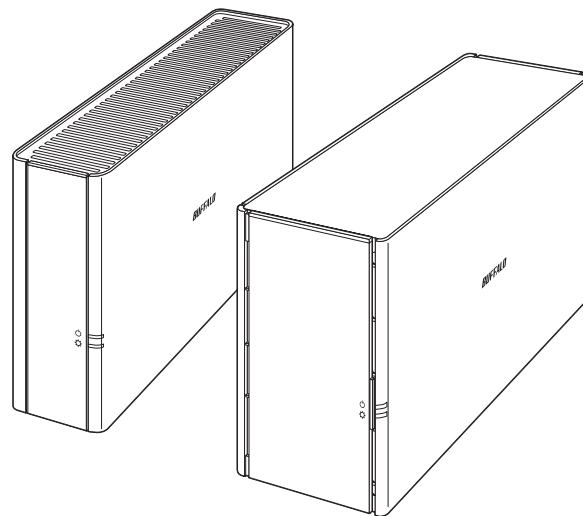




Network Attached Storage

LinkStation 500

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

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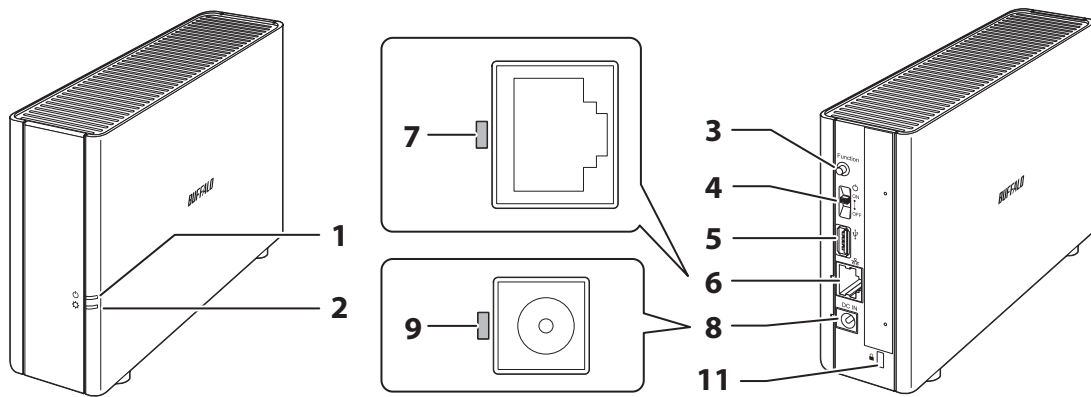
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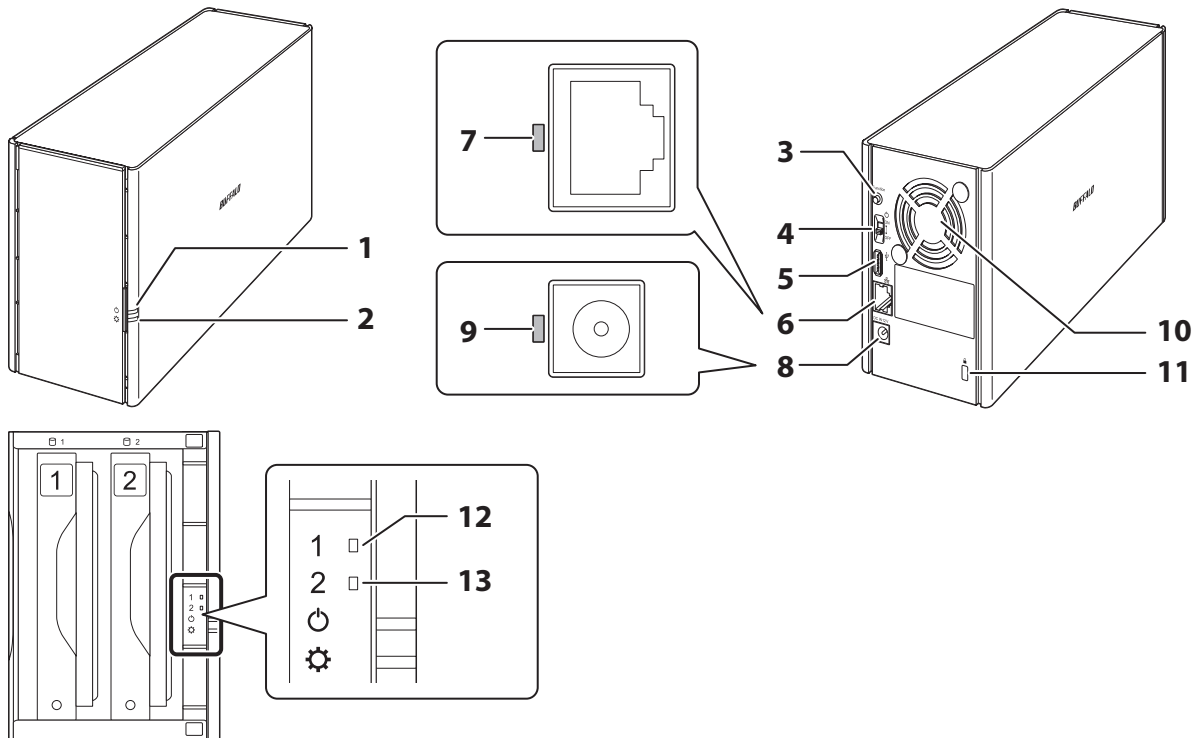
Chapter 1 Getting Started

Diagrams

LS510D



LS520D, LS520DN, LS520DE



1 Power LED (🔌)

Glows white while the LinkStation is on.
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 (⚙️)

Glows white while the USB device is connected and blinks during USB device dismounting and Direct Copy.

3 Function Button

Use this button for rebuilding the RAID array after replacing the defective drive or performing Direct Copy.

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, and USB UPS devices 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

Glows green when the LinkStation is connected to a network and blinks when the connection is experiencing activity.

8 Power Connector

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

9 Power Status 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

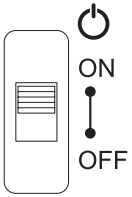
If there is an error on the drive in slot 2, this LED will light.

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.

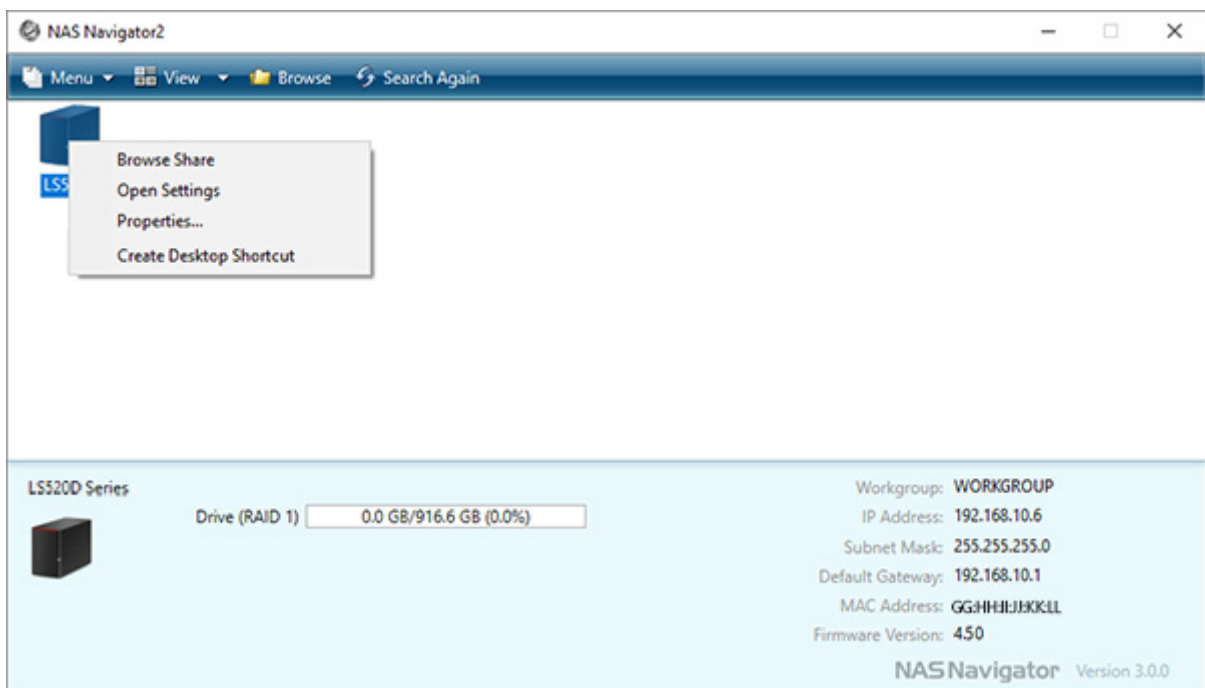
When the power LED turns off, the shutdown process is completed.



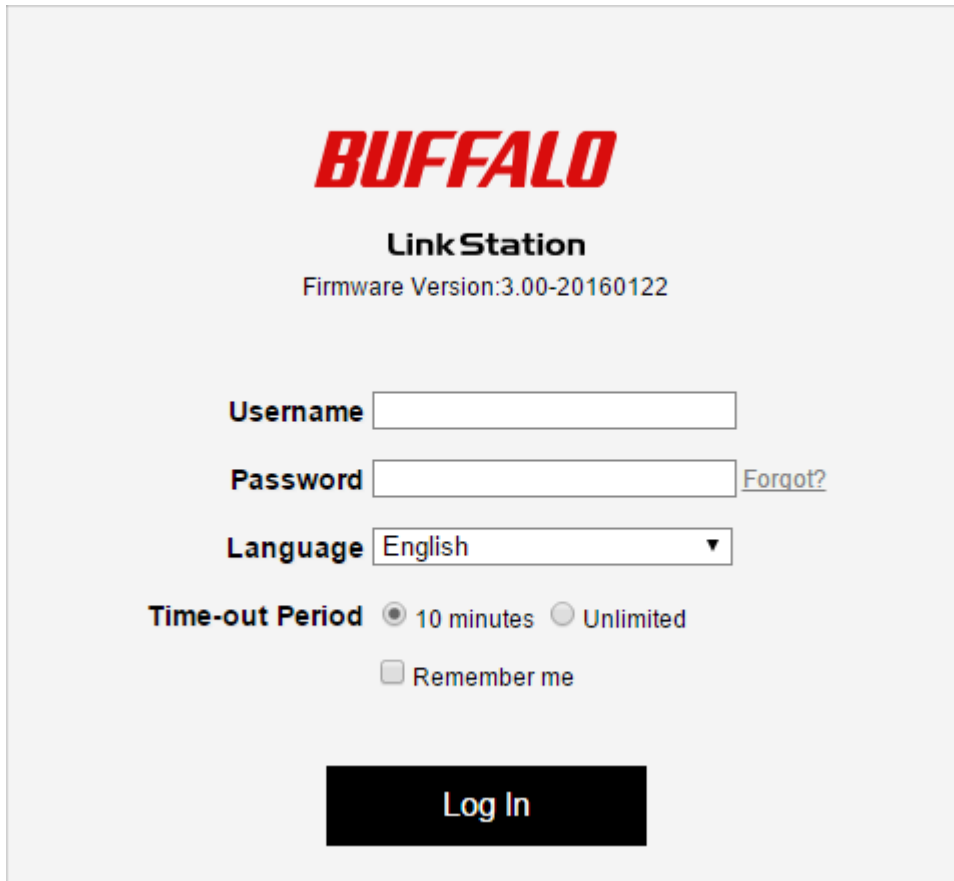
Restarting from Settings

You can also restart the LinkStation remotely from Settings. To restart from Settings, follow the procedure below.

- 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 press the Enter key or click *Log In*.

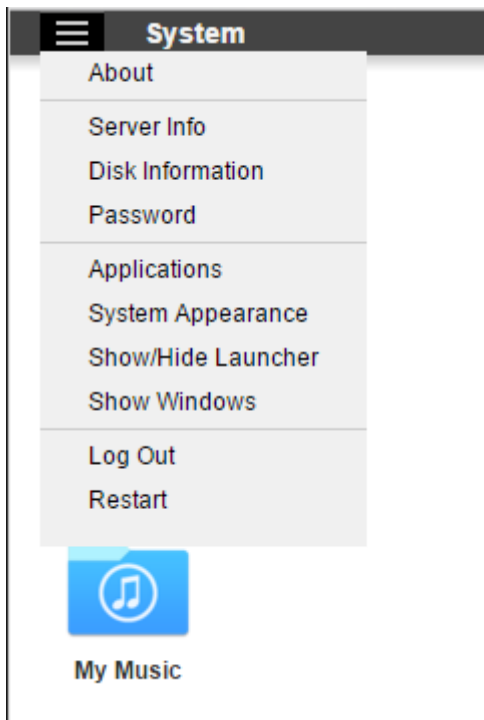


The image shows the Buffalo LinkStation login interface. At the top, the Buffalo logo is displayed in red, followed by the text "LinkStation" and "Firmware Version:3.00-20160122". Below this, there are three input fields: "Username" with an empty text box, "Password" with an empty text box and a "Forgot?" link to its right, and "Language" with a dropdown menu currently set to "English". Underneath the language field, there are radio buttons for "Time-out Period" with options "10 minutes" (selected) and "Unlimited", and a checkbox for "Remember me" which is currently unchecked. At the bottom center, there is a large black button with the text "Log In" in white.

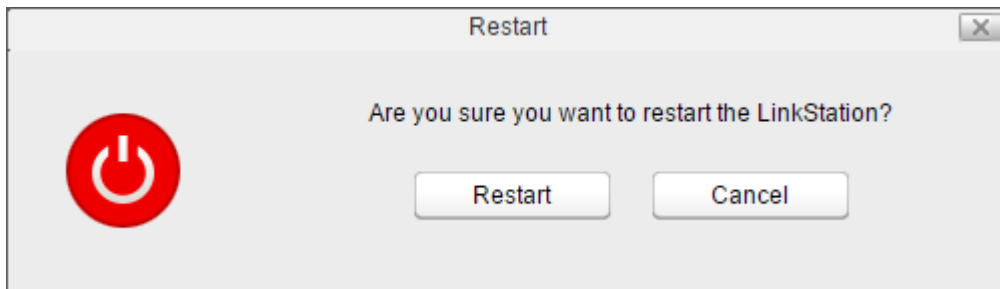
4 Settings will open.



- 5** Click  at the top-left of Settings and choose *Restart*.




- 6** Click *Restart* again.



When the power LED stops flashing and glows white, the restart process is complete.

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.

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 ["WebAccess"](#) section in chapter 7.

- 1** Open SmartPhone Navigator.

2 Tap your LinkStation from the NAS list.

3 Tap *Browse*.

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

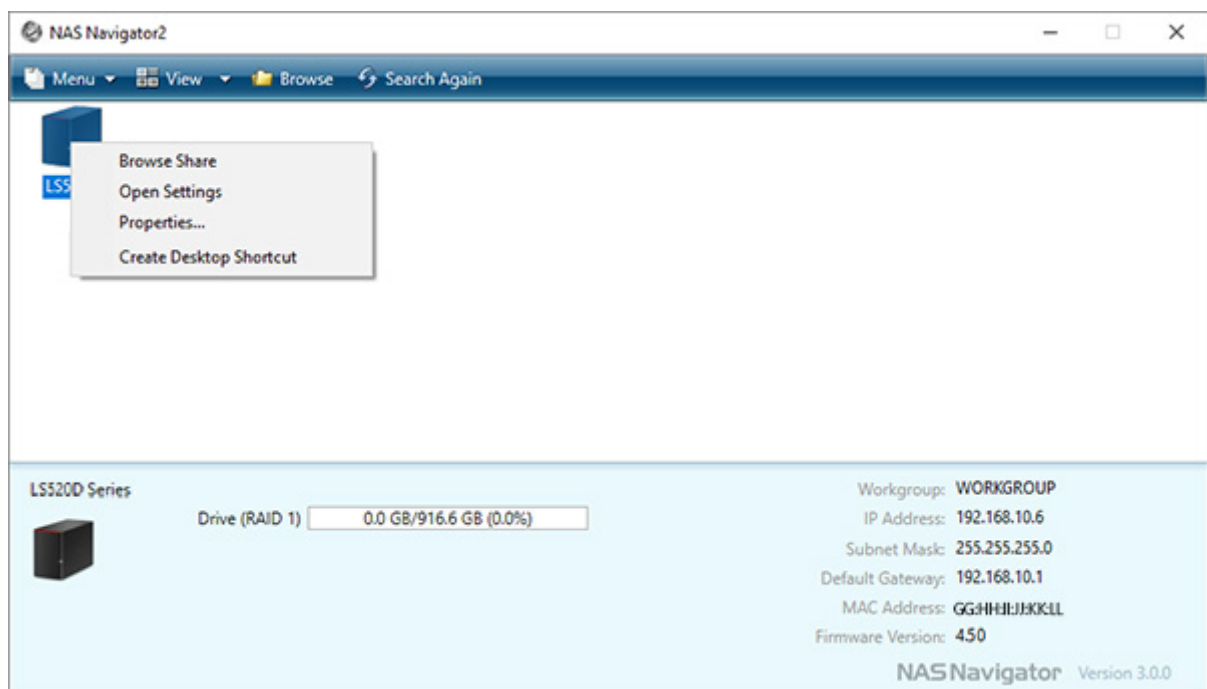
Configure and manage your LinkStation using the Settings interface, accessible from a browser window. Open the interface using the appropriate procedure below or type the LinkStation's IP address into the URL field of your browser.

Opening Settings

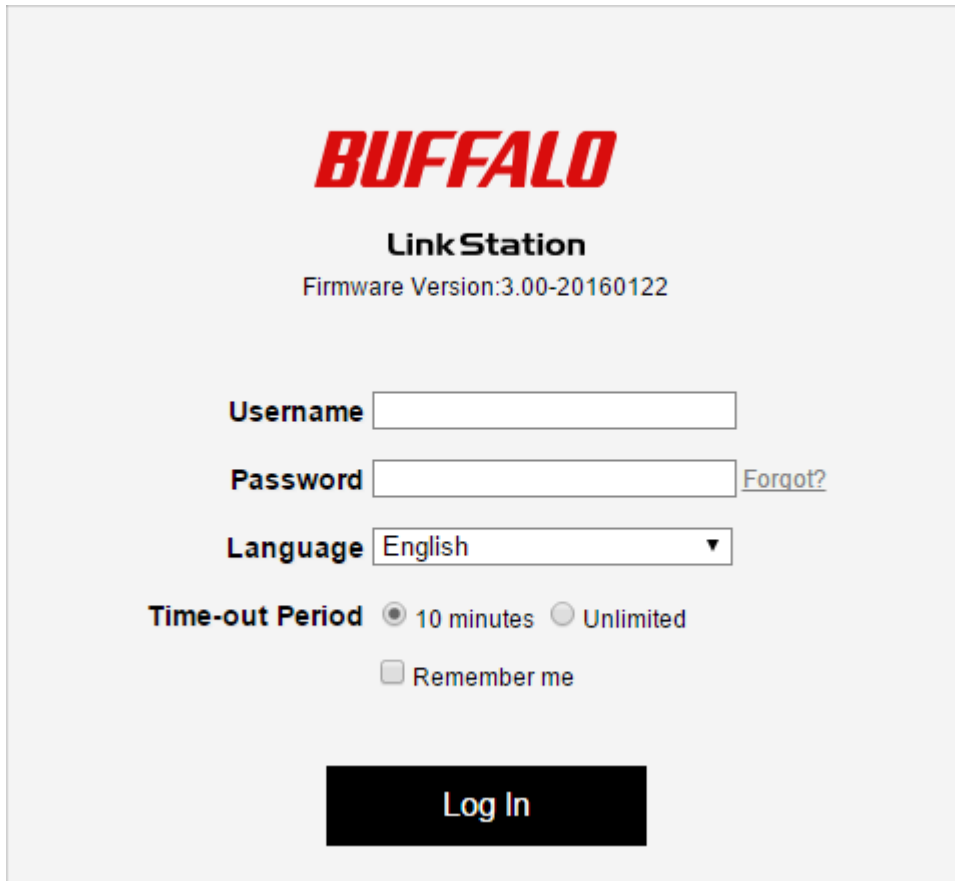
Using a Computer

Note: Firefox, Google Chrome, Internet Explorer 9 or later, Safari 8 or 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.

- 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 press the Enter key or click *Log In*.



The image shows the Buffalo LinkStation login interface. At the top, the Buffalo logo is displayed in red. Below it, the text "LinkStation" and "Firmware Version:3.00-20160122" are shown. The login form includes a "Username" text box, a "Password" text box with a "Forgot?" link to its right, and a "Language" dropdown menu currently set to "English". Underneath, there are radio buttons for "Time-out Period" with options "10 minutes" (selected) and "Unlimited", and a checkbox for "Remember me". A large black "Log In" button is positioned at the bottom center.

4 Settings will open.



Notes:

- To log out from Settings, close the browser.
- If the time-out period is set to “10 minutes”, you will be logged out of Settings after 10 minutes of inactivity.

Using 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.

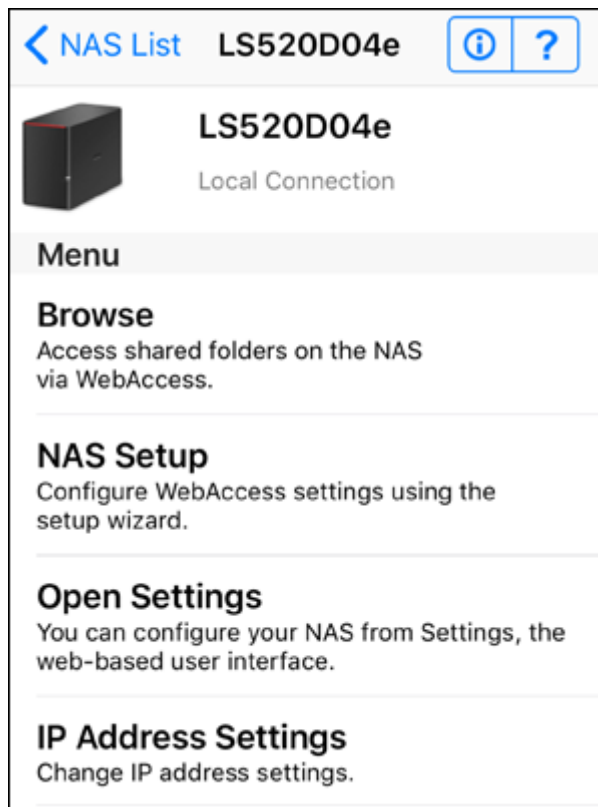
Notes:

- 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 the “admin” user to change settings.
- Mobile devices that support mobile-optimized Settings display are described in the “[Specifications](#)” section in chapter 11.

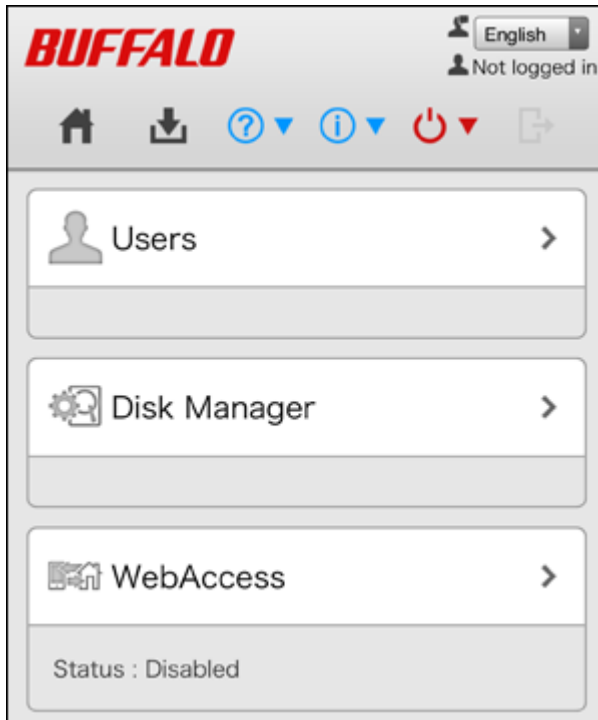
1 Open SmartPhone Navigator on your mobile device.



2 Tap *Open Settings*.



3 Settings will be displayed.



Note: If you tap any buttons, you will need to enter a username and password.

Resetting Administrator Password

If you forget the admin password and cannot log in to Settings, you can initialize it with the function button. Follow the procedure below to initialize the password.

- 1** Turn off the LinkStation.
- 2** Turn the LinkStation on while pressing and holding the function button until the power LED flashes amber.
- 3** Initialization will start. Do not power down the LinkStation while the power LED is blinking.
- 4** When the power LED glows a steady white, initialization is finished.

Navigating the Main Menu

When you log in to Settings, you will see the following screen first.



The Home Screen

The home screen acts like a typical computer desktop. Default shortcuts are listed below:





Item	Description
My LinkStation	Accesses all stored files and folders and all LinkStation functions, including creating new folders.
My Photos*	Shortcuts of folders that are in My LinkStation.
My Music*	
My Videos*	
Applications	Contains programs built in to the LinkStation, as well as default shortcuts to system settings.
Recycle Bin	Stores deleted files. If a file is accidentally deleted, you can restore it from this folder. To empty the recycle bin, right-click the recycle bin icon, then click <i>Empty Recycle Bin</i> . Note: The recycle bin will only store files deleted from Settings.

*If you disable the "Hide username folders" checkbox through the initial setup wizard, these options will appear. This setting can also be changed from the window by clicking *Options* at the shared folder settings.

Launcher

The launcher provides instant access to applications and settings of your choice. Even with other windows open on the LinkStation, the launcher will always stay on top for easy access. You can adjust the launcher size, screen position, orientation, or even hide it completely, depending on what is convenient for you.

Default launcher shortcuts are listed below:

Item	Description
 My LinkStation	The same as My LinkStation.
 Media Player	Plays audio or video files stored on the LinkStation.
 Disk Manager	Manages internal and external drives connected to the LinkStation.
 System Settings	Configures optional advanced settings.

Customizing the Home Screen

You can customize the home screen desktop to your specifications.

Adding New Shortcuts

To add a new desktop shortcut for an application, drag the application from the “Applications” folder to the desktop. To add a desktop shortcut for a file or folder, drag the file or folder from its location to the desktop.

Deleting Shortcuts

To delete a shortcut, you can right-click on the shortcut and click *Delete*. Alternatively, you can drag and drop the shortcut into the recycle bin, then click *OK* from the dialog window.

