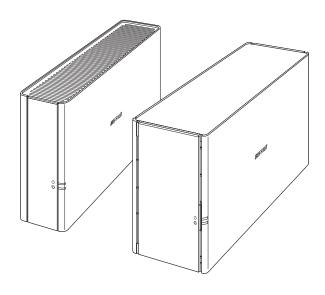


Network Attached Storage

LinkStation 200

User Manual



Please make sure to read this manual before using and follow the procedures. If you have any inquiries about the product, contact the number on the warranty statement or the packing box. Do not discard the included documents, the warranty statement, or the packing box.

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

> 35020312-16 June 2020

Table Of Contents

Chapter 1 Getting Started	<u>7</u>
Diagrams	7
Turning the LinkStation On and Off	8
Installing Applications	9
NAS Navigator2	9
SmartPhone Navigator	9
WebAccess	9
Settings Up Through Setup Wizard	9
Accessing Shared Folders	11
Accessing from a Computer	11
Accessing from a Mobile Device	11
Chapter 2 Configuration	13
Opening Settings from a Computer	13
Opening Easy Admin	13
Opening Advanced Settings	15
Opening Settings from a Mobile Device	18
Chapter 3 File Sharing	21
Configuring Shared Folders	21
Adding a Shared Folder	21
Recycle Bin	23
Read-Only Shares	23
Hidden Shares	23
Configuring Users	24

Adding a User	24
Converting Local Users into External Users	27
Adding a Group	27
Configuring Access Restrictions	29
Local Users and Groups	30
Active Directory	31
NT Domain	34
User Authentication with an External SMB Server	36
Chapter 4 Storage Management	40
RAID Modes	40
Working with RAID Arrays	40
Using JBOD	40
Changing the RAID Mode	41
Expanding RAID Capacity Without Deleting Data	43
RAID Scanning	44
Adding an External Drive	45
Connecting an External Drive	45
Compatibility	45
Dismounting Drives	46
Dismounting Using the Function Button	46
Dismounting from Settings	46
Checking Drives	47
Formatting Drives	48
Erasing Data on the LinkStation Completely	50
Quotas	50
Quotas for Users	50
Quotas for Groups	51
Δ	

Drive Replacement 52
Replacing a Defective Drive53
Rebuilding the RAID Array55
Chapter 5 Remote Access 57
WebAccess 57
Configuring from Easy Admin57
Configuring from Advanced Settings58
Accessing Remotely60
FTP 60
Chapter 6 Backup 62
Backing Up Data on the LinkStation 62
Backup Modes62
Preparing a Backup Destination63
Configuring a Backup Job64
Backing Up Your Mac with Time Machine68
Copying from a USB Device74
Enabling Direct Copy75
Starting Direct Copy75
Chapter 7 Multimedia 76
DLNA 76
Configuring from Easy Admin76
Configuring from Advanced Settings77
Playing Files78
Connected DLNA-Compatible Devices78
Streaming to DLNA-compatible Devices79

Disabling Playback from Specific Devices80
iTunes Server 81
BitTorrent 83
Configuring BitTorrent83
Opening the Download Manager84
Downloading Files86
Connecting a Printer 87
Chapter 8 Advanced Features 89
Email Notification 89
Sleep Mode90
Encrypting Data Transmission 92
Encrypting Settings Data92
Encrypting FTP Transfer Data92
SSL Keys92
Restoring Factory Defaults93
Initializing from Settings93
Initializing Using the Function Button94
Updating the Firmware94
Name, Date, Time, and Language94
Jumbo Frames 98
Changing the IP Address99
Chapter 9 Configuring from Mobile Devices 101
Settings Available from Your Mobile Device 101
Configuring Users 101

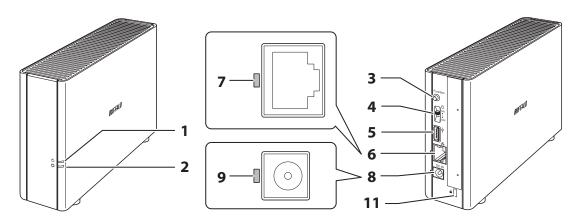
Adding a User10)2
Changing the Password10)5
Deleting a User10)7
Configuring Shared Folders10	19
Adding a Shared Folder10)9
Configuring Access Restrictions11	11
Deleting a Shared Folder11	13
Configuring WebAccess11	5
Configuring the DLNA Server12	1
Managing USB Devices 12	!1
Dismounting USB Drives12	22
Enabling Direct Copy12	23
Starting Direct Copy12	23
Enabling a Print Server12	25
Rebuilding the RAID Array12	<u>!</u> 5
Chapter 10 Utilities 12	
CHADLEL IV VIIILIE3	7
•	
NAS Navigator212	27
NAS Navigator212 Windows12	27 27
NAS Navigator212	27 27
NAS Navigator212 Windows12	27 27 27
NAS Navigator2	27 27 27 27
NAS Navigator2	27 27 27 27
NAS Navigator2	27 27 27 27 27
NAS Navigator2	27 27 27 27 27 28

Chapter 12 Regulatory Compliance Information 1	33
For Customers in the United States	133
For Customers in Europe	133

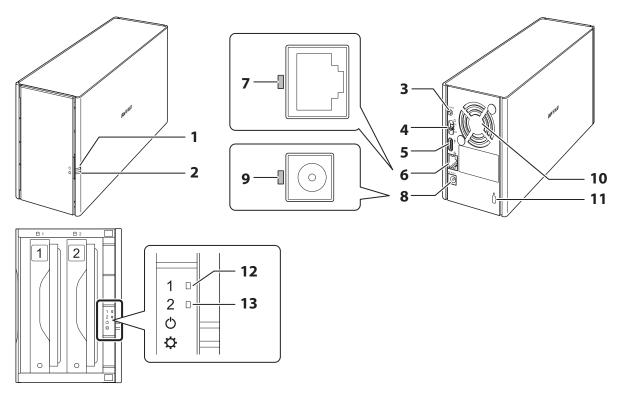
Chapter 1 Getting Started

Diagrams

LS210D



LS220D, LS220DE, LS220DR



1 Power LED

The power LED glows white while the LinkStation is on.

The power LED blinks white while the LinkStation is booting or shutting down.

If an error occurs, the power LED blinks red.

If there is a status message, the power LED blinks amber.

If there is new firmware available, the power LED glows amber.

2 Function LED

This LED glows white while the LinkStation is being initialized and while dismounting USB devices. It blinks white during Direct Copy.

For enclosure models, the red function LED glows when turning the LinkStation on for initial hard drive installation and blinks after pressing the function button.

3 Function Button

Use this button for Direct Copy, dismounting USB devices, and initializing settings.

4 Power Switch

Move the switch up and down to power the device on and off.

5 USB Port

Compatible USB drives, USB memory devices, digital cameras, and USB printers can be connected. USB hubs are not supported.

6 LAN Port

Connect to a router, hub, or switch on your Ethernet network with the included Ethernet cable.

7 Link/Act LED

Blinks green when the LinkStation is accessed over the network.

8 Power Connector

Use the included power cable to connect to a surge protector or outlet.

9 Power Status LED

The LED glows green when the power cable is connected.

10 Fan

Spins to prevent overheating inside. Do not block the fan.

11 Anti-Theft Security Slot

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

12 Drive 1 Error LED

If there is an error on the drive in slot 1, this LED will light.

13 Drive 2 Error LED

If there is an error on the drive in slot 2, this LED will light.

Turning the LinkStation On and Off

Move the power switch to the **on** position to turn the device on.

To turn off the LinkStation, move the switch to the **off** position and wait for the unit to fully shut down before unplugging it. Don't unplug the AC adapter without properly shutting down the LinkStation first.

When the power LED turns off, the shutdown process is completed.

Chapter 1 Getting Started



Installing Applications

NAS Navigator2

For Windows or macOS 10.12 and Earlier

- 1 Go to the d.buffalo website (http://d.buffalo.jp/LS200/) to download the installer.
- **2** Select the region and model to go to your specific model's d.buffalo website.
- **3** Download the NAS Navigator2 installer and install it onto your computer.

For macOS 10.13 and Later

- 1 Open Mac App Store and search for the NAS Navigator2 app.
- **2** Click [Get], then [Install].

SmartPhone Navigator

SmartPhone Navigator will allow you to open LinkStation's Settings, change the IP address, and configure WebAccess settings. Follow the procedure below to install the application.

- 1 Open App Store (iOS devices) or Google Play (Android devices).
- **2** Search for and install "SmartPhone Navigator".

WebAccess

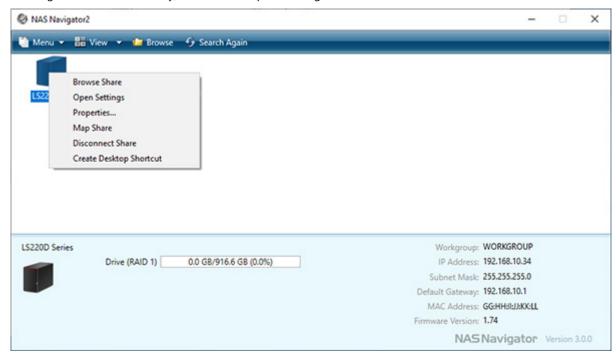
WebAccess will allow you access files on the LinkStation. Follow the procedure below to install the WebAccess application.

- 1 Open App Store (iOS devices) or Google Play (Android devices).
- **2** Search for and install "WebAccess".

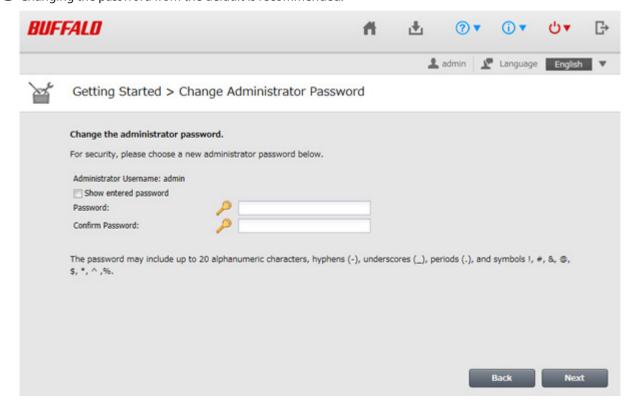
Settings Up Through Setup Wizard

When you access Settings for the first time, or after initializing the LinkStation's settings, the setup wizard will automatically appear. To set up the LinkStation using the wizard, follow the procedure below.

- Double-click the NAS Navigator2 icon () to start NAS Navigator2.
- Right-click your LinkStation's icon and select [Open Settings]. For macOS, select the LinkStation's icon while holding down the control key, then select [Open Settings].



Changing the password from the default is recommended.



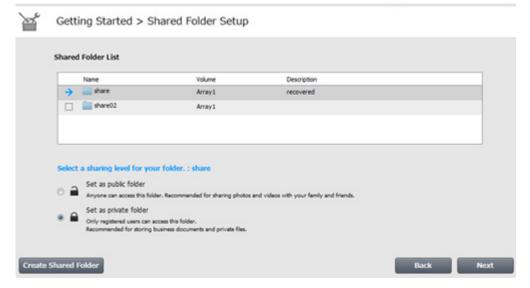
Note: You can open this same screen by clicking [Getting Started] from Easy Admin.

Enter the new password (twice), then click [Next].

Note: The default username and password are "admin" and "password". To keep the defaults, leave both fields blank and click [Next].

Chapter 1 Getting Started

5 Configure levels of sharing for all existing shared folders (public or private) to finish the initial setup wizard.



Notes:

- Select "Set as private folder" to restrict access to the folder to specific users.
- Click [Create Shared Folder] to create a new shared folder from the wizard. By default, SMB and AFP connections can be used to access this folder.

6 Click [OK] when completed.

Accessing Shared Folders

Accessing from a Computer

- **1** Double-click the NAS Navigator2 icon () to start NAS Navigator2.
- **2** Double-click your LinkStation's icon.
- **3** File Explorer will open with shared folders' lists. For macOS, the LinkStation is mounted as a drive icon on the desktop or it is displayed in the sidebar of the Finder.

Note: When you access a shared folder from a Windows PC, you may be asked to enter a username and password. In such a case, enter "guest" for the username and leave the password field blank.

Accessing from a Mobile Device

To access shared folders from a mobile device with the following procedure, you must configure WebAccess settings first. To configure WebAccess, refer to the <u>"WebAccess"</u> section in chapter 5.

- **1** Open SmartPhone Navigator.
- **2** Tap your LinkStation from the NAS list.
- **3** Tap [Browse].

Chapter 1 Getting Started

Note: Alternatively, you can access shared folders from the WebAccess app. Open the application and tap your LinkStation's hostname in the NAS list.

Chapter 2 Configuration

Configure and manage your LinkStation using the Settings interface, accessible from a browser window. Open the interface using the appropriate procedure below or type the LinkStation's IP address into the URL field of your browser. Within Settings, the Easy Admin page gives you quick access to commonly-used settings.

Opening Settings from a Computer

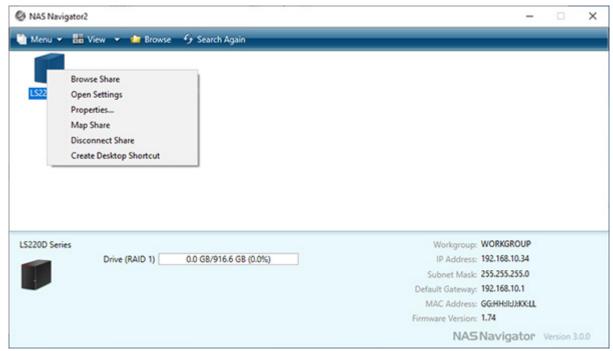
Notes:

- To access Settings, we recommend using NAS Navigator2, which should already be installed on your computer if you followed the quick setup guide included with your LinkStation for initial setup. If you do not have NAS Navigator2 installed, refer to the "NAS Navigator2" section in chapter 10 for the procedure on how to download and install it.
- Internet Explorer 9, Microsoft Edge, Firefox 18, Google Chrome 24, Safari 5, and later are supported. If you have difficulty viewing Settings, check whether you have a proxy server enabled in the browser settings. If you do, disable the proxy server.

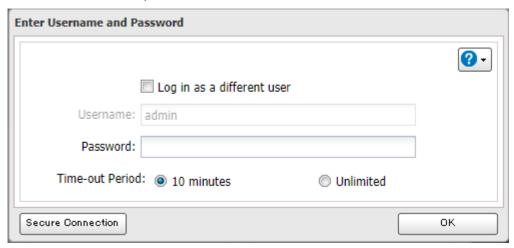
Opening Easy Admin

The Easy Admin page makes it easy to change common settings. Follow the procedure below to open Easy Admin.

- **1** Double-click the NAS Navigator2 icon () to start NAS Navigator2.
- **2** Right-click your LinkStation's icon and select [Open Settings]. For macOS, select the LinkStation's icon while holding down the control key, then select [Open Settings].

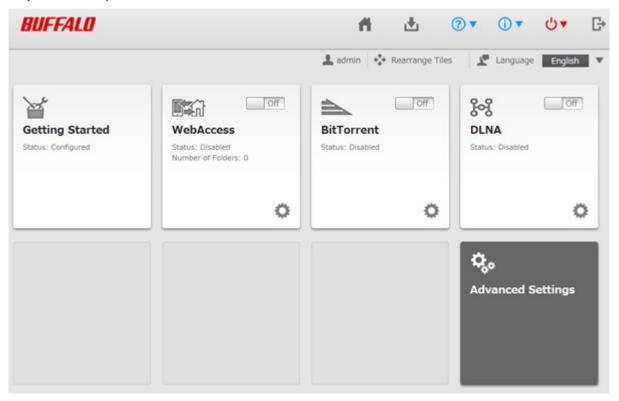


3 Enter the username and password, then click [OK].



Notes:

- If the time-out period is set to "10 minutes", you will be logged out of Settings after 10 minutes of inactivity.
- Click [Secure Connection] to log in using an encrypted connection.
- 4 Easy Admin will open.

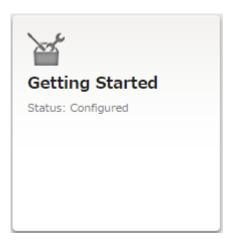


Getting Started

The wizard lets you configure the following settings:

- · Changing the administrator password
- Creating shared folders
- · Configuring access restrictions

Chapter 2 Configuration



WebAccess

Configure WebAccess to access your LinkStation remotely. Refer to the <u>"WebAccess"</u> section in chapter 5 for more information.

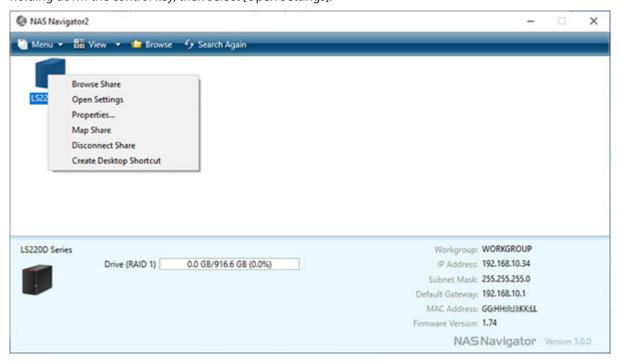


Opening Advanced Settings

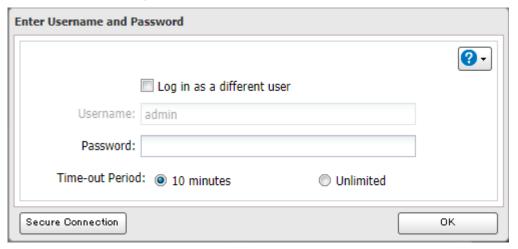
1 Double-click the NAS Navigator2 icon () to start NAS Navigator2.

Chapter 2 Configuration

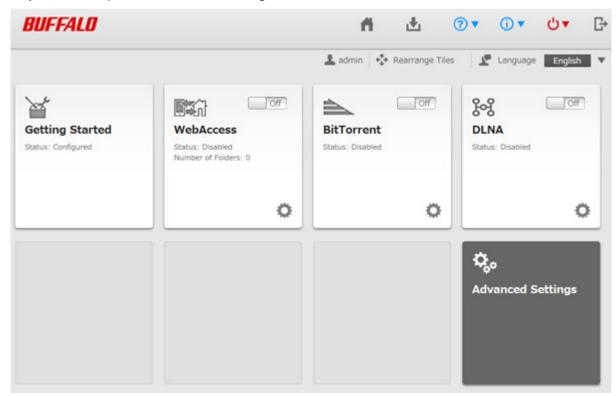
2 Right-click your LinkStation's icon and select [Open Settings]. For macOS, select the LinkStation's icon while holding down the control key, then select [Open Settings].



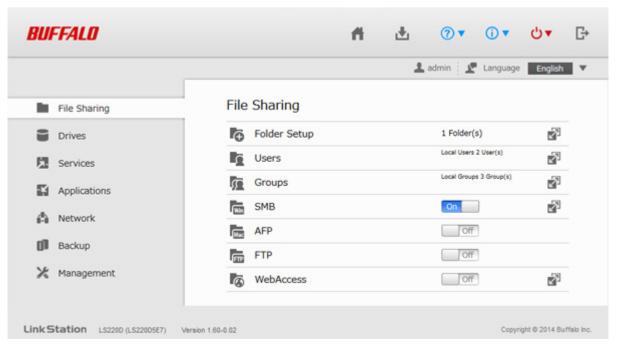
3 Enter the username and password, then click [OK].



4 Easy Admin will open. Click [Advanced Settings].



5 Advanced Settings will open.



Notes:

• Username/Password Combinations:

Username	Password	Settings Available
admin (default)	password (default)	All
guest	blank	System information (read-only)

Chapter 2 Configuration

Username	Password	Settings Available
Your username	Your password	If a user is assigned as an administrator, all settings are available. If assigned as a power user, the user can create and edit shared folders, users, and general user groups. If assigned as a general user, the user can only access readonly system information and change their own password.

• To go back to Easy Admin, click the home icon (1).



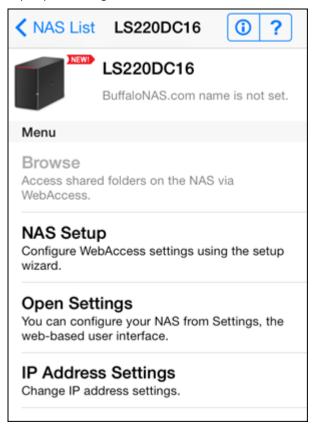
Opening Settings from a Mobile Device

You can access your LinkStation's Settings from your iOS or Android device. Download and install "SmartPhone Navigator" from the App Store or Google Play.

