer name:	WS5200D0A7	😵 Change settings
Full computer name:	WS5200D0A7	
Computer description:		
Workgroup:	WORKGROUP	

3 In the *Computer Name* tab, click *Change*.

	System Properties						
Computer Name Hardwa	are Advanced Remote						
Windows uses on the network	Windows uses the following information to identify your computer on the network.						
Computer description:							
	For example: "IIS Production Server" or "Accounting Server".						
Full computer name:	WS5200D0A7						
Workgroup:	WORKGROUP						
To rename this compute workgroup, click Change	r or change its domain or						
L	OK Cancel Apply						

4 Enter the computer name, choose domain or workgroup, and click OK.

Computer Name/Domain Changes
You can change the name and the membership of this computer. Changes might affect access to network resources.
Computer name: Buffalo_sample
Full computer name: Buffalo_sample
More
Member of
O Domain:
Workgroup:
WORKGROUP
OK Cancel

Note: The computer name should have 16 characters or less. If more than 16 characters are entered, all characters from the 17th character on are ignored.

Changing the Password

The default password for the TeraStation's administrator account is "password". This is public knowledge, so for security, you should change it immediately. Follow the procedure below to change the password.

- **1** From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.
- 2 Click Local Users and Groups, then double-click Users.

3 Right-click the user whose password will be changed and click *Set Password*.



4



5 Enter a new password (twice).



Adding a User

- **1** From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.
- **2** Click Local Users and Groups.

3 Right-click *Users* and click *New User*.



4 Enter the desired settings and click *Create*.

	New User ? X
User name:	Buffalo_user01
Full name:	
Description:	
Password:	•••••
Confirm passwo	rd:
🖌 User must c	hange password at next logon
User cannol	change password
Password n	ever expires
Account is a	lisabled
Help	Create Close

5 Click Close.

Note: Accounts not belonging to the Administrators group cannot be connected by the remote desktop.

Adding a Group

- **1** From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.
- **2** Click Local Users and Groups.

3 Right-click *Groups* and choose *New Group*.



4 Enter a group name and click *Add*.

	New Group ? ×
Group name:	Buffalo_group01
Description:	
Members:	
Add	Remove
Help	Create Close

5 Click Advanced.

Select Users	? X
Select this object type:	
Users or Built-in security principals	Object Types
From this location:	
WS5200D0A7	Locations
Enter the object names to select (<u>examples</u>):	
	Check Names
Advanced OK	Cancel

Click *Find Now*.

Select Users	? X
Select this object type: Users or Built-in security principals	ect Types
From this location:	
	ocations
Ngme: Starts with	<u>C</u> olumns
Description: Starts with V	Find <u>N</u> ow
Non expliring password Days since last logon:	<i>9</i> 9
Search res <u>ults:</u>	Cancel
Name In Folder	

7 Select the users to be registered to the group, then click OK.

Select Users ?	x		
Select this object type: Users or Built-in security principals			
From this location:			
WS5200D0A7			
Common Queries	_		
Name: Starts with v	mns		
Description: Starts with V	Now		
Disabled accounts Si	op		
Days since last logon:	>		
Search results: OK Ca	ncel		
Name In Folder	^		
Administrator WS5200D0A7			
ANONYMOU	≡		
Authenticated			
BATCH Buffalo user01 WS5200D0A7			
CONSOLE L			
CREATOR G			
A DIALUP	_		
A Everyone	~		

8 Click OK.

Select Users ? × Select this object type: Users or Built in security principals Object Types... From this location: WS5200D0A7 Locations... Enter the object names to select (examples): WS5200D0A7/Buffalo_user01 Oheck Names Advanced... OK Cancel

9

Click Create.

	New Group ? X
Group name:	Buffalo_group01
Description:	
Members:	
Buffalo_us	er01
Add	Remove
Help	Create Close

10 Click Close.

Creating a Shared Folder

No shared folders are configured by default. Before using the TeraStation, follow the procedure below to create one or more shared folders.

This is an example to create a shared folder, named "Share" in drive D, which anyone can access.

1 From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.

2 Click Shared Folders.

3 Right-click *Shares* and click *New Share*.



4 Click Next.

Cr	eate A Shared Folder Wizard	x
2	Welcome to the Create A Shared Folder Wizard This wizard helps you share a computer folder so that it can be accessed by people on other computers in your network or workgroup. Windows Firewall will be set up to allow this folder to be shared with other computers. Please read how this may impact Windows Firewall and the security of your computer. Learn more about Windows Firewall Click Next to continue.	
	< Back Next > Cancel	

5 Enter the path of an existing folder or a new folder, then click *Next*.

	Create A Shared Folder Wizard
Folder Path Specify the path	to the folder you want to share.
<u>C</u> omputer name:	WS5200D0A7
Type the path to the folder.	folder you want to share, or click Browse to pick the folder or add a new
Eolder path:	C:\Share Browse
Example:	C:\pocs\Public
	< <u>B</u> ack <u>N</u> ext > Cancel

Notes:

- Enter "D:\Share" in folder path to create the shared folder for the first time.
- If the message "The system cannot find the specified path. Do you want to create it?" is displayed, click Yes.