Restoring Shortcuts

To restore desktop shortcuts to the default ones, right-click anywhere on the desktop and click *Restore Desktop Icons*.

Arranging and Sorting Icons

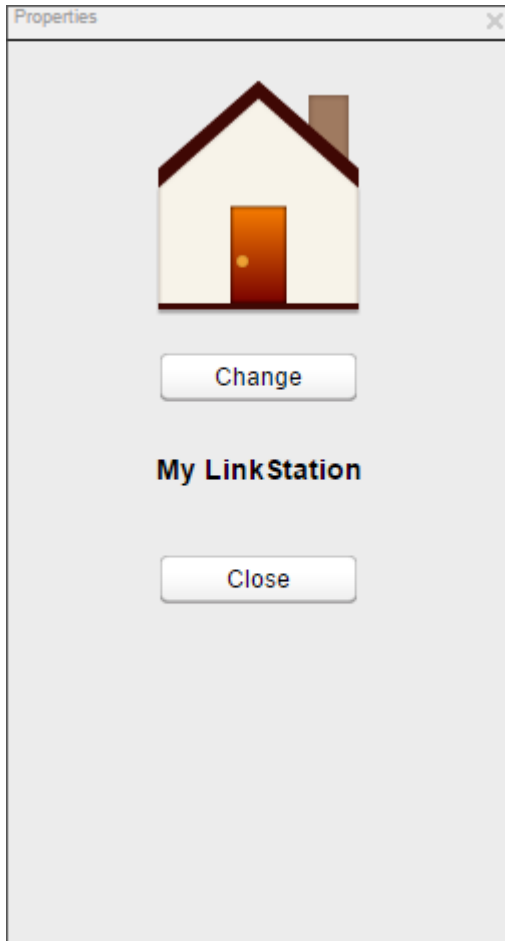
To re-arrange the icons, simply drag them to your preferred location on the desktop. To sort desktop shortcuts, right-click anywhere on the desktop and click *Sort Desktop Icons*. All the shortcuts will be re-arranged starting from the top-left corner.

Changing Icons

You can change replace an icon image with an image file on your LinkStation.

- 1 Right-click on a shortcut icon and click *Change Icon*.

2 Click *Change* and select the image you want.



3 Click *Close*.

Launcher Options

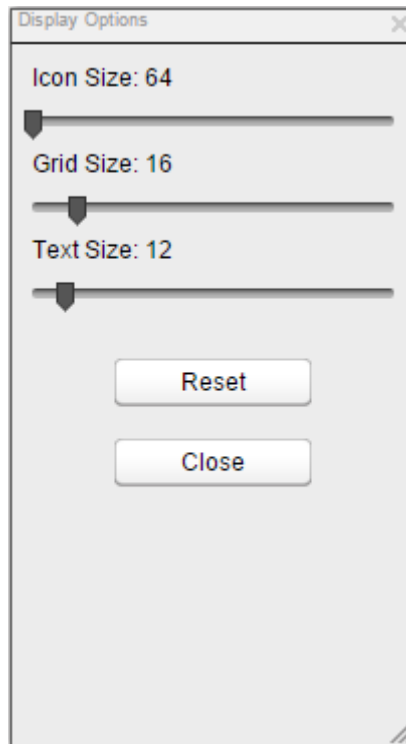
You can remove or restore launcher shortcuts just as you would with desktop shortcuts.

In addition to removing applications, you can also change the location and size of the launcher.

- Click and drag on the launcher to re-position it.
- Click on the double arrows in the gray handle to minimize the launcher.
- Click on the single arrow in the gray handle to flip the orientation from vertical to horizontal or vice versa.
- Click and drag the triangle in the corner of the launcher to resize it.

Display Options

Right-click anywhere on the desktop and click *Display Options*. You can adjust the sliders to change the item display sizes. To revert back to the factory default setting, click *Reset*.



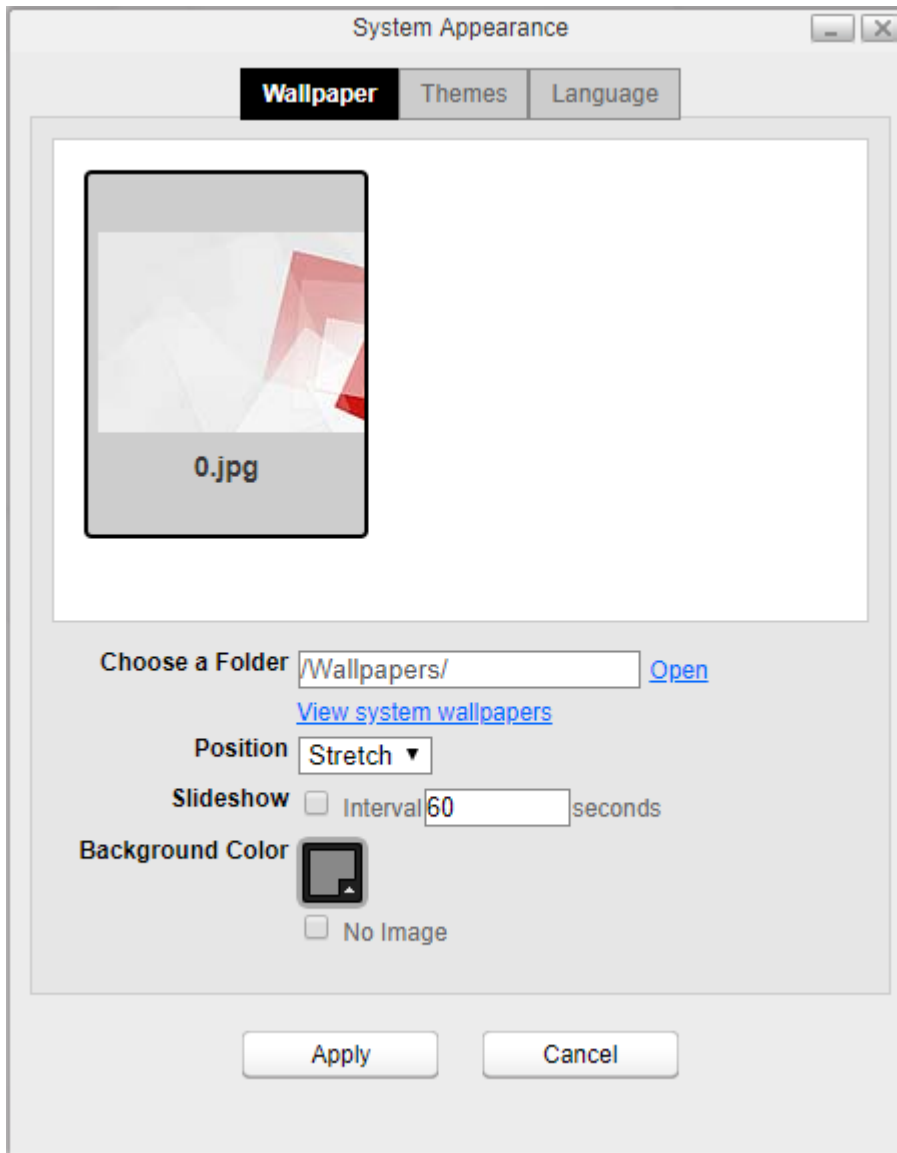
- Icon Size: Toggle between icon display sizes.
- Grid Size: Toggle between icon grid display sizes.
- Text Size: Toggle between text display sizes.

Wallpaper Options

You can replace the default wallpaper to match your own personal preferences. You can set any image stored on the LinkStation as the wallpaper. You can also enable the slideshow function to cycle through your images and display a new image at a preset interval.

- 1 Right-click on the background and click *System Appearance*.

- 2** Click the *Wallpaper* tab, then *Open*. Select the folder where your images are stored, or click *View system wallpapers* to view stock images included on your LinkStation. Click on the image you want to set as your wallpaper.



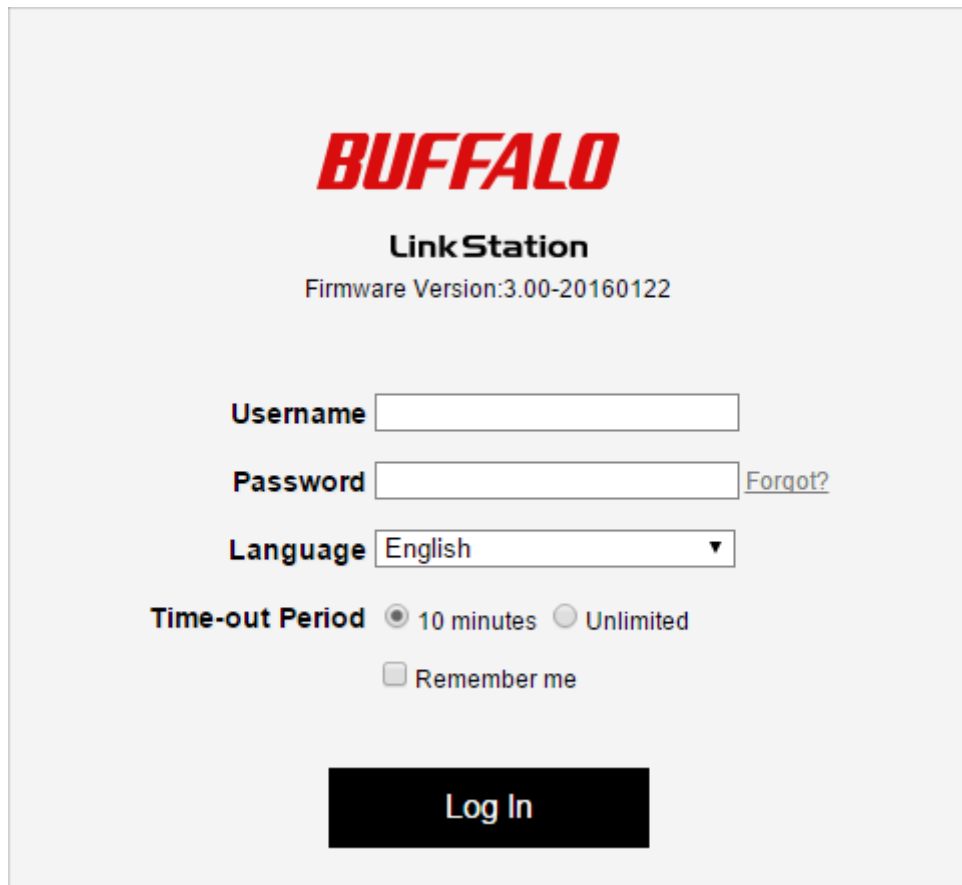
- 3** From the “Position” drop-down list, select how the image will be displayed.
- Stretch: Stretch the wallpaper to desktop size.
 - Center: Places the wallpaper in the center of the desktop.
 - Tile: Displays the wallpaper in a tile-like pattern.
 - Fill: Make the wallpaper fill the desktop and cut any overflow.
 - Fit: Make the wallpaper fit the desktop without overflow.
- 4** If you enable “Slideshow”, you can set an interval in seconds to cycle through images in the selected folder as the background.
- 5** If you don’t want to use an image as the wallpaper, you can set the background as a solid color and enable the “No Image” option.

Changing Display Languages

You can change the display language before or after you log in to Settings.

Changing from the Login Page

Open Settings and select the language from the drop-down list. The display language will be changed.

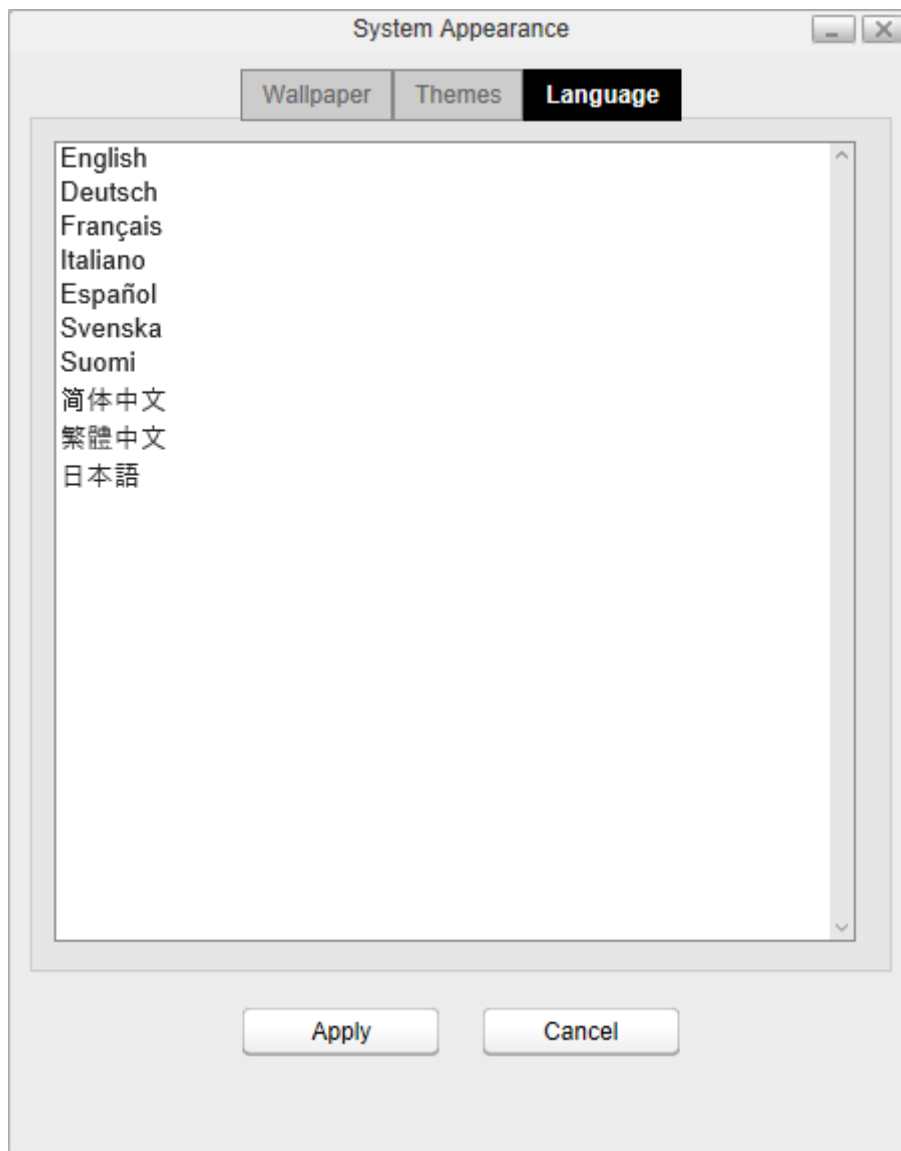


The screenshot displays the Buffalo LinkStation login interface. At the top, the Buffalo logo is shown in red, followed by the text "LinkStation" and "Firmware Version:3.00-20160122". Below this, there are three input fields: "Username" with an empty text box, "Password" with an empty text box and a "Forgot?" link to its right, and "Language" with a dropdown menu currently showing "English". Underneath the language field, there are two radio button options for "Time-out Period": "10 minutes" (which is selected) and "Unlimited". Below these is a checkbox labeled "Remember me" which is currently unchecked. At the bottom center, there is a black "Log In" button.

Changing from the Desktop


- 1 Right-click anywhere on the desktop and click *System Appearance*.

2 Click the *Language* tab and select the desired display language from the list.



3 Click *Apply*.

Chapter 3 My LinkStation

My LinkStation is an application that manages files and folders stored on the LinkStation. To open My LinkStation, click the  icon on the home screen.

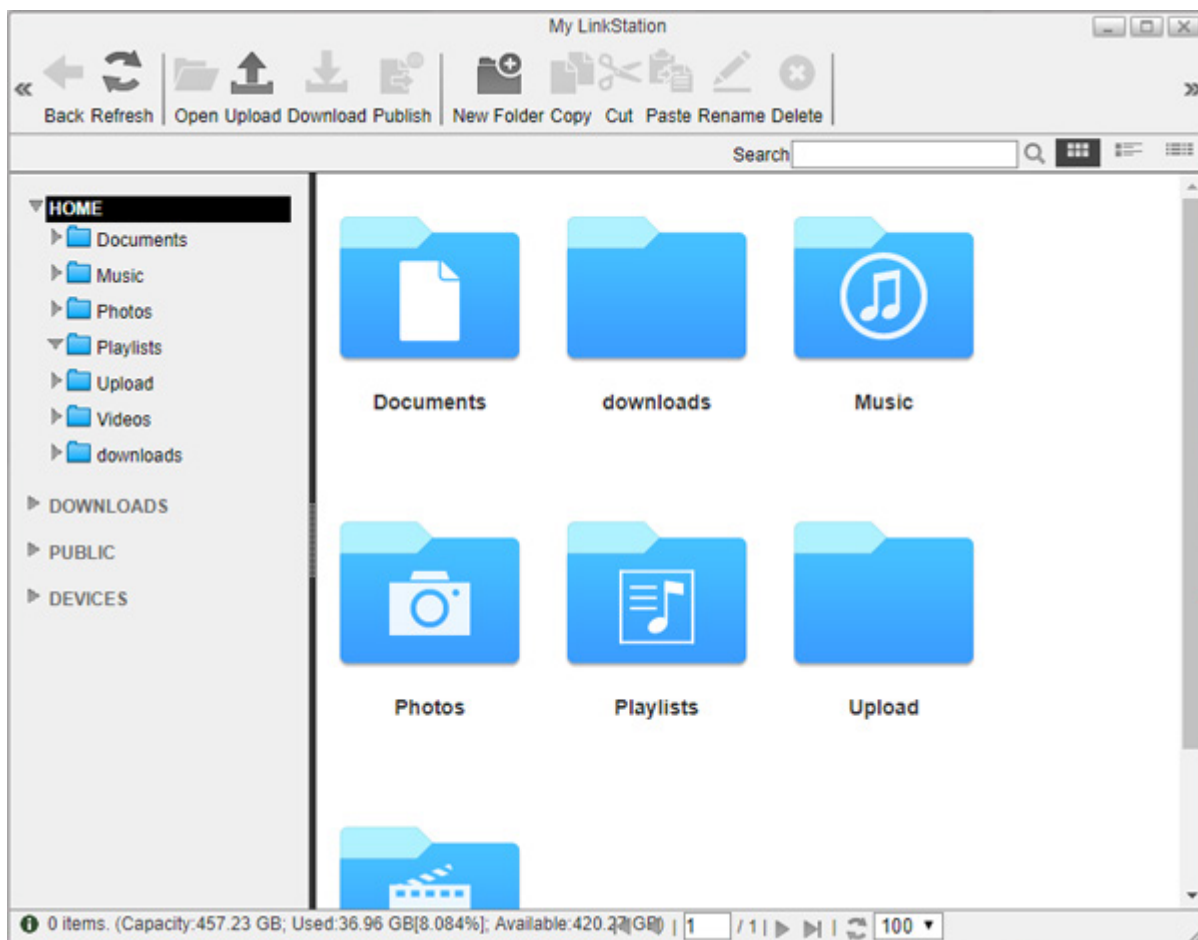
In the My LinkStation window, the following tabs will be displayed on the left as a directory:


- **HOME**: This shows subfolders in the username folder that will be automatically created when creating a user. If you log in to Settings as the admin user, this will display all folders in the “admin” folder.
- **DOWNLOADS**: This is a folder that stores downloaded files.
- **PUBLIC**: This is a folder that any user can access.
- **DEVICES**: All shared and subfolders that are created on the LinkStation will be displayed.












*If you disable the “Hide username folders” checkbox through the initial setup wizard, these options will appear. This setting can also be changed from the window by clicking *Options* at the shared folder settings.

Note: “DOWNLOADS” and “DEVICES” directories can only be accessed by the admin user.


Navigating the My LinkStation Window



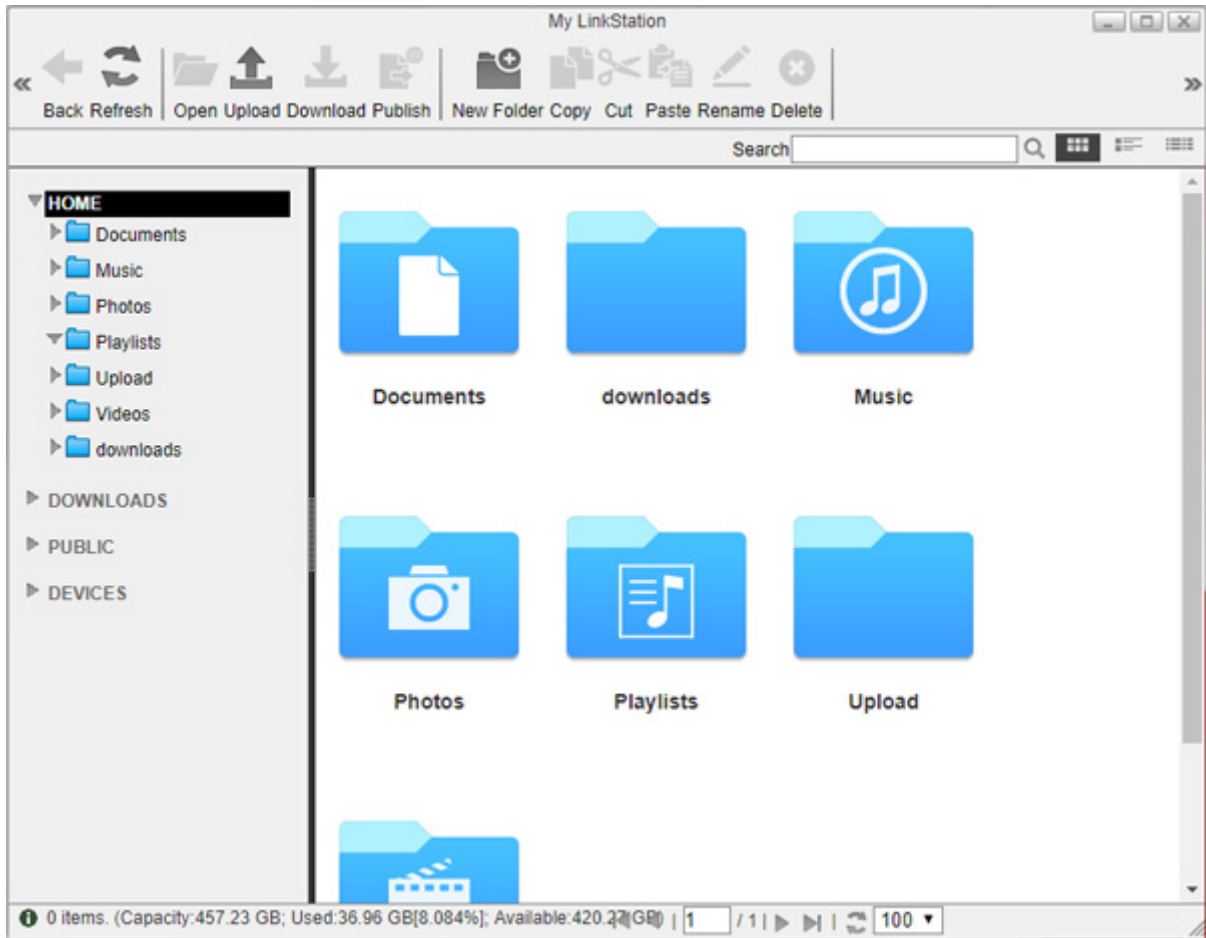
Icons	Name	Descriptions
	Back	Return to the previous screen.

Icons	Name	Descriptions
	Refresh	Refresh the screen.
	Open	Open a file or folder.
	Upload	Upload a file from your local computer to the LinkStation.
	Download	Download a selected file to your local computer.
	Publish	Share the selected folders or files with a link.
	New Folder	Create a new folder.
	Copy	Create a copy of the selected file or folder, either in the current directory or another that is available to the user.
	Cut	Cut the selected file or folder.
	Paste	Paste the file or folder on the clipboard to the new location.
	Rename	Change the name of a file or folder.
	Delete	Delete the selected file or folder.

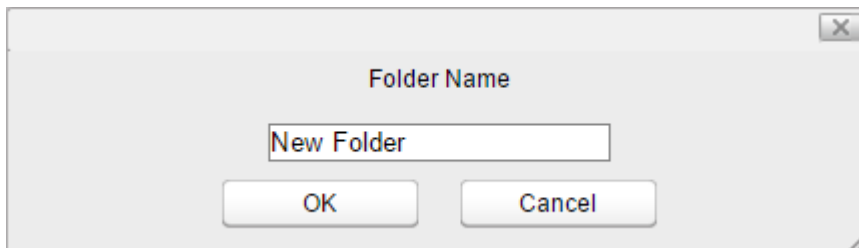
Adding Folders

- 1 From Settings, click *My LinkStation* ().
- 2 Select a shared folder to add a subfolder from the directory list on the left.