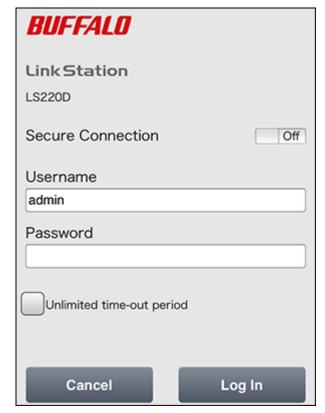
- If you have an older version of SmartPhone Navigator installed on your device, update it to the latest version. Your icons and software may be slightly different from the examples in this manual.
- You must be logged in as a member of the administrator group.
- Mobile devices that support mobile-optimized Settings display are described in the "Specifications" section in chapter 11.
 - 1 Open SmartPhone Navigator on your mobile device.



Tap [Open Settings].

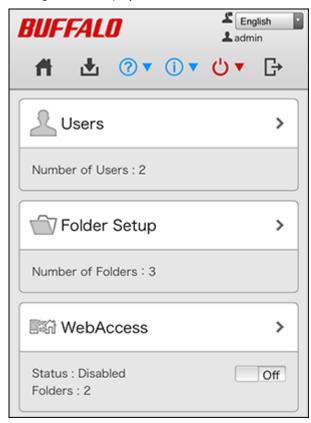


Enter the username and password, then tap [Log In].



Chapter 2 Configuration

4 Settings will be displayed.



Notes:

- The first time you go through setup, you'll be given a chance to change the default password, correct the time zone settings, and select the RAID mode (models with 2+ drives only). Step though the wizard to change these settings.
- Tap [Desktop] to show Advanced Settings. This screen gives the full array of settings that could be changed from a computer, but it is not optimized for mobile devices.

Configuring Shared Folders

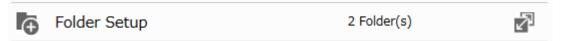
Adding a Shared Folder

Follow the procedure below to create a shared folder. To create a shared folder from a mobile device, refer to the <u>"Adding a Shared Folder"</u> section in chapter 9.

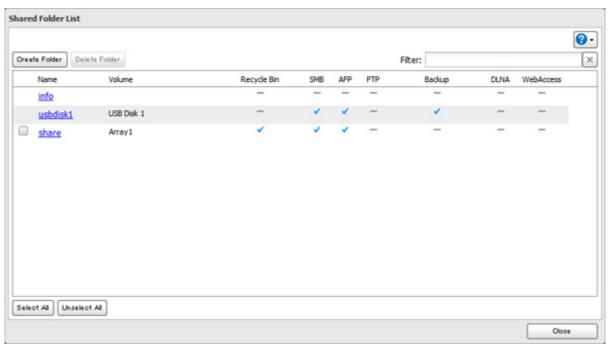
1 From Advanced Settings, click [File Sharing].



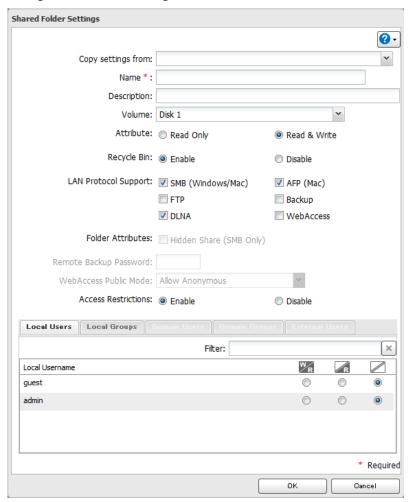
2 Click to the right of "Folder Setup".



3 Click [Create Folder].



4 Configure the desired settings, then click [OK].



Notes:

- Names may contain up to 27 alphanumeric characters, hyphens (-), and underscores (_). Multibyte characters are supported. The first character should not be a symbol.
- Descriptions may contain up to 75 alphanumeric characters, hyphens (-), underscores (_), and spaces. Multibyte characters are supported. The first character should not be a symbol or space.
- You may create up to 400 shared folders.
- The names of shared folders should not use characters from more than one language. For example, mixing Japanese and Korean characters in names is not supported.
- If the names of shared folders accessed via AFP and FTP connections contain multibyte characters, configure the client language in [Management] > [Name/Time/Language] to match the characters. If the setting and display language do not match, the shared folder name will not be displayed correctly.
- The following characters are handled differently by macOS and Windows devices. Avoid using these characters when sharing data between macOS and Windows devices:
 ~ // ¢ £ ¬
- Windows does not support some characters that macOS and the LinkStation allow. If you create a filename on a Mac using any of the following symbols, it will not display correctly on a Windows computer. You may have to connect to the LinkStation via AFP in order to display or copy files that contain these symbols in their filenames.
 ?][/\=+><;:", |*
- Do not use any of the following words for the name of a shared folder as these words are reserved for internal use by the LinkStation: authtest, global, homes, info, lost+found, lp, msdfs_root, mt-daapd, printers, ram, spool, usbdisk x (where "x" is a number, for example: usbdisk1)
- Don't use the following unsupported characters in shared folder names, workgroup names, or filenames:

纊褜鍈銈蓜俉炻昱棈鋹曻彅丨仡仼伀伃伹佖侒侊侚侔俍偀倢俿倞偆偰偂傔僴僘兊兤冝冾凬刕劜劦勀勛勻匇匤 卲厓厲叝斐咜咊咩哿喆坙坥垬埈埇焀塚增墲夋奒奛奝奣妤妺孖寀甯寘寬尞岦岺峵崧嵓﨑嵂嵭嶸嶹巐弡弴彧德 忞恝悅悊惞惕愠惲愑愷愰憘戓抦揵摠撝擎敎旳盺昻眆昮昞昤晥晙畴晳睶暠暲暿曺朎朗杦枻桒柀栁桄棏栟楨 榉榘槢樰橫橆橳橾櫢櫤毖氿汜沆汯泚洄涇浯涖涬淏淸淲淼渹湜渧渼溿澈澵濵瀅瀇瀨炅炫焏焄煜煆煇凞燁燾犱 犾猤猪獷玽珉珖珣珒琇珵琦琪琩骔瑢璉璟甁畯皂皜皞皛皦益睆劯砡硎硤硺礰礼神祥禔福禛竑竧靖竫箞精絈絜 綷綠緖繒罇羡羽茁荢荿菇菶葈蒴蕓蕙蕫﨟薰龝蜌蠇裵訒訷詹誧誾諟諸諶譓譿賰賴贒赶赳軏迟逸遧郞都鄕鄧釚 釗釞釭釮釤釥鈆鈐鈊鈺鉀鈼鉎鉙鉑鈹鉧銧鉷鉸鋧鋗鋙鋐硣鍅鋠鋓錥錡鋻鋍錞鋿錝錂鍰鍗鎤鏆鏞鏸鐱鑅鑈閒隆 隝隝隯霳霻靃靍靏靑靕顗顥飯餇餧館馞驎髙髜魵魲鮏鮱鮻鰀鵰鵫鸖鸙潶畩秕緇臂蘊訃躱鐓饐鷯

- File and folder names may contain up to 255 single-byte characters.
- Folder and workgroup names whose names contain non-Roman characters may not be displayed correctly.
- If shared folders are accessed from a Mac, information files for the Mac may be generated automatically. Do not delete these files. If they are deleted from a Windows device, this may prevent further access from a Mac.
- · The LinkStation belongs to the default zone in AppleShare; the zone cannot be specified.
- When files are copied to the LinkStation or to a USB drive connected to the LinkStation, file information such as date created, date modified, and other date information may be updated or changed.
- During a file transfer, if settings are changed, the file transfer operation may be aborted.
- File copying to the LinkStation is protected by a journaling file system. If the Ethernet cable is disconnected or a power outage occurs while copying data, the following may occur:
 - Preset data such as the LinkStation name, users, and groups may be erased.
 - An incomplete file may be copied and the file can no longer be deleted. If this occurs, restart the LinkStation, delete the file, and perform the copy operation again.

Recycle Bin

To protect your data from accidental deletion, you may configure your LinkStation to use a recycle bin instead of deleting files immediately. The recycle bin will only work with SMB connections.

Read-Only Shares

By default, new shares are set with read and write access, but you may change the folder attribute to read-only. Follow the procedure below to change the shared folder attribute to read-only.

1 From Advanced Settings, navigate to [File Sharing] > [Folder Setup] and choose a shared folder.

2 Click [Edit] and change the "Attribute" option to "Read Only", then click [OK].

Read-only shares and HFS Plus-formatted USB drives will have "(Read Only)" added to comments in File Explorer. **Note:** Configure the share attribute only through Settings. Configuring folder attributes through Windows is not supported and may cause unexpected behavior.

Hidden Shares

If a shared folder becomes hidden, it will not be displayed under Network, and only certain users will be allowed to access it. To hide a shared SMB folder, follow the procedure below.

- 1 From Advanced Settings, navigate to [File Sharing] > [Folder Setup] and choose a shared folder to make hidden. A USB drive is not available as a hidden share.
- **2** Select the "Hidden Share (SMB Only)" checkbox and click [OK].

Notes:

- If protocols other than "SMB (Win/Mac)" or "Backup" under "LAN Protocol Support" are enabled, the hidden shares option will be grayed out and cannot be selected.
- Configure hidden share attributes only through Settings. Configuring them through Windows is not supported and may cause unexpected behavior.

To access a hidden folder, open File Explorer in your computer and enter "\\LinkStation name\shared folder name\\" into the address bar. For example, if the LinkStation name is "LSXXXX001" and the shared folder name is "share", enter "\\LSXXXX001\share\\" to open it.

Configuring Users

Adding a User

Follow the procedure below to create a user. To create a user from a mobile device, refer to the <u>"Adding a User"</u> section in chapter 9.

Note: The LinkStation can register a maximum 300 of users, which includes the default users "admin" and "guest".

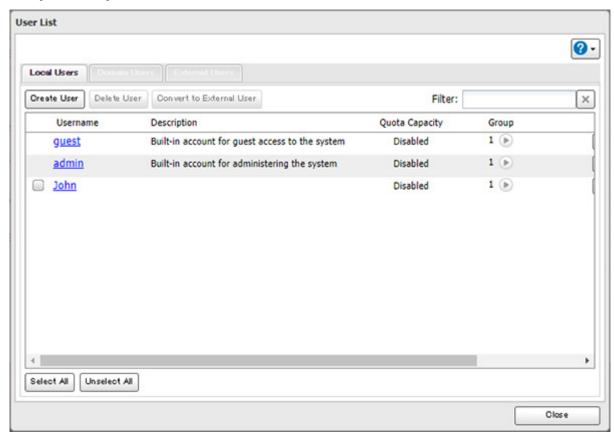
1 From Advanced Settings, click [File Sharing].



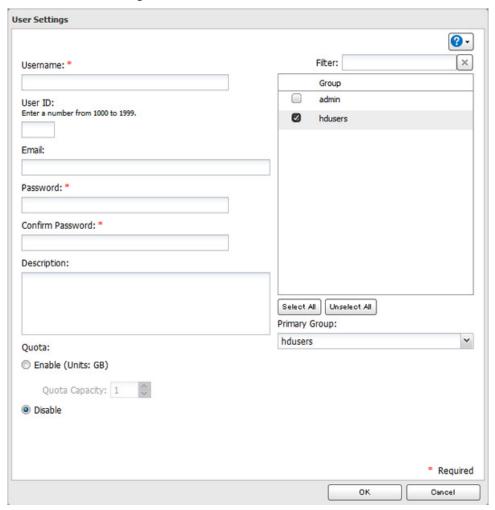
2 Click to the right of "Users".



Click [Create User].



4 Enter the desired settings, then click [OK].



Notes:

- Usernames may contain up to 128 alphanumeric characters, hyphens (-), underscores (_), periods (.), and the symbols! # & @ \$ * ^ %. The first character should not be a symbol.
- The user ID should be a number from 1000 to 1999. Each user ID should be unique. If this field is left blank, a user ID is assigned automatically.
- Do not duplicate user IDs, group IDs, usernames, or group names. Each should be distinct and unique.
- User descriptions may contain up to 75 alphanumeric characters, hyphens (-), underscores (_), and spaces. Multibyte characters are supported. The first character should not be a symbol or space.
- Passwords may contain up to 20 alphanumeric characters, hyphens (-), underscores (_), commas (,), periods (.), semicolons (;), tildes (~), and the symbols @! # \$ % &') (* + / > < = ? "] [^ } { |. The first character should not be a symbol unless it is an underscore.
- Use the same username and password for both Windows and the LinkStation or you may be unable to access shared folders.
- If a user belongs to multiple groups, the most strict access restrictions will apply. For example, if a user is added to a group with read and write access, and also to a read-only group, the user will effectively have read-only access.
- Do not use any of the following words as a username as these words are reserved for internal use by the LinkStation: adm, admin, administrator, all, apache, bin, daemon, disk, ftp, ftpuser, guest, halt, hdusers, kmem, lp, mail, man, mysql, news, nobody, nogroup, none, operator, root, shadow, shutdown, sshd, sync, sys, tty, users, utmp, uucp, www

Converting Local Users into External Users

If using an external SMB server for authentication, you may convert any local users into external users. This way, the LinkStation will have a user list that matches the users in the external SMB server, and access restrictions for this LinkStation's shared folders may be assigned to the converted "external" users.

Follow the procedure below to convert a local user into an external user. If a local user is converted, their user information (including passwords) will be removed from the LinkStation. External users cannot be reverted to local users.

Note: External authentication should be enabled before local users can be converted. For more information on external authentication, refer to the "User Authentication with an External SMB Server" section.

- **1** From Advanced Settings, click [File Sharing].
- **2** Click to the right of "Users".
- **3** From the user list screen, select the checkboxes of any users to be converted to an external user, then click [Convert to External User].
- 4 Click [OK].
- **5** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].

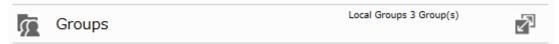
Converted users are displayed under the "External Users" tab. You can then configure access restrictions for external users.

Adding a Group

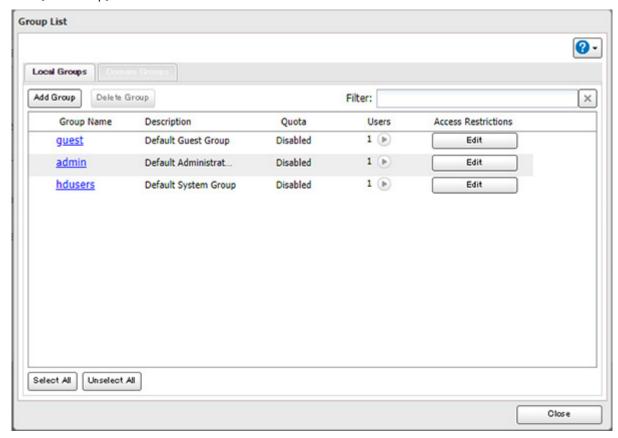
1 From Advanced Settings, click [File Sharing].



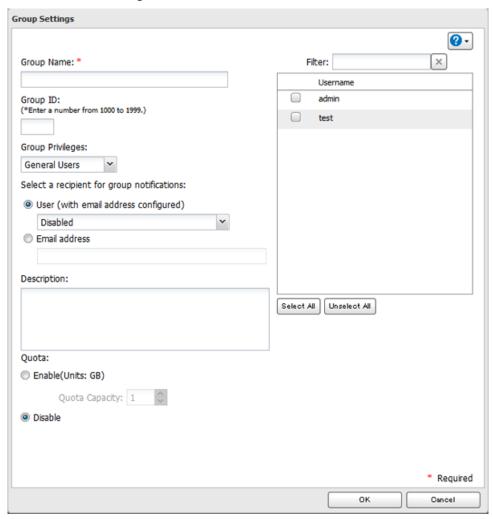
2 Click to the right of "Groups".



Click [Add Group].



4 Enter the desired settings, then click [OK].



Notes:

- Group names may contain up to 20 alphanumeric characters, hyphens (-), underscores (_), and periods (.). The first character should not be a symbol unless it is an underscore.
- Group descriptions may contain up to 75 alphanumeric characters, hyphens (-), underscores (_), and spaces. Multibyte characters are supported. The first character should not be a symbol or space.
- If the group ID field is left blank, a group ID is automatically assigned. Use numbers between 1000 and 1999 to set a group ID manually. Don't use duplicate group IDs.
- You may register up to 300 groups with the LinkStation.
- If you are logged in as an administrator, you can change any setting, including other users' passwords. If you are logged in as a member of the power users group, you can create and edit shared folders, users, and groups. If you are logged in as a member of the general users group, you can change only your own password.
- Do not use any of the following words as a group name as these words are reserved for internal use by the LinkStation: adm, admin, administrator, all, apache, bin, daemon, disk, ftp, ftpuser, guest, halt, hdusers, kmem, lp, mail, man, mysql, news, nobody, nogroup, none, operator, root, shadow, shutdown, sshd, sync, sys, tty, users, utmp, uucp, www

Configuring Access Restrictions

You may restrict access for specific shared folders, including external USB drives.

Follow the procedure below to configure access restrictions. To configure access restrictions from a mobile device, refer to the "Configuring Access Restrictions" section in chapter 9.

Notes:

- Access restrictions can be set separately for each shared folder, but not for subfolders within the shared folders.
- Configure access restrictions only through Settings. Configuring access restrictions through Windows is not supported and may cause unexpected behavior.

Local Users and Groups

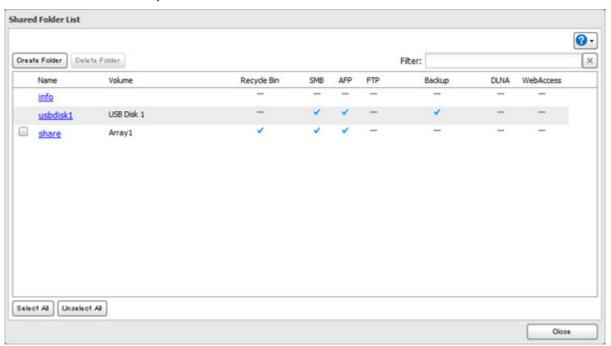
1 From Advanced Settings, click [File Sharing].



2 Click to the right of "Folder Setup".



 $oldsymbol{3}$ Click the shared folder that you want to set access restrictions for.



- 4 Click [Edit].
- **5** Enable "Access Restrictions".



6 Select the level of access for the user or group.



7 Click [OK].

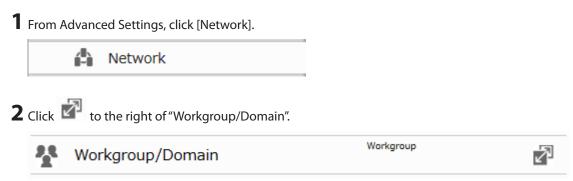
Notes:

- The example above shows access restrictions by users. To restrict access by group, click the [Local Groups] tab and select group permissions.
- The most restrictive access settings will always apply. For example, if both read-only and read and write permissions are given to a user, the user will have read-only access.

Active Directory

If there is an Active Directory environment, the LinkStation will use account information from the Active Directory domain controller to set access restrictions for LinkStation's shared folders. There is no need to perform individual account management for the LinkStation. If multiple LinkStations are installed on the network, the account information is centrally managed in Active Directory, greatly reducing the operations required for installation and management.

Note: The LinkStation supports a domain environment with a maximum of 1000 users and groups.

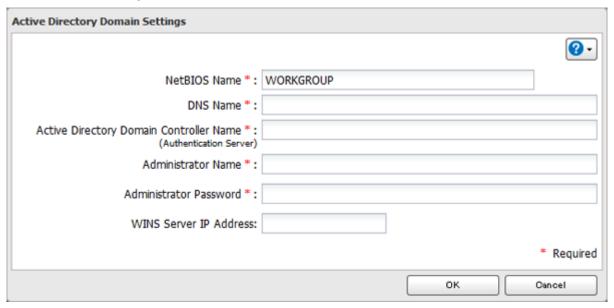


3 Click [Edit].

Select "Active Directory", then click [Next].



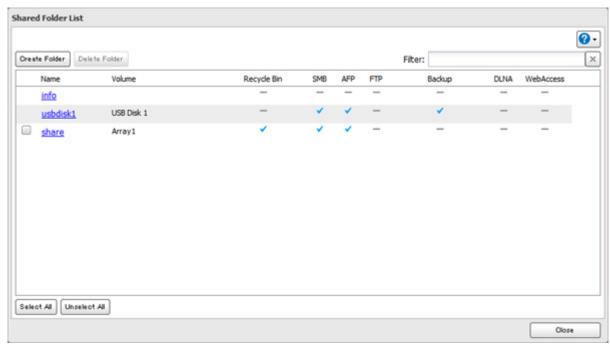
- Click [Yes].
- Enter the desired settings, then click [OK].



Click to the right of "Folder Setup".



8 Click the shared folder that you want to set access restrictions for.



- 9 Click [Edit].
- **10** Enable "Access Restrictions".