6 Enter a name for the share and a description (optional), then click *Next*.

	Create A Shared Folder Wizard	
Name, Description, and Settings Specify how people see and use this share over the network.		
Type information al offline, click Change	bout the share for users. To modify how people use the content while e.	
Share name:	Share	
Share path:	\\WS5200D0A7\Share	
Description:		
Offline setting:	Selected files and programs available offline	
	< <u>B</u> ack <u>N</u> ext > Cancel	

7 Check Customize permissions, then click Custom.

Create A Shared Folder Wizard		
Shared Folder Permissions Permissions let you control who can see the folder and the level of access they have.		
Set the kind of permissions you want for the shared folder.		
○ All users have read-only access		
Administrators have full access; other users have read-only access		
Administrators have full access; other users have no access		
Customize permissions		
Custom		
By default, only share permissions are set on this folder. To control local access permissions to this folder or objects within the folder, click Custom and then modify the permissions on the Security tab to apply specific permissions on the folder.		
< Back Finish Cancel		
8

Choose Everyone and check Allow for "Change".

Customize	Permissions	? X	
Share Permissions Security			
Group or user names:	Group or user names:		
& Everyone			
	Add	Remove	
Permissions for Everyone	Allow	Deny	
Full Control			
Change	~		
Head	~		
	OK	Cancel	

9 In the *Security* tab, click *Edit - Add*.



10 Enter "Everyone" under "Enter the object names to select", then click *OK*.

Select Users or Groups	? X
Select this object type:	
Users, Groups, or Built-in security principals	Object Types
From this location:	
WS5200D0A7	Locations
Enter the object names to select (<u>examples</u>):	
Everyone	Check Names
Advanced 0	K Cancel

11 Choose "Everyone", then check *Allow* for *Modify*.

Permission	s for Share	X	
Security			
Object name: C:\Share			
Group or user names:			
CREATOR OWNER			
Administrators (WS5200D0A	7\Administrators)		
& Everyone			
& Users (WS5200D0A7\Users))		
	A <u>d</u> d	<u>R</u> emove	
Permissions for Everyone	Allow	Deny	
Full control			
Modify	•		
Read & execute	✓		
List folder contents	✓		
Read	✓		
Learn about access control and permissions			
OK Cancel Apply			

- **12** Click OK OK Finish Finish.
- **13** Click Local Users and Groups in Computer Management.
- **14** Double-click Users Guest.

15 In the *General* tab, uncheck *Account is disabled*, then click *OK*.

Notes:

Enable a guest account:

- (1) From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.
- (2) Click Local Users and Groups.
- (3) Double-click Users Guest.
- (4) In the General tab, uncheck Account is disabled, then click OK.

Enable access permissions:

- (1) From the Windows Storage Server Start menu, open *Administrative Tools*, then double-click *Computer Management*.
- (2) Click Shared Folders.
- (3) Double-click Shared, then the shared folder.
- (4) In the Security tab, click Edit.
- (5) From the *Local Users and Groups* list, add the users or groups that will be allowed access (the groups and users must be created beforehand). To allow access by all users, add a guest and change "Administrators Access permission" to "Full Control".

Email Notification

Your TeraStation can send you email reports daily, or when settings are changed or an error occurs. Notification emails may be triggered by any of the following events:

Hard drive status at scheduled time

- Hard drive read error
- TeraStation booted
- Fan error
- Temperature exceeded
- Specified event ID logged



2 Check "Enable email notification".

Em	nail Notification
Enable email notification	
iend to	
Email Address	New
	Ede
<	Delete
SMTP Server	
Server address:	Port 25
Authentication	
User authorization None	~
POP carvar addrase:	P [10]
FOF server address:	Port 110
Username:	Password
SSL/TLS	
Do not use SSL/TLS	~
Title: TeraStation Sta Contents Email server address: Status report 12 p.m. Status peror Backup error Temperature Error Specify event ID	tus Report Pv4 IPv6 V Disk error Fan failure Replication error FSU Failure
Log type Source	Event ID New Edit
Test Message	Apply Close

- **3** Click *New* and enter an email address. You may enter up to five email addresses to receive notifications.
- 4 Enter your mail server settings and choose what events will trigger notification. Click *Apply* to finish the email notification settings. You can send a test email when clicking *Test Message*.