3 Click *New Folder*.



4 Enter a desired folder name and click *OK*.



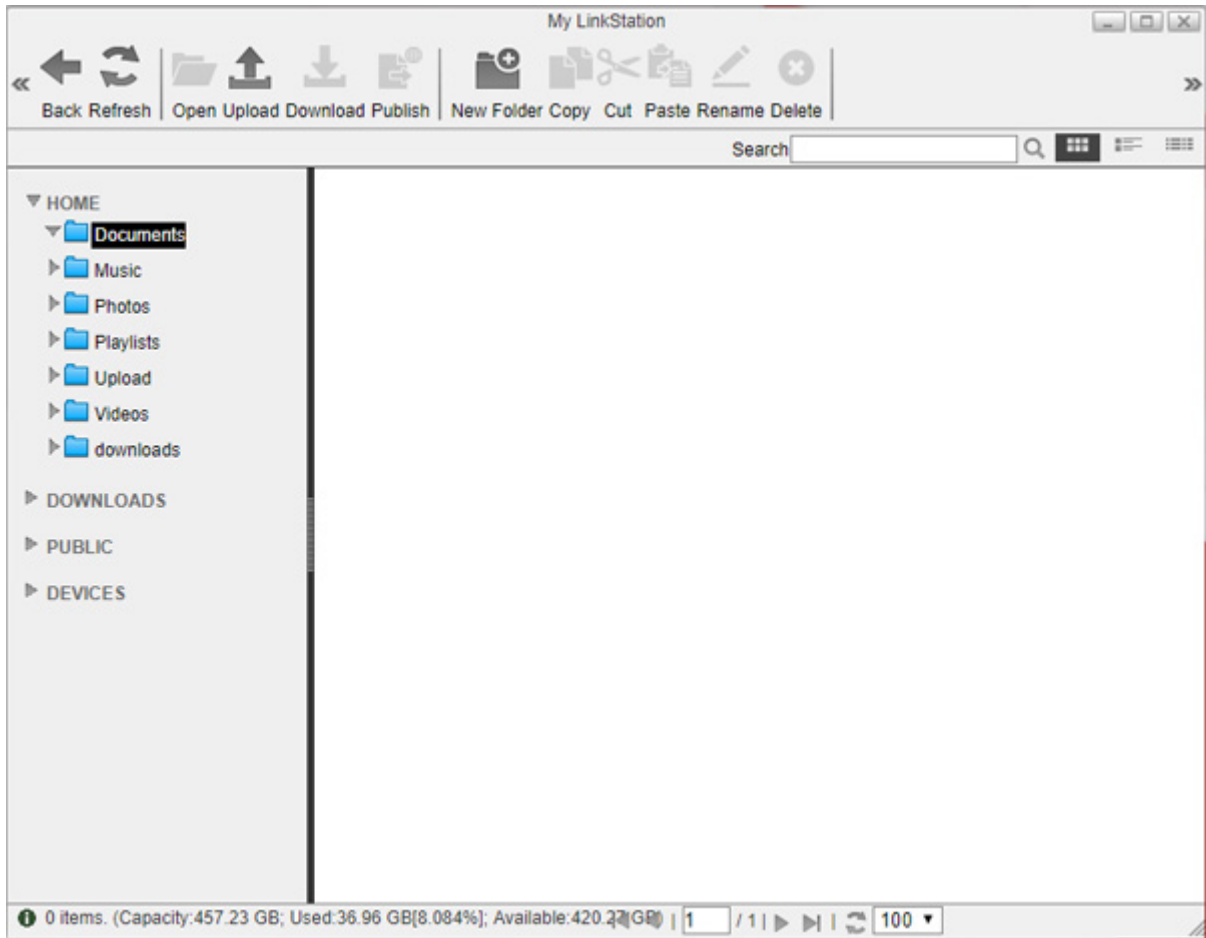
The folder will be created in the selected shared folder.

Uploading and Downloading Files

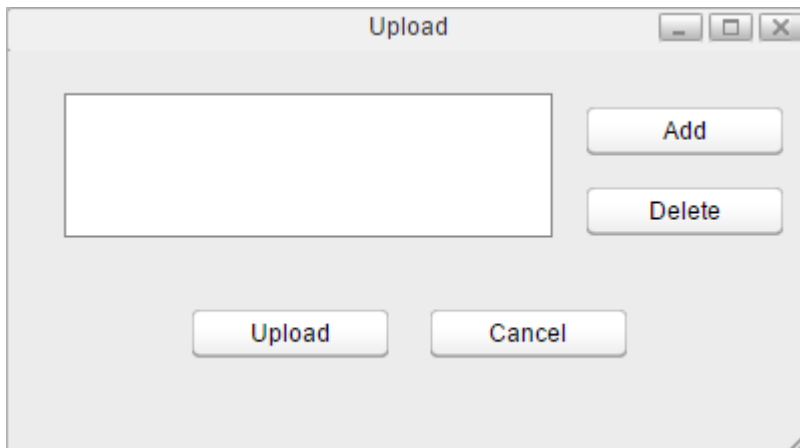
Uploading from a Computer

1 From Settings, click *My LinkStation* (🏠).

2 Select a folder to upload a file to and click *Upload*.



3 Click *Add* and select a file.

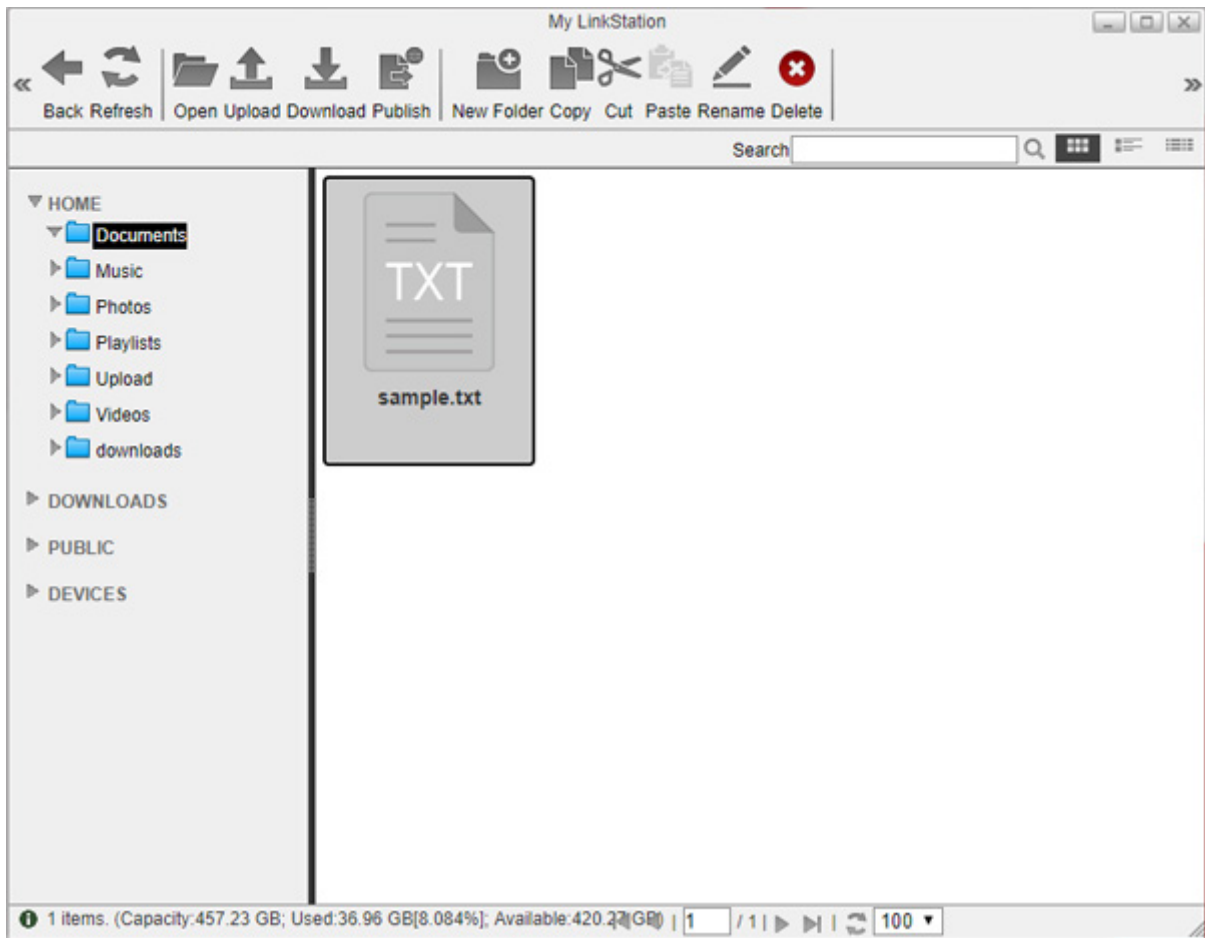


4 The selected file is added to the list. Click *Upload*.

Downloading Files to a Computer

1 From Settings, click *My LinkStation* (🏠).

- 2 Select a file to download to your computer and click *Download*. The selected file will be downloaded to your computer.

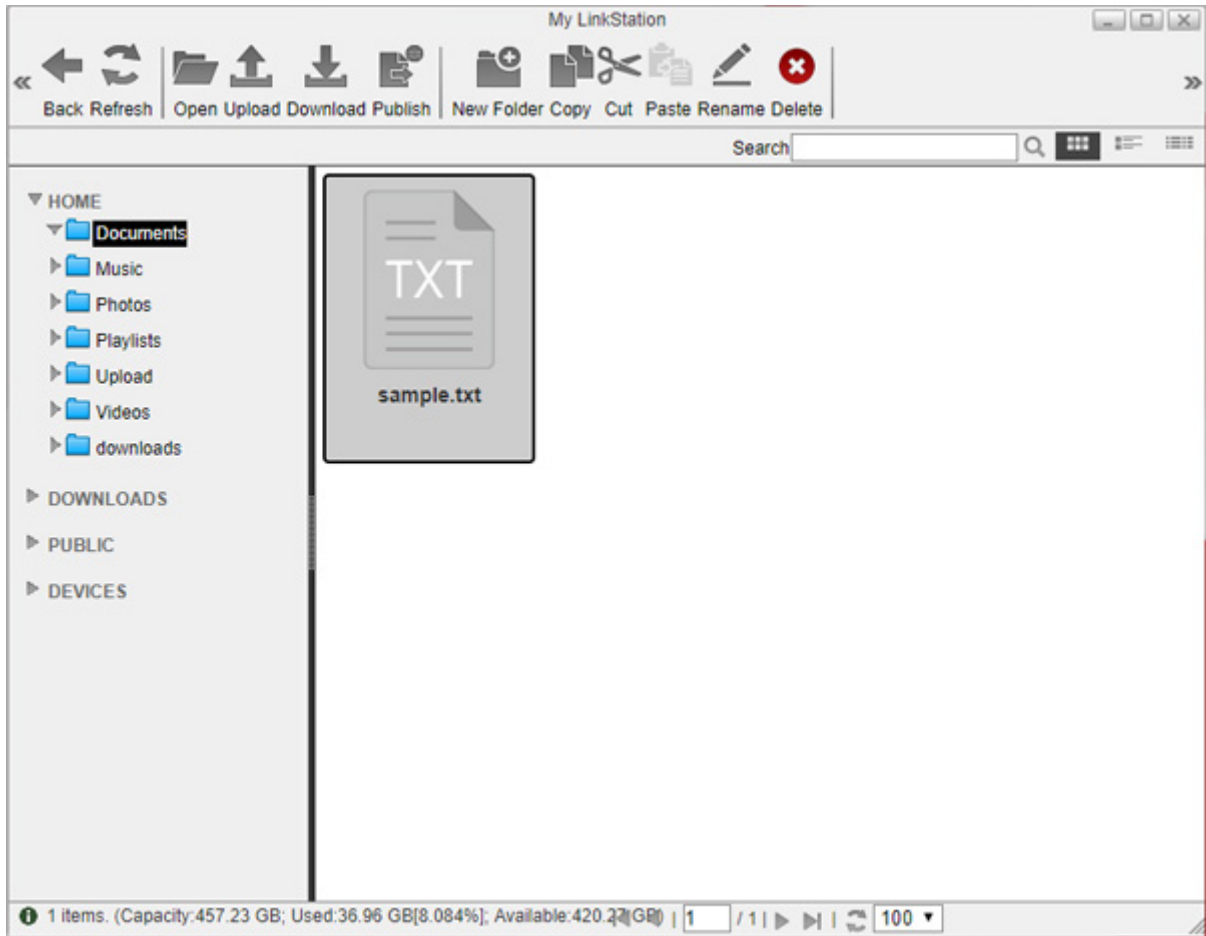


Sharing Files and Folders Using Shared Links

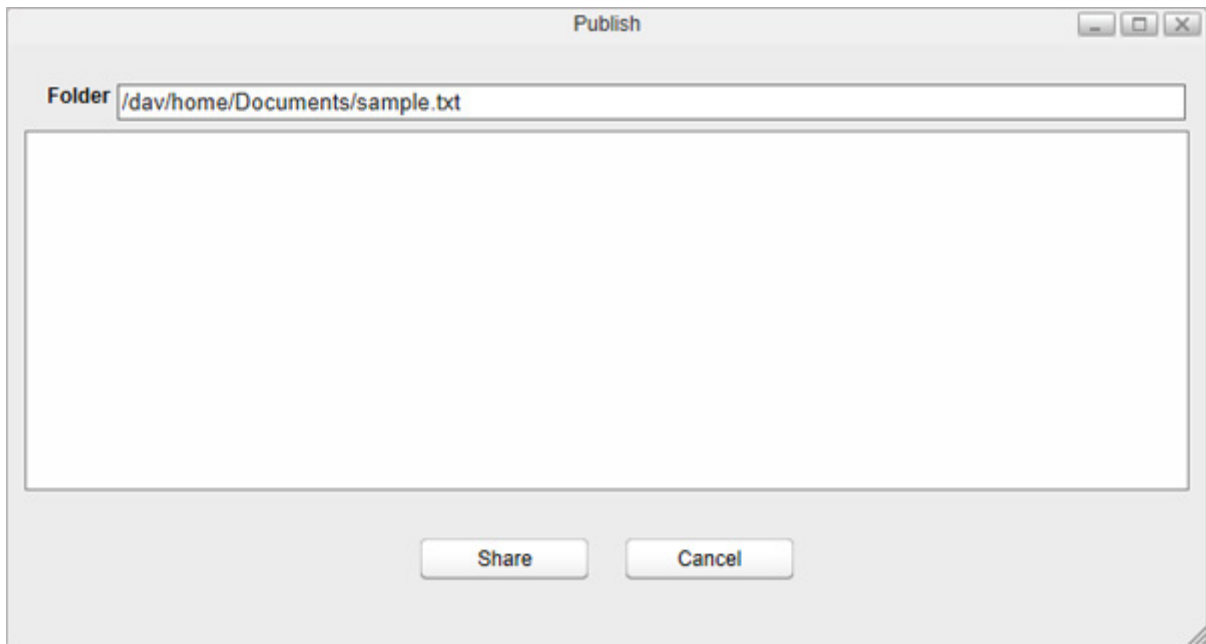
You can create a temporary shared link to share files or folders with other users on the local network or via the Internet. To enable the access from outside the network, you should configure *WebAccess* settings before creating the shared link. For more detailed information about *WebAccess*, refer to the "[WebAccess](#)" section in chapter 7.

- 1 From Settings, click *My LinkStation* (🏠).

2 Select a folder or file from the main window and click *Publish*.



3 Click *Share*. The temporary shared link will be generated.




4 You can send the link by copying and pasting it into an email or messaging application.

The expiry date is set to a month from the date when the link is generated. To change the date, click *Edit* and specify a date. After you finish editing, click *OK* to apply changes.

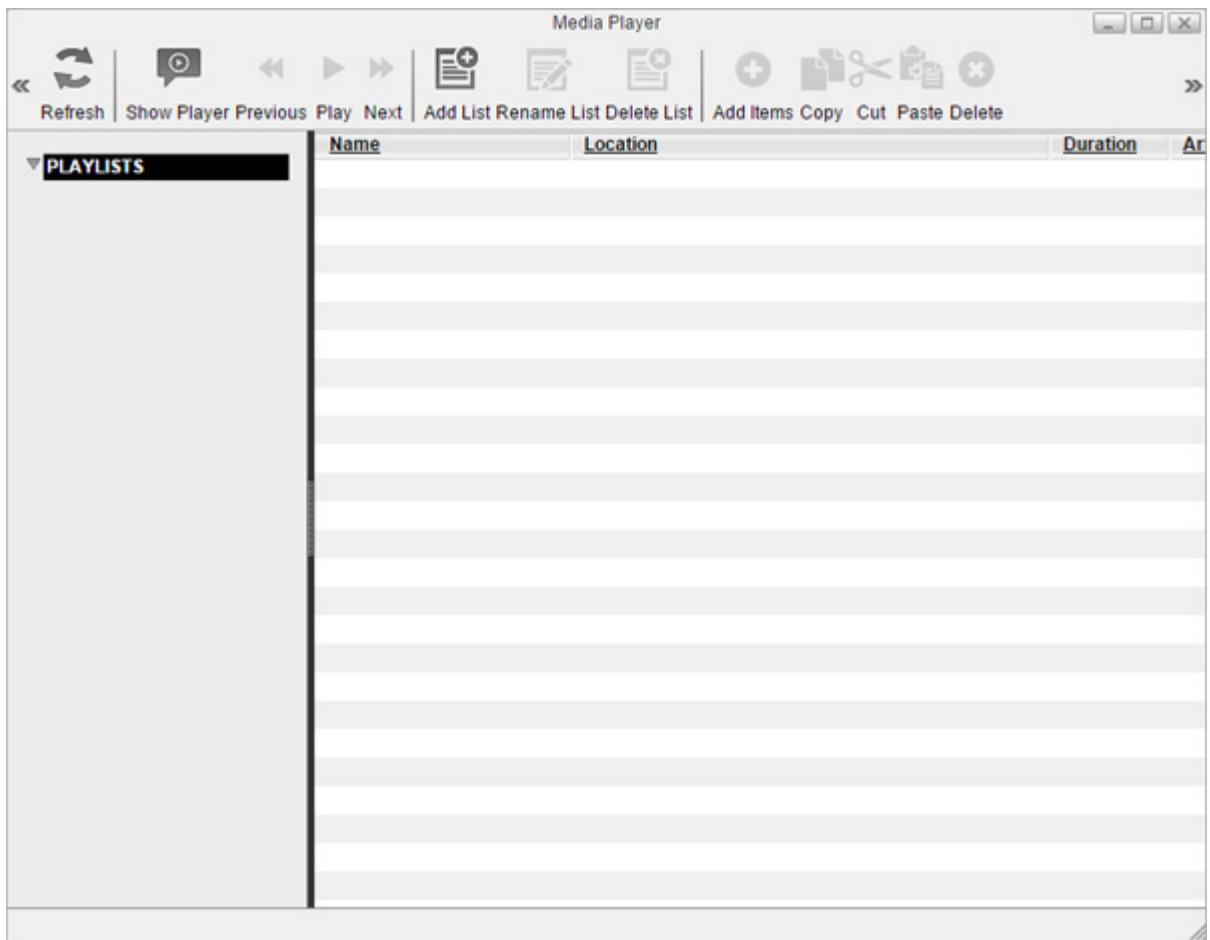
Notes:






- No other folder or file on the LinkStation can be accessed from the shared link.
- Expired links cannot be accessed.









Chapter 4 Media Player

Media Player is an application that can play media files on the LinkStation and create original playlists with the media files. To open Media Player, click the  icon on the home screen.

Navigating the Media Player Window



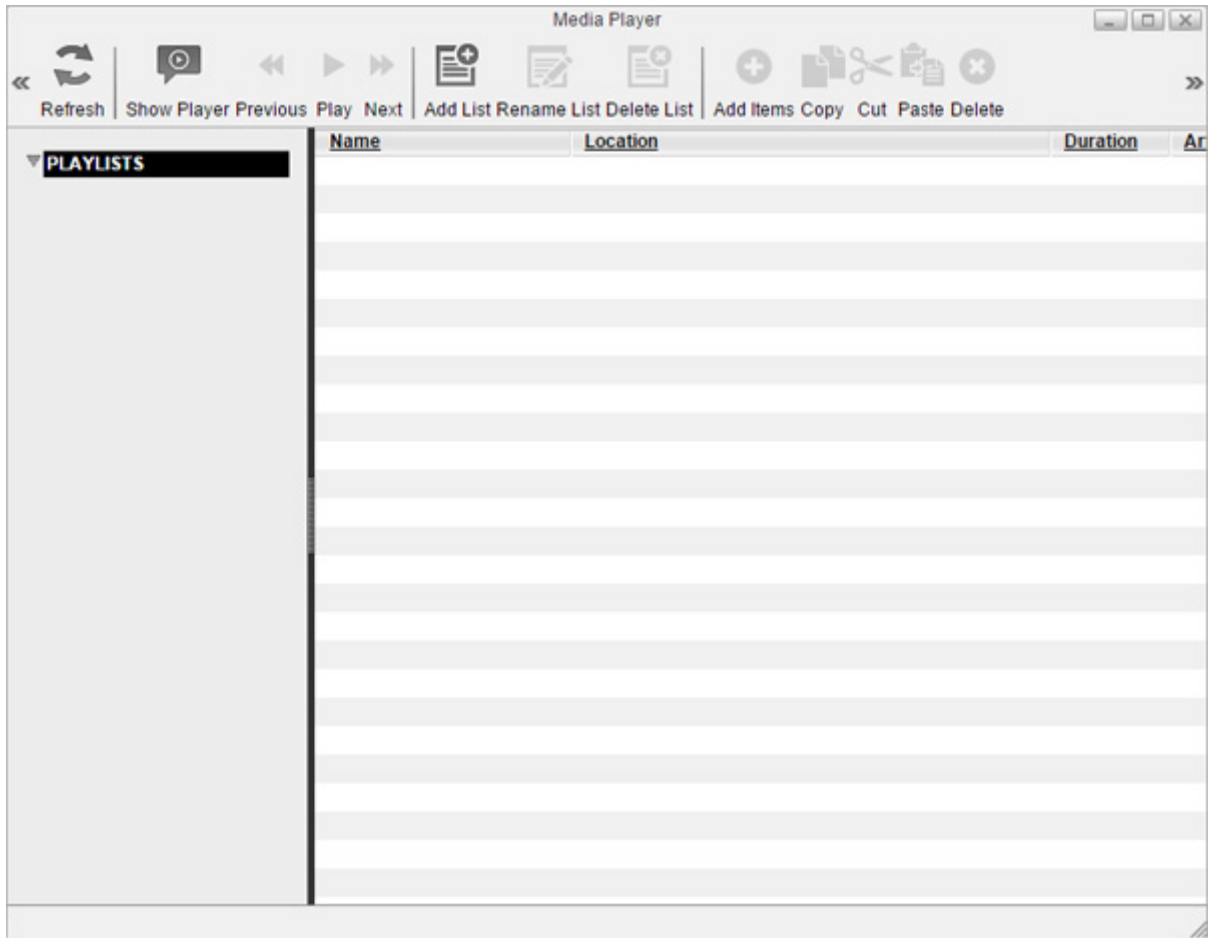
Icons	Name	Descriptions
	Refresh	Refresh the screen.
	Show Player	Displays the media player.
	Previous	Return to the previous media file.
	Play	Opens the media player and play media files in the playlist.
	Next	Skip to the next media file.

Icons	Name	Descriptions
	Add List	Add a new playlist.
	Rename List	Change the name of a playlist.
	Delete List	Delete a selected playlist.
	Add Items	Add a media file to the playlist.
	Copy	Create a copy of the selected media file, either from the current directory or another that is available to the user.
	Cut	Cut the selected media file.
	Paste	Paste the media file on the clipboard to the new location.
	Delete	Delete the selected media file.

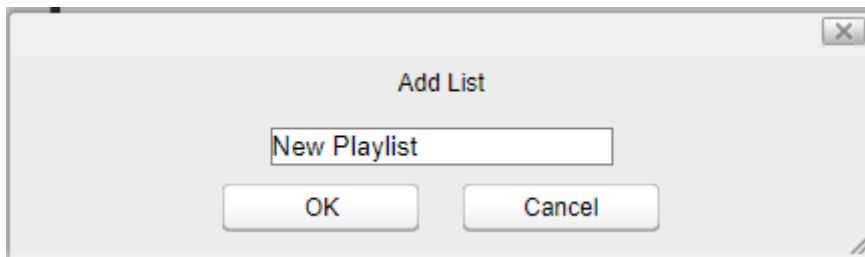
Creating Playlists

- 1 From Settings, click *Media Player* ().

2 Select "PLAYLISTS" at the left of the window and click *Add List*.



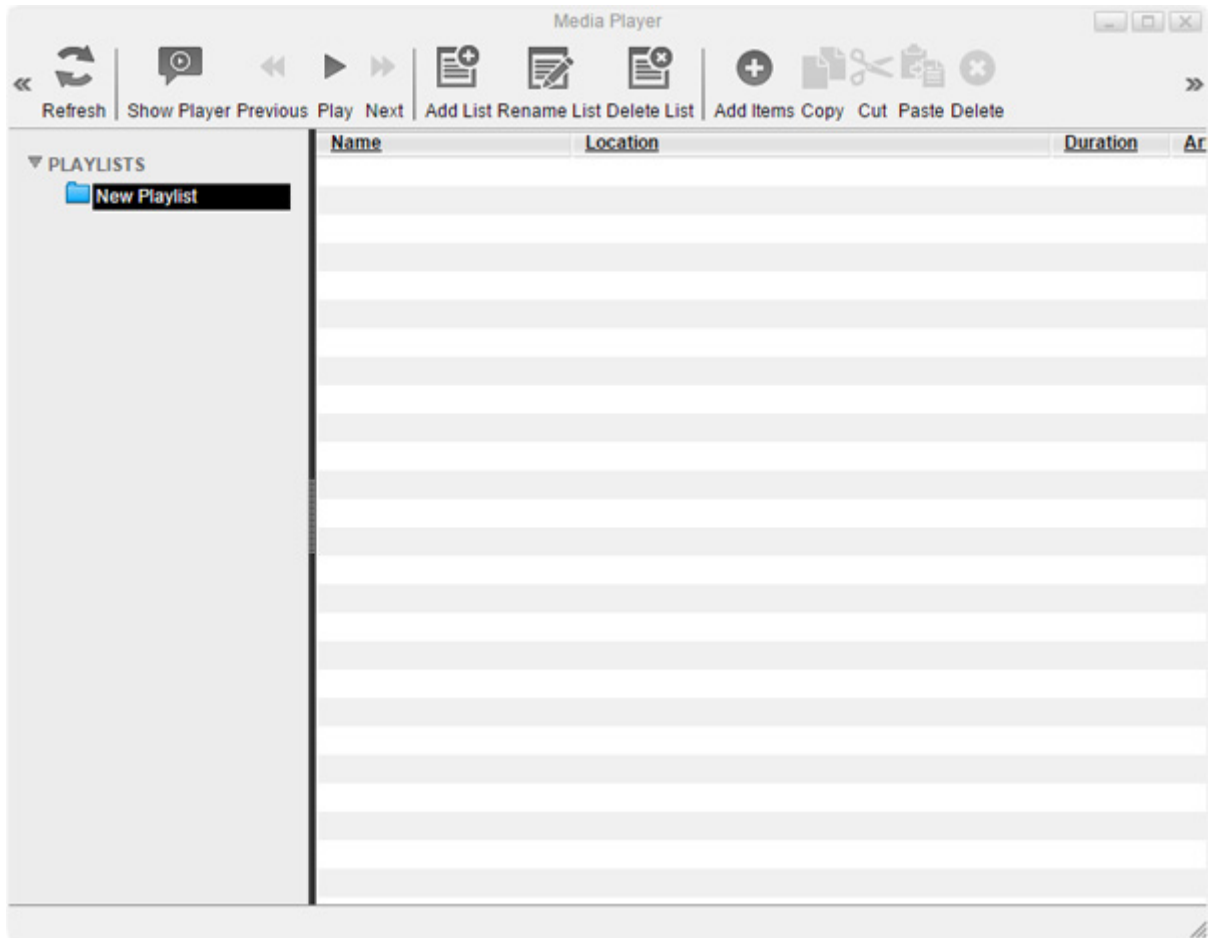
3 Enter a desired playlist name and click *OK*.