11 Select the level of access for the user or group.

Read and write Read-only : No access

12 Click [OK].

Notes:

- If you change the LinkStation's name, you will no longer be able to use domain users and groups or access restrictions. To repair this, rejoin the domain.
- To have the LinkStation join an Active Directory domain, configure it to use a DNS server that can resolve names for the Active Directory domain.
- After building an Active Directory domain, the administrator password for joining the domain must be changed at least once, or joining the Active Directory domain will fail.
- The DNS name and NetBIOS name of Active Directory domains should be identical.
- The most restrictive access settings will always apply. For example, if both read-only and read and write permissions are given to a user, the user will have read-only access.
- If there is a difference of more than five minutes between the LinkStation's clock and the domain controller's clock, joining the domain or authenticating domain users and groups may fail. For best results, use an NTP server to set the time for all network devices.
- To use the LinkStation as a member server in an Active Directory domain, the LinkStation should be logged in to the domain and accessed from a computer that is not a member of the domain with a valid domain account.
- If the LinkStation is a member server of an Active Directory domain, you cannot connect as a guest user via AFP.
- If your LinkStation is a member server in an Active Directory domain and you change the authentication method to "Workgroup", the account on the domain controller will not be deleted automatically.

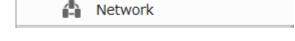
- When the LinkStation joins an Active Directory domain, FTP is disabled. Before using FTP, move the FTP switch back to the **on** position.
- Don't disable the SMB protocol while Active Directory is used for access restrictions. If you do, you will need to enable SMB again and reconfigure AD from scratch.

NT Domain

If there is an NT domain environment, the LinkStation will use account information from the NT domain server to set access restrictions for LinkStation's shared folders. There is no need to perform individual account management for the LinkStation. If multiple LinkStations are installed on the network, the account information is centrally managed in the NT domain, greatly reducing the operations required for installation and management.

Note: The LinkStation supports an NT domain environment with a maximum of 1000 users and groups.

1 From Advanced Settings, click [Network].



2 Click to the right of "Workgroup/Domain".

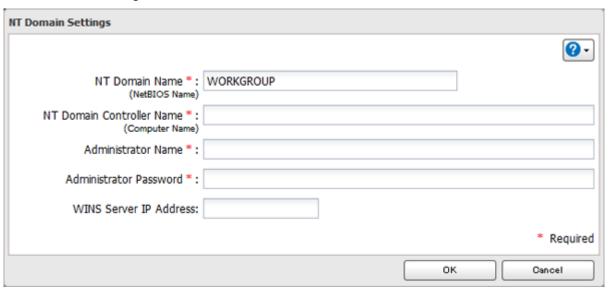


- 3 Click [Edit].
- 4 Select "NT Domain", then click [Next].

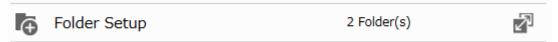


5 Click [Yes].

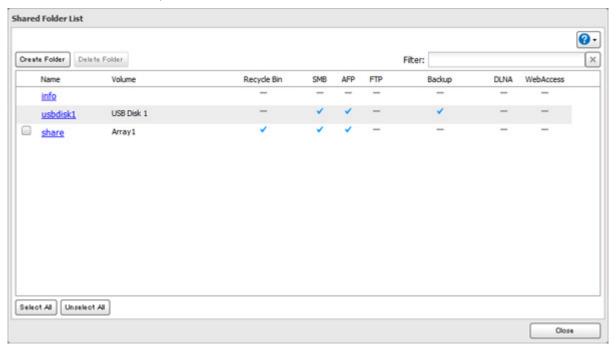
Enter the desired settings, then click [OK].



Click to the right of "Folder Setup".



Click the shared folder that you want to set access restrictions for.



- 9 Click [Edit].
- Enable "Access Restrictions".



Select the level of access for the user or group.

R: Read and write R: Read-only : No access

12 Click [OK].

Notes:

- If you change the LinkStation's name, you will no longer be able to use domain users and groups or access restrictions. To repair this, rejoin the domain.
- The most restrictive access settings will always apply. For example, if both read-only and read and write permissions are given to a user, the user will have read-only access.
- If a domain username is more than 20 bytes long, the LinkStation truncates it to 20 bytes.
- To use the LinkStation as a member server in an NT domain, the LinkStation should be logged in to the domain and accessed from a computer that is not a member of the domain with a valid domain account.
- If the LinkStation is a member server of an NT domain, you cannot connect as a guest user via AFP.
- When you change the user or group settings on the domain controller, these changes may not take effect immediately on the LinkStation until it is rebooted.
- If your LinkStation is a member server in an NT domain and you change the authentication method to "Workgroup", the account on the domain controller will not be deleted automatically.
- If the LinkStation has joined a domain network, you cannot connect to it via FTP.
- Don't disable the SMB protocol while an NT domain server is used for access restrictions. If you do, you will need to enable SMB again and reconfigure the NT domain settings from scratch.

User Authentication with an External SMB Server

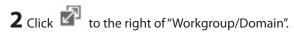
LinkStations on your network can be linked to an external authentication server for centralized management of user accounts and passwords. The authentication server should be another Buffalo NAS device. Other external SMB authentication servers are not supported.

Notes:

- Disable SMB2 before using external authentication.
- Access restrictions for local users and groups will still apply to shared folders if an external SMB server is used for authentication.
- The procedure below contains methods to automatically register external users. You can also manually add
 external users by converting them from local users. Refer to the <u>"Converting Local Users into External Users"</u>
 section above for more details on converting local users.







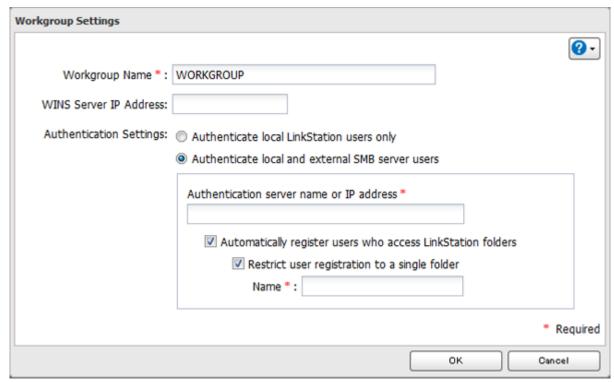


3 Click [Edit].

4 Select "Workgroup", then click [Next].



- **5** Click [Yes].
- **6** Enter a workgroup name. Select "Authenticate local and external SMB server users" and enter the SMB server's IP address. You can also specify a server from another subnet.



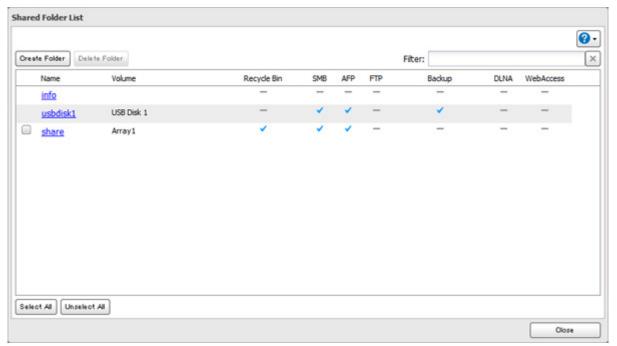
- 7 If "Automatically register users who access LinkStation folders" is selected, users that access any of the LinkStation's folders will be automatically registered as external users. This process only applies to folders that have access restrictions disabled. After new external users are added, disable this option to limit the number of authenticated user accounts.
- **8** If "Restrict user registration to a single folder" is checked, the LinkStation will automatically create a readonly shared folder. Enter the shared folder name. Users that access this specific folder will be automatically registered as external users. If this setting is deselected at a later time, the LinkStation will automatically remove the folder.

Note: Connect to the authentication folder via SMB, not FTP or AFP. Automatic user registration may not work the first time if on macOS 10.8 (or later). If this occurs, try rebooting the LinkStation, then access the authentication shared folder again.

- **9** Click [OK] to save any changes. When saving changes to the external authentication server settings, you may not convert all current local users to external users. If a local user is converted to an external user, their user information (including passwords) will be removed from the NAS. External users cannot be reverted to local users.
- **10** Click to the right of "Folder Setup".



 ${f 11}$ Click the shared folder that you want to set access restrictions for.



- 12 Click [Edit].
- **13** Enable "Access Restrictions".



14 Click the [External Users] tab and select the level of access for each external user.



15 Click [OK].

Notes:

- Users that are automatically registered belong to the "hdusers" group. They can be added to other groups from within group settings. Added users will be listed in "Users" > "External Users". To delete a user that was registered automatically, select that user and click [Delete External User].
- The most restrictive access settings will always apply. For example, if both read-only and read and write permissions are given to a user, the user will have read-only access.
- To access access-limited shared folders from OS X 10.7, use AFP instead of SMB; under "LAN Protocol Support", check "AFP (Mac)" on the destination folders to use AFP and click [OK].

- If access restrictions are set for users and groups from the authentication server, guest and anonymous connections will not be possible with AFP connections.
- FTP connections do not support authentication with an external SMB server.
- If using a Windows PC for external authentication, the default Windows SMB security settings may need to be changed. An easy way to do this is to run File Sharing Security Level Change Tool, available from this product's download page on the Buffalo website. This utility will let you easily change or restore your Windows security settings to work with external authentication.

RAID Modes

The LinkStation supports many types of RAID. The type of RAID arrays available for use depends on how many drives are installed on your LinkStation.

Notes:

- If you change the RAID mode, all data on the array is deleted. This is true for every procedure in this chapter. Always back up any important data before performing actions that affect your RAID array.
- Some RAID arrays allow you to change the RAID mode without losing data by adding drives. To change a RAID mode by adding drives to the existing array, refer to the <u>"Expanding RAID Capacity Without Deleting Data"</u> section below.
- Drive capacity is displayed in Settings in actual gigabytes. The Properties window in Windows may show GiB instead, which will be a smaller number.
- After the RAID mode is changed (except when creating a RAID 0 array), the LinkStation performs a RAID scan that
 will take about 10 hours per TB. File transfers are slower during this period. While the I17 message is displayed in
 NAS Navigator2, do not turn off the LinkStation. If you do, the RAID scan will start over.

RAID 1

Combines two drives into a mirrored array. The usable space is equal to the capacity of a single drive. Identical data is written to each drive. If a drive becomes damaged, data can be recovered by replacing the damaged drive. As long as one drive in the array remains undamaged, all data in the array can be recovered.

RAID 0

Combines two drives into a single array. The usable space is equal to the total capacity of all drives in the array. This simple RAID mode offers faster performance than RAID modes that include parity. If a single drive in the array becomes damaged, then all data in the array will be lost.

JBOD

This mode uses the drives inside the LinkStation as individual drives. The usable space is equal to the total capacity of all drives on the LinkStation. If any of the drives become damaged, then all data on that drive will be lost.

Working with RAID Arrays

To change RAID settings, navigate to [Drives] > [RAID] in Advanced Settings.

Using JBOD

With JBOD, each drive on the LinkStation is addressed separately. To put drives from an array into JBOD, follow the procedure below.

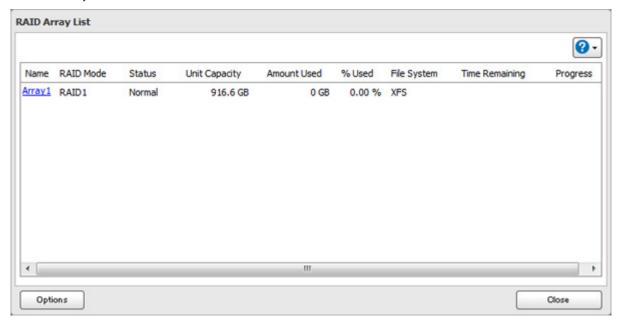
1 From Advanced Settings, click [Drives].



2 Click to the right of "RAID".



3 Click the array to delete.



- 4 Click [Delete RAID Array].
- $\begin{tabular}{ll} \begin{tabular}{ll} \beg$
- **6** Click [OK] when completed. Next, create a shared folder by referring to the <u>"Adding a Shared Folder"</u> section in chapter 3.

Changing the RAID Mode

To change the RAID mode, first put the drives into JBOD by referring to the <u>"Using JBOD"</u> section above. Then, follow the procedure below.

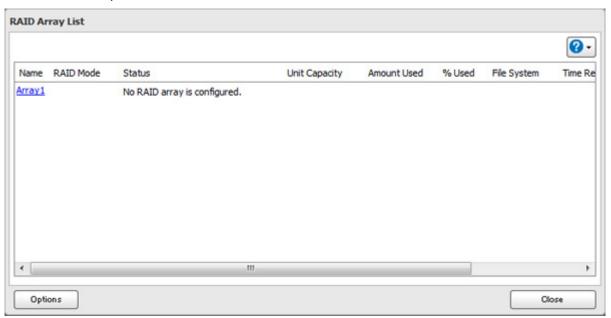
1 From Advanced Settings, click [Drives].



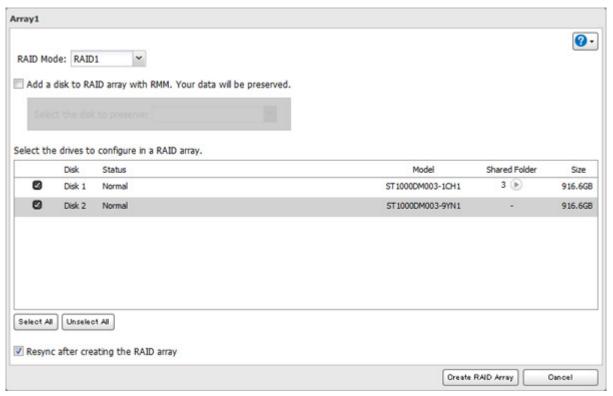
2 Click to the right of "RAID".



3 Choose a RAID array.



4 Select a RAID mode and the drives to be used, then click [Create RAID Array].



Note: Normally, after a RAID array is created, it is "resynced", which optimizes the array, making it more stable. The resyncing process will take about one hour per terabyte of space in the array. File transfers will be slower during this period, but the array will remain fully usable. The **I17** message will also be displayed in NAS Navigator2 during the resync. If you clear the "Resync after creating the RAID array" checkbox, the resyncing process will be skipped. If the LinkStation is rebooted during the resyncing process, the resync will begin again from the beginning.

- **5** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- **6** Click [OK] when completed. Next, create a shared folder by referring to the <u>"Adding a Shared Folder"</u> section in chapter 3.

Expanding RAID Capacity Without Deleting Data

You can create a RAID array without erasing data on the drive by using RMM (RAID Mode Manager). To create the RAID 1 array using RMM, you must have two drives available in JBOD.

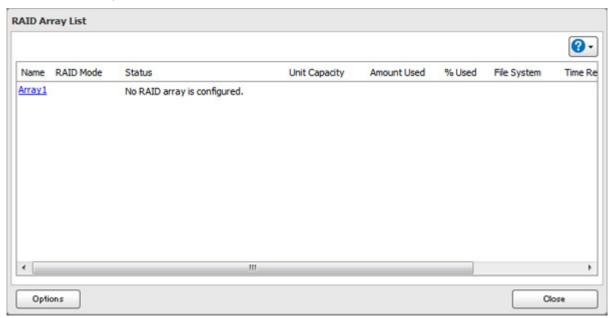
1 From Advanced Settings, click [Drives].



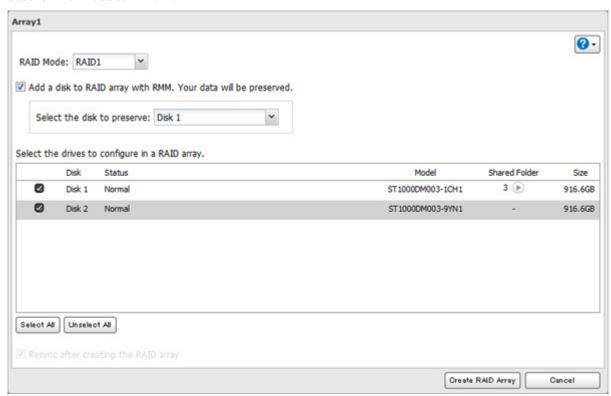
2 Click to the right of "RAID".



3 Choose a RAID array.



4 Set the RAID mode to "RAID 1".



- Select the "Add a disk to RAID array with RMM. Your data will be preserved." checkbox.
- Select the drive whose data will be saved from the drop-down list.
- Select the drive to add to the RAID array.
- Click [Create RAID Array].
- The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- Click [OK] when completed.

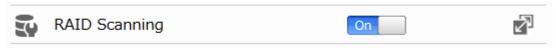
RAID Scanning

A RAID scan checks your RAID array for bad sectors and if it finds any, it automatically repairs them. Only RAID 1 arrays are supported. For best results, run a RAID scan regularly.

From Advanced Settings, click [Drives].

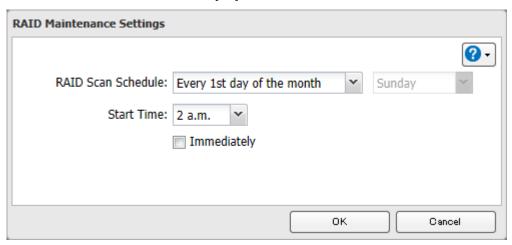


Move the RAID scanning switch to the position to enable RAID scanning.



3 Click to the right of "RAID Scanning".

- 4 Click [Edit].
- **5** Select when to run the scan and click [OK].



Notes:

- Select the "Immediately" checkbox to run a RAID scan immediately.
- To stop a RAID scan, click [Cancel RAID Scan].

Adding an External Drive

Connecting an External Drive

Your LinkStation features a USB port, and you can connect an external drive to this port. Once connected, it appears as a shared folder on the LinkStation. Formatted drives are detected automatically. Unformatted drives should be formatted in Settings.

After a USB drive is recognized, the LinkStation adds "usbdisk x" to the shared folder list, where "x" is the USB port to which the drive is connected.

Compatibility

The following devices are supported by the LinkStation. Buffalo external USB drives are recommended but DUB and DIU series drives are not supported.

- USB storage devices
- Card readers (except for card readers that can recognize two or more memory cards)

Supported file systems for external drives and the types of allowed access are listed below:

	Ext3*	XFS	NTFS*	exFAT*	FAT32	HFS Plus*
Accessing via SMB	R	R/W	R/W	R/W	R/W	R
Using as a backup drive	R/W	R/W	R/W	R/W	R/W	R
Using for Direct Copy	R/W	R/W	R/W	R/W	R/W	R

R/W: Read and write, R: Read-only

Make sure only one device is connected to a USB port on the LinkStation. Some external drives with automatic power-on won't turn on automatically when connected to the LinkStation. Use their manual power switch to turn them on. Be sure to connect only one bus-powered drive at a time. If there is insufficient bus power for your USB

^{*}This cannot be formatted from Settings.

drive, connect its AC adapter. Note that only the first partition of a connected USB drive is mounted. Additional partitions are not recognized.

Dismounting Drives

If the LinkStation is powered on, dismount drives (internal and external) before unplugging them. You may dismount the external drive using the function button, or dismount any drive from Settings. If the LinkStation is off, then all drives are already dismounted and may be unplugged safely.

Note: If you unplug your external drives without dismounting them, Settings may still show "usbdisk" in the shared folder list. Reboot your LinkStation to clear it.

Dismounting Using the Function Button

Press and hold down the function button for three seconds. The white function LED will go out as all attached USB drives are dismounted. You may now unplug any USB drives safely.

Dismounting from Settings

Follow the procedure below to dismount a drive. To dismount a drive while using a mobile device, refer to the <u>"Dismounting USB Drives"</u> section in chapter 9.

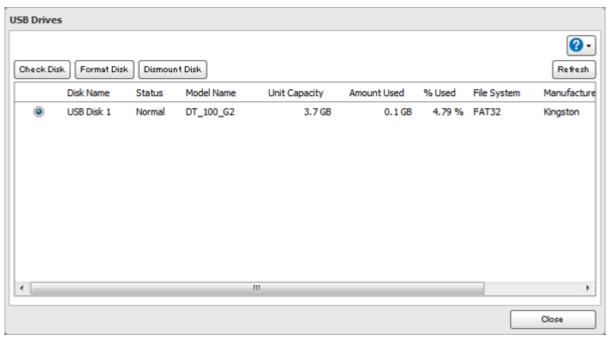
1 From Advanced Settings, click [Drives].



2 Click [Drives] to dismount an internal drive or [USB Drives] to dismount an external drive.



3 Select the drive to dismount and click [Dismount Disk].



- **4** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- **5** When the dismounting process is completed, it is safe to unplug the drive. Disconnect the drive from the LinkStation.

Note: To remount the drive, unplug it and then plug it back in.

Checking Drives

A drive check tests the data on a drive on the LinkStation or one that is connected via USB for integrity. Errors are fixed automatically. With large drives, a drive check may run for many hours. Shared folders cannot be accessed during a drive check. Do not turn off the LinkStation until the drive check is finished. Follow the procedure below to run a drive check.