Items	Descriptions	
Enable email notification	If enabled, email reports will be sent during specific events.	
	Adds a new receiver for the notification email. Click New to add a new	
Sand to	email address. Click Edit to change the receiver settings or Delete to	
	remove an address from the list.	
	Note: Up to 5 email address may be added.	
	Enter your email SMTP server's address and port number. Port	
	number 25 is configured by default.	
SWIP Server	Note: If you choose "None" or "POP before SMTP" for the user	
	authorization, the port number is locked to "25".	
	Select the user authorization type from "None", "POP before SMTP",	
	"LOGIN (SMTP-AUTH/LOGIN)", and "CRAMMD5 (SMTP-AUTH/CRAM-	
Authentication	MD5)". If "POP before SMTP" is selected, enter the POP server address,	
	port number, username, and password. Unless specified otherwise,	
	the standard port number (110) is used.	
	If "LOGIN (SMTP-AUTH/LOGIN)" or "CRAMMD5 (SMTP-AUTH/CRAM-	
55L/1L5	MD5)" is selected, select whether to use SSL or TLS.	

Items	Descriptions	
Title	Enter the subject of the notification email.	
	Email server address: Check "IPv6" to add IPv6 compatibility to the email notifications. Select the event that will trigger the notification emails to be sent.	
Contents	Disk error: Sends an email when a hard drive error occurs. At boot: Sends an email when the system is booted or restarted. Fan failure: Sends an email when a fan error occurs.	
	Temperature error: Sends an email when the TeraStation temperature exceeds normal levels. Specify event ID: Sends an email when the specified event IDs are	
	logged. Enter an event ID to trigger email notifications.	
Test Message	Sends a test email to the email address which is configured.	

LCD Display Settings

You may configure the LCD on the front of the TeraStation.

1

From the Windows Storage Server Start menu, click *Display Settings*.

2 Configure the desired settings and click OK.

5 D	Display Settings 📃 🗖 🗙		
Show		Scroll Display	
✓ IP Address 1		 Enable 	
✓ Drive Usage		⊖ Disable	
🗹 Date & Time		LCD Brightness	
✓ IP Address 2		5 → Very Bri	ight 🗸
		✓ Night Mode	e
OK Cancel			

Items	Descriptions
Show	Select the item(s) to be displayed on the LCD display.
Scroll Display	If enabled, the LCD scrolls through display items at a regular interval.
LCD Brightness	Change the brightness of the LCD display from level 1 (darkest) to 5 (brightest).
Night Mode	If checked, the LCD brightness will be set at level 2 (dark) from 6 pm to 8:59 am the next day. Note: If the LCD brightness is already set to level 1 (darkest) or level 2 (dark), night mode will be grayed out and cannot be selected.

Changing the IP Address

Note: If the TeraStation is being used in a domain environment, the IP address cannot be changed by NAS Navigator2. To change the IP address, the domain environment administrator must change it at the domain server.

1 Right-click on your TeraStation's icon and click *Properties*.

For Mac OS, click the TeraStation icon while holding down the control key, then click Configure.

	Ingator 2	- 0 X
🎽 Menu	🔹 🔠 View 👻 🍅 Browse 🛭 😏 Refresh 🌗 I'm here	
WS	Browse Shares	
	Open Remote Desktop	
	Properties	
	Create Desktop Shortcut	
	I'm here	
WS5400	D Series	Workgroup: WORKGROUP
WS5400	DD Series C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150
WS5400	DD Series C: 12 .8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.0.0
WS5400	D Series C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.00 MAC Address: AA:BB:CC:DD:EE:FF
W55400	D Series C: 12.8 GB/100.0 GB (12.8%)	Workgroup: WORKGROUP IP Address: 192.168.11.150 Subnet Mask: 255.255.255.0 Default Gateway: 0.0.0 MAC Address: AA:BB:CC:DD:EE:FF Firmware: 2.41

2 Click the *IP Address* tab, enter the desired settings, and click *OK*.

WS5200D0A7 Properties			
WS5200D Series			
Remote Desktop IP Address			
Use DHCP			
Renew IP address			
IP Address 192 . 168 . 11 .			
Subnet Mask 255 255 255 0 Default Gateway 0 . 0 . 0			
Cancel Apply			

Notes:

- If you don't know how to configure these settings, check "Use DHCP".
- If you are prompted to enter the administrator's password, enter the TeraStation's password (it is set to "password" by factory default).

Chapter 8 NAS Navigator2

NAS Navigator2 for Windows

NAS Navigator2 is a utility program that makes it easy to display Windows Storage Server, change the TeraStation's IP address, or check its hard drive in remote desktop. If you installed the TeraStation with the TeraNavigator, NAS Navigator2 was installed automatically.