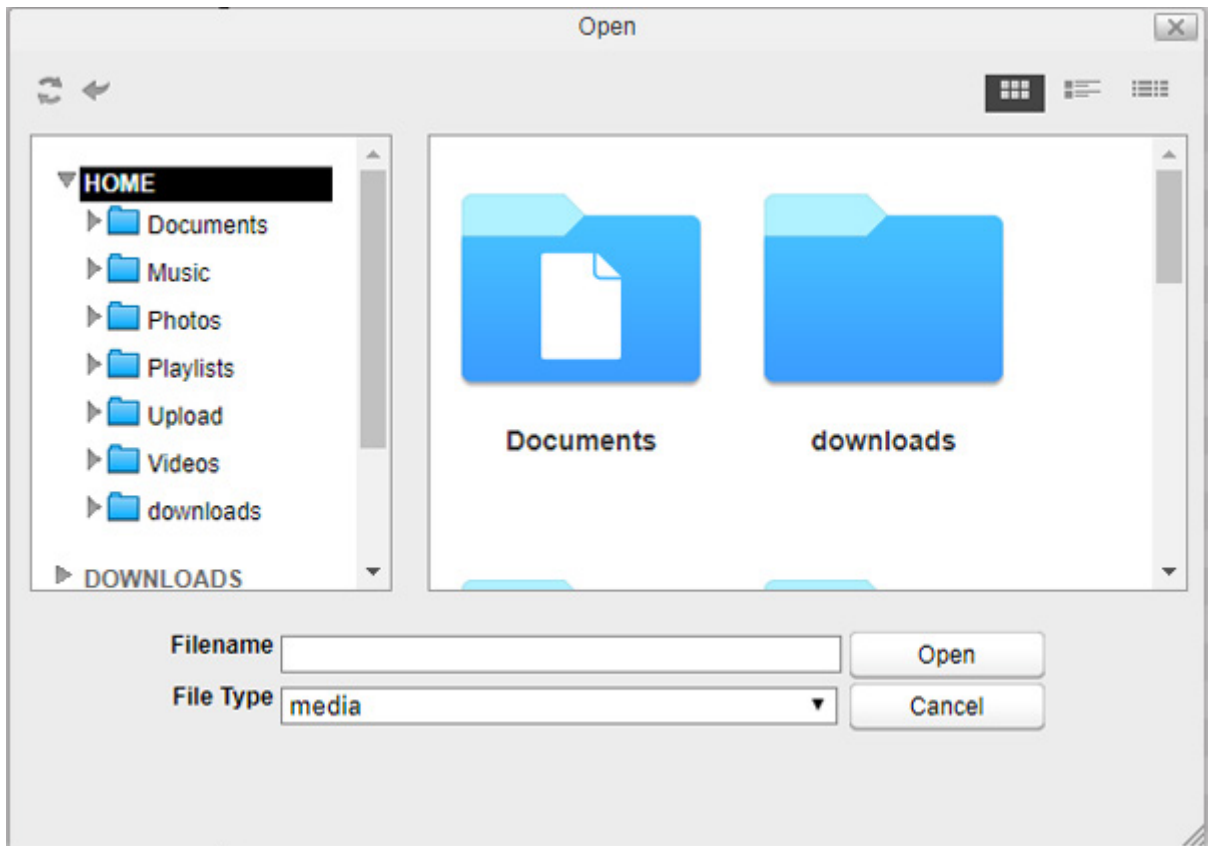
Adding Media Files

1 From Settings, click *Media Player* (🔊).

2 Select the playlist at the left of the window and click *Add Items*.




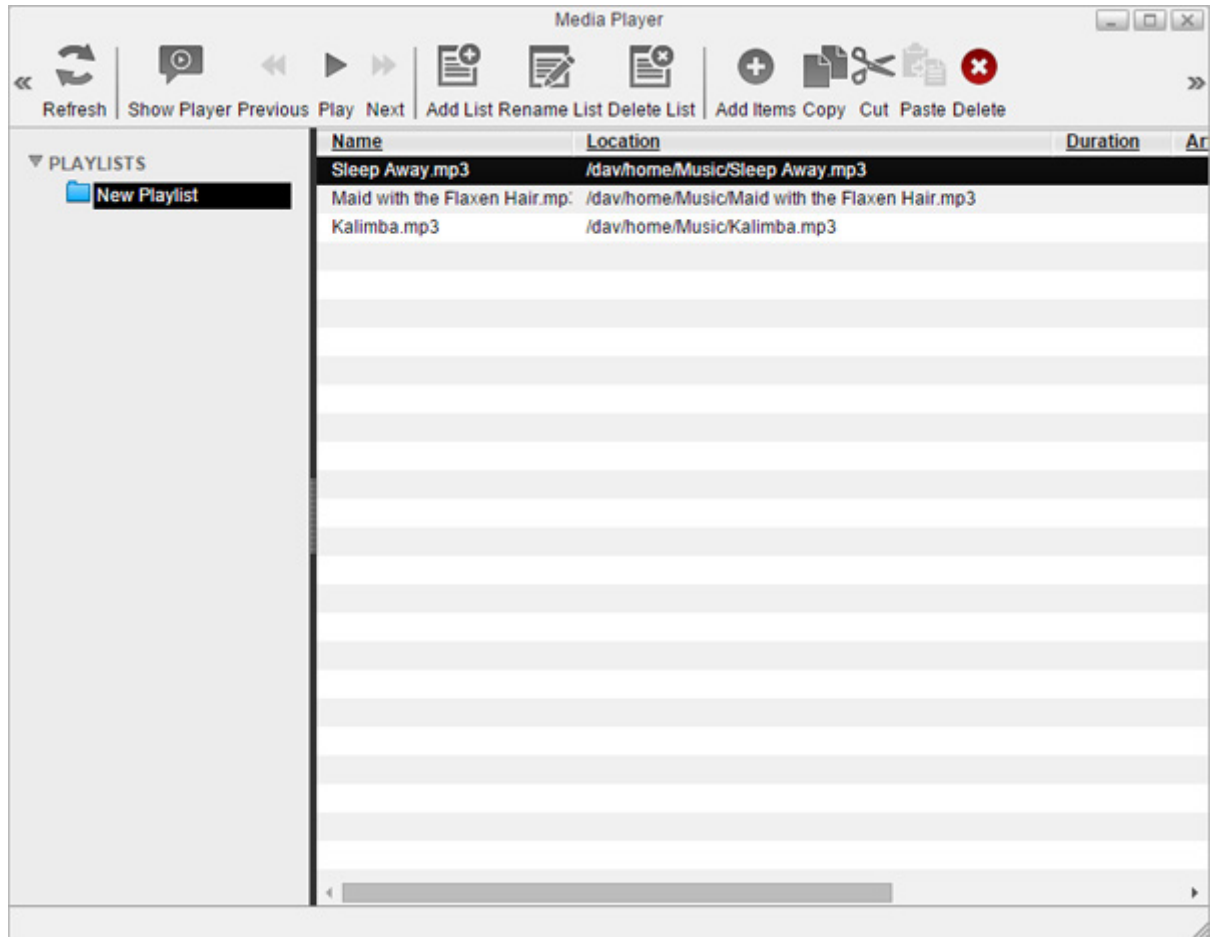
3 The dialog box will open. Select a media file to add and click *Open*.



Playing Files


Media Player supports MP3 or MP4 file playback on the browser. Some specific MP4 files may not be compatible. Other file types will be downloaded to the desired location on your computer.

- 1 From Settings, click *Media Player* ().
- 2 Select the playlist at the left of the window and click *Play*.



- 3 The player window will open and start playing media files. To return to the playlist, click *Show Player*.

Chapter 5 Disk Manager

Disk Manager is an application that manages RAID arrays and internal or external drives. To open Disk Manager, click the  icon on the home screen.

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.

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.

Linear

Combines all drives from drives into a single virtual drive. For this virtual drive, data will be written onto the first drive, then to the next drive when the first drive becomes full, and so on. The usable space is equal to the total capacity of all drives in the array. Linear mode offers no redundancy. If any of the drives become damaged, then all data on that drive 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

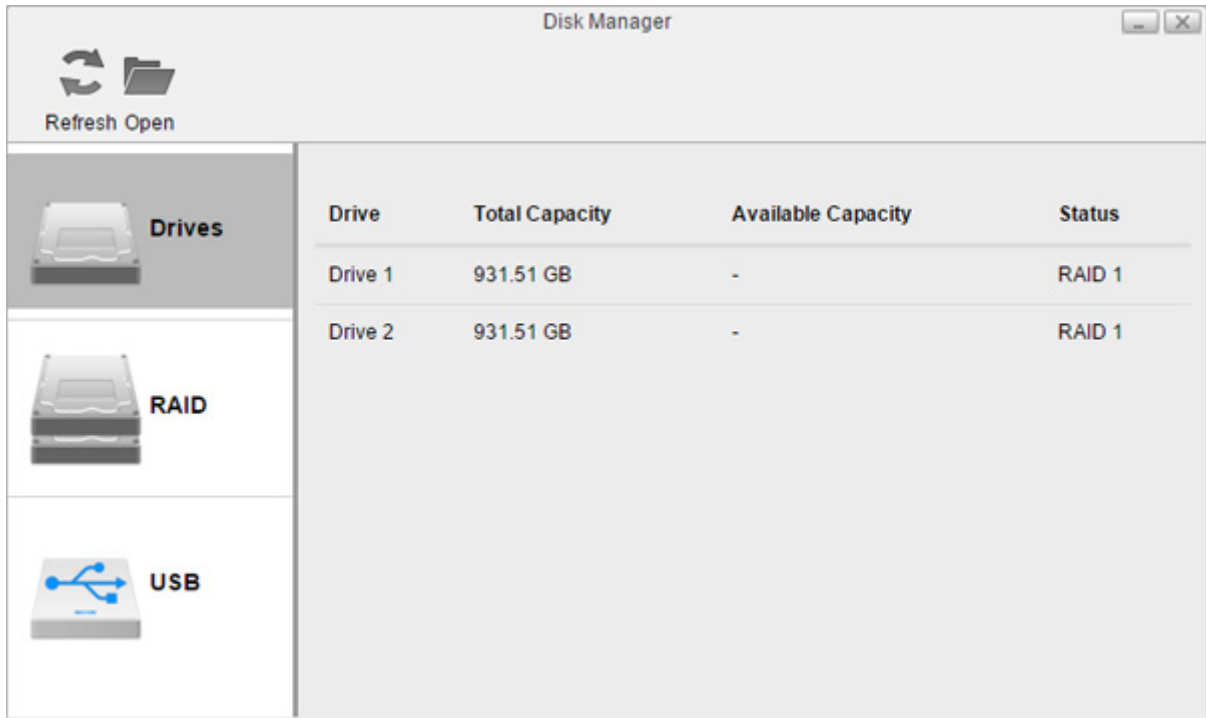
Note: If you change the RAID mode, all data on the array is deleted. This is true for every procedure in this chapter. Always back up any important data before performing actions that affect your RAID array.

Using JBOD

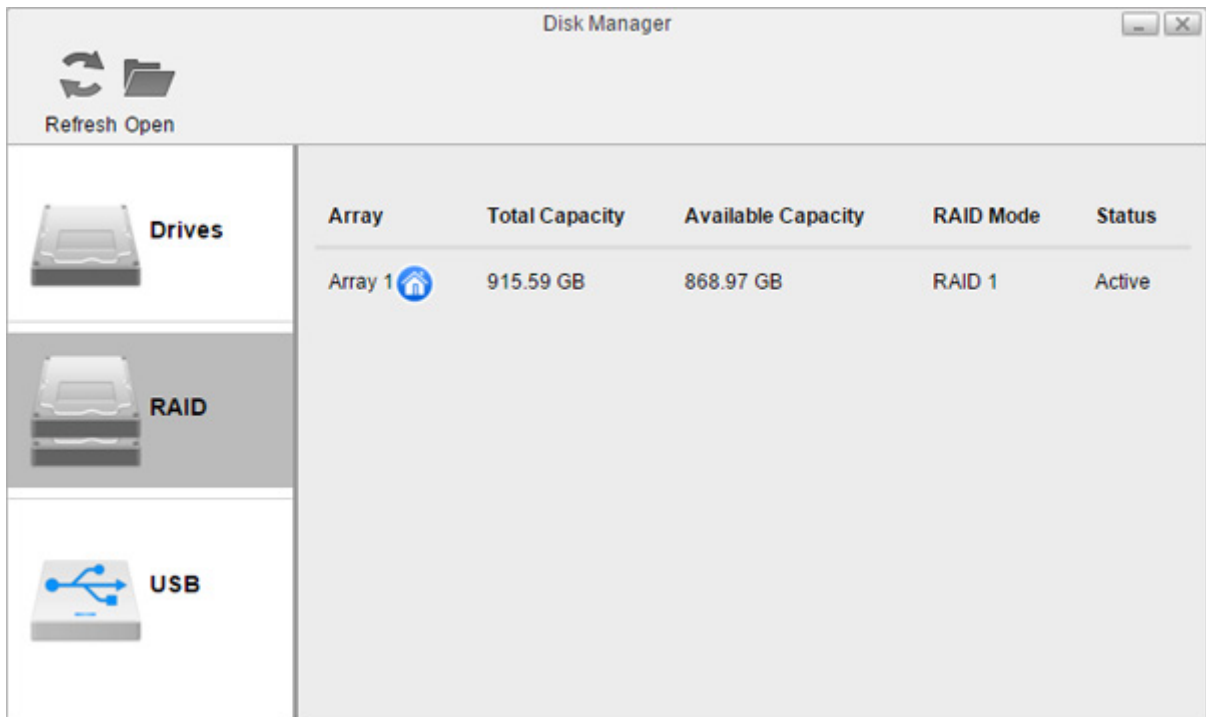
With JBOD, each drive on the LinkStation is addressed separately. To put drives from an array into JBOD, follow the procedure below.

- 1 From Settings, click *Disk Manager* (.

2 Click the *RAID* tab.



3 Click the array to delete.



4 Click *Delete*.**5** Two different warnings will be displayed. Read them carefully and click Yes for both.**6** Format the drive by referring to the ["Formatting Drives"](#) section below.

Once JBOD is configured, the default shared folders will automatically be created only on the drive that is initially formatted. Create a shared folder on the other drives by referring to the ["Adding a Shared Folder"](#) section in chapter 7.

Changing the RAID Mode

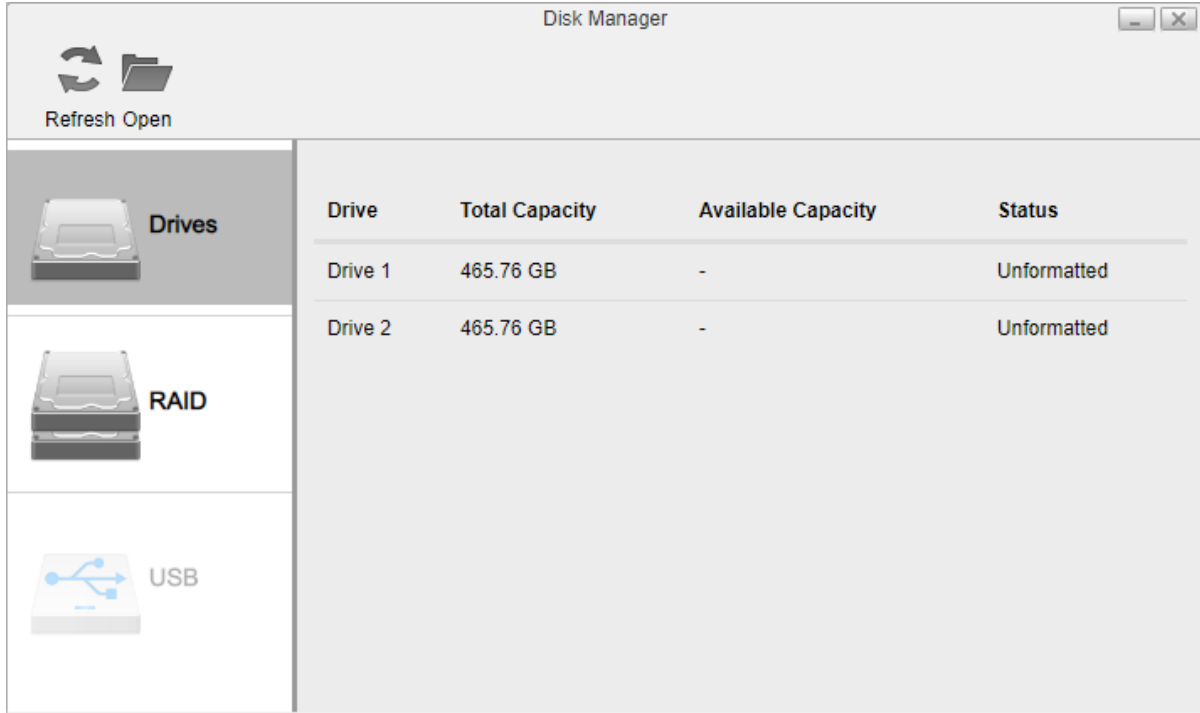
To change the RAID mode, first put the drives into JBOD by referring to the ["Using JBOD"](#) section above. Then, follow the procedure below.

Note: You can also configure the RAID settings, including changing the RAID mode, using the initial setup wizard, but you will lose all settings on the LinkStation.

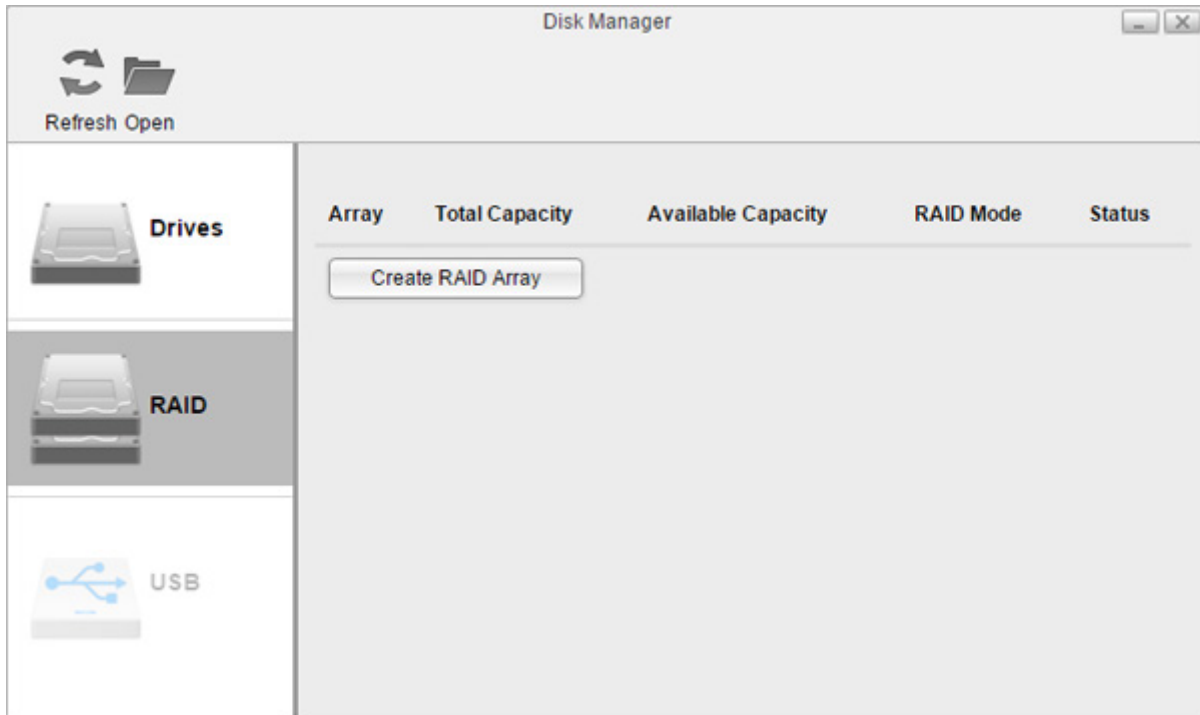
To launch the initial setup wizard, initialize the LinkStation settings from *System Settings > Reset*, then follow the procedure on the screen to finish changing the RAID mode.

1 From Settings, click *Disk Manager* ().

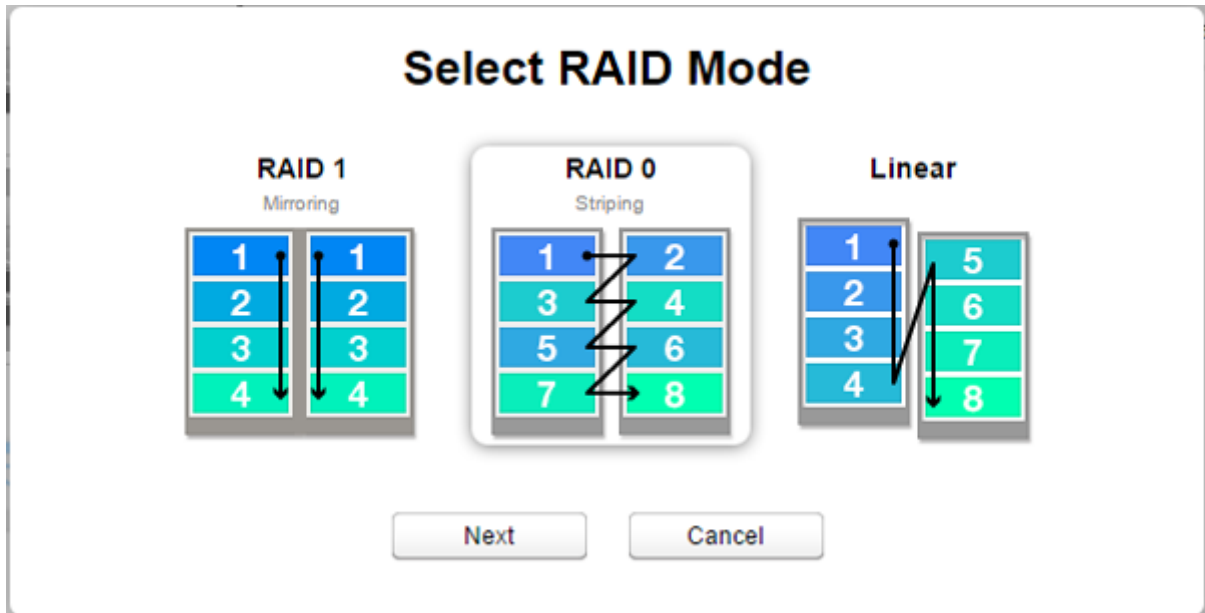
2 Click the *RAID* tab.



3 Click *Create RAID Array*.



- 4** Select a RAID mode and click *Next*.




- 5** Click *Yes*.
- 6** RAID array creation will start. Wait until it's done.
- 7** Click *OK*, then *Close* when completed.

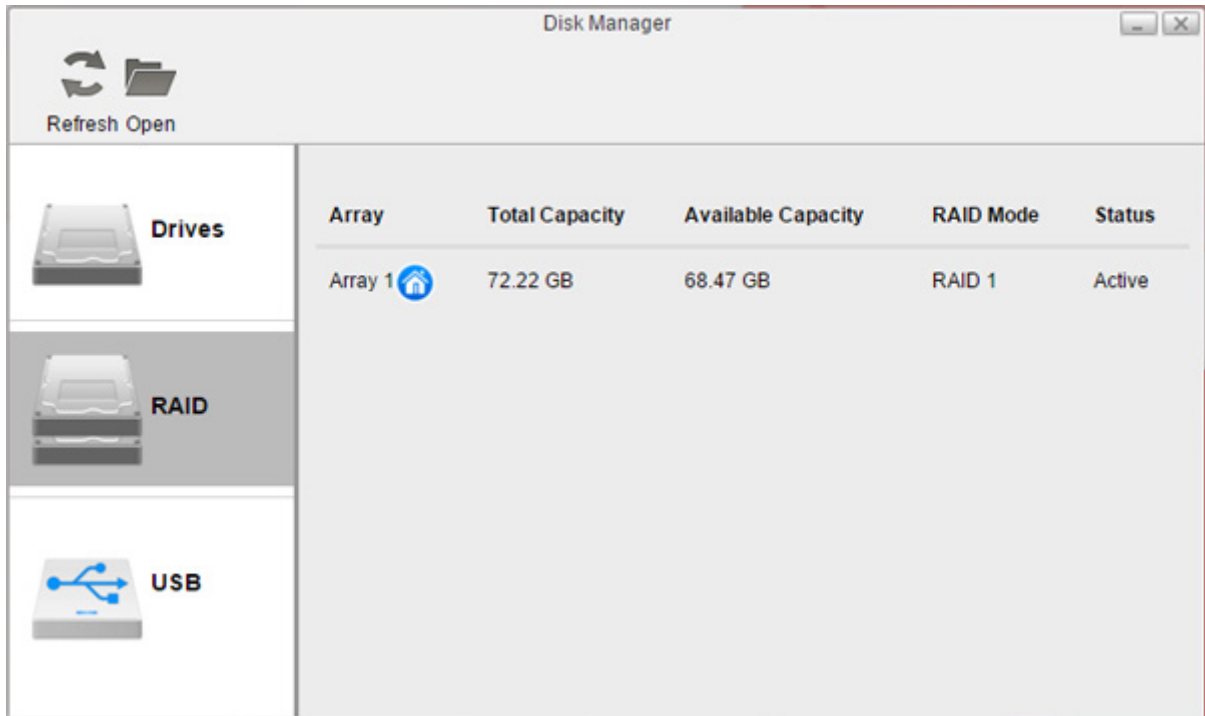
The new RAID array will be created. Next, create a shared folder by referring to the [“Adding a Shared Folder”](#) section in chapter 7.

Expanding RAID Capacity Without Deleting Data

If the drives in your LinkStation are in a RAID 1 array with two drives or they are in degraded mode, you can expand the RAID array capacity without erasing the data on the drives. To expand the capacity, you should have two new drives with capacity larger than the remaining drive.

- 1** Shut down the LinkStation and remove one of the drives. Do not remove both drives at the same time.
- 2** Insert a new drive (with a larger capacity than the remaining drive) and turn on the LinkStation.
- 3** When the power LED glows white or blinks amber, press and hold the function button for five seconds.
- 4** The LinkStation will start rebuilding the RAID array. After a few minutes, the I18 message will be displayed in NAS Navigator2. Wait until the drive finishes rebuilding; the I18 message will be extinguished.
- 5** After the RAID array is rebuilt, shut down the LinkStation again and remove another drive.
- 6** Insert another new drive and turn it on.
- 7** When the power LED blinks amber, press and hold the function button for five seconds.
- 8** The LinkStation will start rebuilding the RAID array again. Wait until the I18 message is extinguished as step 4 above.
- 9** After the I18 message disappears, open Settings and click *Disk Manager* ().