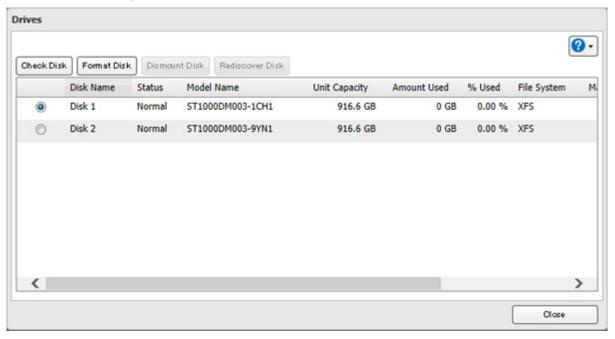
1 From Advanced Settings, click [Drives].



2 Click [Drives] to check an internal drive or [USB Drives] to check an external drive.



3 Select the drive or array to test, then click [Check Disk].



4 Click [Check]. You have the option of deleting information files from macOS during the check if desired.



Formatting Drives

Notes:

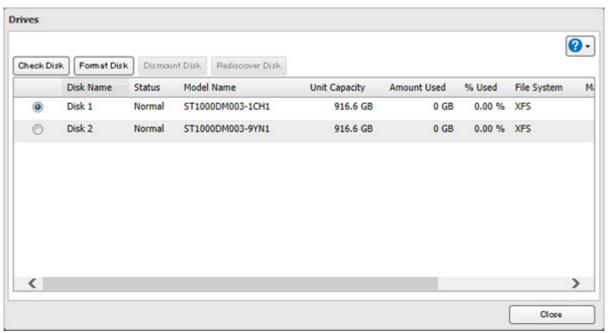
- Under some circumstances, data deleted when a drive is formatted can be recovered. To ensure that data is "gone forever", a format might not be sufficient. Instead, refer to the "Erasing Data on the LinkStation Completely" section below.
- After a drive is formatted, the "% Used" and "Amount Used" in Settings will not be 0. This is because some drive space is used for the system area.
 - **1** From Advanced Settings, click [Drives].



2 Click [Drives] to format an internal drive or [USB Drives] to format an external drive.

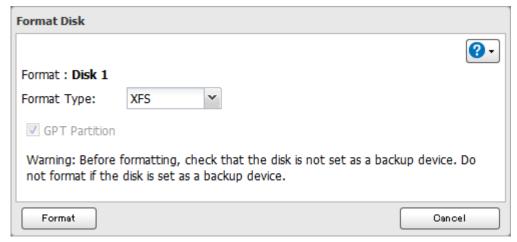


3 Select the drive or array to format, then click [Format Disk].



Note: If you connect an external drive to the LinkStation and the drive status is still shown as "Unformatted", refresh the status by clicking [Rediscover Disk]. If the status doesn't change, disconnect and reconnect the USB drive.

4 Select a format type, then click [Format].



- **5** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- **6** Depending on the size of your drive, the format may take several minutes or several hours to complete. The power LED will flash during the format. Shared folders cannot be accessed during a format. Click [OK] when completed.

Notes:

- Do not turn off the LinkStation or disconnect power to the LinkStation while formatting a drive.
- For drives that are 2.2 TB or larger, make sure that the "GPT Partition" checkbox is selected. If you accidentally format a larger drive without GPT, disconnect and then reconnect it before reformatting with GPT.

Erasing Data on the LinkStation Completely

Under some circumstances, data from formatted drives can be recovered. The drive erasure process in this section does a much more thorough job of erasing data. This procedure is recommended for removing all data from a drive in a way that makes it nearly impossible to recover with current tools. The LinkStation will then be in the following state:

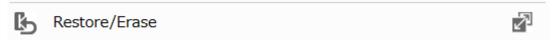
- Both drives in JBOD
- · An empty shared folder on each drive
- · All settings returned to their default values
- · All logs deleted

Follow the procedure below to completely and permanently erase all data from your LinkStation.

1 From Advanced Settings, click [Management].



2 Click to the right of "Restore/Erase".



3 Click [Erase LinkStation].

Erase

This will erase all data and settings and return the LinkStation to its factory defaults. Erased data cannot be restored. Several hours will be required for this process.

Erase LinkStation

- **4** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- **5** All data on the LinkStation will be permanently erased.

Quotas

You can set a quota for each user or group as well as a threshold alert where you will receive an email notification if the space used exceeds the configured threshold. To configure email notifications for the quota, refer to the <u>"Email Notification"</u> section in chapter 8.

Notes:

- When using quotas, disable the recycle bin or empty the trash folder often. The limited space includes the space used for trash.
- Quotas apply per drive or per array. If a quota is set to 1 GB, each array or drive can use a maximum of 1 GB.
- Quotas cannot be set for external drives connected to the LinkStation.
- If both user and group quotas are configured for a user, the most restrictive quota will always apply.

Quotas for Users

Follow this procedure to limit the shared folder space available for a user.

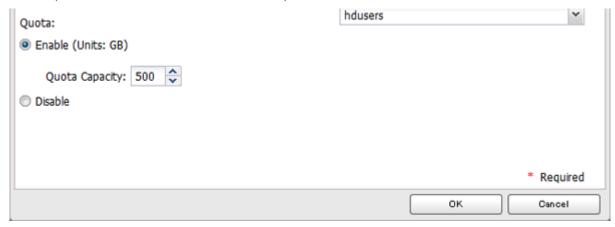
1 From Advanced Settings, click [File Sharing].



2 Click to the right of "Users".



- **3** Select the user that will be given a quota and click [Edit]. If you want to set a quota for a new user, create a user by referring to the <u>"Adding a User"</u> section in chapter 3.
- 4 Enable quotas, choose the maximum amount of space the user will be allowed to use, and click [OK].



Note: If you change the primary group, restart the LinkStation to apply the quota settings.

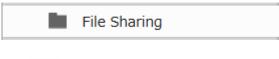
5 Click [Close].



Quotas for Groups

Follow the procedure below to limit the space for shared folders that each group can use.

1 From Advanced Settings, click [File Sharing].



2 Click to the right of "Groups".

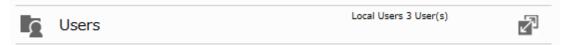


3 Select the group that will be given a quota and click [Edit]. If you want to set a quota for a new group, create a group by referring to the "Adding a Group" section in chapter 3.

4 Enable quotas, choose the maximum amount of space the group will be allowed to use, and click [OK].



- **5** Click [Close].
- **6** Click to the right of "Users".



- **7** Select the user that will inherit the group quota settings and click [Edit]. If you want to add a new user to a group with a quota, create a user by referring to the <u>"Adding a User"</u> section in chapter 3.
- **8** Select the group's checkbox to join and change the user's primary group to the group with the quota, then click [OK].
- **9** Click [Close].
- **10** Click at the top-right of Settings and select [Restart].

Drive Replacement

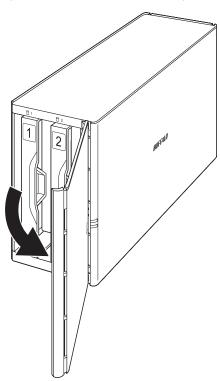
If a drive fails, an error message will be displayed in both NAS Navigator2 and Settings.

Notes:

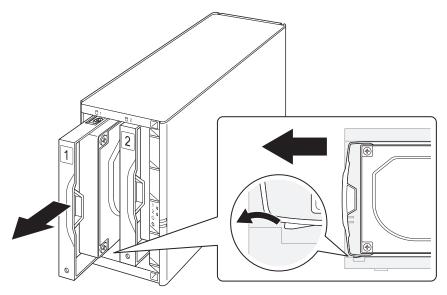
- Do not replace a running drive while the LinkStation is turned on. Power down the LinkStation before changing the drive. While the LinkStation is running, never unplug or remove drives without dismounting them first.
- If using the LS220DR LinkStation model, use a Buffalo OP-HDBN series drive as the replacement drive. For the replacement drive of other LinkStation models, use a Buffalo OP-HDBST series drive. The replacement drive should be the same size or larger as the original drive. If a larger drive is used, the extra space will not be usable in a RAID array.
- If sending a defective drive to Buffalo for replacement, please keep the cartridge as Buffalo will only replace the drive and not the cartridge.
- To avoid damaging the LinkStation with static electricity, ground yourself by touching something made of metal before handling any sensitive electronic parts.
- After a drive is replaced, it will take about 30 minutes before normal file reading and writing operations are restored. Settings may not be accessible during this period.
- Do not change the order of the drives on the LinkStation. For example, pulling out the drive in slot 1 and replacing it with the drive in slot 2 may cause data to be corrupted or lost.
- If a new drive is not recognized after installing it, click [Rediscover Disk] in Settings.

Replacing a Defective Drive

- **1** Turn the LinkStation off and remove all cables.
- **2** Squeeze the left side of the front panel and swing it open.



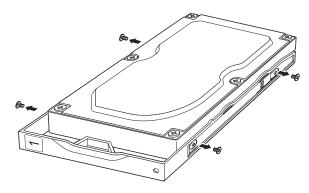
 $\boldsymbol{3}$ Push the failed drive's cartridge up and remove it from the LinkStation.



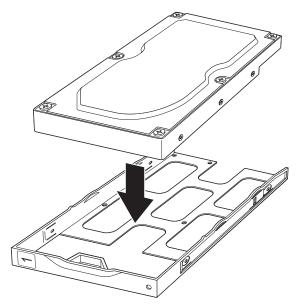
Notes:

- Do not press hard on the top of the LinkStation.
- Pull the drive straight out the front of the chassis.

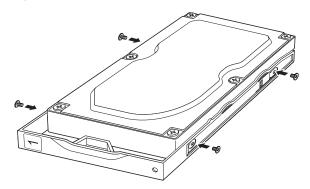
4 Unscrew the four screws and remove the drive from the cartridge.



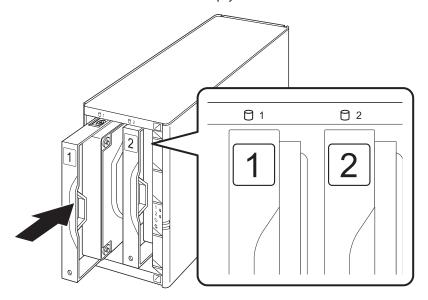
 $\boldsymbol{5}$ Install a new drive (sold separately) into the cartridge.



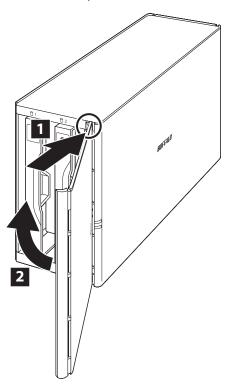
6 Replace the four screws.



7 Insert the new drive back into the empty slot.



8 Close the front panel.



9 Connect all cables, then turn on the LinkStation.

Rebuilding the RAID Array

Depending on the RAID mode you have configured, the procedure after replacing the defective drive may vary. Refer to the section of the configured RAID mode and follow the described procedure.

Follow the procedure below to rebuild the RAID array. To rebuild the RAID array while using a mobile device, refer to the <u>"Rebuilding the RAID Array"</u> section in chapter 9.

Using RAID 1

- From Advanced Settings, navigate to [Drives] > [RAID].
- Click the RAID array that held the failed drive.
- Select the replaced drive and click [Recover RAID Array].
- Enter the confirmation number, then click [OK].

Using RAID 0

- From Advanced Settings, navigate to [Drives] > [RAID].
- Click the RAID array that held the failed drive and click [Delete RAID Array].
- The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- 4 From [Drives] > [Drives], select the replaced drive and click [Format Disk].
- The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- From [Drives] > [RAID], choose "RAID 0" from the RAID mode drop-down list and click [Create RAID Array].
- The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- Click [OK] when completed.

The new RAID 0 array will be created. Next, create a shared folder by referring to the <u>"Adding a Shared Folder"</u> section in chapter 3.

Using JBOD

- ${f 1}$ From Advanced Settings, navigate to [Drives] > [Drives].
- Select the replaced drive and click [Format Disk].
- The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].

The drive will be formatted. Next, create a shared folder by referring to the <u>"Adding a Shared Folder"</u> section in chapter 3.

Chapter 5 Remote Access

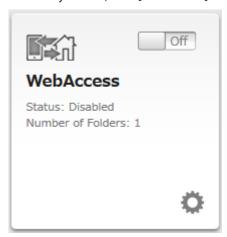
WebAccess

WebAccess is a software utility for accessing the files in the shared folder of your LinkStation from your computer or mobile device through the Internet. Be careful when configuring WebAccess. Certain settings can make the files in the shared folder available to anyone on the Internet, without any access restrictions.

Follow the procedure below to configure WebAccess. To configure WebAccess from a mobile device, refer to the <u>"Configuring WebAccess"</u> section in chapter 9.

Configuring from Easy Admin

1 From Easy Admin, click [WebAccess].



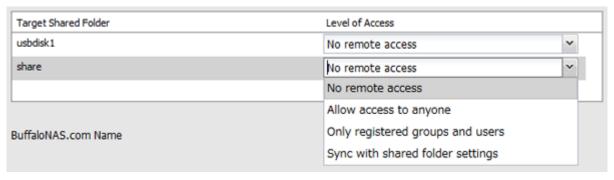
2 Move the WebAccess switch to the position to enable WebAccess.



WebAccess allows you to create a secure personal cloud for easy remote access and file sharing with anyone, anywhere over the Internet while your data remains securely stored in one place on your home network.



3 Select the level of access for each shared folder from the drop-down list.



Chapter 5 Remote Access

4 Enter a BuffaloNAS.com name for your BuffaloNAS account.

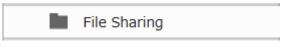


Note: The BuffaloNAS.com name may contain between 3 and 20 alphanumeric characters, underscores (_), and hyphens (-). The BuffaloNAS.com name is case-sensitive.

- **5** Click [Apply].
- **6** Continue with the procedure at http://buffalonas.com/manual/setup/en/.

Configuring from Advanced Settings

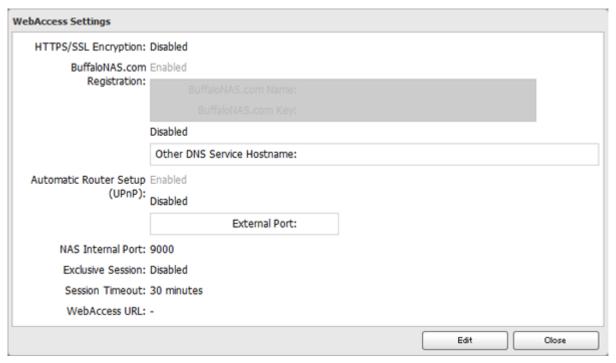
1 From Advanced Settings, click [File Sharing].



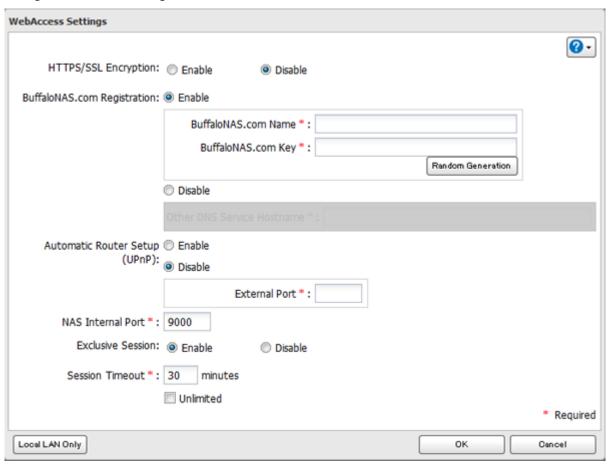
2 Click to the right of "WebAccess".



3 Click [Edit].



4 Configure the desired settings, then click [OK].



- To use SSL encryption for more secure data transfers, enable "HTTPS/SSL Encryption". However, some
 WebAccess applications may not support HTTPS/SSL encryption. Disable it if this is an issue. For more
 details, refer to the WebAccess help guide.
- You may use the BuffaloNAS.com server as a DNS server, or disable it to use a different DNS server.
- Choose a "BuffaloNAS.com Name" and "BuffaloNAS.com Key" for your WebAccess account. Names and keys may contain between 3 and 20 alphanumeric characters, underscores (_), and hyphens (-).
- If "Exclusive Session" is enabled, multiple users cannot be logged in to WebAccess at the same time. Only the last login will be active.
- Enter a time in minutes (1 to 120, or "Unlimited") before inactive users are logged out of WebAccess.



7 Select a shared folder to publish.

Notes:

• For best results, create a new dedicated share for WebAccess.

Chapter 5 Remote Access

- When accessing shared folders through WebAccess from a remote location, a username and password
 may be required for certain operations. For best results, create a user account with permissions on the
 WebAccess share before using WebAccess.
- 8 Click [Edit].
- **9** Under "LAN Protocol Support", select the "WebAccess" checkbox.
- **10** Select the desired WebAccess security level for "WebAccess Public Mode".

Allow Anonymous: Anyone can access (view) shared folders. (Access restrictions configured for shared folders will not work.)

Allow All Groups and Users: All groups and users registered on the Buffalo NAS device can use WebAccess. (Access restrictions configured for shared folders will not work.)

Use Inherited Folder Permissions: Users and groups have the same access permissions with WebAccess that they do locally. If access restrictions are not set for the shared folder, then this option will not be shown.

Whether a user or group can access a folder through WebAccess depends on a combination of WebAccess settings and the shared folder's settings.

			Access restrictions for the logged-in users			
		Not logged in	No access	Read-only	Read and write	
WebAccess Public Mode	Allow Anonymous	R	R/W	R/W	R/W	
	Allow All Groups and Users	-	R/W	R/W	R/W	
	Use Inherited Folder Permissions	-	-	R	R/W	

R/W: Read and write, R: Read-only, -: No access

11 Click [OK].

Accessing Remotely

Once settings are configured, you are now ready for remote access from outside the local network. There are many ways to access WebAccess folders depending on your device:

- From a computer, supported browsers include Microsoft Edge, Firefox, Google Chrome, Internet Explorer 9 or later, Safari 9 or later. Refer to the help guide at the BuffaloNAS.com website after connecting with your BuffaloNAS.com name for more detailed information.
- To access from an iOS device, install the "WebAccess i" application from the App Store. Refer to the help guide for the app for more detailed information.
- To access from an Android device, install the "WebAccess A" application from Google Play. Refer to the help guide for the app for more detailed information.

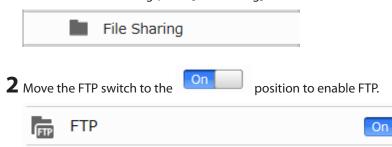
FTP

By default, the LinkStation's shares are only accessible by users connected to the same network or router as the LinkStation. The optional FTP server allows users outside the local network to access the LinkStation.

Note: FTP is intended for users who already have FTP client software and have experience with it.

Chapter 5 Remote Access

1 From Advanced Settings, click [File Sharing].



3 Click to the right of "Folder Setup".



- **4** Choose a folder to enable remote FTP access on.
- **5** Click [Edit].
- **6** Under "LAN Protocol Support", select the "FTP" checkbox; select read-only or read and write for the shared folder's attribute and click [OK].

Accessing the LinkStation with an FTP Client

To access the LinkStation via FTP, configure your FTP client software with the following settings:

- · Hostname: IP address of the LinkStation
- Username: the LinkStation's username
- · Password: the LinkStation's password
- Port: 21

Accessing the LinkStation with an Anonymous User

To allow anonymous access to your FTP share, disable access restrictions. Configure your FTP client software with the following settings for anonymous FTP access:

- Hostname: IP address of the LinkStation
- Username: "Anonymous"
- · Password: any character string
- Port: 21

Notes:

- If the LinkStation joins a domain, domain and anonymous users cannot remote access via FTP.
- Shared folders connected by FTP are available from the "/mnt" folder. The examples of default locations are: /mnt/array1/share /mnt/disk1/share /mnt/usbdisk1
- Don't use FTP to share files and folders with multibyte characters in their names with a Mac. Use an AFP or SMB
- If a file was created or copied using AFP, you may be unable to delete it using an FTP connection. If this occurs, use an SMB or AFP connection instead to delete the file.
- For FTP connections, make sure that the total filename length including the folder path is 250 single-byte characters or less.

Backing Up Data on the LinkStation

You can back up the LinkStation folders to another shared folder on the same LinkStation, a connected USB drive, or a shared folder on another Buffalo NAS device, either on the same network or on another network.

Backup Modes

The following types of backup are available from this LinkStation.

Normal Backup

All files in the source will be backed up to the destination. The backup data will be stored in the folder whose name will be the backup date and time.