NAS Navigator2 will run in the system tray when the computer is on.



Double-click the **W** icon to start NAS Navigator2.

NAS Navigator2		- 0 -
🗋 Menu 🐱 🔠 View 🐱	G Refresh	
WS5400D049		
WS5400D Series		Workgroup: WORKGROUP
9	C: 12.8 GB/100.0 GB (12.8%)	IP Address: 192.168.11.150
		Subnet Mask: 255.255.255.0
		Default Gateway: 0.0.0.0
		MAC Address: AA:BB:CC:DD:EE:FF
		Firmware: 2.41
		NAS Navigator version 2.76

Click your TeraStation's icon to open a share on the TeraStation and display:

- Total capacity
- Capacity in use
- IP address
- Workgroup
- Subnet mask
- Default gateway
- MAC address
- Firmware version

Name		Description
Menu	Map Share*	Not available for this product (grayed out).
	Disconnect Share*	Not available for this product (grayed out).
	Map All Remote Shares to Drive Letters	Assigns all the TeraStation's shared folders as network drives. This is available only when a shared folder has been created.
	Create Desktop Shortcut*	Creates a shortcut icon to the TeraStation's shared folder "share" on the desktop.
	Launch NAS Navigator2 on Startup	Launches NAS Navigator2 in the system tray when Windows boots.
	Display Errors	If an error occurs, an error message will pop up from the NAS Navigator2 icon in the system tray.
	Properties*	Opens the selected TeraStation's properties page.
	Close	Closes NAS Navigator2.
	View	Icons: Displays icons. Details: Displays hostname, product name, workgroup, IP address, subnet mask, and default gateway.
View	Sort by	Select the sort order from following to display when multiple NAS are found: Hostname, product name, workgroup, IP address, subnet mask, and default gateway.
Browse*	1	Opens the TeraStation's shared folder.
Refresh		Searches for NAS devices on the network again.
I'm here*		Causes your TeraStation to beep.
	Browse Shares	Opens the TeraStation's shared folder.
District alight second	Open Remote Desktop	Opens Windows Storage Server in remote desktop.
device's icon to	Properties	Opens the TeraStation's properties page.
show these options.	Create Desktop Shortcut	Creates a shortcut icon to the TeraStation's shared folder "share" on the desktop.
	I'm here	Causes your TeraStation to beep.

*Click on the TeraStation's icon to display these options.

When NAS Navigator2 is minimized, right-click on the NAS Navigator2 icon in the system tray for the following options.

Browse Shares	WS5400D •
Open Remote Desktop Properties	Refresh Browco Sharos
Create Shortcut I'm here	Exit
	2013/12/05

	Name	Description
	Browse Shares	Opens the TeraStation's shared folder.
	Open Remote Desktop	Opens Windows Storage Server in remote desktop.
ToraStation Namo	Properties	Opens the TeraStation's properties page.
relastation Name	Create Desktop Shortcut	Creates a shortcut icon to the TeraStation's shared
		folder "share" on the desktop.
	I'm here	Causes your TeraStation to beep.
Refresh		Refreshes list of NAS devices.
Browse Shares		Displays NAS Navigator2 window.
Exit		Exits NAS Navigator2.

The following tasks may be performed from the TeraStation's properties page.

WS5200D0A7 Properties		
WS5200D Series Remote Desktop IP Address Use DHCP Renew IP address IP Address IP Address IP Address IP Address Default Gateway O Cancel	0 0 Apply	
Namo		Description
Kemote Desktop	emote Desktop Click Open Remote Desktop to open Windows Storage Server.	
Check Use DHCP to assign an IP address automatically. If there is no DHCP set		an IP address automatically. If there is no DHCP server in the
network, you cannot use this function.		his function.
Check Renew IP address to obtain an IP address from DHCP server.		obtain an IP address from DHCP server.
	You can manually enter a	ו IP address, subnet mask, and default gateway.

NAS Navigator2 for Mac

NAS Navigator2 is a utility program that makes it easy to display Windows Storage Server, change the TeraStation's IP address, or check its hard drive in remote desktop. If you installed the TeraStation with the TeraNavigator, NAS Navigator2 was installed automatically.



Click on a TeraStation's icon to display:

- Total capacity
- Used capacity

- Workgroup
- IP address
- Subnet mask
- Default gateway
- MAC address
- Firmware version

Double-click it to open a share on the TeraStation.