10 Click the *RAID* tab and the RAID array to make the capacity larger.



11 Click *Expand*.



12 Read the warning message carefully and click *Yes*.

13 The RAID array will be rebuilt and its capacity will expand. The power LED will blink amber and the I18 and I46 messages will appear. Wait until those messages disappear and the power LED returns to a steady white.

Adding an External Drive

Your LinkStation features a USB port, and you can connect an external drive to this port. For external drives, Buffalo USB drives are recommended. The following file systems for external drives are supported: ext2, ext3, ext4, FAT32, exFAT, NTFS, HFS Plus


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 drive, connect its AC adapter.

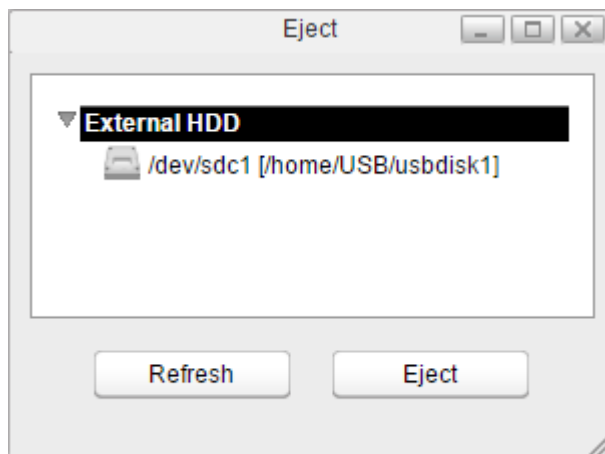
Note: This LinkStation will not recognize USB drives that are larger than 16 TB. Use only USB drives that are 16 TB or smaller.

Dismounting an External Drive

If the LinkStation is powered on, dismount an external drive before unplugging it. You may dismount the external drive from Settings. If the LinkStation is off, then the external drive is already dismounted and may be unplugged safely.

Dismounting Using the Eject Button

- 1 Click the  icon at the upper right corner of the home screen toolbar.
- 2 Select the device to dismount and click *Eject*.

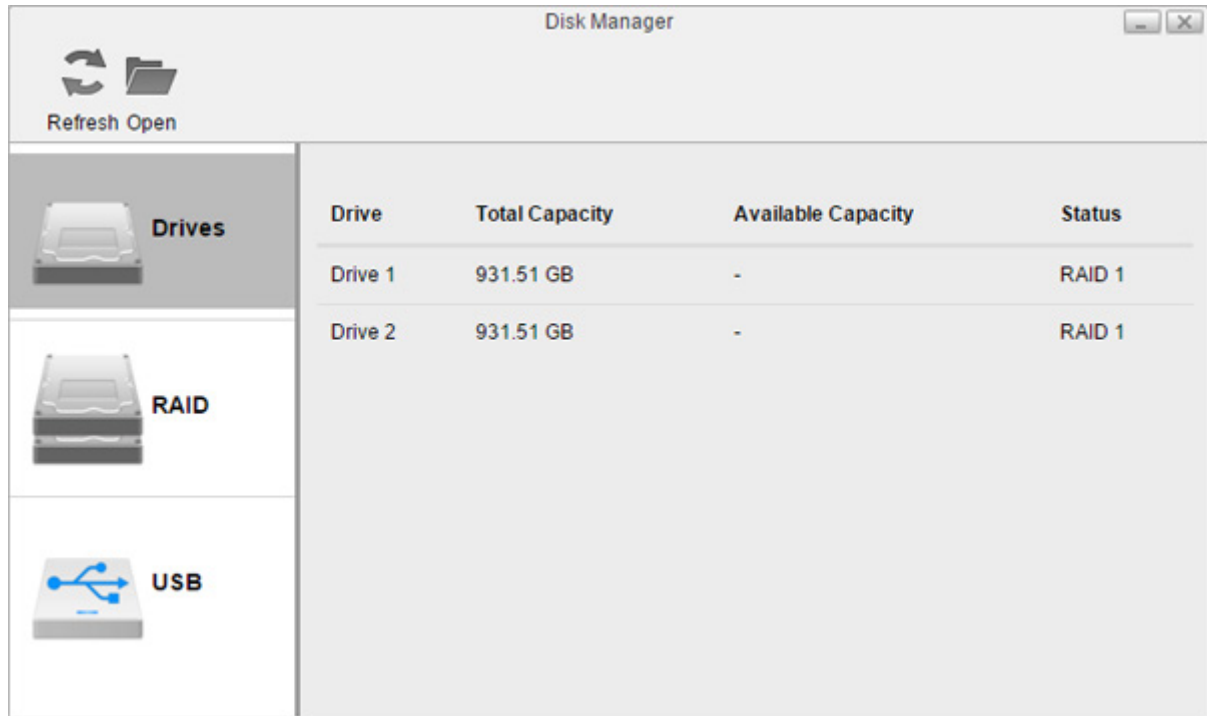


- 3 The external drive will be dismounted.
Once the drive is dismounted, unplug it from the LinkStation.

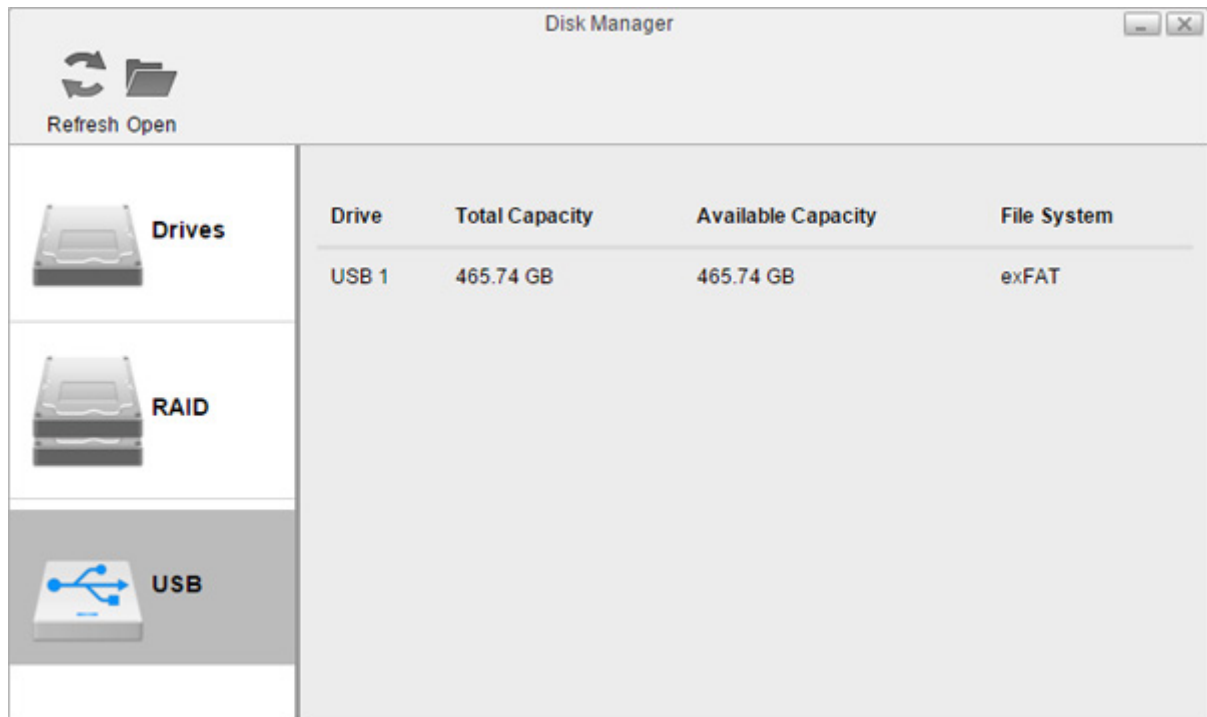
Dismounting Using Disk Manager

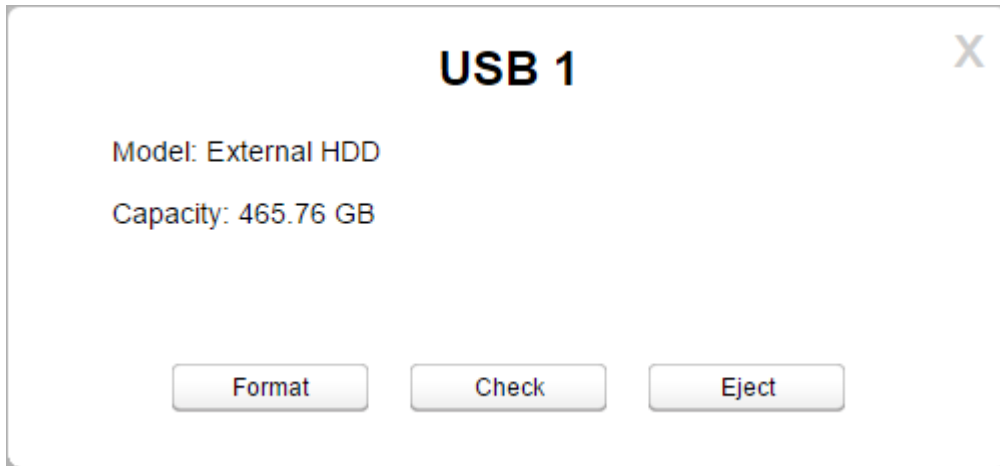
- 1 From Settings, click *Disk Manager* ()

2 Click the *USB* tab.



3 The drive information will be displayed. Click the external drive to be dismounted.



4 Click *Eject*.**5** The external drive will be dismounted.

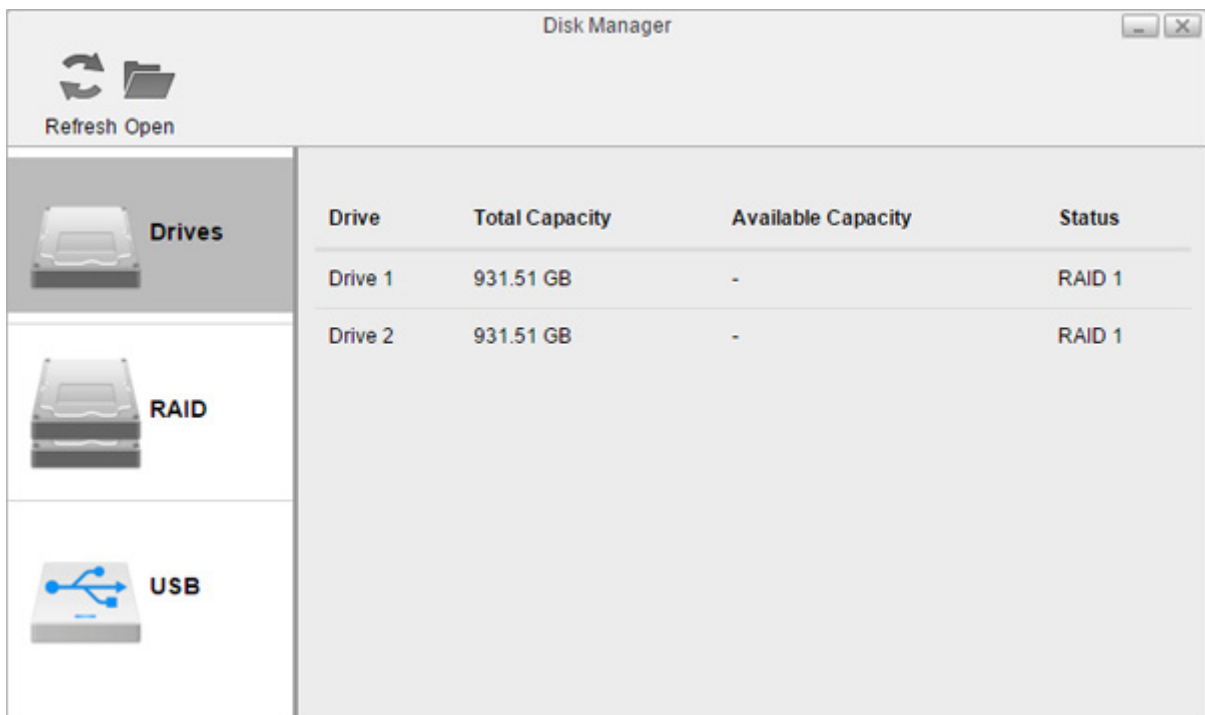
Once the drive is dismounted, unplug it from the LinkStation.

Checking Drives

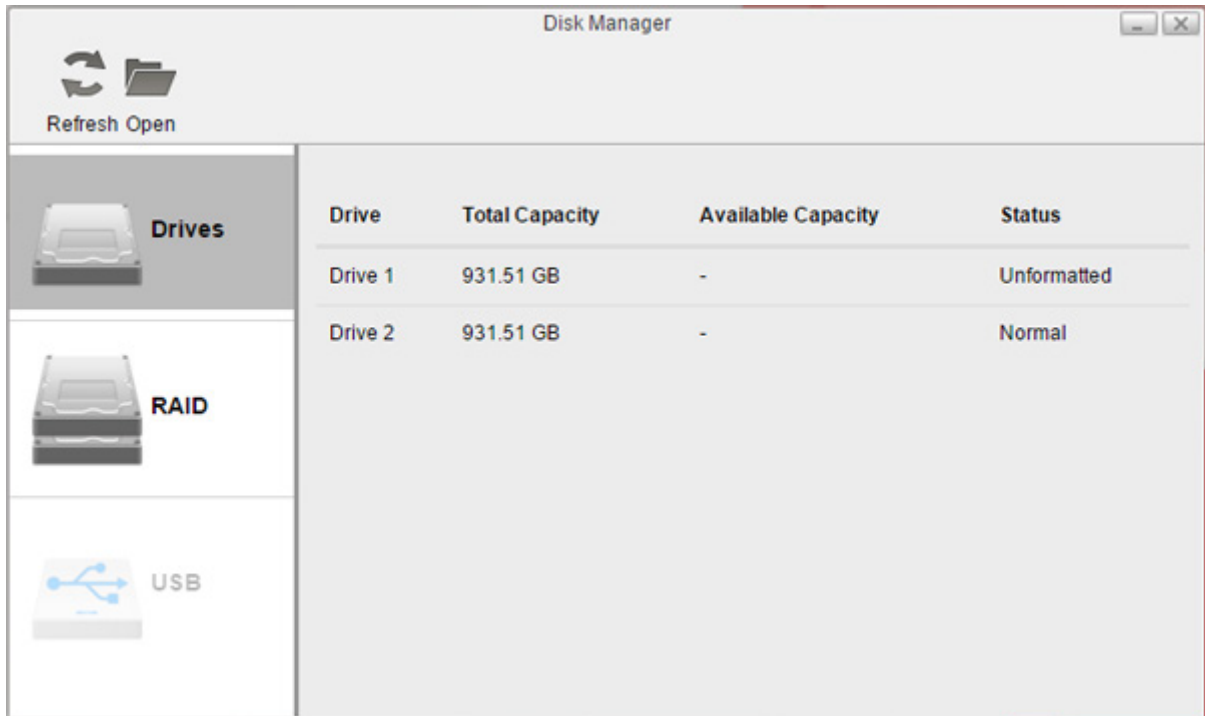
A drive check tests the data on a drive on the LinkStation or one that is connected via USB for integrity. Errors are fixed automatically. With large drives, a drive check may run for many hours. Do not turn off the LinkStation until the drive check is finished. Follow the procedure below to run a drive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

1 From Settings, click *Disk Manager* (⚙️).

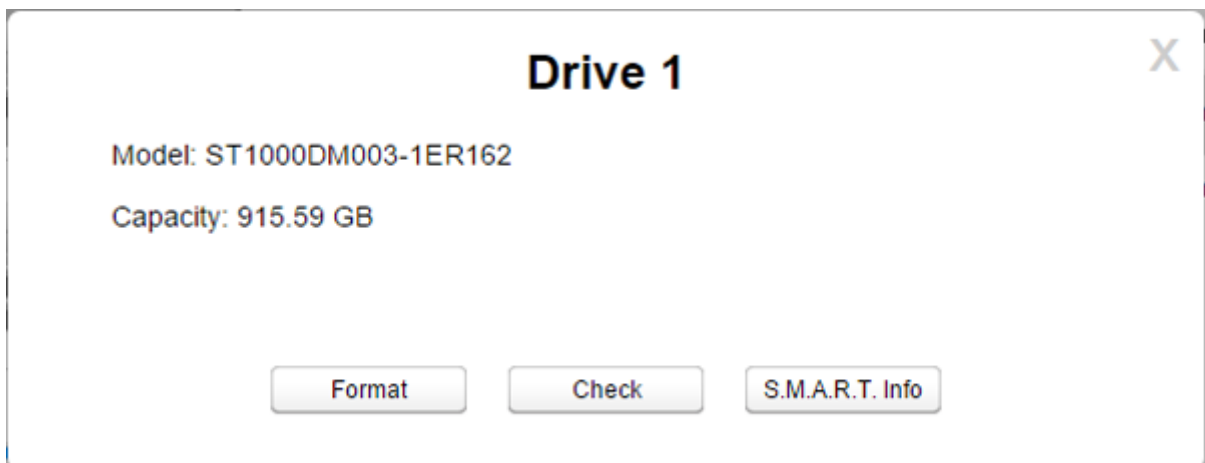
2 Click the *RAID* tab to check an internal drive (if there is no RAID array configured, click the *Drives* tab) or the *USB* tab to check an external drive.



3 Select the array or drive to test.



4 Click *Check*.



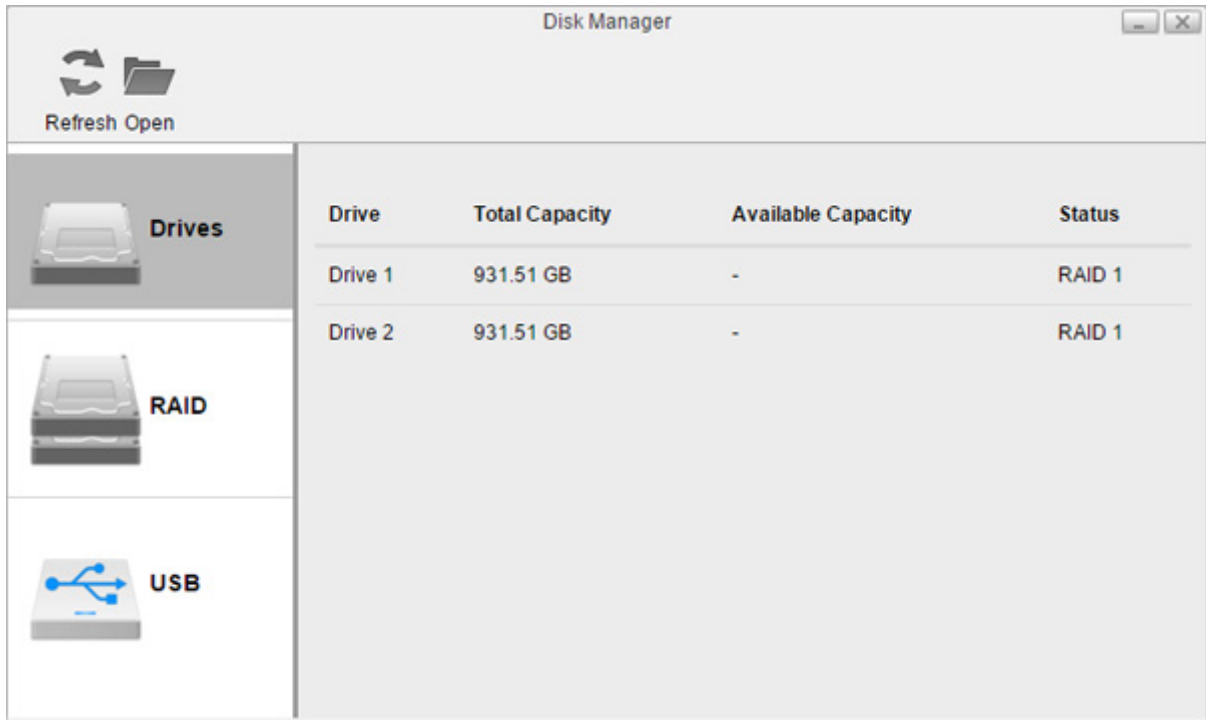
5 Click *OK*, then *Close* when completed.

Formatting Drives

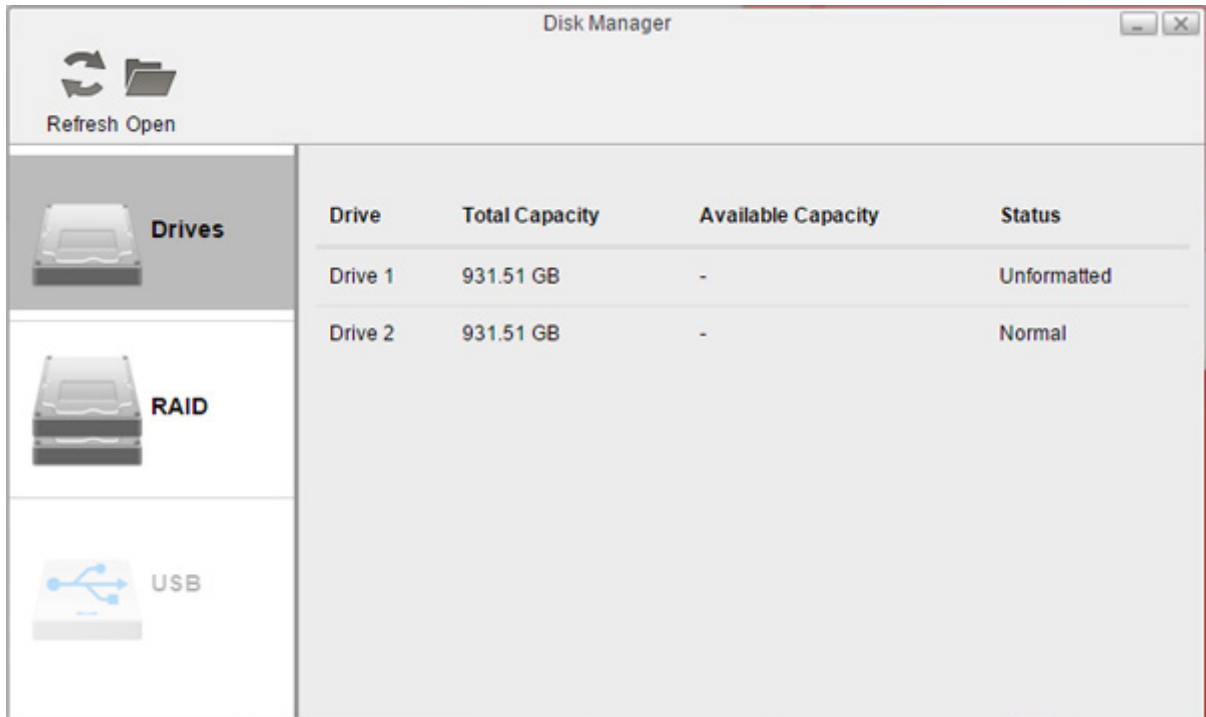
Note: Since firmware version 3.00, the drive that had been used on a different LS500 series LinkStation needs to be formatted after it is inserted.

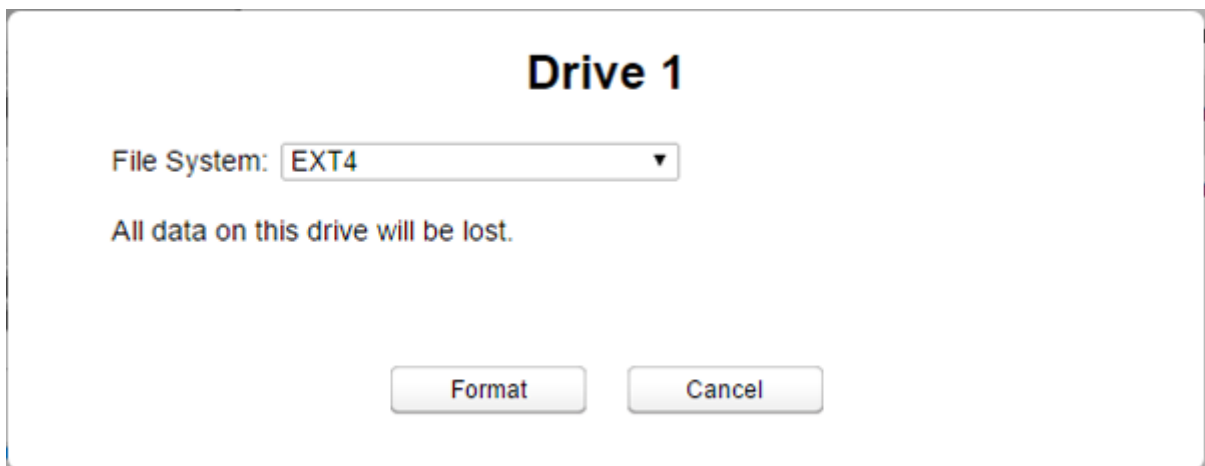
1 From Settings, click *Disk Manager* (⚙️).

- 2 Click the *RAID* tab to format an internal drive (if there is no RAID array configured, click the *Drives* tab) or the *USB* tab to format an external drive.



- 3 Select the array or drive to format.



4 Click *Format*.**5** Select a file system from the drop-down list and click *Format*.**6** Click *OK*, then *Close* when completed.**Notes:**

- Do not turn off the LinkStation or disconnect power to the LinkStation while formatting a drive.
- The following file systems can be formatted from Settings.