· Folders available as backup sources:

- Shared folder on the backup source LinkStation (excluding the "info" folder)
- ° USB drive connected to the backup source LinkStation
- Shared folder on another Buffalo NAS device*

· Folders available as backup destinations:

- Shared folder on the backup source LinkStation (excluding the "info" folder)*
- USB drive connected to the backup source LinkStation*
- Shared folder on another Buffalo NAS device****

*The folder should have the "Backup" checkbox selected for "LAN Protocol Support" on the shared folder settings.

Overwrite (Incremental)

The first backup job runs like a normal backup. As each subsequent backup job runs, only files that have been changed since the last normal backup will be backed up, but any files deleted from the backup source folder will also remain in the backup destination folder. The folder structure in the backup destination folder will be the same as the backup source folder.

· Folders available as backup sources:

- Shared folder on the backup source LinkStation (excluding the "info" folder)
- USB drive connected to the backup source LinkStation
- Shared folder on another Buffalo NAS device*

· Folders available as backup destinations:

- Shared folder on the backup source LinkStation (excluding the "info" folder)*
- USB drive connected to the backup source LinkStation*
- Shared folder on another Buffalo NAS device****

*The folder should have the "Backup" checkbox selected for "LAN Protocol Support" on the shared folder settings.

^{**}You can select up to the second level of folders.

^{**}You can select up to the second level of folders.

Overwrite (Differential)

The first backup job runs like a normal backup. As each subsequent backup job runs, only files that have been changed since the last normal backup will be backed up, and any files deleted from the backup source folder will also be deleted from the backup destination folder. The backup destination folder will always remain the same size as the backup source folder, and the folder structure in the backup destination will be the same as the backup source folder.

- · Folders available as backup sources:
 - Shared folder on the backup source LinkStation (excluding the "info" folder)
 - USB drive connected to the backup source LinkStation
 - Shared folder on another Buffalo NAS device*
- · Folders available as backup destinations:
 - Shared folder on the backup source LinkStation (excluding the "info" folder)*
 - USB drive connected to the backup source LinkStation*
 - Shared folder on another Buffalo NAS device*,**

*The folder should have the "Backup" checkbox selected for "LAN Protocol Support" on the shared folder settings.

Preparing a Backup Destination

Configure a shared folder on a Buffalo NAS device or connected USB drive as a backup destination. The following procedure explains using another shared folder on the LinkStation as a backup destination. The procedure may vary depending on which Buffalo NAS device is selected as a destination.

1 From Advanced Settings, click [File Sharing].
File Sharing
Click to the right of "Folder Setup".



- **3** Choose the folder to be set as a backup destination.
- 4 Click [Edit].
- **5** Under "LAN Protocol Support", select the "Backup" checkbox.
- **6** Enter the desired characters into the remote backup password field and click [OK].



Notes:

• You may leave this field blank if you do not want a backup password, but for security reasons we highly recommend entering one for the shared folder. If a backup password is configured for the shared folder, that folder will not show up as a target for the backup source or destination when configuring a backup job on another Buffalo NAS device unless it's entered. You may create multiple folders using different backup

^{**}You can select up to the second level of folders.

passwords for backup, but only one password can be used on the LinkStation. Folders that are configured with a different password cannot be used.

A backup password is not available when a new shared folder is created by a power user.

A backup destination has been created.

Note: If you want to back up to a Buffalo NAS device on another network, follow the procedure below to add the Buffalo NAS device so it can be used as a backup destination.

- (1) From the Backup Job Settings screen, click [LinkStation and TeraStation List].
- (2) Click [Add]; enter the IP address or hostname/FQDN of the destination Buffalo NAS device, then click [OK].
- (3) Click [Close] when completed.
- (4) Click [Refresh] and make sure the desired Buffalo NAS device has been added to the list.

Configuring a Backup Job

You can configure backup jobs by using another shared folder on the Buffalo NAS device or a USB drive connected to the LinkStation as a destination. You can also back up to a Buffalo NAS device on another network as long as the two networks are connected by a VPN or the route is configured properly.

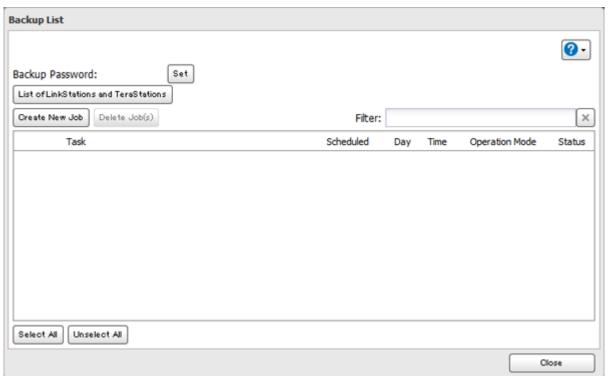
1 From Advanced Settings, click [Backup].



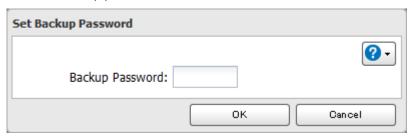
2 Click to the right of "Backup".



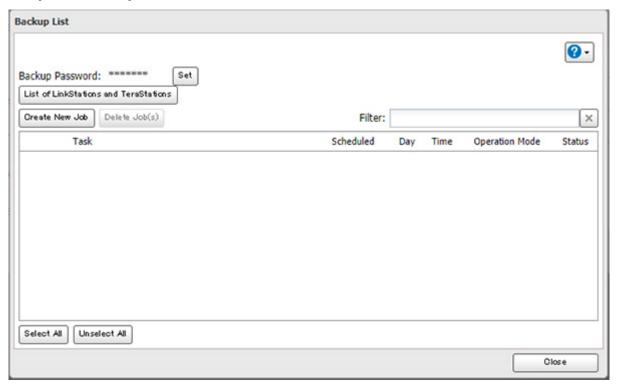
3 If you had configured a backup password for the backup source folder on another Buffalo NAS device or the backup destination folder, click [Set]. If you hadn't, skip to step 5.



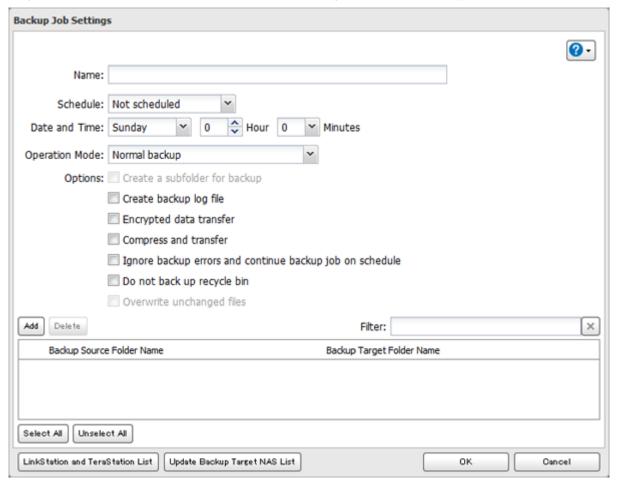
Enter the backup password and click [OK].



Click [Create New Job].

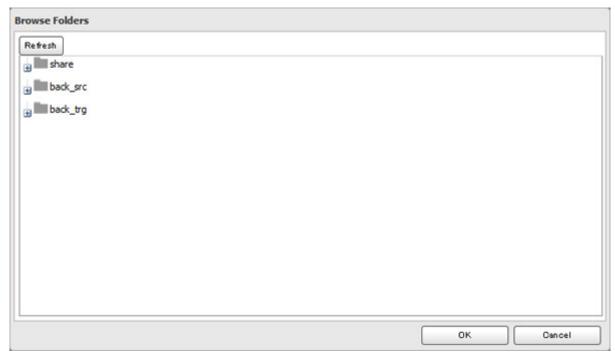


6 Select backup settings such as date and time to run, then select a backup mode for the "Operation Mode" drop-down list. Refer to the differences between the backup modes in the "Backup Modes" section above.

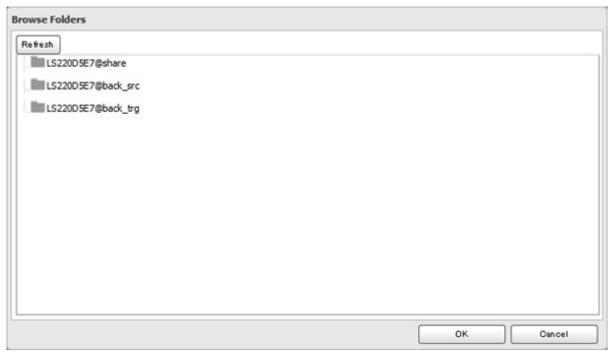


- **7** Click [Add].
- 8 Click [Browse] under "Backup Source Folder Name".

9 Select the shared folder that will be the backup source, then click [OK].



- **10** Click [Browse] under "Backup Target Folder Name".
- ${f 11}$ Select the shared folder that will be the backup destination, then click [OK].



 ${f 12}$ Click [OK]. The backup job will be added to the backup jobs list.

Notes:

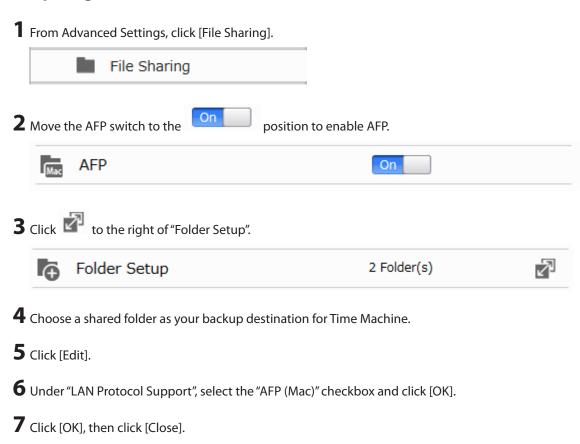
- Up to eight backup jobs can be configured.
- To back up data between Buffalo NAS devices on a network using jumbo frames, make sure that both devices are configured to use identical (or similar) Ethernet frame sizes. If Ethernet frame sizes are significantly different, the backup job may not be properly performed. In such a case, select the default frame size (1500 bytes) for both devices.

• Backup data, such as ".DS_Store" files, from macOS may include characters that cannot be read on FAT32-formatted drives in its filename. For best results, reformat the drive before using it as a backup destination.

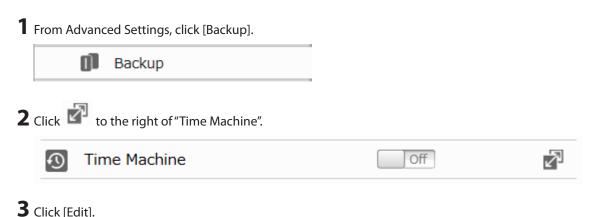
Backing Up Your Mac with Time Machine

Time Machine is a backup program included with macOS. Configure your LinkStation as shown below to use Time Machine.

1. Preparing a Shared Folder for Time Machine



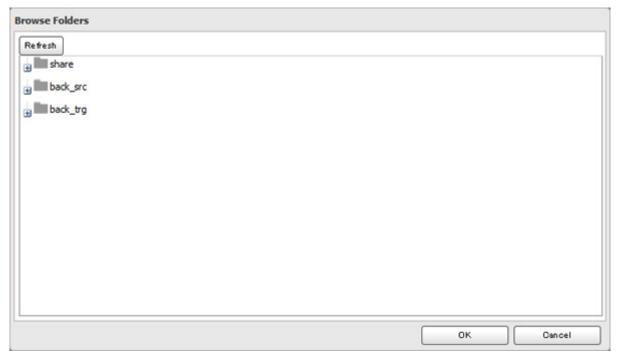
2. Configuring a Shared Folder as a Backup Destination



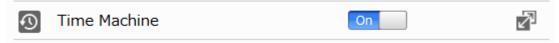
4 Click [Browse].



5 Select the shared folder that you enabled AFP for in the previous steps, then click [OK].



- **6** Click [OK], then click [OK] again.
- **7** Move the Time Machine switch to the position to enable Time Machine.



3. Configuring Time Machine on macOS

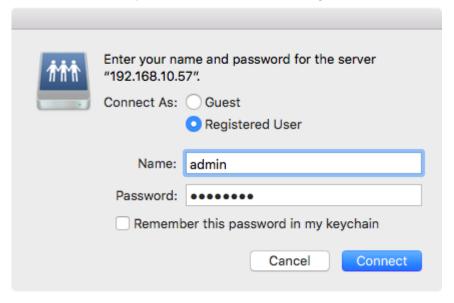
From the Finder menu bar, navigate to [Go] > [Connect to Server].



Enter "afp://" and then the IP address or hostname of your LinkStation, then click [Connect].

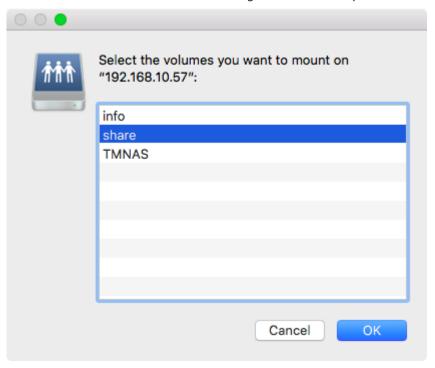


Enter a username and password to be used for accessing the shared folder and click [Connect].



Note: If access restrictions are not configured on the destination share, log in with the administrator account. The default username and password for the administrator account are "admin" and "password". If access restrictions are configured, log in with an account with write privileges.

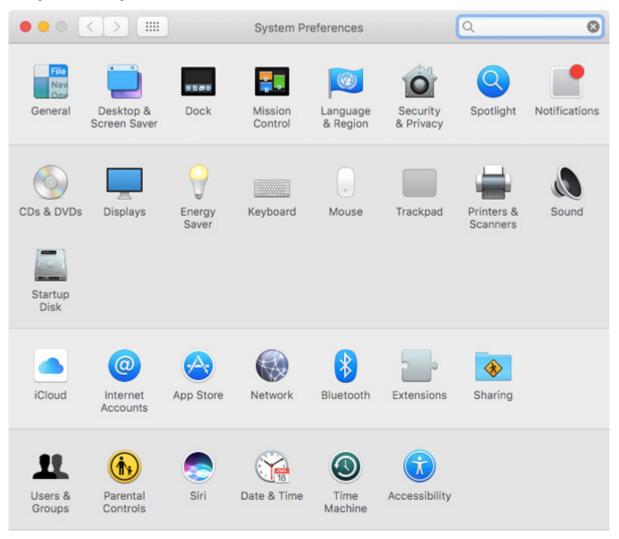
4 Select the shared folder that has been configured as the backup destination and click [OK].



5 From the Apple menu, open [System Preferences].

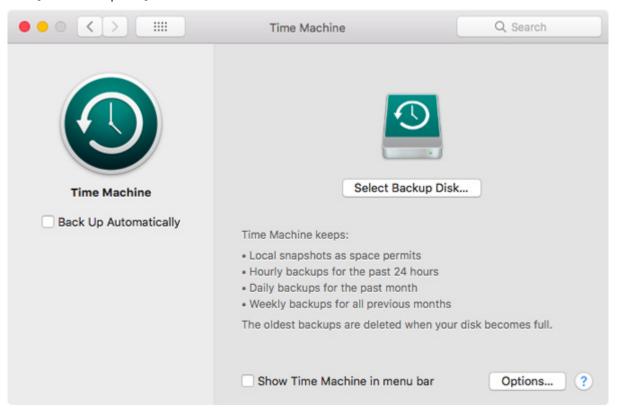
Chapter 6 Backup

Click [Time Machine].

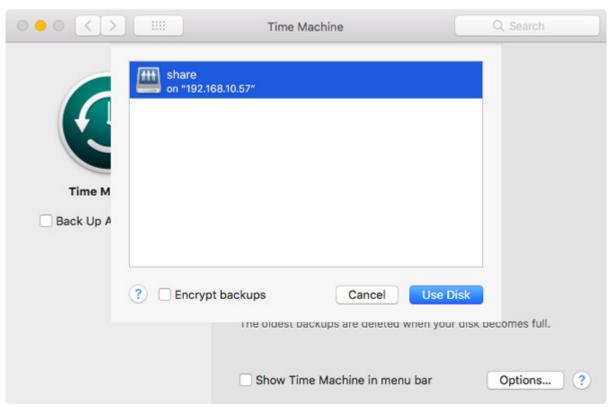


Chapter 6 Backup

Click [Select Backup Disk].

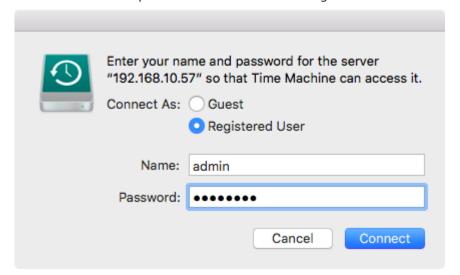


Select the shared folder, then click [Use Disk].



Chapter 6 Backup

9 Enter a username and password to be used for accessing the shared folder and click [Connect].



 ${f 10}$ Time Machine will count down from 120 seconds, then backup will begin.



Copying from a USB Device

Use Direct Copy to copy data from a USB device directly to the LinkStation.

Follow the procedure below to configure Direct Copy. To configure Direct Copy from a mobile device, refer to the <u>"Enabling Direct Copy"</u> section in chapter 9.

Supported Devices:

- · USB mass storage devices
- Card readers (except for card readers that can recognize two or more memory cards)
- · Digital cameras and other PTP devices

Enabling Direct Copy

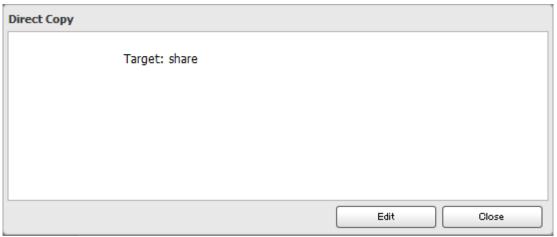
1 From Advanced Settings, click [Backup].



2 Move the Direct Copy switch to the position to enable Direct Copy.



To change the Direct Copy target folder, navigate to [Backup] > [Direct Copy] > [Edit], select a new folder, and click [OK].



Starting Direct Copy

1 Connect the USB device. When it mounts (about 10 seconds), the function LED will light up.

Notes:

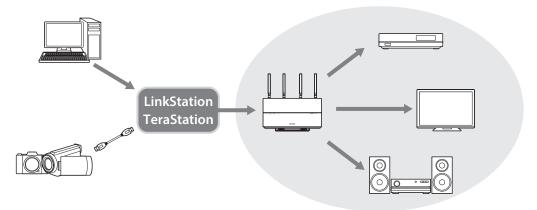
- Devices that don't trigger the function LED to light up are not supported.
- When you connect PTP devices, the function LED may not light up. In such case, disconnect the PTP device from the LinkStation once, then reconnect it.
- 2 You now have 60 seconds to press the function button once. If you do, the function LED will flash as all the files on the USB device are copied to the Direct Copy folder of the LinkStation.

Notes:

- While the function LED is flashing, press the function button once to cancel Direct Copy.
- For digital cameras that are not in the USB mass storage class, all files from the digital camera are copied.
- When the copy operation is completed, the access LED of the USB device will stop flashing. Dismount the USB device from the LinkStation by referring to the "Dismounting Drives" section in chapter 4.

DLNA

DLNA is a set of guidelines for sharing digital media. The LinkStation includes a DLNA server compliant with the DLNA guidelines. Movies, photos, and music saved on the LinkStation can be played back on DLNA-compatible TVs, stereo equipment, game consoles, and other devices on the local network.



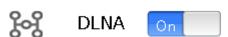
DLNA can be configured from a mobile device. Refer to the <u>"Configuring the DLNA Server"</u> section in chapter 9. Follow the procedure below to configure it from a computer.

Configuring from Easy Admin

1 From Easy Admin, click [DLNA].



2 Move the DLNA switch to the position to enable DLNA.



3 Move the switch for the folder you'll use for DLNA media to the position as well.



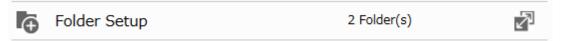
4 Click [Apply].

Configuring from Advanced Settings

1 From Advanced Settings, click [File Sharing].



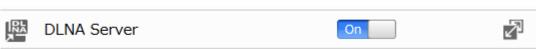
2 Click to the right of "Folder Setup".



- **3** Select the folder that you want to share with media players and other DLNA-compatible devices.
- 4 Click [Edit].
- **5** Under "LAN Protocol Support", select the "DLNA" checkbox and click [OK].
- **6** Click [Close].
- **7** Click [Services].