Name		Description	
Open		Opens the default shared folder for a selected TeraStation.	
Refresh		Searches for NAS devices on the network again.	
I'm here		Causes your TeraStation to beep.	
Open Remote Deskto	р	Opens Windows Storage Server in remote desktop.	
Configure		Opens the TeraStation's properties page.	
Label Color		Selects the color of the name displayed below the icon.	
View Options		Lets you choose icon size, position, and view mode.	
Auto Power Mode		Auto power mode can turn supported TeraStations and	
		LinkStations on the network on and off automatically.	
	Open Folder	Opens the TeraStation's shared folder.	
To display these	Open Remote Desktop	Opens Windows Storage Server in remote desktop.	
options, hold down	Configure	Opens the TeraStation's properties page.	
the control key	I'm here	Causes your TeraStation to beep.	
and select your		Selects the color of the name displayed below the icon. The	
TeraStation's icon.	Label Color	menu below is displayed when you click the TeraStation	
		icon while holding down the control key.	

Chapter 9 Appendix

LCD Display

The LCD display can be cycled through different modes by pressing the display button on the front of the TeraStation.

Modes

LCD Mes	sage	Description
	LINK SPEED No LINK	Not connected to network.
Link Speed Note: When an Ethernet cable is	LINK SPEED 10Mbps	Connected at 10 Mbps.
connected to LAN Port 2, "LINK SPEED 2" is displayed.	LINK SPEED 100Mbps	Connected at 100 Mbps.
	LINK SPEED 1000Mbps	Connected at 1000 Mbps full duplex.
Disk Space Used	HDD USED c_DEEF	Bar graphs are shown to indicate the used space for the C, D, E, and F internal drives of the TeraStation. When a hard drive is full, it is indicated by "^".
Hostname/IP Address	WS5000xxx 192.168.11.150	Displays the hostname and IP address. Note: If the hostname contains multibyte characters, they will be replaced with question marks (?) on the LCD display.
Calendar/Clock	DATE TIME 2012/1/1 11:11	Displays the date and time set in the TeraStation.
Installed OS	Windows Storage Server 2012	Displays the OS installed on the TeraStation.
IP Address 2	NETWORK2 192.168.11.151	Displays the IP address of LAN port 2 when an Ethernet cable is connected to LAN port 2.

Errors and Status

LCD Message	Description	Corrective Action
SYSTEM Error E11 Fan Failure	An error occurred in the fan speed.	Check that no foreign objects or dust are clogging the fan. If any foreign objects or dust are found, use a pair of tweezers, air duster, or other tool to remove them. If the error is displayed again, contact Buffalo technical support for assistance.

LCD Message	Description	Corrective Action
SYSTEM Error E12 Cooling Failure	A rise in the system temperature may have exceeded the allowable safety value.	Do not place objects in the area around the TeraStation. Also, move the TeraStation to a cool location. Make sure that the TeraStation's fan is working normally.
HDx Error E16 HDx Not Found	Unable to find hard drive X.	Hard drive X may be disconnected or may have failed. After shutting down, reinstall the hard drive.
HDx Broken E30 Replace the DISK	An error occurred, so hard drive X was removed from the RAID array.	Replace hard drive X.
SYSTEM I10 TOO HOT !	A rise in the system temperature may have exceeded the allowable safety value.	Move the TeraStation to a cool location. Do not place objects in the area around the TeraStation.
Operation I12 DEGRADE MODE	Operating in degraded mode.	Check the drive where the error occurred and replace it with a new hard drive. For replacing method, refer to the "Hard Drive Replacement Procedure" section in chapter 5.
RAID I18 X Drive Rebuilding	Rebuilding drive X in the array. Note: Transfer speeds are slower during the rebuilding process.	Wait until the RAID resynchronization finishes. It will take about 8–12 hours per terabyte for a RAID 5 volume and 3–6 hours per terabyte for a mirrored volume. This message will disappear when the RAID resynchronization finishes.
Replication I33 Replicate Failure	An error occurred during replication.	From Buffalo Replication, click <i>Sync</i> to execute resynchronization. If the error is displayed again, contact Buffalo technical support for assistance.
154 Backup Failure	A backup job has failed.	Make sure that the backup job is configured correctly, and that the NAS is on and not in standby mode. If the backup job still fails, check the status of NAS, network, and backup source and destinations. Also, check the backup log to see if any errors were recorded.

Default Settings

Administrator's Name	Administrator
Password	password
Shared Folders	Drives C and D are configured as
	administrative hidden shares by Windows
	Storage Server's default settings.

DHCP Client	Normally, the TeraStation will get its IP address automatically from a DHCP server on the network. If no DHCP server is available, then an IP address will be assigned as follows: IP Address: 169.254.xxx.xxx (xxx is assigned randomly when booting the TeraStation). Subnet Mask: 255.255.0.0	
Registered Group	Windows Storage Server's default groups are registered.	
Microsoft Network Group Setting	WORKGROUP	
RAID Mode	Drive C: A mirrored array using drives 1 and 2 Drive D: A RAID 5 array using all drives [*] *WS5200D: Drive D is a mirrored array using drives 1 and 2.	
Local Security Policy	"Password must meet complexity requirements" is disabled by default.	