Internal Drive	ext4
External Drive	ext3, ext4, exFAT

Drive Replacement

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

Notes:

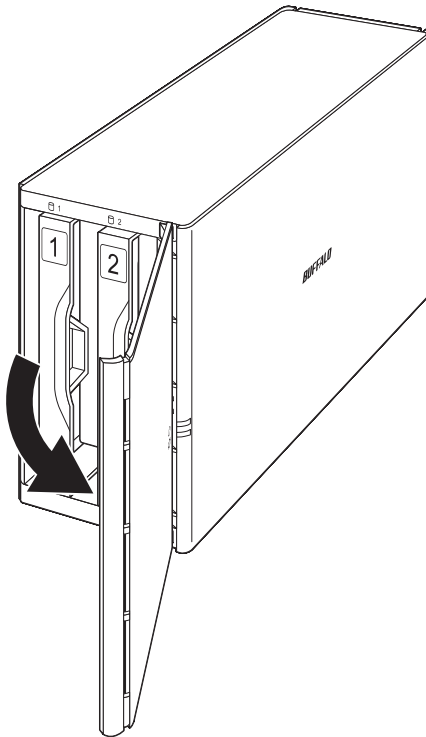
- Do not replace a running drive while the LinkStation is turned on. Power down the LinkStation before changing the drive. While the LinkStation is running, never unplug or remove drives without dismounting them first.
- If using the LS520DN LinkStation model, use a Buffalo OP-HDBN series drive as the replacement drive. For the replacement drive of other LinkStation models, use a Buffalo OP-HDBST series drive. You can also use compatible non-Buffalo drives listed on the [Buffalo website](#) as the replacement drive for the LS520DE LinkStation model. 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 0 array. However with a RAID 1 array, you can expand the current RAID array capacity

if you replace a drive with a larger-sized drive. To expand the capacity, refer to the [“Expanding RAID Capacity Without Deleting Data”](#) section above.

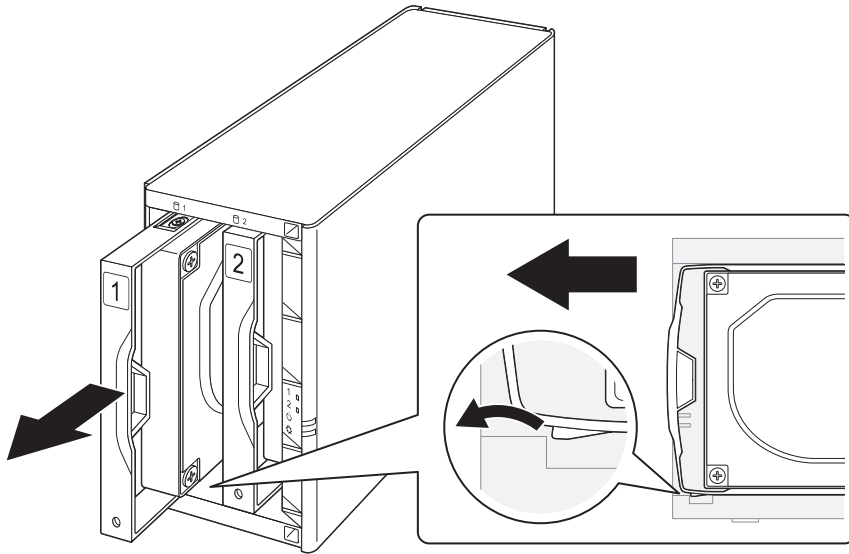
- If there is existing data on the replacement drive, back it up as all data on the drive will be lost during the replacement process.
- If sending a defective drive to Buffalo for replacement, please keep the cartridge as Buffalo will only replace the drive and not the cartridge.
- To avoid damaging the LinkStation with static electricity, ground yourself by touching something made of metal before handling any sensitive electronic parts.
- 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.

Step 1 - 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.



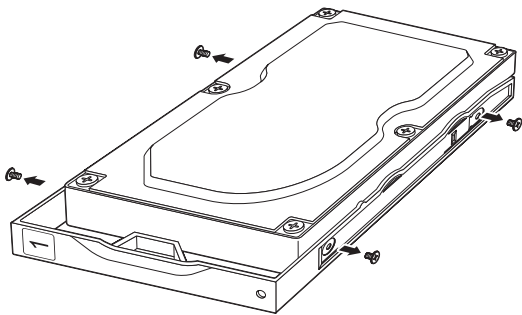
3 Push the failed drive's cartridge up and remove it from the LinkStation.



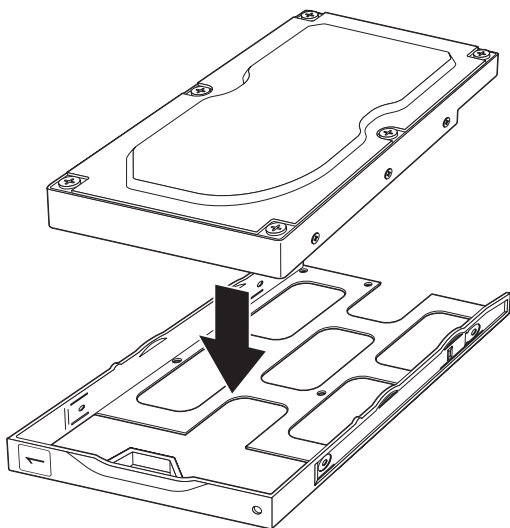
Notes:

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

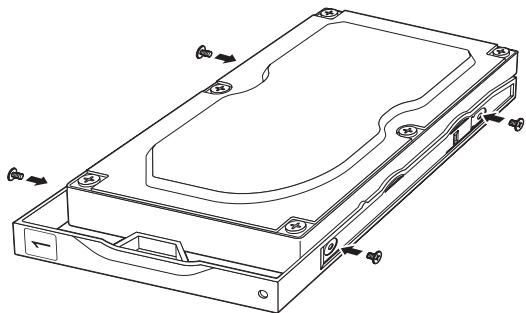
4 Unscrew the four screws and remove the drive from the cartridge.



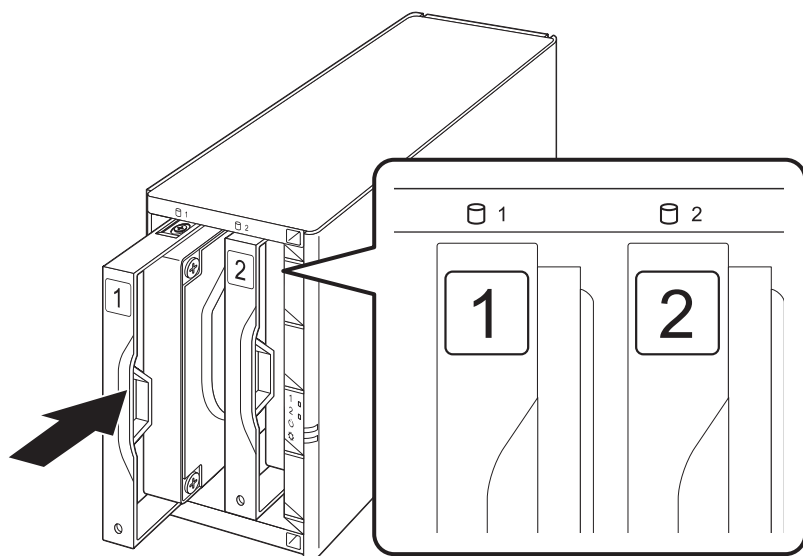
5 Install a new drive (sold separately) into the cartridge.



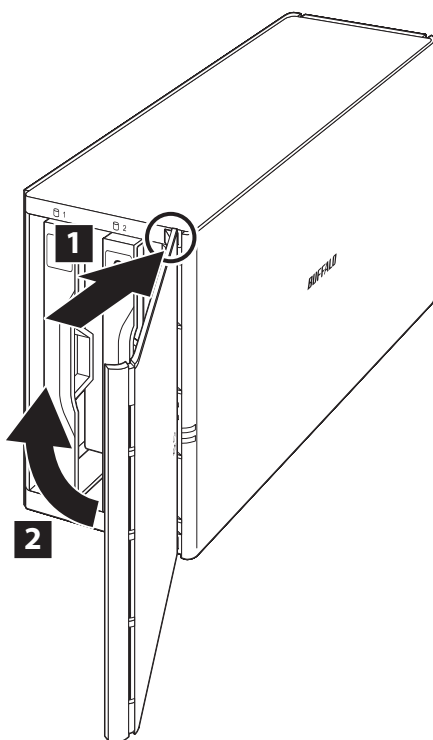
6 Replace the four screws.



7 Insert the new drive back into the empty slot.



8 Close the front panel.



- 9 Connect all cables, then turn on the LinkStation.

Step 2 - Rebuilding the RAID Array

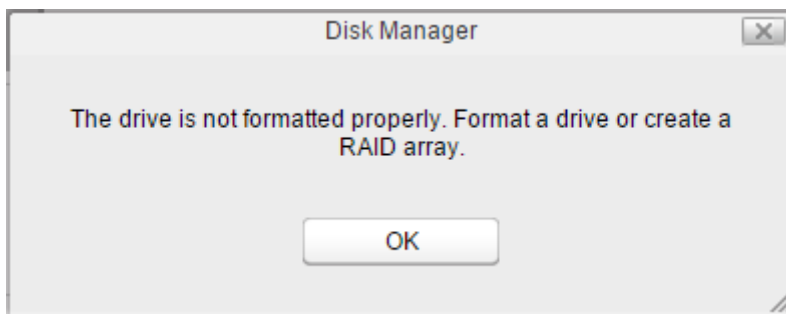
Depending on the RAID mode you have configured, the procedure after replacing the defective drive may vary. Refer to the section of the configured RAID mode and follow the described procedure.

Using RAID 1

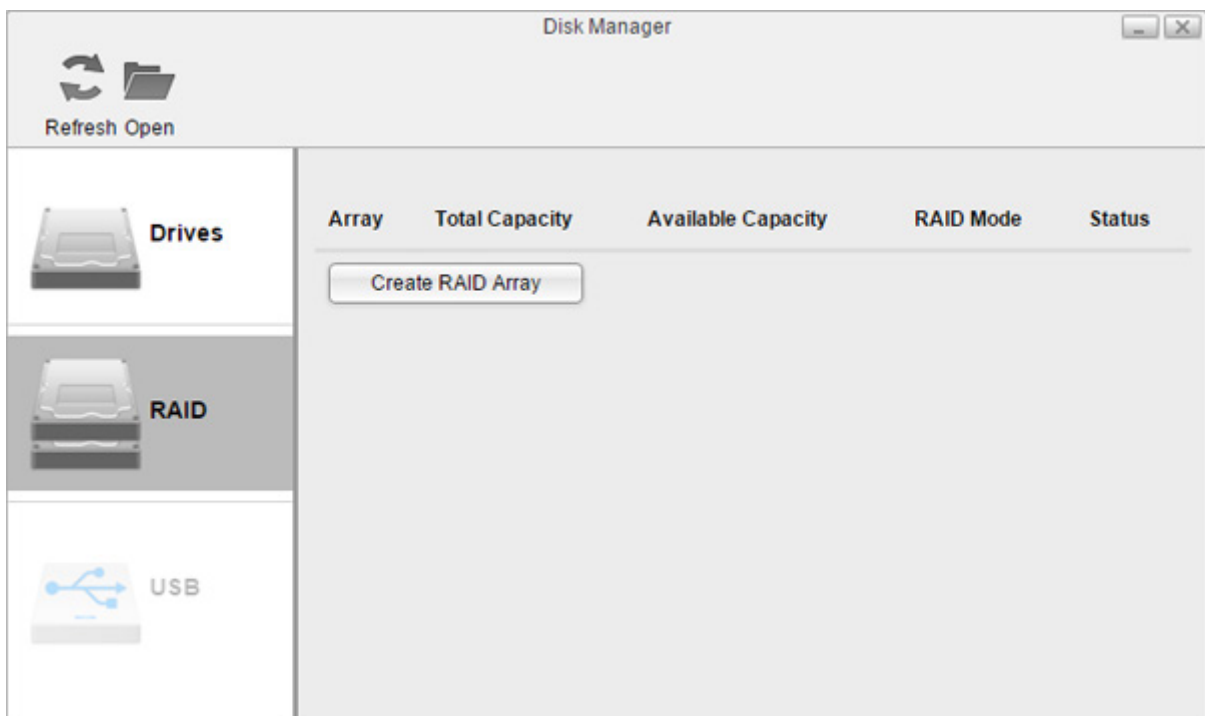
- 1 Press and hold the function button for five seconds.
- 2 The LinkStation will start rebuilding the RAID array. After a few minutes, the I18 message will be displayed in NAS Navigator2. Wait until the drive finishes rebuilding; the I18 message will be extinguished.

Using RAID 0 or Linear

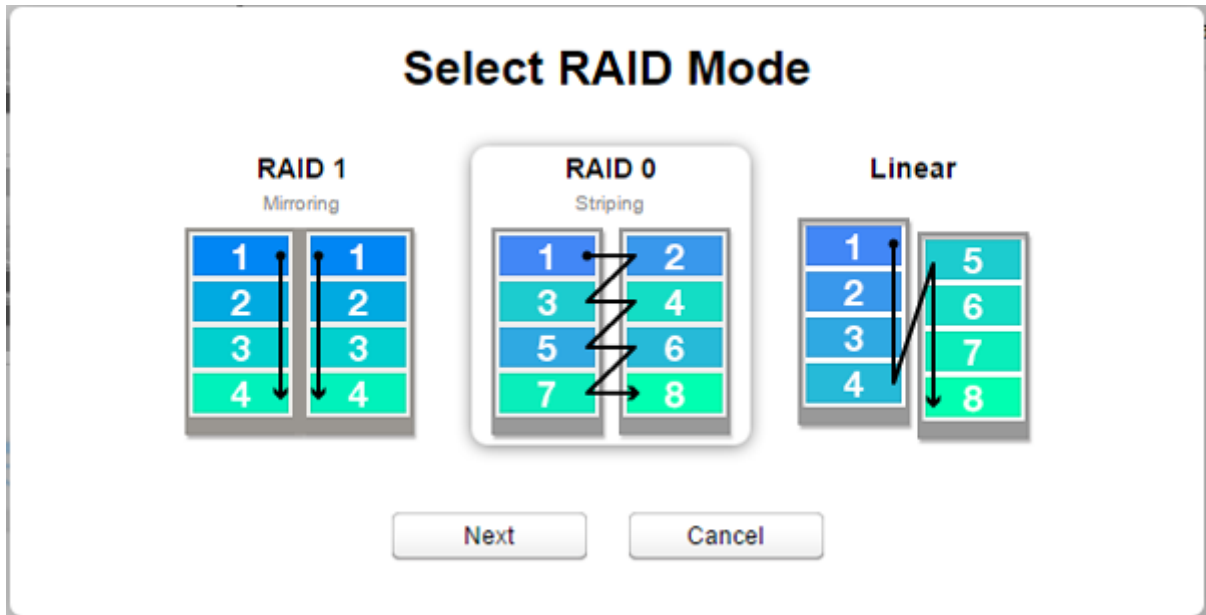
- 1 From Settings, click *Disk Manager* (⚙️).
- 2 The error message below will be displayed due to a new drive being inserted. Click *OK*.



- 3 Click the *RAID* tab, then *Create RAID Array*.



4 Select a RAID mode and click *Next*.



5 Click *Yes*.

6 Click *OK*, then *Close* when completed.

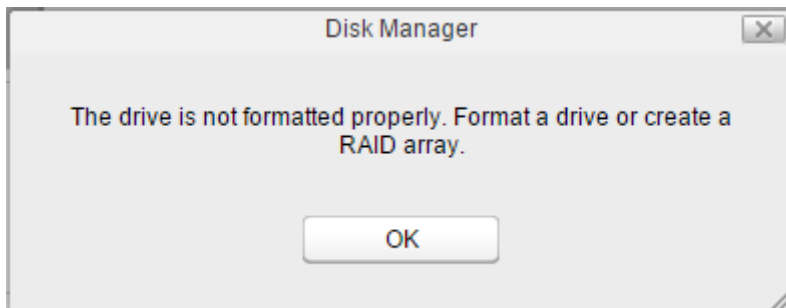
The new RAID array will be created. Next, create a shared folder by referring to the [“Adding a Shared Folder”](#) section in chapter 7.

Using JBOD

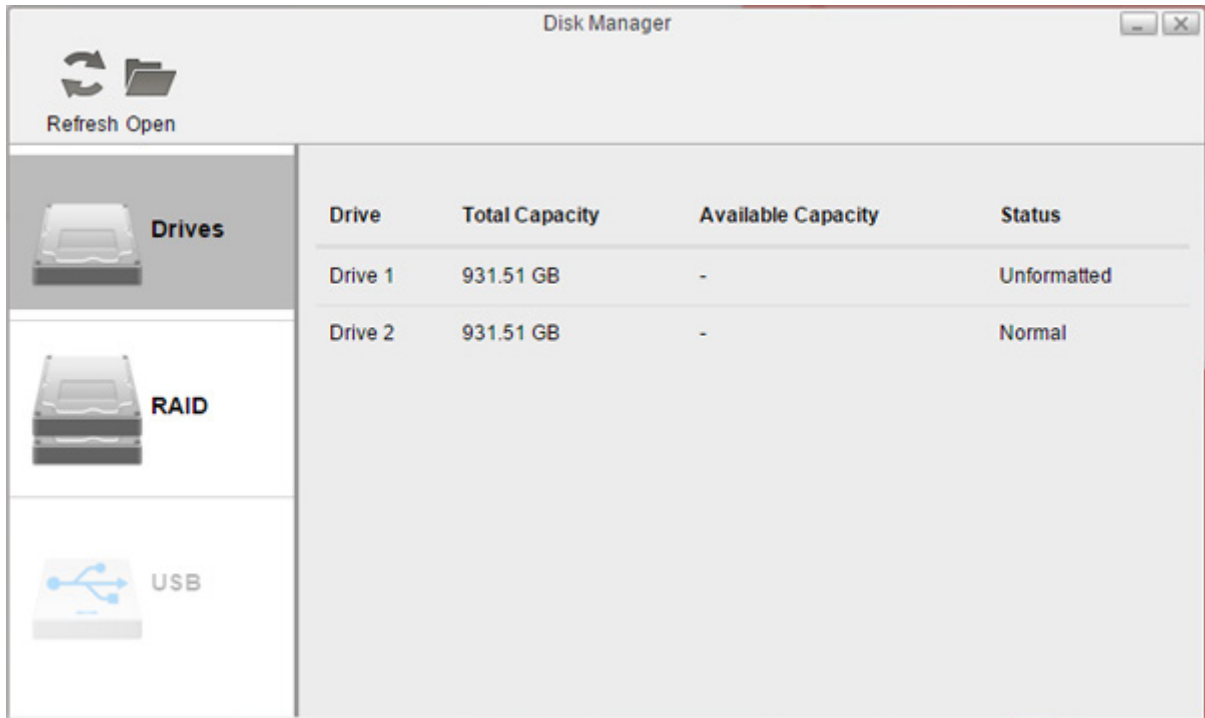
If the drive that was initially formatted fails, the LinkStation will not be accessible unless the drive is replaced.

1 From Settings, click *Disk Manager* ().

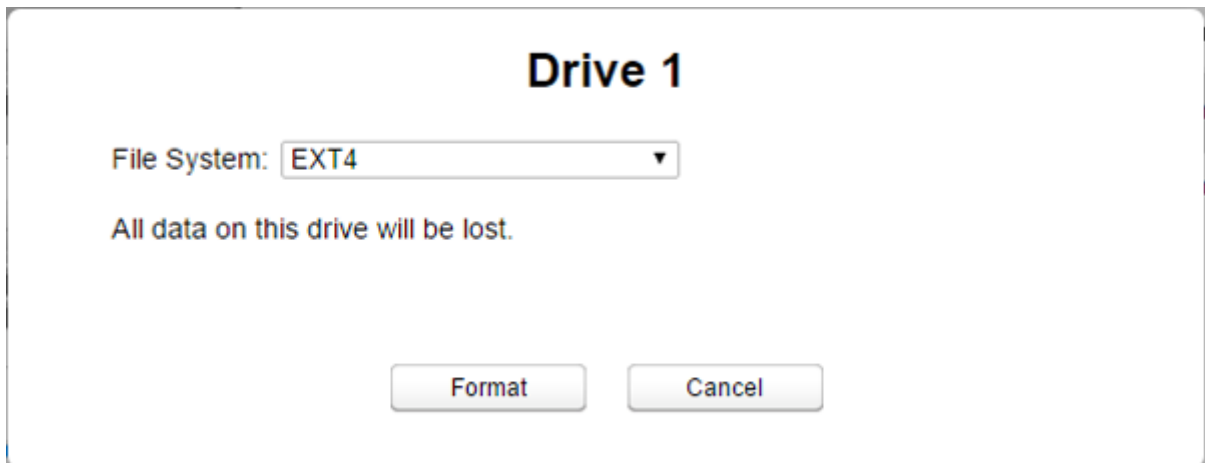
2 The error message below will be displayed due to a new drive being inserted. Click *OK*.



3 Select a drive that shows “Unformatted” and click *Format*.



4 Select a file system from the drop-down list and click *Format*.



5 Click *OK*, then *Close* when completed.

The drive will be formatted. Next, create a shared folder by referring to the [“Adding a Shared Folder”](#) section in chapter 7.

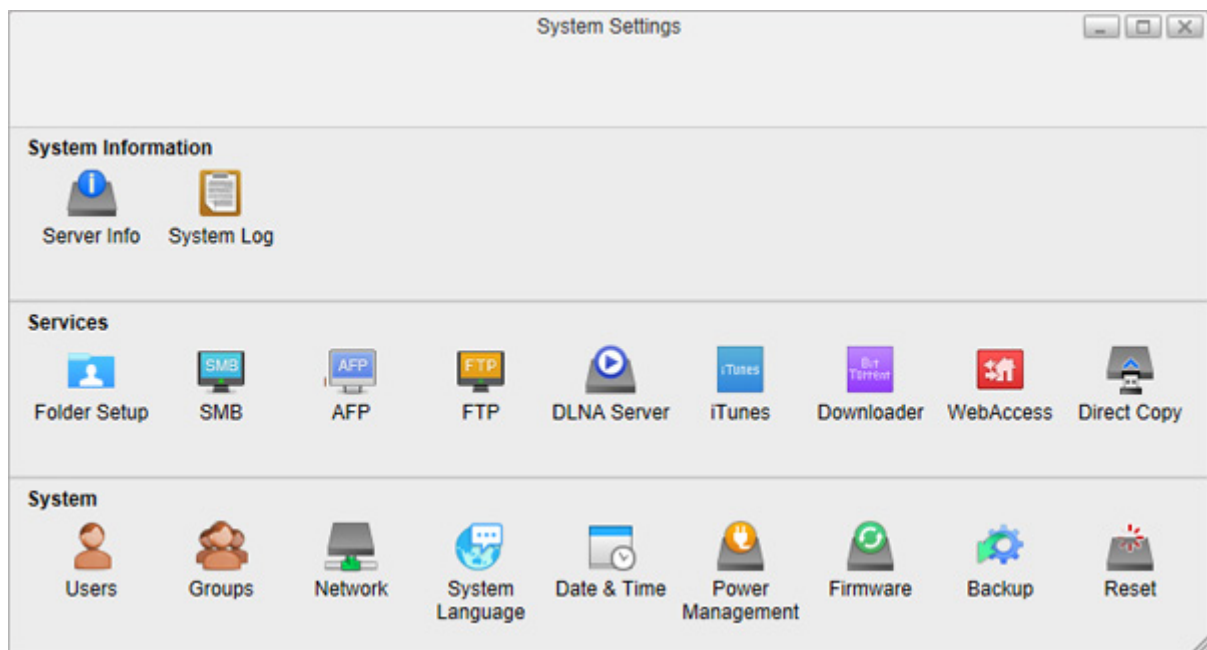
Chapter 6 System Information

Server Info

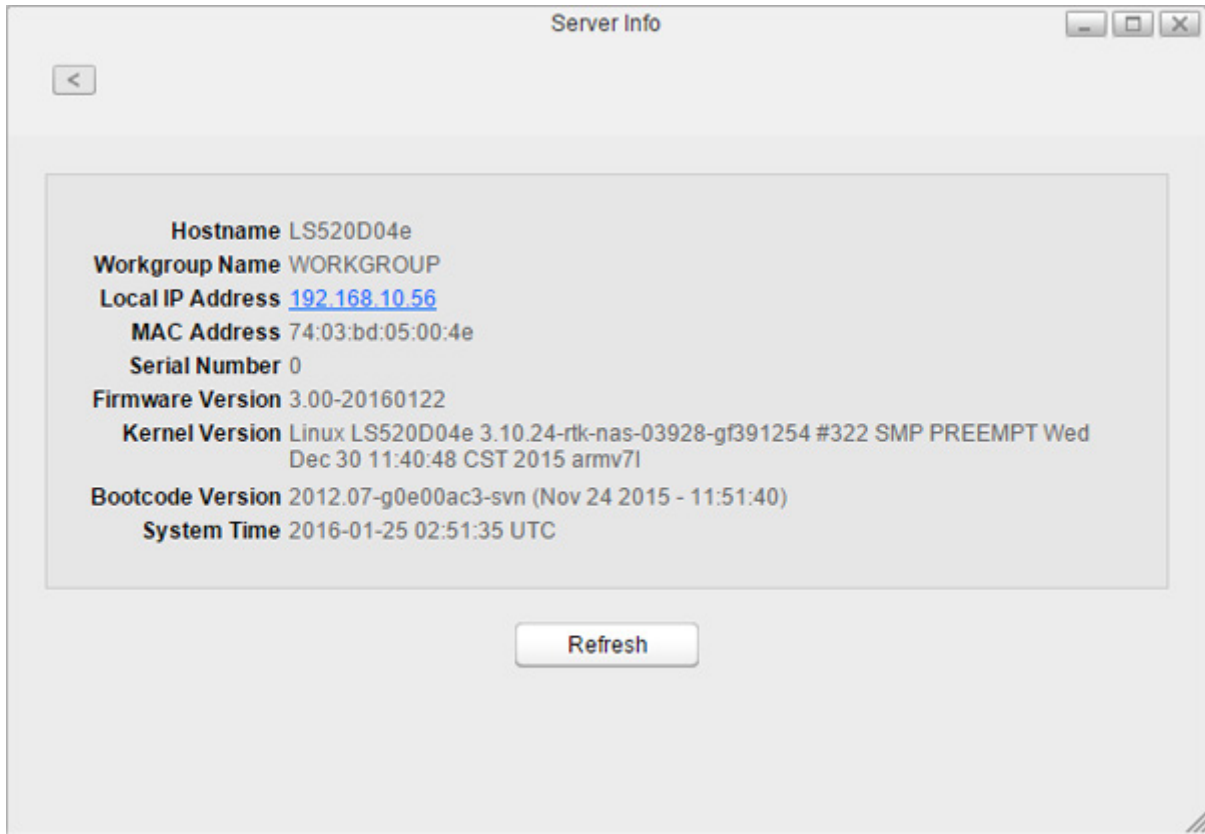
Displays the hostname, workgroup name, IP address, MAC address, firmware version, time, and other minor system information.