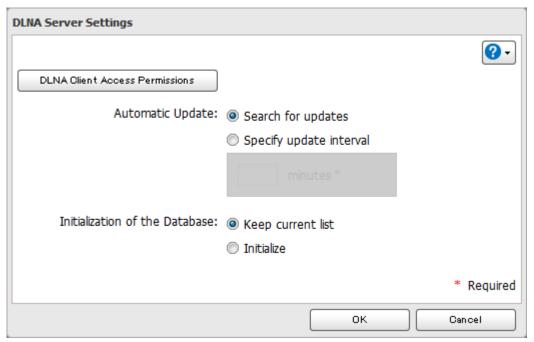


8 Move the DLNA switch to the position to enable DLNA.



- **9** Click to the right of "DLNA Server".
- 10 Click [Edit].

11 Select an interval for DLNA server database updates and click [OK].



Playing Files

To play back content from a DLNA-compatible device:

- 1 Connect the DLNA-compatible device to the same network as the LinkStation and turn it on.
- **2** Select the LinkStation in the software of the DLNA-compatible device.
- **3** Select the content to be played back.

Note: For more information on playing files, refer to the DLNA-compatible devices' manuals.

Connected DLNA-Compatible Devices

Follow the procedure below to view the DLNA-compatible devices connected to your LinkStation.

1 From Advanced Settings, click [Services].

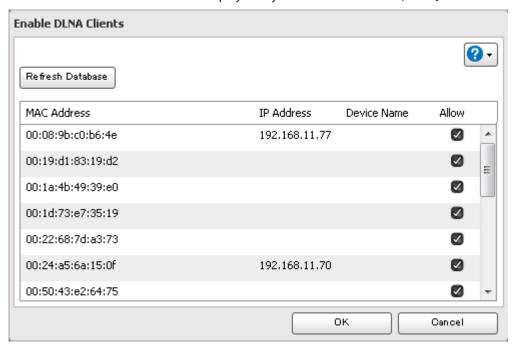


2 Click to the right of "DLNA Server".



3 Click [DLNA Client Access Permissions].

4 A list of the MAC addresses, IP addresses, and device names of the DLNA-compatible devices connected to the same network as the LinkStation is displayed. If your device is not listed, click [Refresh Database].



Streaming to DLNA-compatible Devices

When new movies, photos, and music files are added to the LinkStation's DLNA folder, the database must be updated before the new files can be streamed. By default, the database is updated when the files are stored on the LinkStation. You can change this interval or update the database manually.

1 From Advanced Settings, click [Services].

Services

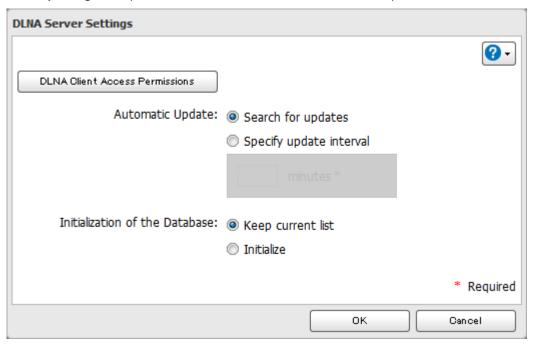
2 Click to the right of "DLNA Server".

DLNA Server

On

3 Click [Edit].

4 You may change the update interval, or select [Refresh Database] to update the database immediately.



Disabling Playback from Specific Devices

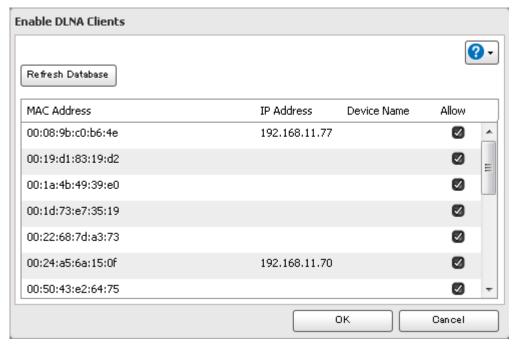
You may block specific DLNA devices from playing back media content.

1 From Advanced Settings, click [Services].



3 Click [DLNA Client Access Permissions].

4 Clear the checkboxes under "Allow" for any devices you do not want to allow to play media and click [OK].



Supported File Types

The LinkStation supports DLNA streaming of files with the extensions below.

Types	File Extensions
Video files	.3gp, .asf, .avi, .divx, .dvr-ms, .m1v, .m2p, .m2t, .m2ts, .m4v, .mov, .mp4, .mpe, .mpeg, .mpeg2, .mpg, .mts, .spts, .tp, .ts, .tts, .vdr, .vob, .wmv, .xvid
Picture files	.bmp, .gif, .jpeg, .jpg, .png, .tif, .tiff, .yuv
Music files	.3gp, .aac, .ac3, .aif, .aiff, .apl, .dff, .dsf, .flac, .lpcm, .m3u, .m4a, .mp1, .mp2, .mp3, .mp4,
	.mpa, .ogg, .pcm, .wav, .wma

iTunes Server

If iTunes server is enabled, computers on your network with iTunes can play music files stored on the LinkStation and transfer them to your iOS devices. iTunes server supports playback from up to five computers.

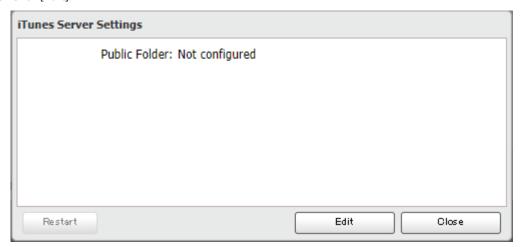
1 From Advanced Settings, click [Services].



2 Click to the right of "iTunes Server".



3 Click [Edit].



4 Click [Browse].



5 Select the shared folder that you want to make available to iTunes, then click [OK].



6 Click [OK].

7 Move the iTunes server switch to the position to enable iTunes server.

Point position to enable iTunes server.

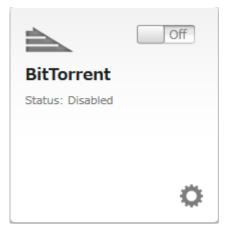
BitTorrent

BitTorrent is a protocol for distributing large amounts of data efficiently. The information in this section is only for users who are familiar with BitTorrent.

Configuring BitTorrent

Easy Admin

1 From Easy Admin, click [BitTorrent].



2 Move the BitTorrent switch to the position to enable BitTorrent.



3 Select the shared folder to save files downloaded via BitTorrent from the drop-down list, then click [Apply].

Advanced Settings

1 From Advanced Settings, click [Applications].

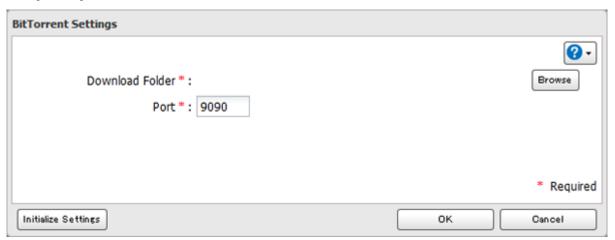


2 Click to the right of "BitTorrent".

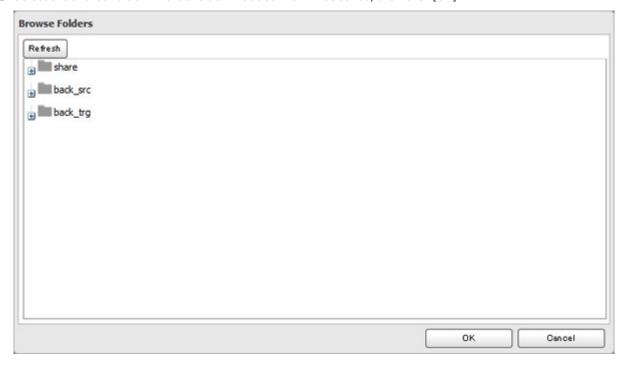


3 Click [Edit].

4 Click [Browse].



5 Select the shared folder where the downloaded file will be saved, then click [OK].



6 Enter the port number, then click [OK].

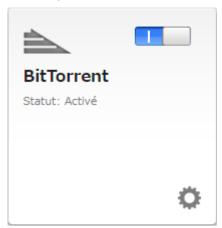


Opening the Download Manager

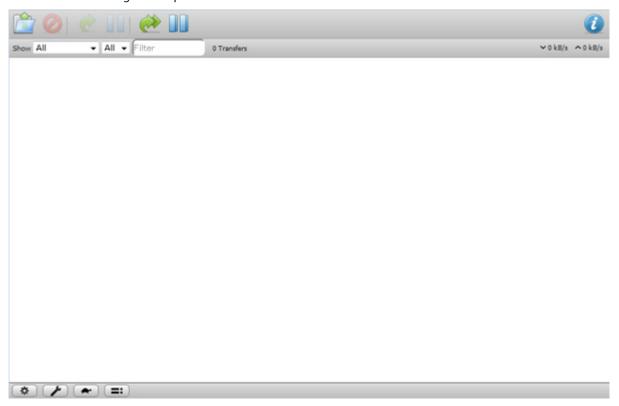
Note: The default username is "admin" and the default password is blank (no password).

Easy Admin

1 From Easy Admin, click [BitTorrent].



 ${f 2}$ The download manager will open.

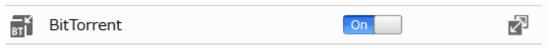


Advanced Settings

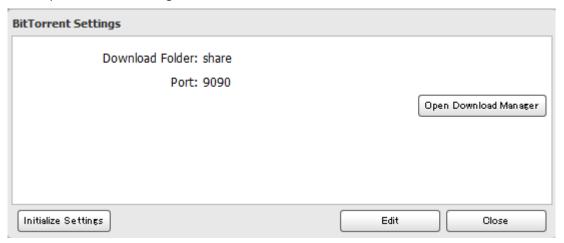
1 From Advanced Settings, click [Applications].



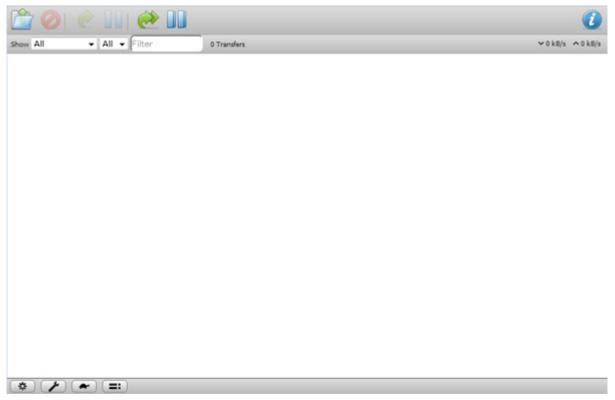
2 Click to the right of "BitTorrent".



3 Click [Open Download Manager].



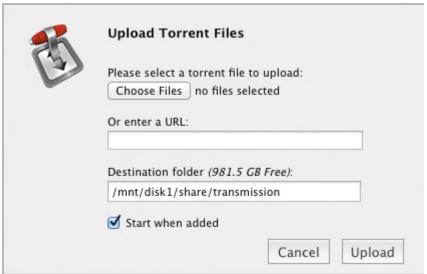
4 The download manager will open.



Downloading Files

- 1 Open the download manager.
- **2** Click the icon.
- **3** Select a file to upload or enter the URL into the "Or enter a URL:" field, specify the location to save the downloaded file, then click [Upload].

Select "Start when added" to start downloading immediately after clicking [Upload].



4 The download will start.

To cancel downloading, click , then [Remove]. Click to pause the download. Click or to resume.

Connecting a Printer

You can connect a printer to the USB port on the LinkStation.

Follow the procedure below to configure a print server. To configure a print server from a mobile device, refer to the <u>"Enabling a Print Server"</u> section in chapter 9.

Notes:

- Only one USB printer can be connected to the LinkStation.
- Bidirectional communication is not supported i.e., remaining ink quantities and other printer status information is not displayed.
- Don't disable the SMB protocol while the print server is enabled. If you do, you will need to enable SMB again and reconfigure the print server from scratch.
 - 1 Connect a printer to the LinkStation's USB port, then turn the printer on.
 - **2** From Advanced Settings, click [Services].



- **4** Refer to the manual supplied with the printer and install the printer drivers.
- **5** Launch NAS Navigator2. Double-click your LinkStation's icon.
- **6** Double-click the icon of the connected printer (the shared name is displayed).

- Click [OK].
- Select your printer, then click [OK].
- Register the printer.

Chapter 8 Advanced Features

Email Notification

Your LinkStation can send you email reports daily, or when settings are changed or an error occurs. You can configure the events that will trigger notifications from any of the following functions: quotas, drive (internal, external, or RAID array), fan (models with 2+ drives only), backup, scheduled status report.

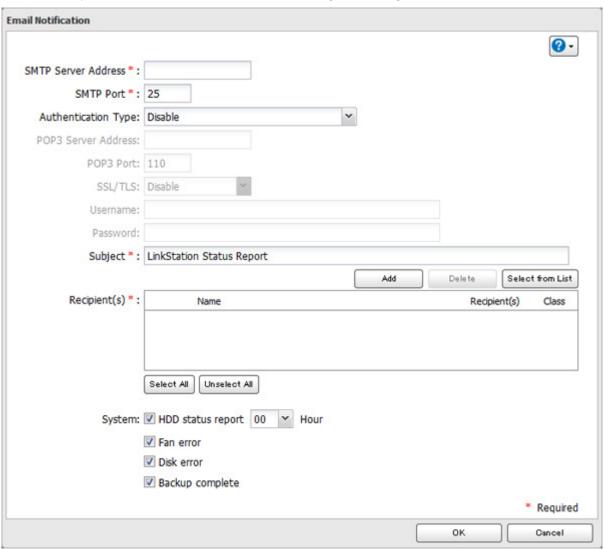
1 From Advanced Settings, click [Management].



- 3 Click to the right of "Email Notification".
- 4 Click [Edit].

Chapter 8 Advanced Features

5 Enter your email server settings, notification email's default subject, then configure recipients and the time when email reports will be sent. Click [OK] to save the configured settings and have a test email sent.



Sleep Mode

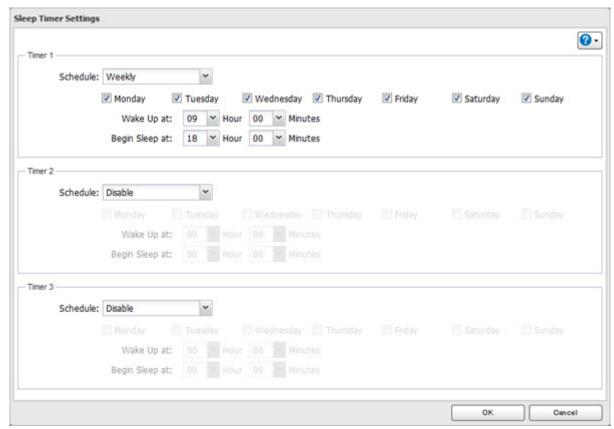
To save energy, you can specify times to put the LinkStation into sleep (standby) mode, during which the drives and LEDs are turned off.

1 From Advanced Settings, click [Management].



3 Click [Edit].

4 Specify the timer interval, wake-up time, and time to enter sleep mode, then click [OK].



Notes:

- Up to three timers can be set.
- The time to enter sleep mode can be set from 12:00 a.m. to 3:45 a.m. of the next day. The time to wake from sleep mode can be set from 12:00 a.m. to 11:45 p.m. If the time to enter sleep mode is after 12:00 a.m., the wake-up time setting may be from 4:00 a.m. to 11:45 p.m.
- The time to enter sleep mode should not be set to the same time as or earlier than the start time.
- If a timer is scheduled during checking or formatting a drive, running a backup process, or setting a backup job within five minutes of the current time, the LinkStation will not change to standby mode when the configured time is reached.
- If scheduled times in the timer overlap, the operation is performed using the widest time interval.
- Examples of timer settings are shown below:

• Example 1:

If running at a current time of 10:00 a.m. Wednesday

Timer 1: Daily 12:00-24:00

Timer 2: Not used

Timer 3: Not used

No operation is performed at 12:00 p.m. and the unit enters sleep mode at 12:00 a.m.

• Example 2:

If running at a current time of 10:00 a.m. Wednesday

Timer 1: Daily 9:00-18:00

Timer 2: Wednesday 10:00-20:00

Timer 3: Not used

On days other than Wednesday, normal operation begins at 9:00 a.m. and the unit enters sleep mode at 6:00 p.m. On Wednesday, the unit enters sleep mode at 8:00 p.m.

• Example 3:

If running at a current time of 10:00 a.m. Wednesday

Timer 1: Daily 9:00-18:00

Timer 2: Wednesday 10:00-1:00 a.m. of the next day

Timer 3: Not used

On days other than Wednesday, normal operation begins at 9:00 a.m. and the unit enters sleep mode at 6:00 p.m. On Wednesday, normal operation begins at 10:00 a.m. and the unit enters sleep mode at 1:00 a.m. of the next day.

• Example 4:

If running at a current time of 10:00 a.m. Wednesday

Timer 1: Daily 9:00-18:00

Timer 2: Wednesday 7:30-22:00

Timer 3: Not used

On days other than Wednesday, normal operation begins at 9:00 a.m. and the unit enters sleep mode at 6:00 p.m. On Wednesday, normal operation begins at 7:30 a.m. and the unit enters sleep mode at 10:00 p.m.

• To wake the LinkStation from sleep mode manually, press the function button.

Encrypting Data Transmission

Encrypting Settings Data

All communication with Settings can use SSL encryption if you access the Settings page by changing "http://" to "https://" in the browser address bar or click [Secure Connection] from the login window. Once you are logged in using the HTTPS connection and wish to disable SSL encryption, click [Normal Connection] from the login window.

Encrypting FTP Transfer Data

You can encrypt passwords and files using SSL/TLS for secure FTP communication. First, open a shared folder's settings and click [Edit]; under "LAN Protocol Support", select the "FTP" checkbox and click [OK]. Afterwords, enable SSL security in the setup screen for your FTP client. The procedure depends on the FTP client software.

SSL Keys

SSL keys are used during setup screen operations and FTP communication. SSL (Secure Socket Layer) is a type of encryption system called public key encryption. Generally, SSL is managed by the two files below.

server.crt (SSL Certificates)

The LinkStation sends the file to a computer, and the computer uses it to perform encryption. The LinkStation receives the encrypted data and uses server.key (the private key) to decrypt the data.

In SSL, this key contains the server certificate, and depending on your computer environment, a check may be performed to determine the trustworthiness of the certificate. The server certificate included in the LinkStation's default settings was created by Buffalo, and in some cases, the security certificate warning message may appear in your browser or another security software. Disregard this message and continue.

server.key (SSL Private Key)

This file is used as a pair with server.crt (server certificate). This is required for decrypting the data that was encrypted by the server certificate, and this is normally not revealed.

Note: The passphrase for the private key must be removed before importing to the LinkStation.

Updating SSL Key Files

To update a server certificate and a private key for SSL, follow this procedure.

- **1** From Advanced Settings, click [Management].
- 2 Click [SSL].
- **3** Register "server.key" for "Secret Key" and "server.crt" for "Server Certificate (.crt)", then click [Import].



Restoring Factory Defaults

To initialize the LinkStation to its factory default settings, follow the appropriate procedure below.

Initializing from Settings

1 From Advanced Settings, click [Management].



2 Click to the right of "Restore/Erase".



3 Click [Initialize LinkStation].



- **4** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].
- **5** The LinkStation will restore its factory default settings.

Initializing Using the Function Button

You can also initialize the settings with the function button.

- 1 Turn off the LinkStation.
- 2 Turn the LinkStation on while holding down the function button. The function LED will flash white.
- **3** Press the function button again while the LED is flashing.
- 4 Initialization will take 5 to 10 minutes. Do not power down the LinkStation while it is initializing and showing the I23 message in NAS Navigator2 and with the power LED. When initialization is finished, the LinkStation will automatically reboot.

Notes:

- The following settings will be initialized: admin username and password, IP address, and Ethernet frame size.
- To disable the function button reset, navigate to [Management] > [Restore/Erase] > [Edit] and change "Restore factory default settings" to "Keep current settings". Be careful with this option! If this is selected and you lose your admin password, you will not be able to reset it.

Updating the Firmware

If a new firmware version is available, a message is displayed when the LinkStation boots. You can update the firmware as below:

Notes:

- Settings will not be available while the firmware is updating. Don't try to access Settings from another device until the update is completed.
- You can disable update notifications in [Management] > [Update].
- To clear an update notification, press the function button.
 - **1** From Advanced Settings, click [Management].



2 Click to the right of "Update".



- **3** Click [OK].
- 4 Click [Install Update].
- **5** The "Confirm Operation" screen will open. Enter the confirmation number, then click [OK].

Name, Date, Time, and Language

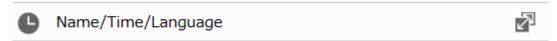
Configure the LinkStation's hostname, date, time, and language as shown below.