Specifications

Check the Buffalo website for information about the latest products and specifications.

	Workgroup Edition Model:	
Installed System	Microsoft Windows Storage Server 2012 Workgroup Edition	
	Standard Edition Model:	
	Microsoft Windows Storage Se	rver 2012 Standard Edition
	Note: The Microsoft Software L	icense is contained in the <i>ms-license</i> folder in the
	supplied USB device. Be sure to	pread the terms and conditions of this license.
		IEEE 802.3ab (1000BASE-T)
	Interface	IEEE 802.3u (100BASE-TX)
		IEEE 802.3 (10BASE-T)
		1000 Mbps full duplex (auto-negotiation)
LAN Port	Transfer Speed	100 Mbps full duplex/half duplex (auto-negotiation)
		10 Mbps full duplex/half duplex (auto-negotiation)
	Number of Ports	2 ports (supports Auto-MDIX)
	Connector Type	RJ-45 8-pin
	WS5600D, WS5400R: USB 2.0 Port (Series A) x 2, USB 3.0 Port (Series A) x 3	
USB Port	WS5400D, WS5200D: USB 2.0 Port (Series A) x 2, USB 3.0 Port (Series A) x 2	
	D-sub 9 pin (male) x 1	
UPS Port	Compatible UPS are manufactured by Omron or APC.	
Internal Lland Drive	If a hard drive in the TeraStation malfunctions, replace it with a Buffalo OP-HDS series	
Internal Hard Drive	drive of the same capacity, available from the Buffalo website.	
Power Supply	AC 100–240 V, 50/60 Hz	
	WS5600D: 170 x 260 x 230 mm; 6.7" x 10.2" x 9.1"	
	WS5400R: 430 x 44 x 430 mm; 16.9" x 1.7" x 16.9"	
Dimensions (W X H X D)	WS5400D: 170 x 215 x 230 mm; 6.7" x 8.5" x 9.1"	
	WS5200D: 170 x 170 x 230 mm; 6.7" x 6.7" x 9.1"	

Weight	WS5600D: 10.0 kg; 22.1 lb
	WS5400R: 9.0 kg; 19.8 lb
	WS5400D: 7.5 kg; 16.5 lb
	WS5200D: 4.0 kg; 8.8 lb.
	WS5600D: 120 W
Power Consumption	WS5400R: 100 W
(Max.)	WS5400D: 86 W
	WS5200D: 47 W
Operating Environment	Temperature: 5–35°C; 41–95°F
Operating Environment	Environment Humidity: 20–80% (no condensation)
	Windows PCs, Macs, and tablets with wired or wireless Ethernet connection.
Compatibility	Note: The TeraStation requires a network connection with your computer for operation.
	The TeraStation cannot connect via USB.
	Windows 8.1*, Windows 8*, Windows 7*, Windows Vista*, Windows XP, Windows XP
Supported OS	Media Center Edition (2004 or 2005), Windows 2000, Windows Server 2012, Windows
	Server 2008 R2, Windows Server 2008, Windows Server 2003 R2, Windows Server 2003,
	Windows 2000 Server, Windows RT 8.1, Windows RT
	OS X 10.8, 10.7, 10.6, 10.5, 10.4, 10.3.9
	*32-bit and 64-bit

Data Backup

While using the TeraStation, you may lose your important data due to sudden accidents, hard disk failure, or accidental misoperation. Back up your data regularly! For best results, back up your data to Buffalo drives like the TeraStation, LinkStation, or DriveStation series.

Troubleshooting

If you can't access your TeraStation:

Typical problems and when you are unable to search using NAS Navigator2 and when the Remote Desktop screen does not open are described below.

Cause 1. The cables are not connected correctly:

The cables are not physically connected, or there may be a contact defect. Reconnect the AC cable and Ethernet cable and restart both the computer and TeraStation.

Cause 2. Security software in the background is blocking communication:

Add an exception to your firewall software, or disable the firewall software completely. Turn off any software security suite that might include a firewall. Try searching again.

Cause 3. Wireless and wired adapters are both enabled:

Disable all adapters except for the LAN adapter connected to the TeraStation.

Cause 4. The LAN cable is defective, or the connection is unstable:

Try changing the hub port or Ethernet cable that you use to connect.

Cause 5. The LAN board, card, or adapter that you are using is defective:

Try changing the LAN board, card, or adapter.

Cause 6. The LAN board or hub transmission mode has not been set:

Change the transmission mode in the LAN board or hub to "10M semi-duplex" or "100M semi-duplex". Some LAN boards or hubs may be unable to connect to the network correctly when the transmission mode is set to "Auto Negotiation".