1 From Settings, click *System Settings* (⚙️).

2 Click *Server Info*.



3 The server information window will open.

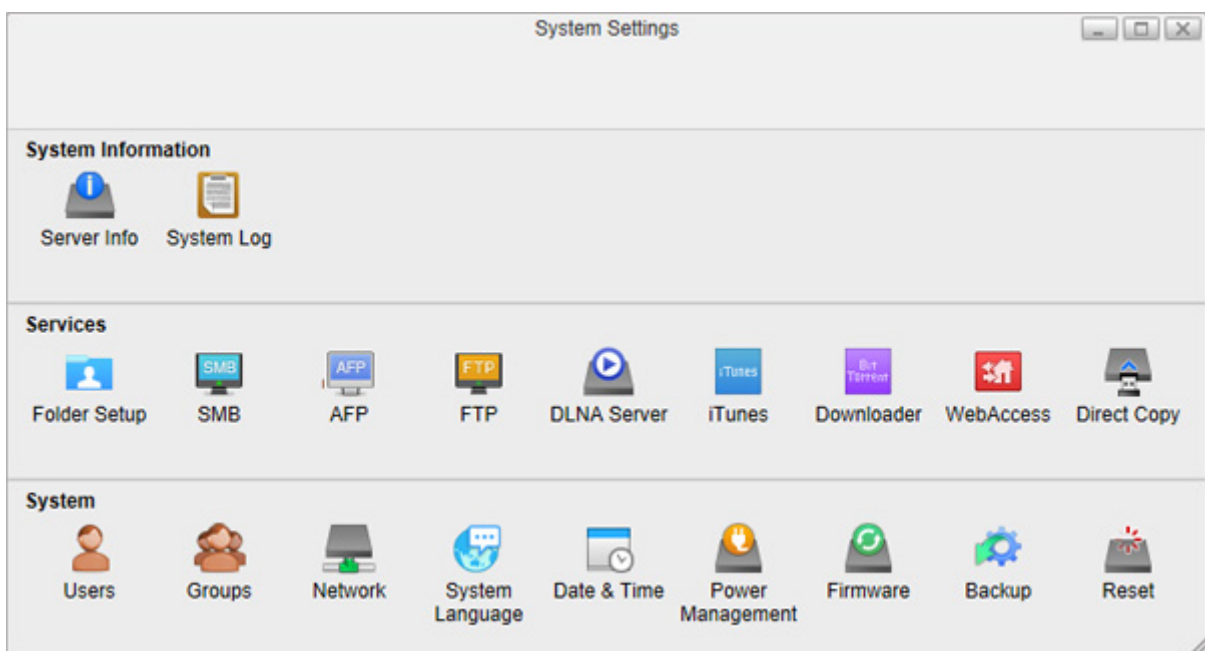


System Log

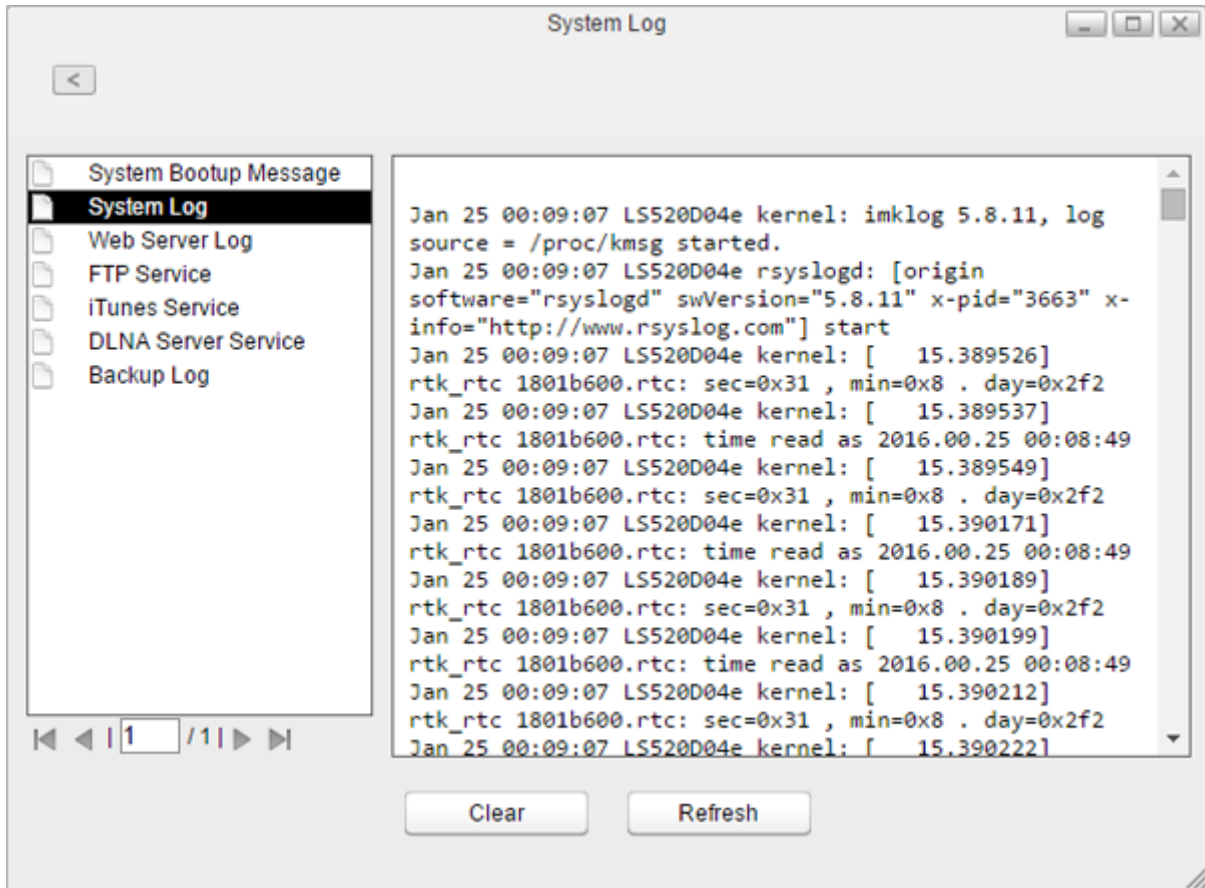
Displays multiple logs of the LinkStation.

1 From Settings, click *System Settings* (⚙️).

2 Click *System Log*.



3 The system log window will open.



Chapter 7 Services

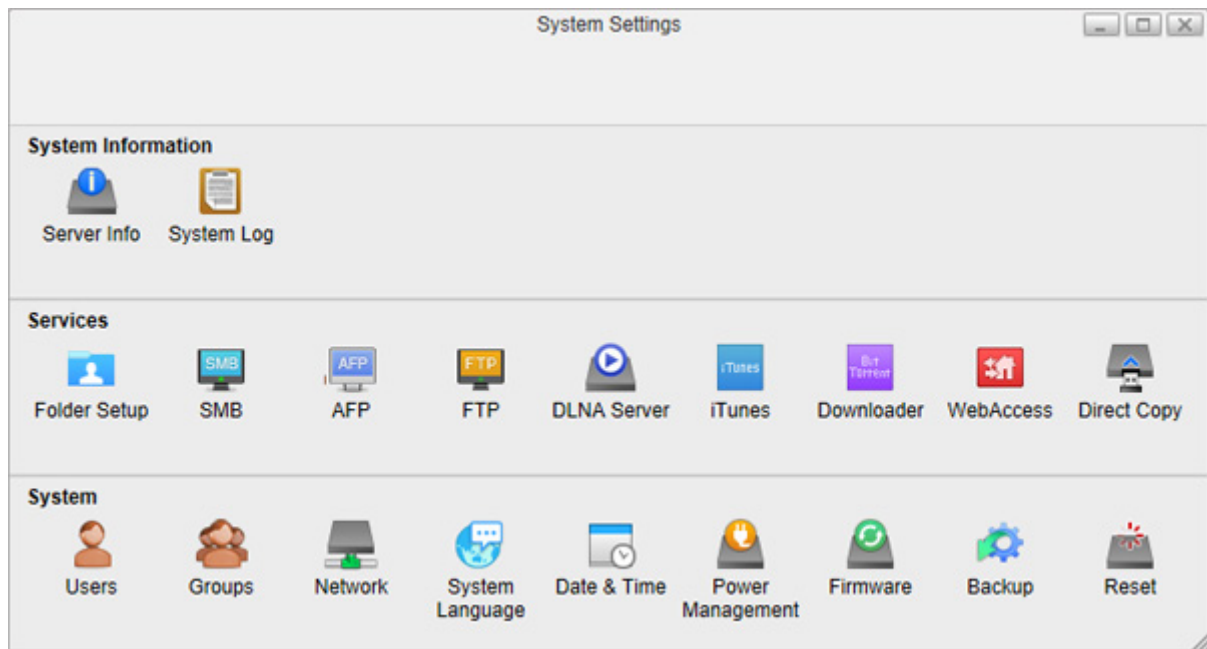
Folder Setup

Create or delete shared folders on the LinkStation and enable or disable protocol services.

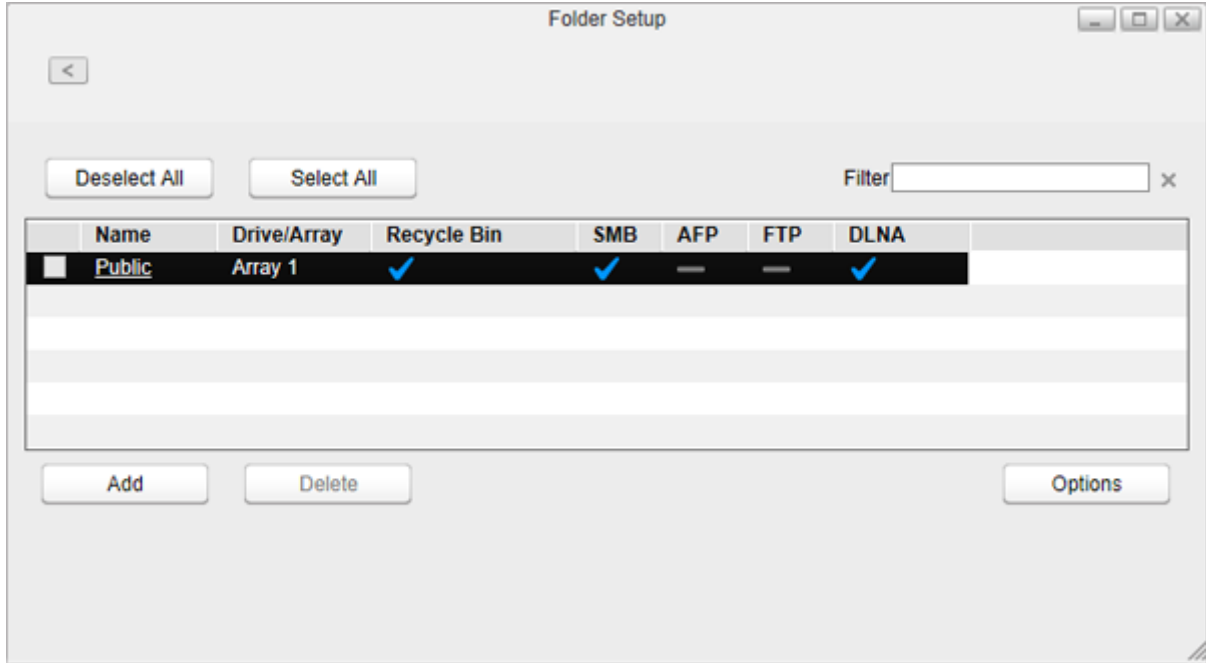
Adding a Shared Folder

1 From Settings, click *System Settings* (⚙️).

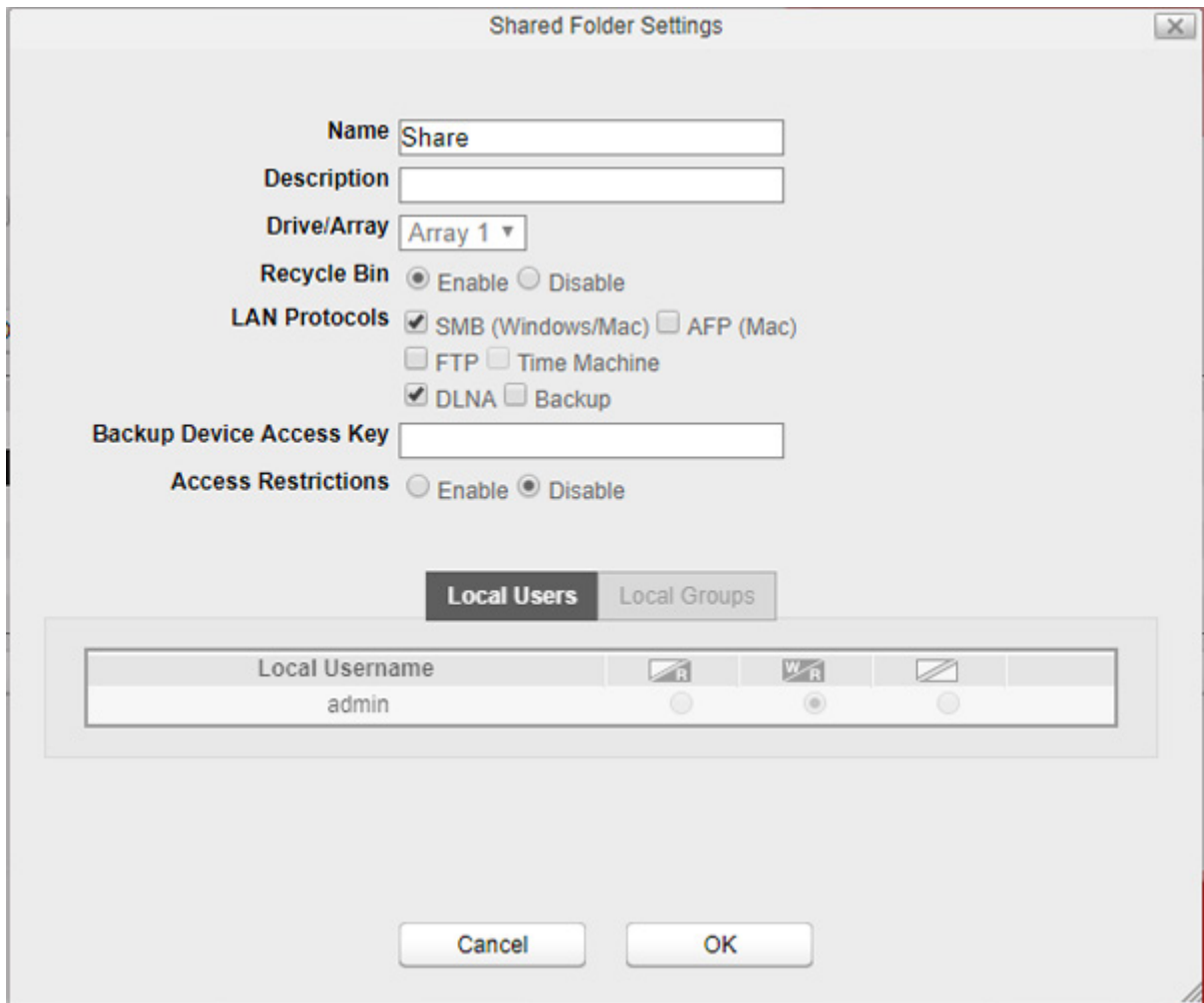
2 Click *Folder Setup*.



3 Click *Add*.



4 Enter a folder name and 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.
- Names already in use for existing folders cannot be used.

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.

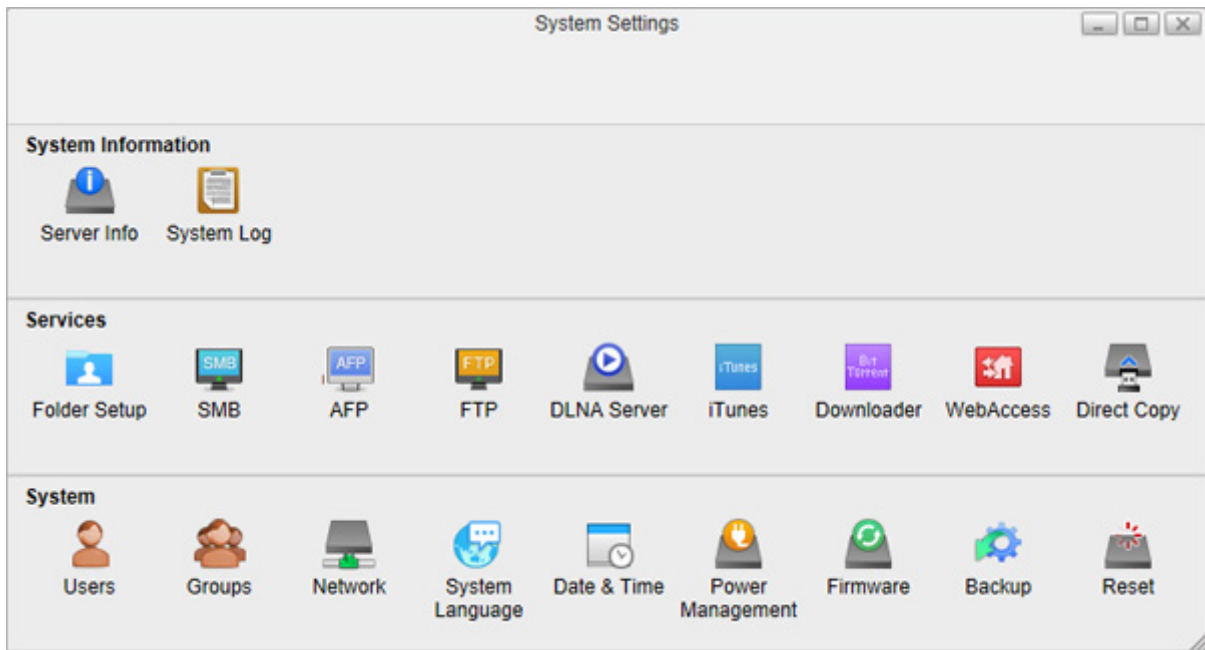
To configure the recycle bin, navigate to *System Settings > Folder Setup* in Settings, select a folder from the list, and enable the recycle bin.

Configuring Access Restrictions

You may restrict access for specific shared folders.

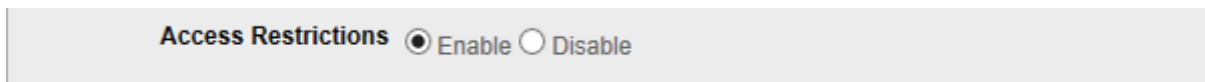
1 From Settings, click *System Settings* (⚙️).

2 Click *Folder Setup*.



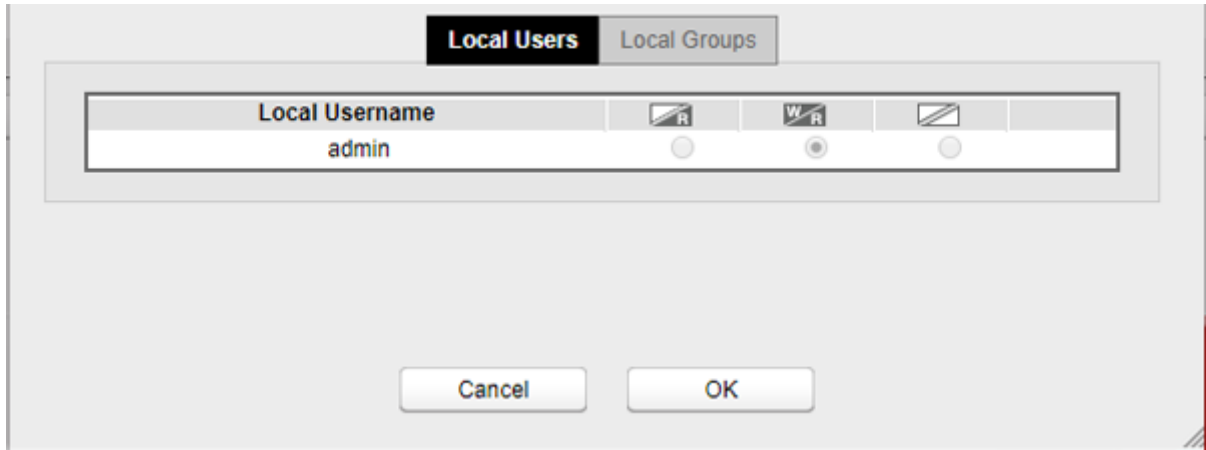
3 Click the shared folder that you want to set access restrictions for.

4 Enable “Access Restrictions”.



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

: Read and write : Read-only : No access



The picture above shows the example of restrictions by the user. If restricting access by group, click the *Local Groups* tab and select group permissions.

6 Click *OK*.

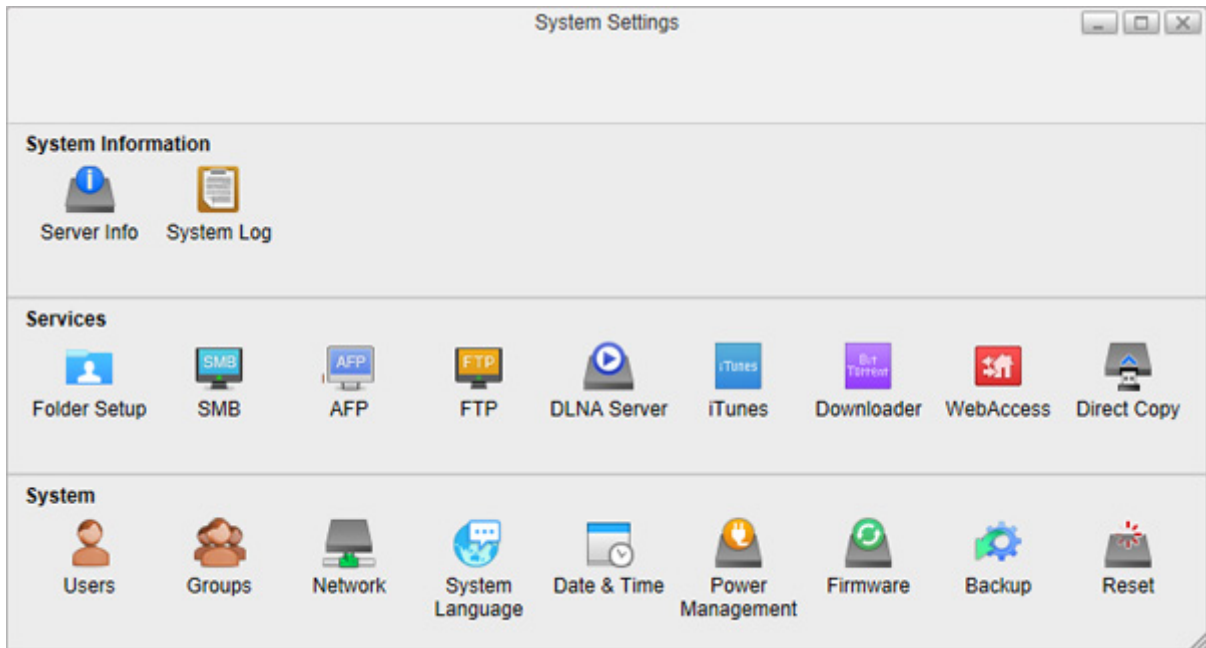
SMB

Enable or disable SMB connections and change a workgroup name for the LinkStation.

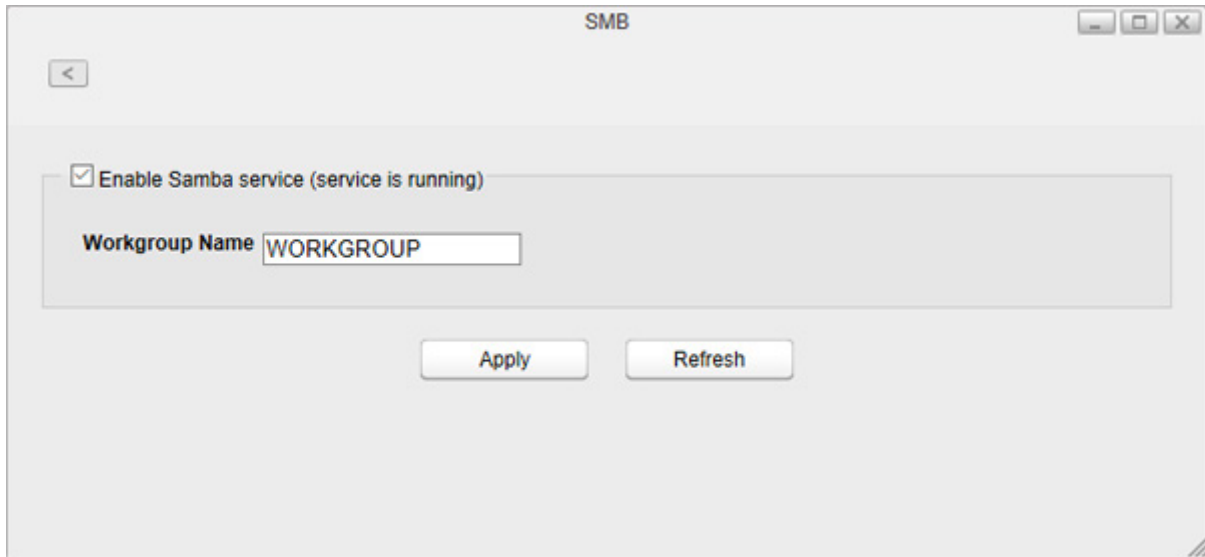
Enabling SMB

1 From Settings, click *System Settings* ().

2 Click *SMB*.



- 3** Select “Enable Samba service” to enable SMB connections and click *Apply*.