Chapter 8 Advanced Features

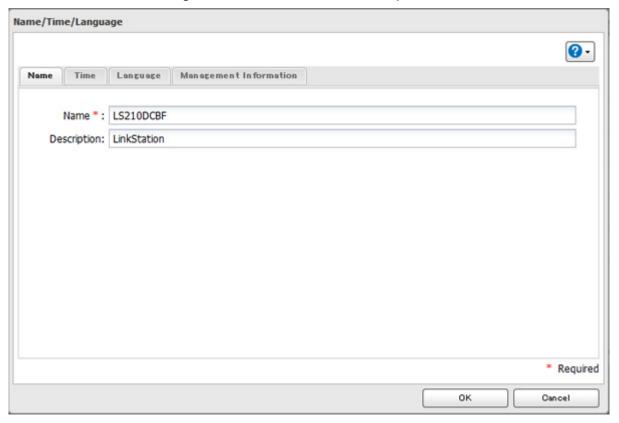
From Advanced Settings, click [Management].



2 Click to the right of "Name/Time/Language".

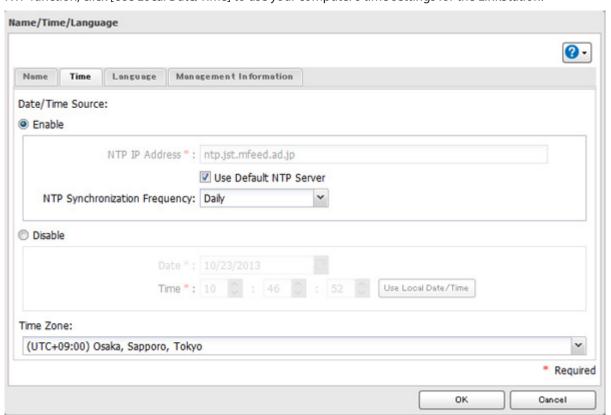


- Click [Edit].
- Click the [Name] tab, then configure the LinkStation's name and description.



Chapter 8 Advanced Features

5 Click the [Time] tab. Enable the NTP server and select the "Use Default NTP Server" checkbox. If you disable the NTP function, click [Use Local Date/Time] to use your computer's time settings for the LinkStation.

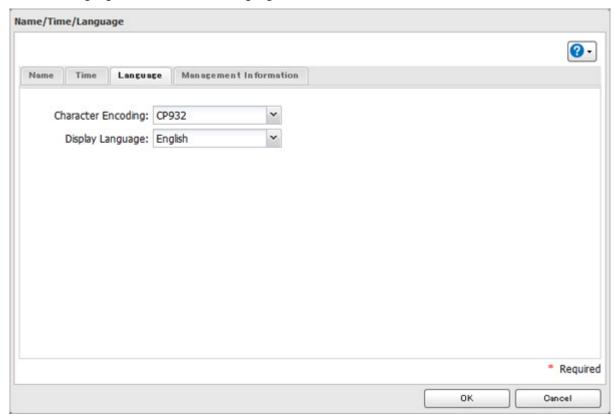


By default, the LinkStation adjusts its clock automatically by using a default NTP server. This NTP server belongs to Internet Multi Feed Inc. For more information, visit http://www.jst.mfeed.ad.jp.

To use a different NTP server, clear the "Use Default NTP Server" checkbox and enter a new NTP IP address or its hostname, then click [OK]. If an NTP server is specified by name instead of IP address, make sure that a DNS server is configured for the LinkStation.

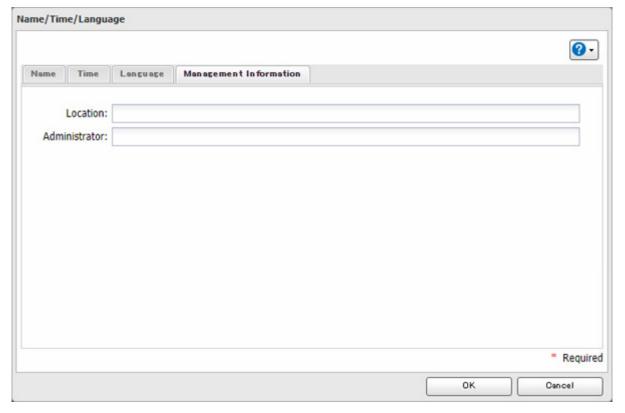
Note: The internal clocks of the LinkStation and other devices on your network may run at slightly different speeds. Over a long period of time, your network devices may show somewhat different times, which can cause network problems. If clocks on your network vary by more than five minutes it may cause unexpected behavior. For best results, keep all clocks on the network set to the same time by adjusting them regularly, or use an NTP server to correct them all automatically.

6 Click the [Language] tab and select the language to be used.



Note: This tab changes the language used by the LinkStation for email notifications, DLNA, and other functions. To change the language displayed in Settings, go to Settings and click [Language] from the menu bar. Choose your desired language from the drop-down list.

 $m{7}$ Click the [Management Information] tab. Enter the desired location and administrator information.



8 When all settings are completed, click [OK].

Jumbo Frames

If your other network devices support jumbo frames, you may be able to improve network performance.

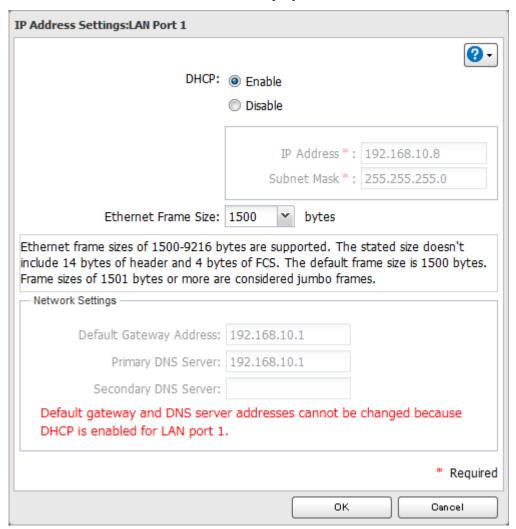
From Advanced Settings, click [Network].

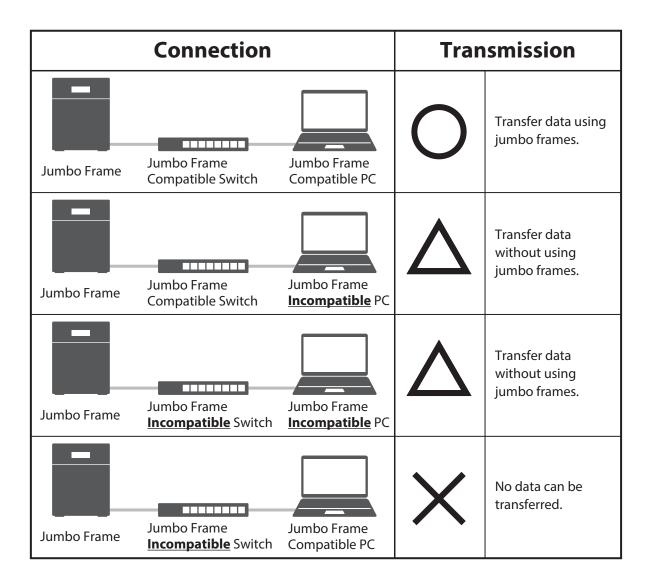


Click to the right of "IP Address".



- Click the LAN port where the jumbo frames will be used.
- Select the desired Ethernet frame size and click [OK].





Note: Make sure the LinkStation's Ethernet frame size is smaller than the hub or router's. Larger frame sizes may not transfer the data to the LinkStation correctly.

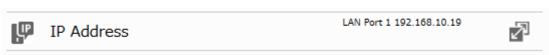
Changing the IP Address

Normally, the LinkStation's IP address is set automatically by a DHCP server on your network. If you prefer, you can set it manually. An easy way to do this is to change it on NAS Navigator2. The procedure to change the IP address in Settings is below.

1 From Advanced Settings, click [Network].



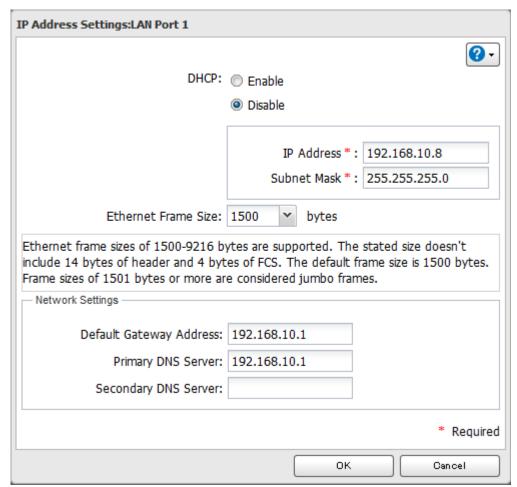
2 Click to the right of "IP Address".



3 Click the LAN port where the IP address will be changed.

Chapter 8 Advanced Features

4 Disable "DHCP" and enter the desired IP address and subnet mask.



- **5** Under "Network Settings", enter the default gateway and DNS server addresses. If no changes are necessaries, keep them as is.
- **6** Click [OK].

Note: The following IP addresses are reserved and should not be used. If you configure one of them by accident, initialize settings by referring to the "Initializing Using the Function Button" section above.

Local loopback address: 127.0.0.1, 255.255.255.0

Network address: 0.0.0.0, 255.255.255.0

Broadcast address: 255.255.255.255, 255.255.255.0 The IP address range from 224.0.0.0 to 255.255.255.255

Chapter 9 Configuring from Mobile Devices

Settings Available from Your Mobile Device

You can change the following settings from your mobile device:

- Create or delete users, and change the user passwords.
- Create or delete shared folders, and configure access restrictions.
- Configure WebAccess settings to remotely access your LinkStation.
- Configure and dismount a USB device connected to your LinkStation, including Direct Copy options and print server settings.
- Recover the RAID array if a drive fails (models with 2+ drives only).
- Configure your LinkStation to use with DLNA-compatible devices on the LAN.
- · Update the firmware.

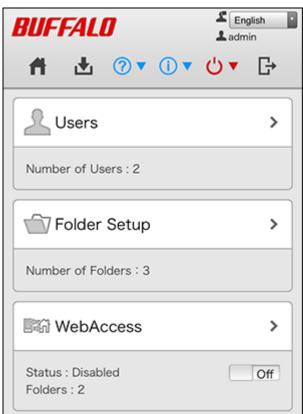
For the procedure of opening Settings from your mobile device, refer to the <u>"Opening Settings from a Mobile Device"</u> section in chapter 2.

Configuring Users

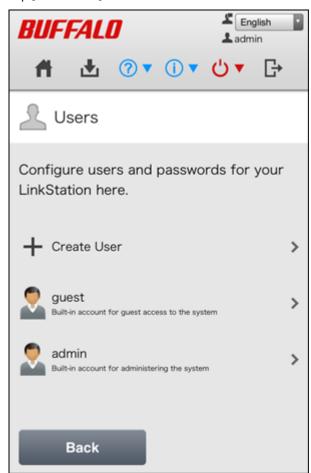
You can create or delete users, or change the user password using the following procedure.

Adding a User

1 From Settings, tap [Users].



Tap [Create User].



3 Enter the desired username and password (twice), then tap [Apply].



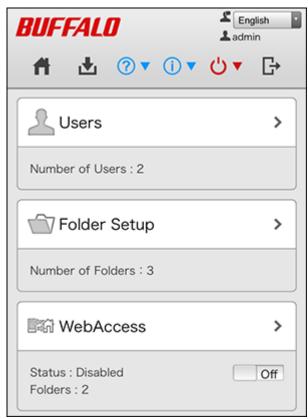
4 Tap [OK] when completed.

Notes:

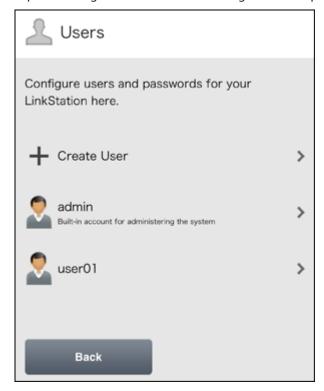
- Usernames may contain up to 128 alphanumeric characters, hyphens (-), underscores (_), periods (.), and the symbols $! # + $ ^ \%$. The first character should not be a symbol.
- Passwords may contain up to 20 alphanumeric characters, hyphens (-), underscores (_), commas (,), periods (.), semicolons (;), vertical bars (|), tildes (~), single quotes ('), backquotes ('), and the symbols ! " # \$ % &) (* + / : < = > ? @ \] [^ } {. The first character should not be a symbol unless it is an underscore.

Changing the Password

1 From Settings, tap [Users].



2 Tap an existing user from the list to change the user's password.



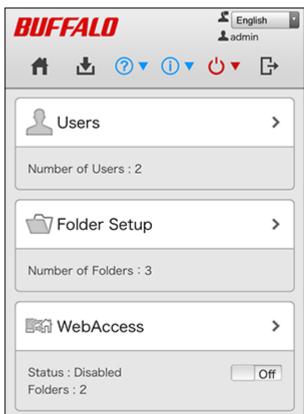
Enter the new password (twice) and click [Apply].



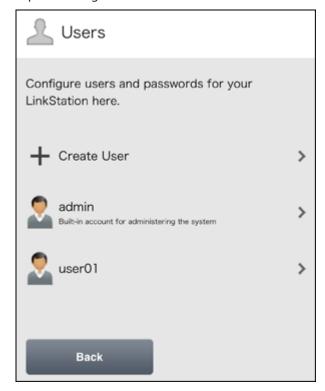
Tap [OK] when completed.

Deleting a User

1 From Settings, tap [Users].



2 Tap an existing user from the list to be deleted.



Tap [Delete This User].

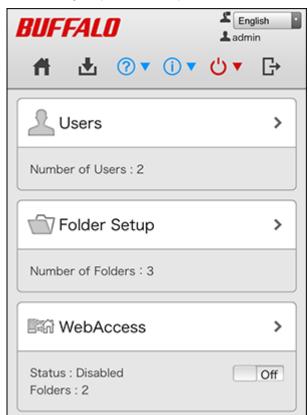


- Tap [Yes].
- $\begin{tabular}{ll} 5 \text{ The "Confirm Operation" screen will open. Enter the confirmation number, then tap [OK].} \end{tabular}$
- Tap [OK] when completed.

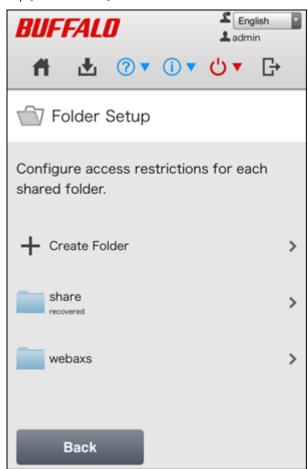
Configuring Shared Folders

Adding a Shared Folder

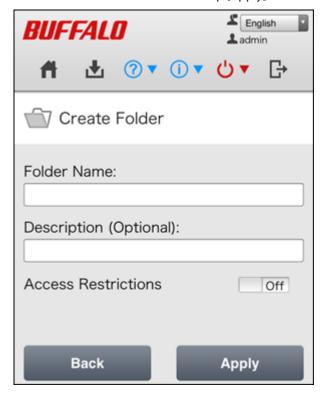
1 From Settings, tap [Folder Setup].



2 Tap [Create Folder].



 $oldsymbol{3}$ Enter the desired folder name and tap [Apply].



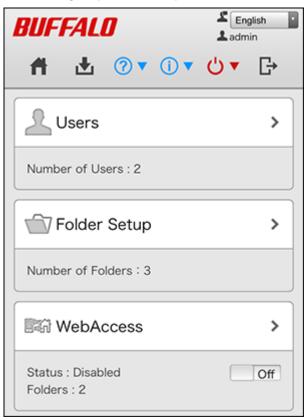
4 Tap [OK] when completed.

Notes:

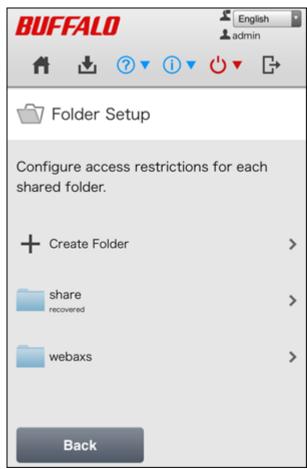
- Names may contain up to 27 alphanumeric characters and symbols. Descriptions may contain up to 75 alphanumeric characters.
- If you create a shared folder from a mobile device, SMB and AFP connections can be used to access this folder by default.

Configuring Access Restrictions

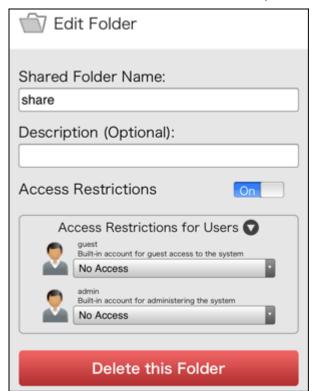
1 From Settings, tap [Folder Setup].



Tap the shared folder that you want to set access restrictions for.



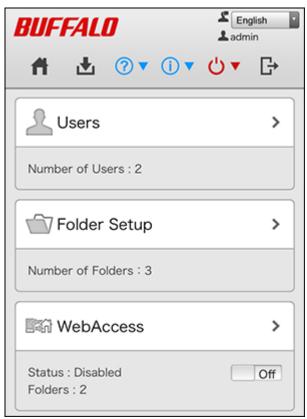
Move the Access Restrictions switch to the **on** position to enable access restrictions.



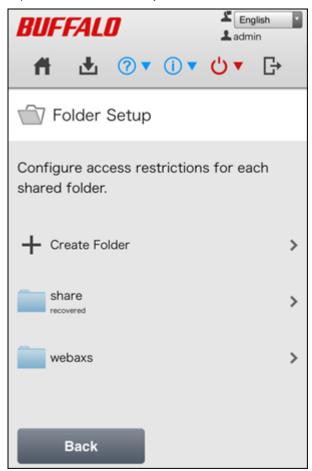
Select the level of access for the users, then tap [Apply].

Deleting a Shared Folder

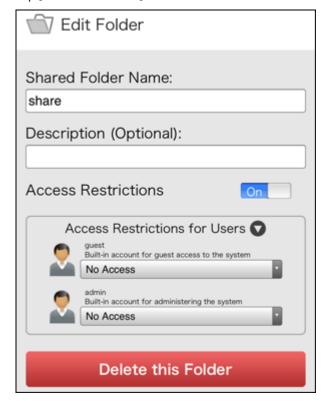
1 From Settings, tap [Folder Setup].



Tap the shared folder that you want to delete.



Tap [Delete this Folder].



Tap [Yes].

Chapter 9 Configuring from Mobile Devices

- ${f 5}$ The "Confirm Operation" screen will open. Enter the confirmation number, then tap [OK].
- **6** Tap [OK] when completed.

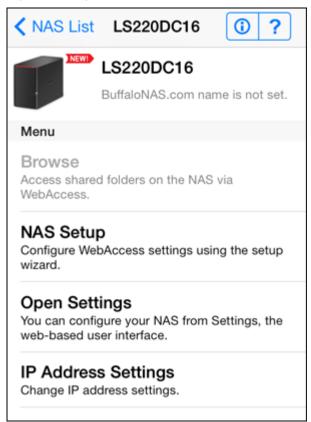
Configuring WebAccess

Note: On your mobile device, download and install the "SmartPhone Navigator" and "WebAccess" apps from App Store (iOS devices) or Google Play (Android devices).

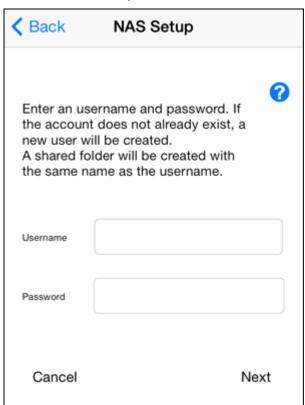
1 Tap the "SmartPhone Navigator" icon on your mobile device.



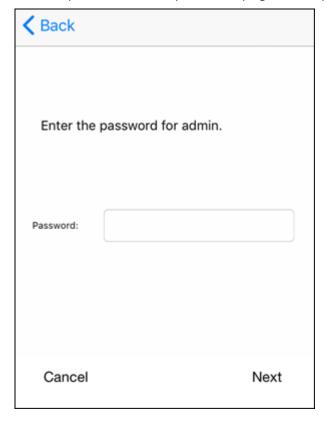
- **2** Select the LinkStation to configure WebAccess.
- **3** Tap [NAS Setup].



Enter a username and password. This will create a new user. Tap [Next].



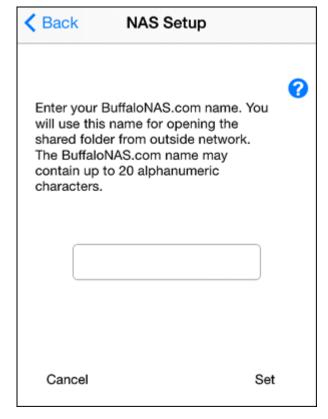
Enter the password from the previous step again and tap [Next].