Cause 7. A network bridge is installed:

If the network has a network bridge that is not being used, remove it.

Cause 8. You are searching from a different network:

You cannot conduct searches beyond your local network subnet. Connect the TeraStation to the same network subnet as the computer performing the search.

Cause 9. TCP/IP is not operating correctly:

Reinstall the LAN adapter drivers.

Cause 10. "Remote Desktop Connection Client for Mac" is not installed on your Mac:

If using OS X 10.4 or later, download and install "Remote Desktop Connection Client for Mac 2" from http://www. microsoft.com. If using OS X 10.3.9, use version 1.0.3 instead.

When TeraStation shared folders suddenly do not open

If the TeraStation shared folder is assigned and used as a network drive, access to the TeraStation may suddenly fail if network settings such as IP addresses or groups are changed. If this happens, follow the procedure in chapter 2 to open the TeraStation's shared folder with NAS Navigator2.

If you are unable to access the shared folder or the system is unstable

This usually happens because too many software applications are running in Windows Storage Server, causing a memory shortage. Exit or uninstall some of the software running in Windows Storage Server, then restart the TeraStation.

Windows Storage Server Recovery Procedure

If Windows Storage Server no longer functions properly, perform recovery using the supplied USB device. This recovery procedure erases your data. Backing up regularly is highly recommended to avoid missing your important

data. Do not connect the supplied USB device to another TeraStation. The recovery process performed by the supplied USB

device is intended for this product only.

Recovery is performed by deleting the area for drive 1, setting up a new 100 GB (Basic Disk/Simple) area, and then copying the Windows Storage Server image to this area.

Note: If there are system areas (or mirrored locations) on hard drives other than drive 1, be sure to delete the system areas (or disable the mirrored locations) before performing the recovery procedure. If recovery is performed without deleting these areas, Windows Storage Server may not run after recovery is performed.

If Windows Storage Server fails to run, turn off the TeraStation and perform the recovery procedure again while all hard drives except for drive 1 (disk 0) are disconnected. After recovery is complete, reconnect the disconnected drives, which will appear in "Disk Management" as "Foreign". In "Disk Management", right-click *Foreign*, select *Import Foreign Disks*, then right-click this area and click *Reactivate Volume* to rebuild the RAID array.

1 Turn off the TeraStation, following the procedure in "Turning the TeraStation On and Off" in chapter 1.

2 Connect the supplied USB device to the USB 2.0 port.

If the label on the supplied recovery USB device shows version 2.4 or later, you could use the USB 3.0 port for recovery.

- **3** Set the boot mode switch to "USB", then press the power button. This executes the recovery process.
- **4** The TeraStation shuts down automatically when the recovery process is complete.
- 5 Remove the USB device, set the boot mode switch to "HDD", and press the power button. When the initial setup is complete, the TeraStation will reboot into Windows Storage Server.

After the recover process is completed, the TeraStation is set to the state below when used at the default settings.

Drive 1
100 MB (EFI System partition)
100 GB (Basic Disk/Simple)
The remaining space is an unallocated area.

Drives 2 to 4

The data on the drives cannot be viewed. They appear as a "Foreign" in "Disk Management".

Note: The data on the drives can be viewed by right-clicking the area displayed as "Foreign" in "Disk Management" and then selecting *Import Foreign Disks*.

- (1) Mirror the system area by using RAID Builder (drive 1 to drive 2).
- (2) Remove the area for RAID 5 in drive 3 and 4.
- (3) Create a RAID 5 volume with drives 1–4 using RAID Builder.

Notes

Using an Omron UPS

The TeraStation's LCD panel will not display information correctly when an Omron UPS is first connected. This is because the LCD panel control and the Omron UPS both use COM port 2. To resolve, refer to the Omron's user manual and change its UPS communication port to a port other than COM 2, then restart the TeraStation.

Ethernet port number is not correct on the Windows Storage Server

Ethernet port numbers on the Windows Storage Server are assigned in the order of recognizing them. They might be different from printed port numbers.

Chapter 10 Regulatory Compliance Information

For Customers in the United States

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Only use the cables and accessories that are included in the package. Don't use other accessories or cables unless specifically instructed to in the documentation.

For Customers in Europe

EU Declaration of Conformity

Dansk

Dette er et Klasse A-produkt. I et hjemmemiljø kan dette produkt skabe radiointerferens, hvormed det kan være nødvendigt for brugeren at tage passende forholdsregler.

Der må kun bruges de kabler og det tilbehør der er inkluderet i pakken. Der må ikke bruges andet tilbehør eller kabler, medmindre det er udtrykkeligt beskrevet i dokumentationen.

Deutsch

Dies ist ein Produkt der Klasse A. In einer häuslichen Umgebung kann dieses Produkt Funkstörungen verursachen. Um diese zu beheben, müssen ggf. entsprechende Maßnahmen ergriffen werden.

Verwenden Sie ausschließlich die Kabel und Zubehörteile, die im Lieferumfang enthalten sind. Andere Zubehörteile oder Kabel dürfen nur dann verwendet werden, wenn dies in der Dokumentation ausdrücklich vorgeschrieben ist.

English

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Only use the cables and accessories that are included in the package. Don't use other accessories or cables unless specifically instructed to in the documentation.

Español

Este es un producto de Clase A. En una situación domestica, este producto puede producir interferencias de radio, en ese caso el usuario deberá tomar las medidas adecuadas.

Utilice únicamente los cables y accesorios incluidos en el paquete. No utilice otros accesorios ni cables a menos que así se indique en la documentación.

Français

Cet appareil est un produit de Classe A. Dans un environnement domestique, ce produit est susceptible de provoquer des interférences radio, auquel cas l'utilisateur peut être mis en demeure de prendre des mesures appropriées. Utilisez uniquement les câbles et accessoires inclus dans ce package. N'utilisez aucun autre accessoire ou câble sauf instruction spécifique de la documentation.

Italiano

Questo è un prodotto di Classe A. In ambienti domestici il prodotto può causare radiointerferenza, nel qual caso potrebbe rendersi necessaria l'adozione di opportune misure.

Utilizzare esclusivamente i cavi e gli accessori inclusi nell'imballaggio. Non utilizzare altri accessori o cavi a meno che non sia specificamente indicato nella documentazione.

Nederlands

Dit is een Klasse A product. Dit product kan in een huishoudelijke omgeving radiostoring veroorzaken in welk geval de gebruiker adequate maatregelen dient te nemen.

Gebruik alleen de kabels en toebehoren die zich in de verpakking bevinden. Gebruik geen ander toebehoren of kabels tenzij dit uitdrukkelijk in de handleiding wordt aangegeven.

Norsk

Dette er et produkt i klasse A. I et hjemmemiljø kan dette produktet forårsake radiointerferens, noe som gjør at brukeren i så fall må foreta passende tiltak.

Bruk kun kabler og tilbehør som er inkludert i pakken. Ikke bruk annet tilbehør eller kabler med mindre spesielt instruert til å gjøre det i dokumentasjonen.

Português

Este é um produto de Classe A. Num ambiente doméstico, este produto pode provocar interferências de rádio, pelo que o utilizador poderá ter de tomar medidas adequadas.

Utilizar apenas cabos e acessórios incluídos na embalagem. Não utilizar outros acessórios ou cabos, salvo se especificamente indicado na documentação.

Suomi

Tämä on luokan A tuote. Tämä tuote voi aiheuttaa radiohäiriöitä kotikäytössä, jolloin käyttäjän on ehkä ryhdyttävä tarvittaviin toimenpiteisiin.

Käytä ainoastaan pakkauksen mukana toimitettuja kaapeleita ja varusteita. Älä käytä muita varusteita tai kaapeleita ellei näin ole erityisesti ohjeistettu asiakirjoissa.

Svensk

Detta är en Klass A-produkt. I en hushållsmiljö kan denna produkt orsaka radiostörningar, och användaren kan i så fall begäras att vidta lämpliga åtgärder.

Använd bara kablar och tillbehör som ingår i förpackningen. Använd inte andra tillbehör eller kablar om du inte får uttryckliga instruktioner om det i dokumentationen.

Türk

Bu, A Sınıfı bir üründür. Evde kullanım sırasında bu ürün radyo girisimine yol açabilir ve bu durumda kullanıcının gerekli önlemleri alması gerekebilir.

Yalnızca pakette bulunan kablo ve aksesuarları kullanın. Belgelerde özellikle belirtilmedikçe başka aksesuar ve kablolar kullanmayın.

<u> 한국 고객 대상</u>

KC

이 기기는 업무용(A급) 전자파적합기기로서 판 매자 또는 사용자는 이 점을 주의하시기 바라 며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

提供給台灣的客戶

BSMI

警告使用者:

此為甲類資訊技術設備,於居住環境中使用時,可能會造成射頻擾動,在此種情況下,使用者會被要求採取某些 適當的對策。

面向中国用户

CCC

警 告

此为A级产品,在生活环境中,该产品可能会造成无线电干扰。在这种情况下,可能需要用户对其干扰采取切实可 行的措施。

设备的最高使用室内环境温度: 35° C

① 仅适用于海拔 2000M 以下地区安全使用。
 断开装置为电源软线上的插头。插座应当装在设备的附近,而且应当便于触及到。电池警告语
 1.电池不得暴露。
 2.使用型号不正确的电池可能导致爆炸。