If UPnP is not enabled on your network, you will only be able to access your LinkStation from the local network. To use WebAccess from outside your home, either enable UPnP on the router or open port 9000 for WebAccess in your router's settings.

Setup Complete Configuration finished. You can now access your NAS using WebAccess. Note: You can not access from an outside network. Tap "Open WebAccess" to start the WebAccess app. Finish Open WebAccess

6 Enter the BuffaloNAS.com name and tap [Set].



7 Tap [Open WebAccess].

Setup Complete

Configuration finished. You can now access your NAS using WebAccess.

BuffaloNAS.com name testwebaxs000

Tap "Open WebAccess" to start the WebAccess app.

Finish

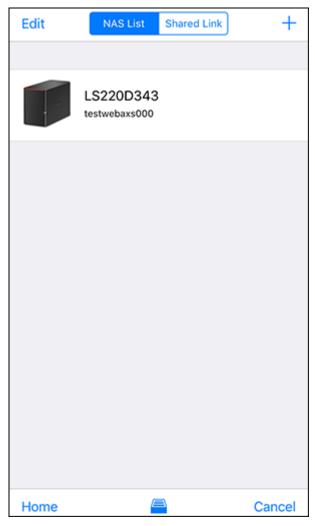
Open WebAccess

- **8** WebAccess will launch.
- **9** Tap [OK] if the following message is displayed.

This Buffalo NAS device has already been added.

OK

 ${\bf 10} \ {\sf Tap\ your\ LinkStation's\ hostname\ to\ open\ the\ shared\ folder}.$

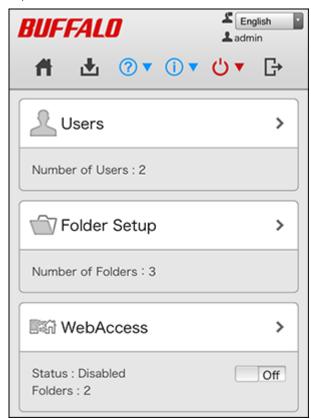


If Unable to Create a BuffaloNAS.com Name

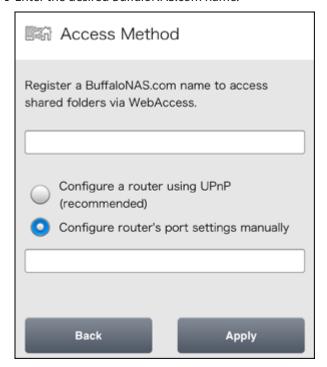
If UPnP is disabled on your router, creating the BuffaloNAS.com name from SmartPhone Navigator may fail. If this occurs, try the following procedure.

- **1** Tap the "SmartPhone Navigator" icon on your mobile device.
- **2** Tap [Open Settings].

Tap [WebAccess].



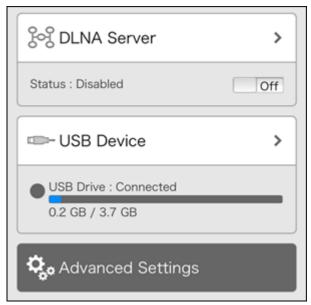
Enter the desired BuffaloNAS.com name.



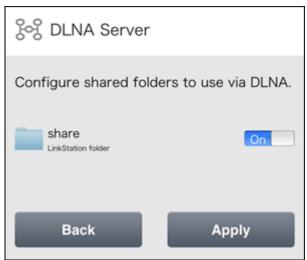
Select "Configure router's port settings manually", enter the router's port number, and tap [Apply].

Configuring the DLNA Server

1 From Settings, tap [DLNA Server].



2 Move the switch to the **on** position to enable DLNA and tap [Apply].

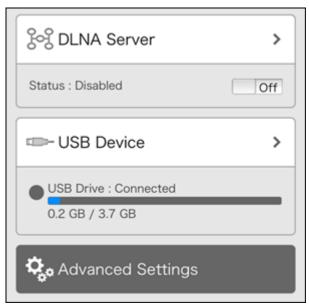


Managing USB Devices

From the "USB Device" option in Settings, you can dismount the USB drive, working with Direct Copy, and configuring UPS sync settings.

Dismounting USB Drives

1 From Settings, tap [USB Device].



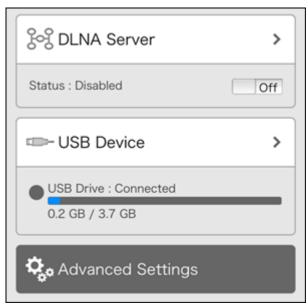
2 Tap [Dismount].



 ${f 3}$ When the completion message is displayed, unplug the USB device and tap [OK].

Enabling Direct Copy

1 From Settings, tap [USB Device].



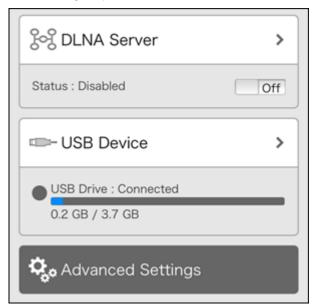
2 Move the Direct Copy switch to the **on** position to enable Direct Copy and tap [Apply].



Starting Direct Copy

Certain USB devices allow you to copy their data directly to your LinkStation using a mobile device.

- 1 Connect the USB device. After it mounts (about 10 seconds), the function LED will light up. Unsupported devices will not cause the function LED to light.
- From Settings, tap [USB Device].



Tap [Start Direct Copy].



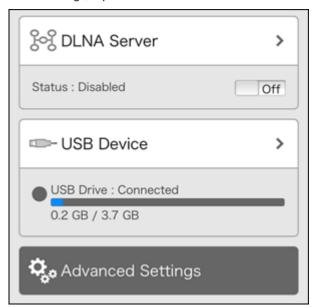
The function LED will flash as all the files on the USB device are copied to the Direct Copy folder on the LinkStation.

Note: By default, the Direct Copy folder is configured to the "share" folder. You can change the destination folder from Settings using the computer. Refer to the "Copying from a USB Device" section in chapter 6 for the procedure.

5 When the copy operation is finished, the access LED of the USB device will stop flashing. Safely dismount the USB device by using the dismount process.

Enabling a Print Server

1 From Settings, tap [USB Device].



2 Move the print server switch to the **on** position to enable print server and tap [Apply].



Rebuilding the RAID Array

You can also initiate the RAID rebuild from your mobile device.

- 1 Turn the LinkStation off and remove all cables.
- **2** Squeeze the left side of the front panel and swing it open.
- **3** Push the failed drive's cartridge up and remove it from the LinkStation.
- **4** Unscrew the four screws and remove the drive from the cartridge.
- **5** Install a new drive (sold separately) into the cartridge.

Chapter 9 Configuring from Mobile Devices

- Replace the four screws.
- Insert the new drive back into the empty slot.
- Close the front panel.
- Connect all cables, then turn on the LinkStation.
- Open the SmartPhone Navigator app on your mobile device and log in to Settings.
- From Settings, tap the blinking yellow information icon.
- Tap [Recover RAID Array], then tap [Recover RAID Array] again.
- Tap [Yes].
- The "Confirm Operation" screen will open. Enter the confirmation number and tap [OK].
- The array will begin to rebuild.

Chapter 10 Utilities

NAS Navigator2

NAS Navigator2 is a utility program that makes it easy to display Settings, change the Buffalo NAS device's IP address, or check its drives. To install NAS Navigator2, refer to the appropriate procedure below for your computer.

Windows

Download the NAS Navigator2 installer from the d.buffalo website, accessible from http://d.buffalo.jp/LS200/. Refer to the app help for more detailed information on operating the app. To open the help, open NAS Navigator2 and navigate to [Menu] > [Help].

macOS

Download the NAS Navigator2 app from Mac App Store and install it.

Refer to the app help for more detailed information on operating the app. To open the help, click the link below. http://buffalo.jp/support_s/guide2/manual/nasnavi2/99/en/

NovaBACKUP

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

The NovaBACKUP installer is available from the d.buffalo website, accessible from http://d.buffalo.jp/LS200/. Select the region and model to go to your specific model's d.buffalo website. Download the NovaBACKUP installer and install the utility onto your computer.

To download the installer, you will need the serial number of your LinkStation. The serial number is printed on the label on the back of the unit.

Chapter 11 Appendix

Power LED Operations

This section explains the details of power LED patterns when an event occurs. If there is a corresponding corrective action described for the code, try it first. If the LED still blinking due to an issue outlined below, contact Buffalo technical support for assistance.

White

The power LED will blink white during bootup or shutdown.

Red

If an error occurs, the power LED will blink red. The pattern of the blink gives the error code. You can also confirm the current status by using NAS Navigator2.

Place of Error Code	Status
10s Place of Error Code	The LED flashes for 1.0 second every 0.3 seconds. This gives the tens place of the error code.
1s Place of Error Code	The LED flashes for 0.5 seconds every 0.3 seconds. This gives the ones place of the error code.

Code	Description	Corrective Action
E07	The firmware is corrupted.	Contact Buffalo technical support for assistance.
E11	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, an air duster, or other tools to remove them.
E12	A rise in the system temperature may have exceeded the allowable safety value.	Move the LinkStation to a cool location. Do not place objects in the area around the LinkStation.
E14	The RAID array cannot be mounted.	Run a drive check on the RAID array by referring to the <u>"Checking Drives"</u> section in chapter 4.
E15	The number of bad sectors has reached a dangerous level.	Replace the drive by referring to the "Drive Replacement" section in chapter 4.
E16	Unable to find the drive.	Re-insert the drive.
E22	Unable to mount the drive.	Format the drive. After formatting, if the error still appears after rebooting, replace the drive.
E23	An error occurred, so the drive was removed from the RAID array.	Replace the drive by referring to the "Drive Replacement" section in chapter 4.
E30	An error occurred, so the drive was removed from the RAID array.	Replace the drive by referring to the <u>"Drive</u> Replacement" section in chapter 4.

Amber (Blinking)

After you change any settings, the power LED will blink amber. The pattern of the blink gives the information code. You can also confirm the current status by using NAS Navigator2.

Place	Status
10s Place	The LED flashes for 1 second every 0.3 seconds. This gives the tens place of the information code.
1s Place	The LED flashes for 0.5 seconds every 0.3 seconds. This gives the ones place of the information code.

Code	Description	Corrective Action
I10	A rise in the system temperature may have exceeded the allowable safety value.	Move the LinkStation to a cool location. Do not place objects in the area around the LinkStation.
I11	The drive has too many bad sectors.	Replace the drive by referring to the <u>"Drive</u> Replacement" section in chapter 4.
I12	Operating in degraded mode.	Check if the E30 error is also displayed. If it is, refer to the corrective action for the E30 error.
I13	Formatting the RAID array.	-
I14	Checking the RAID array.	-
I15	Examining the error status of the RAID array. Note: Transfer speeds are slower during the examination process.	-
I16	Creating the RAID array.	-
I17	Resynchronizing the RAID array. Note: Transfer speeds are slower during resynchronization.	-
I18	Rebuilding the RAID array. Note: Transfer speeds are slower during the rebuilding process.	-
I19	Rewriting the RAID array.	-
120	Formatting the drive.	-
I21	Checking the drive.	-
I22	Rewriting the drive.	-
123	The initialization process has been started by using the function button and settings are being initialized.	-
I25	Updating the LinkStation firmware.	Do not turn off the LinkStation's power.
126	The initialization process has been started by using Settings and all settings are being initialized.	Do not turn off the LinkStation's power.
127	Checking the USB drive.	-
128	Formatting the USB drive.	Do not turn off the LinkStation's power.
146	Data migration or conversion (RAID migration) is in progress.	Do not turn off the LinkStation's power.
147	Data migration or conversion (RAID migration) is in progress.	Do not turn off the LinkStation's power.

Chapter 11 Appendix

Code	Description	Corrective Action
152	A new firmware version has been released.	Update the firmware by referring to the <u>"Updating the Firmware"</u> section in chapter 8.
154	The backup job failed.	Make sure that the backup job is configured correctly. Make sure that the backup target NAS device is on and not in standby mode. If the backup job still fails, check the status of the network, as well as the backup source and destination.

Amber (Glowing)

When the power LED glows a steady amber, a new firmware version is available. Update the firmware to the newest version.

Default Settings

Administrator's Name	admin	
Password	password	
Shared Folders	"share" and "info" for both Windows and Mac computers. *The recycle bin is enabled by default.	
IP Address	The LinkStation 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 a number randomly assigned when booting the LinkStation.) Subnet Mask: 255.255.0.0	
Registered Groups	"hdusers", "admin", and You cannot edit or dele	"guest" ete these default groups.
Microsoft Network Group Settings	WORKGROUP	
Ethernet Frame Size	1500 bytes	
SMB	Enabled SMB Protocol Exclude Mac OS temp files from	Switch between SMB2 and SMB1 automatically Yes
AFP	recycle bin Disabled	
FTP	Disabled	
WebAccess	Disabled	
RAID Scanning	Disabled	
DLNA Server	Disabled	
iTunes Server	Enabled	
Print Server	Disabled	
BitTorrent	Disabled	
Time Machine	Disabled	
Direct Copy	Disabled	
NTP	Enabled	

Chapter 11 Appendix

Email Notification	Disabled	
Function Button Settings	Restore factory default settings	
RAID Mode	RAID 1 (LS220D and LS220DR)	

Specifications

Check the <u>Buffalo website</u> for the latest product information and specifications.

	Standards Compliance	IEEE 802.3ab (1000BASE-T), IEEE 802.3u (100BASE-TX), IEEE 802.3 (10BASE-T)
	Data Transfer Rates	10/100/1000 Mbps (auto sensing)
I ANI listanta a	Number of Ports	1
LAN Interface	Connector Type	RJ-45 8-pin (auto MDI-X)
	Supported Protocols	TCP/IP
	Network File Services	SMB/CIFS, AFP, FTP/FTPS
	Ethernet Frame Sizes	1500, 4084, 7404, and 9216 bytes
	Standards Compliance	USB 2.0
USB Interface	Data Transfer Rates	Max. 480 Mbps
USB IIIterrace	Number of Ports	1
	Connector Type	Type A
	Number of Drive Bays	LS210D: 1 LS220D, LS220DE, LS220DR: 2
	Drive Interface	SATA 3 Gbps
	Supported RAID	LS220D, LS220DE, LS220DR: 0, 1, JBOD (individual drives)
Internal Drive		LS220D, LS220DE: Buffalo OP-HDBST series drive LS220DR: Buffalo OP-HDBN series drive
	Replacement Drive	Note: The replacement drive should be the same size or larger as the original drive. The drives listed above are available from the <u>Buffalo website</u> .

	Power Supply	AC 100–240 V, 50/60 Hz
	Dimensions (W × H × D, excluding protruding parts)	LS210D: 45 × 128 × 205 mm; 1.8 × 5.0 × 8.1 in. LS220D, LS220DE, LS220DR: 87 × 128 × 205 mm; 3.4 × 5.0 × 8.1 in.
	Weight	LS210D: approx. 1.1 kg; 2.4 lbs LS220D, LS220DR: approx. 2.5 kg; 5.5 lbs LS220DE: approx. 0.9 kg; 1.9 lbs
	Power Consumption	LS210D: max. 18 W (1–2 TB models), max. 24 W (3 TB+ models) LS220D, LS220DE, LS220DR: max. 48 W
	Operating Environment	Temperature: 5–35°C; 41–95°F Humidity: 20–80% non-condensing
Others	Compatible Devices	Windows PCs, Intel Mac computers, iOS devices, and Android devices with wired or wireless Ethernet connection.
	Supported OS	 For LS210D, LS220D, LS220DE: Windows 10, 8.1, 8, 7, Vista, XP*, RT 8.1, RT macOS 10.15, 10.14, 10.13, 10.12, 10.11, 10.10, 10.9, 10.8, 10.7, 10.6 Windows Server 2019, 2016, 2012 R2, 2012, 2008 R2, 2008 iOS 5 or later Android 2.3 or later For LS220DR: Windows 10, 8.1, 7 macOS 10.15, 10.14, 10.13, 10.12, 10.11 iOS 10 or later Android 4.4 or later
		*32-bit

Chapter 12 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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

Proposition 65

WARNING:

This product and its components contain chemicals known to the State of California to cause cancer and birth defects, or reproductive harm. Wash hands after handling.

For Customers in Europe

EU Declaration of Conformity



Chapter 12 Regulatory Compliance Information

specifically instructed to in the documentation.

Brug ikke USB-kabler, der er 3 meter eller længere for at tilslutte USB enheder til denne LinkStation serie. 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

Verwenden Sie keine USB-Kabel, die 3 Meter lang oder länger sind, um USB-Geräte an LinkStations dieser Serie anzuschließen.

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

Do not use USB cables that are 3 meters or longer to connect USB devices to this LinkStation series.

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

Español

Utilice cables de una longitud inferior a 3 metros para conectar los dispositivos USB a este tipo de LinkStation. 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

Utilisez des câbles d'une longueur de moins 3 mètres pour connecter les périphériques USB à ce type de LinkStation.

Utilisez uniquement les câbles et accessoires inclus dans ce package. N'utilisez aucun autre accessoire ou câble sauf instruction spécifique de la documentation.

Italiano

Non utilizzare cavi USB lunghi 3 metri o più per collegare dispositivi USB a questa LinkStation.

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

Gebruik geen USB-kabels die 3 meter of langer zijn om USB-apparaten met deze LinkStation series te verbinden. 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

Bruk ikke USB-kabler på tre meter eller mer for å koble USB-enheter til denne LinkStation-serien.

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

Não usar cabos USB de 3 metros ou mais para ligar dispositivos USB a esta série LinkStation.

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

Suomi

Älä käytä 3m tai pitempiä USB-kaapeleita USB-laitteiden liittämiseen näille LinkStation-sarjoille.

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

Svensk

Använd inte USB-kablar som är 3 meter eller längre för att ansluta USB-enheter till den här LinkStation-serien. 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

USB aygıtları bu LinkStation serisine bağlamak için 3 metre ve daha uzun USB kabloları kullanmayın. Yalnızca pakette bulunan kablo ve aksesuarları kullanın. Belgelerde özellikle belirtilmedikçe başka aksesuar ve kablolar kullanmayın.

AC Adapter

The external power adapter should be a UL/CSA62368-1 or UL/CSA60950-1 certified power adapter. Make sure it is approved by Buffalo accordingly before using or replacing it.

The chart below lists the product models of the AC adapter included with your LinkStation unit. The "x" at the end of the AC adapter's model name represents a variable alphabetic character between D and Z.

LS210D0101, LS210D0201	Asian Power Devices Inc. WB-18L12R-Z080x	
LS210D0301, LS210D0401	Asian Power Devices Inc. WA-24Q12R-Z079x	
LS220D, LS220DE, LS220DR	Asian Power Devices Inc. DA-48T12-Z067x	

ErP Lot 7

The chart below lists detailed information on the AC adapters included with your LinkStation unit for compliance with "Commission Regulation (EU) 2019/1782, ecodesign requirements for external power supplies pursuant to Directive 2009/125/EC of the European Parliament and of the Council". The "x" at the end of the AC adapter's model name represents a variable alphabetic character between D and Z.

	Product manufacturer's name	BUFFALO INC.
	Commercial registration number	1800-01-041423
	Address	AKAMONDORI Bldg., 30-20, Ohsu 3-chome, Naka-ku, Nagoya 460-8315, Japan
	Input voltage	100-240 V
WD 10112D 7000	Input AC frequency	50–60 Hz
WB-18L12R-Z080 <i>x</i>	Output voltage	12.0 V
	Output current	1.5 A
	Output power	18.0 W
	Average active efficiency	88.2%
	Efficiency at low load (10%)	82.0%
	No-load power consumption	0.06 W

	Product manufacturer's name	BUFFALO INC.
	Commercial registration number	1800-01-041423
	Address	AKAMONDORI Bldg., 30-20, Ohsu 3-chome, Naka-ku, Nagoya 460-8315, Japan
	Input voltage	100-240 V
MA 24042D 7070	Input AC frequency	50–60 Hz
WA-24Q12R-Z079 <i>x</i>	Output voltage	12.0 V
	Output current	2.0 A
	Output power	24.0 W
	Average active efficiency	88.2%
	Efficiency at low load (10%)	88.1%
	No-load power consumption	0.07 W
	Product manufacturer's name	BUFFALO INC.
	Commercial registration number	1800-01-041423
	Address	AKAMONDORI Bldg., 30-20, Ohsu 3-chome, Naka-ku, Nagoya 460-8315, Japan
	Input voltage	100-240 V
DA 40742 7067	Input AC frequency	50-60 Hz
DA-48T12-Z067 <i>x</i>	Output voltage	12.0 V
	Output current	4.0 A
	Output power	48.0 W
	Average active efficiency	89.2%
	Efficiency at low load (10%)	86.5%
	No-load power consumption	0.08 W