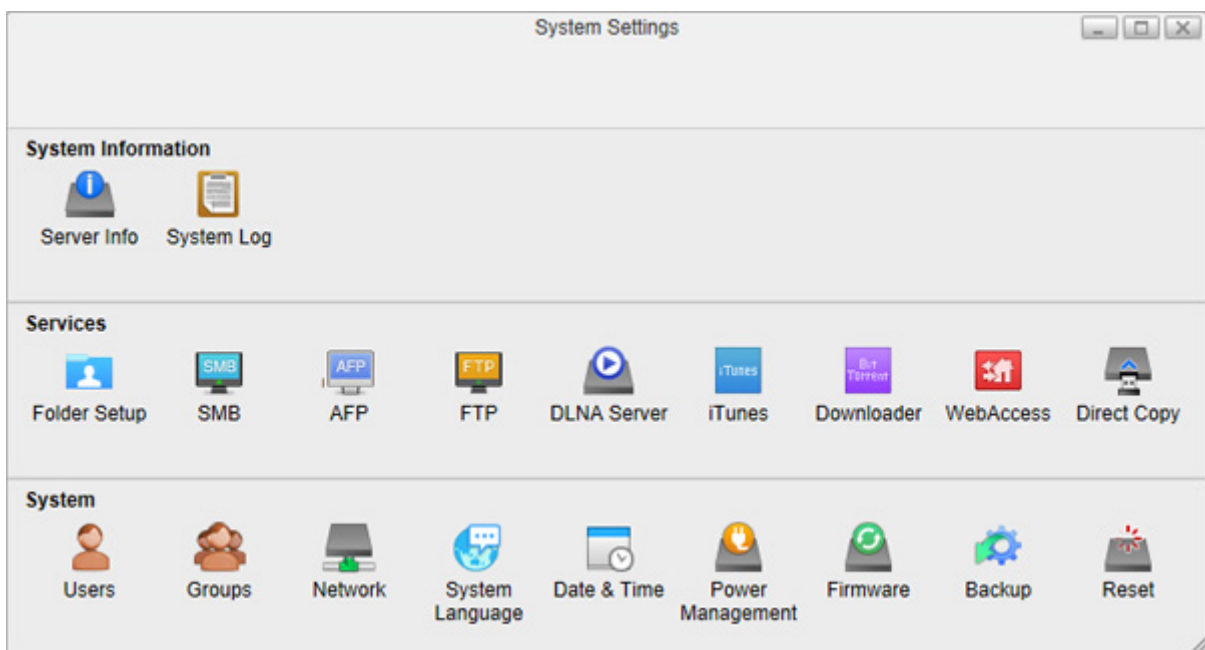


Even if the file sharing service is enabled, it will not be enabled for the folder automatically. Go to “Folder Setup” and enable the service for the folder.

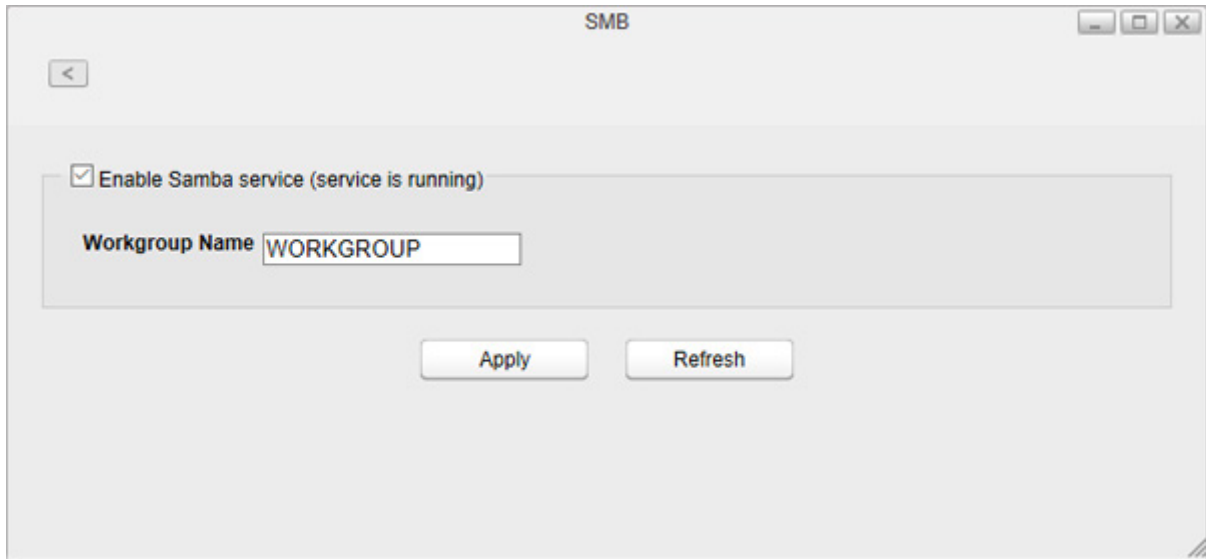
Changing the Workgroup Name

- 1** From Settings, click *System Settings* (⚙️).

- 2** Click *SMB*.



- 3** Enter a new workgroup name and click *Apply*.

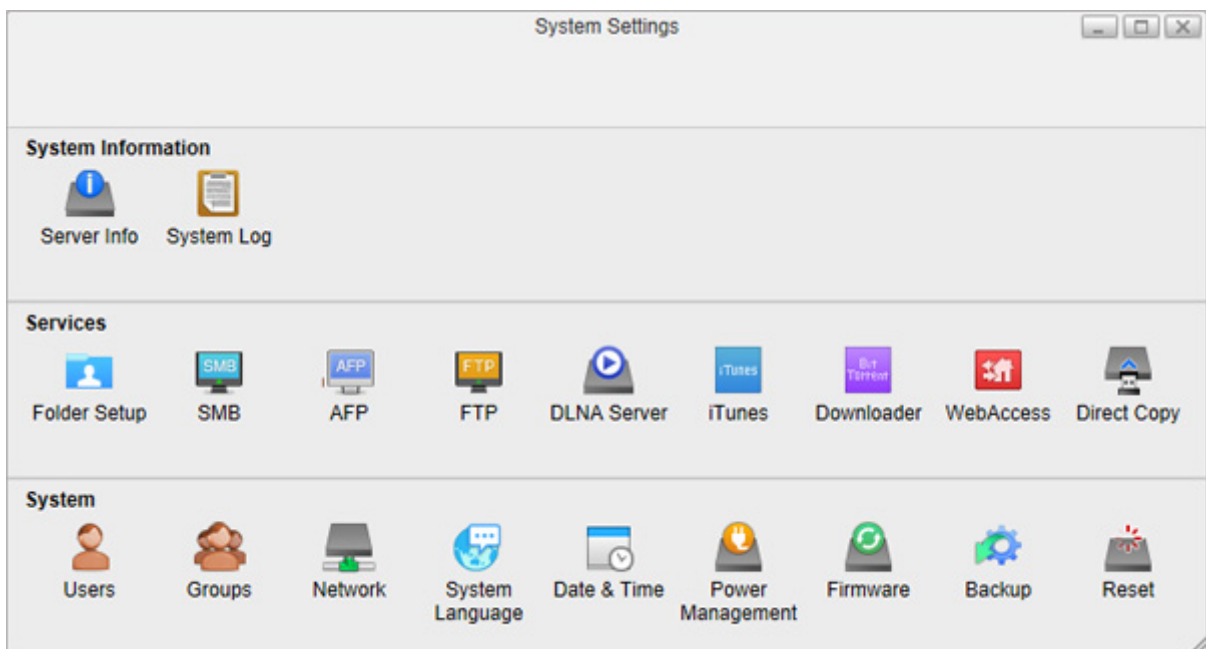


Note: A workgroup name may contain up to 32 alphanumeric characters, hyphens (-), underscores (_), and the symbols @ } { ! # \$ % & ~ ^.

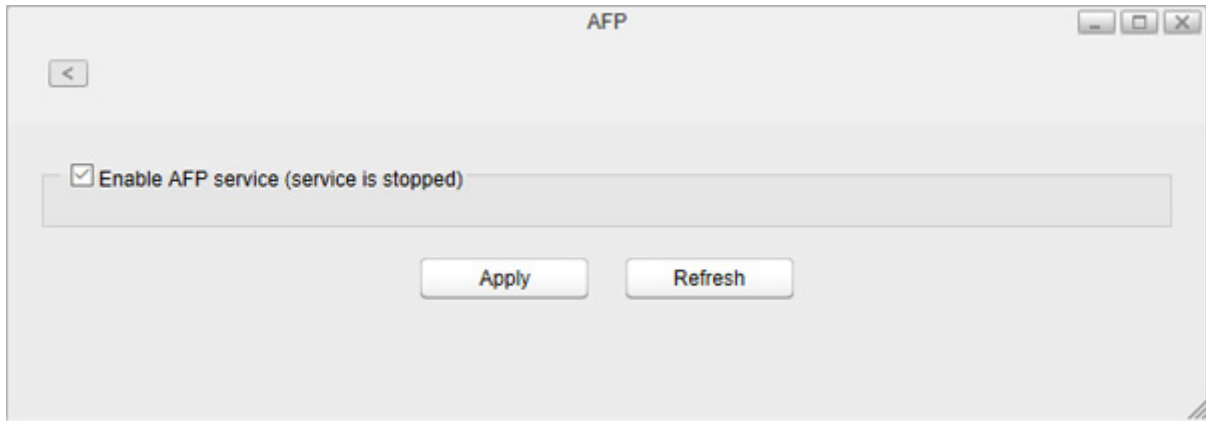
AFP

Enable or disable AFP connections for the LinkStation.

- 1** From Settings, click *System Settings* (⚙️).
- 2** Click *AFP*.



3 Select “Enable AFP service” to enable AFP connections and click *Apply*.



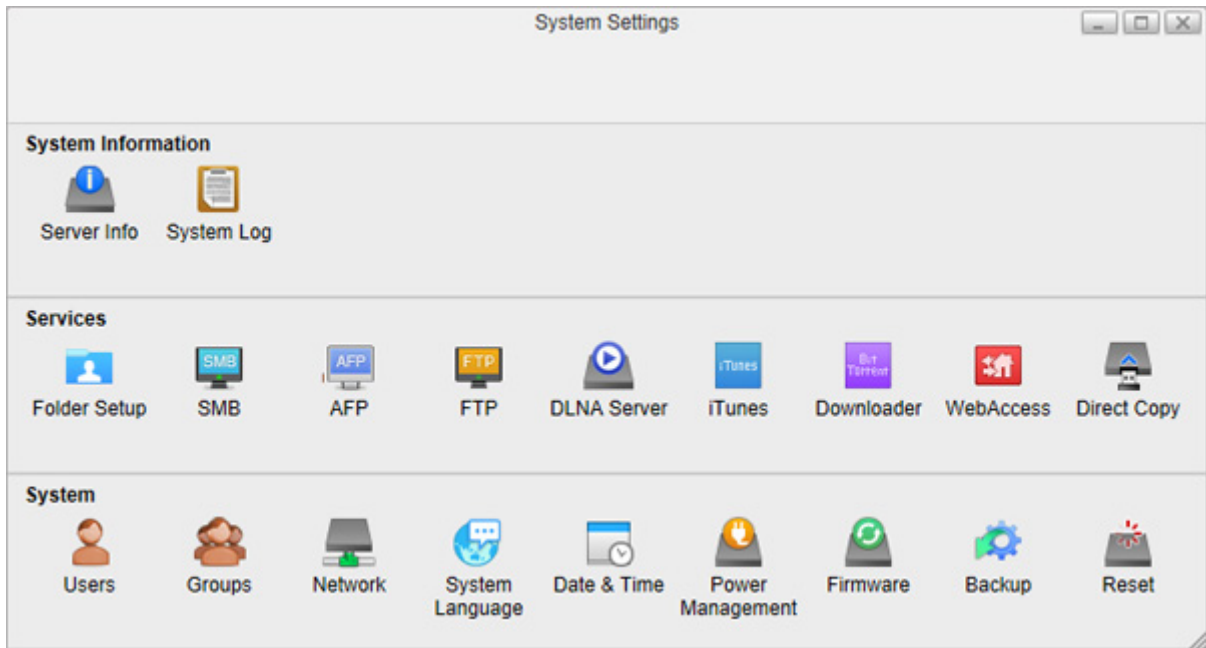
Even if the file sharing service is enabled, it will not be enabled for the folder automatically. Go to “Folder Setup” and enable the service for the folder.

FTP

Enable or disable FTP connection of the LinkStation.

1 From Settings, click *System Settings* (⚙️).

2 Click *FTP*.



3 Select “Enable FTP service” to enable FTP connections.



4 Enter a desired port number and other settings.

5 Click *Apply*.

Even if the file sharing service is enabled, it will not be enabled for the folder automatically. Go to “Folder Setup” and enable the service for the folder.

Note: If you access the LinkStation as an anonymous user via FTP, it will be read-only access.

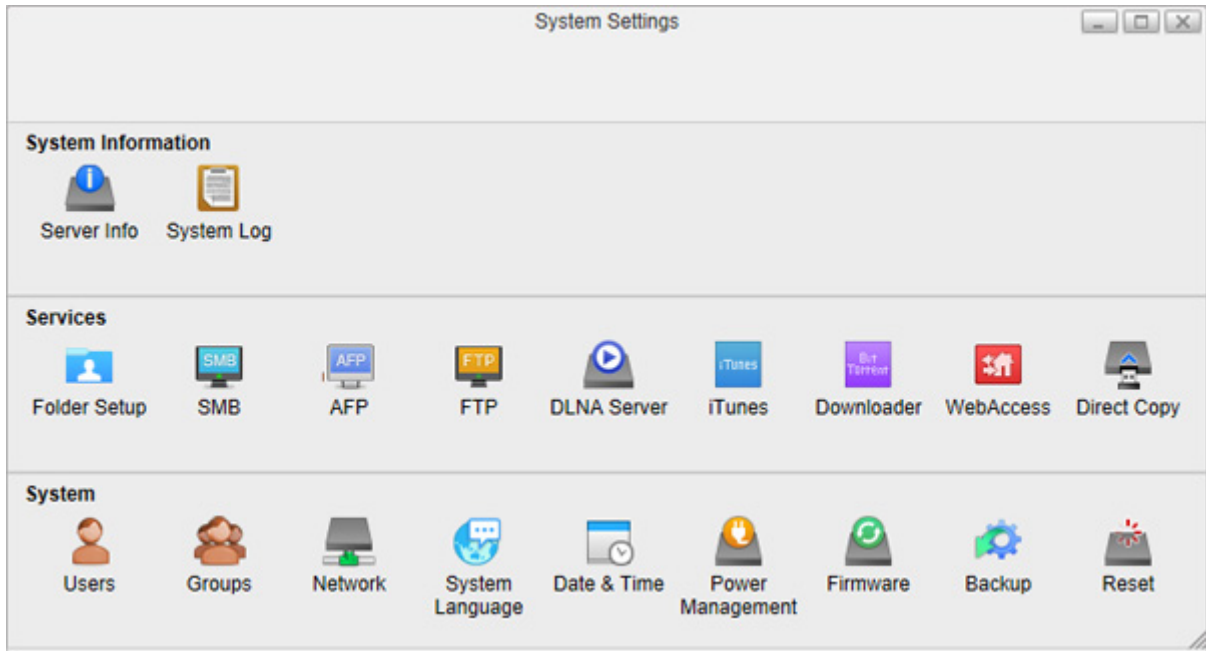
DLNA Server

Enable or disable DLNA. If enabled, you can view or play files stored on the LinkStation from DLNA-compatible devices.

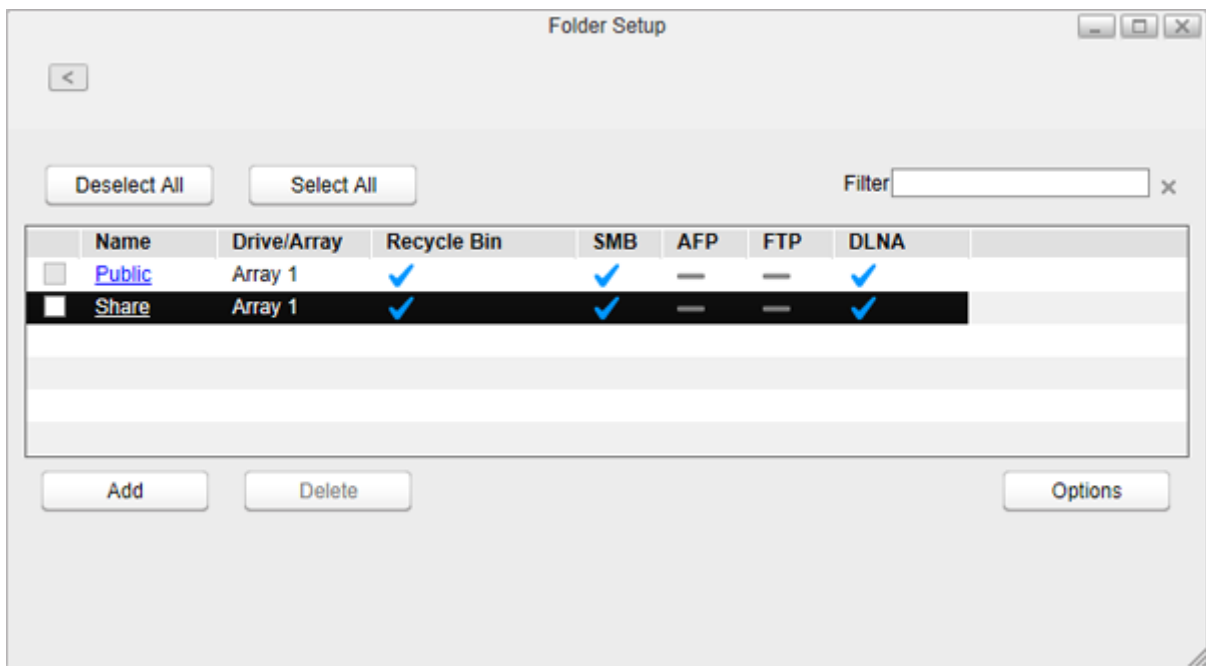
DLNA is a set of guidelines for sharing digital media. The LinkStation includes a DLNA server compliant with the DLNA guidelines. Movies, photos, and music saved on the LinkStation can be played back on DLNA-compatible TVs, stereo equipment, game consoles, and other devices on the local network.

1 From Settings, click *System Settings* (⚙️).

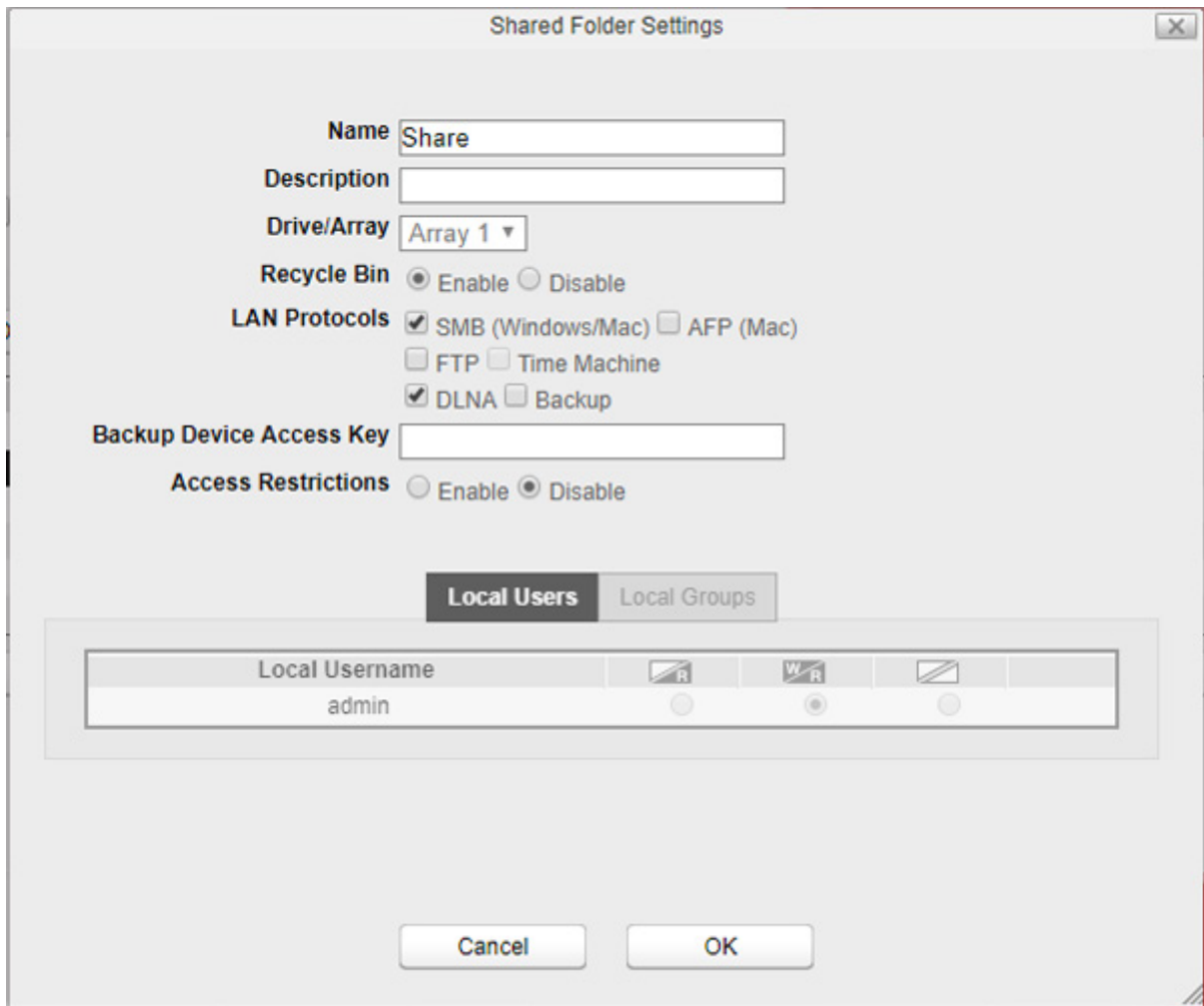
2 Click *Folder Setup*.



3 Select a shared folder for the DLNA server.



- 4** Make sure that “DLNA” is enabled for the folder. If not, select the “DLNA” checkbox for “LAN Protocols”, then click OK.



If DLNA service is not enabled, it will be enabled automatically when enabling the service for a shared folder.

Playing Files on a DLNA Client Device

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.

Notes:

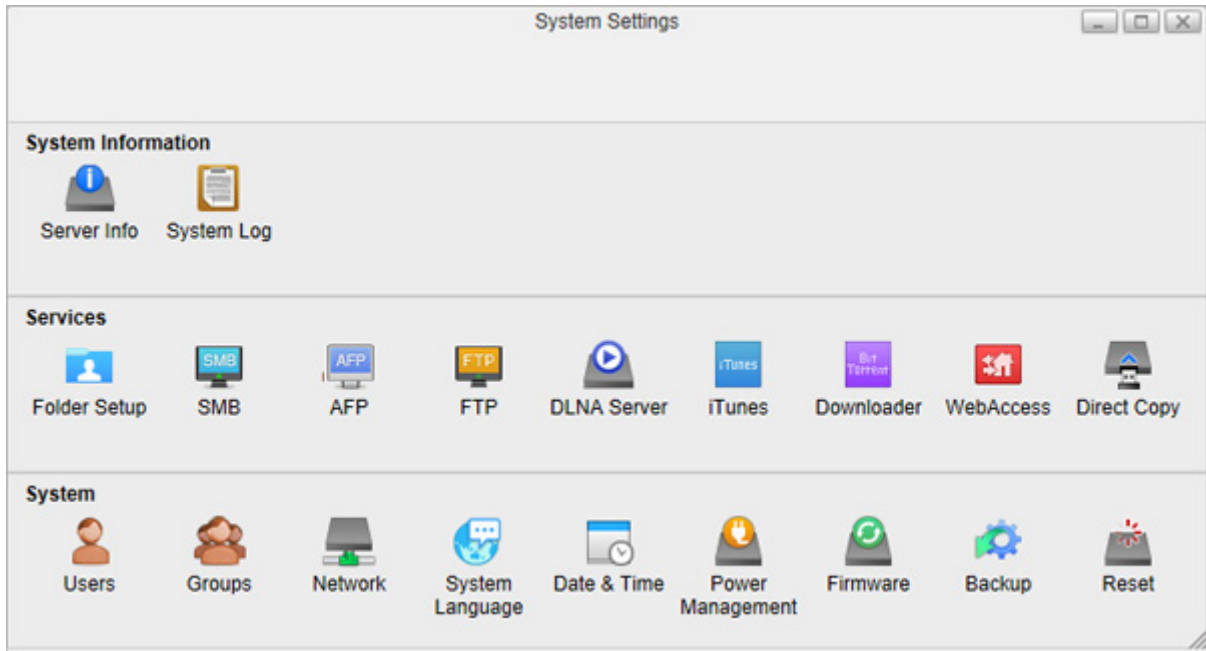
- For more information on playing files, refer to the DLNA-compatible devices' manuals.
- Windows Media files (.wmv, .wma) without simple index do not support fast forwarding/rewinding.

iTunes

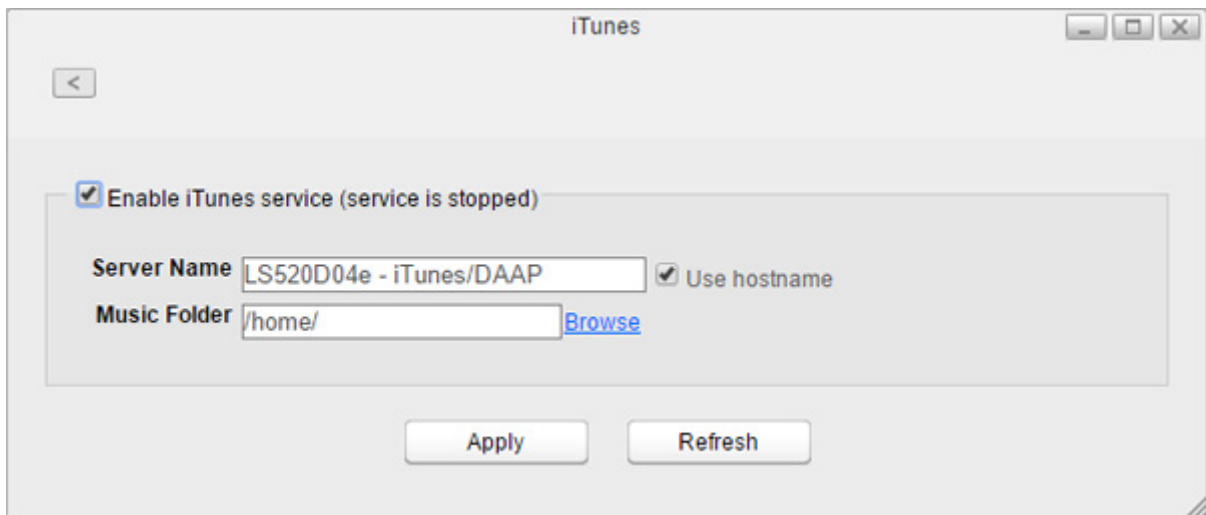
Enable or disable the iTunes server, change the server name, and select a folder for sharing. If iTunes server is enabled, computers on your network with iTunes can play music files stored on the LinkStation.

- 1** From Settings, click *System Settings* (⚙️).

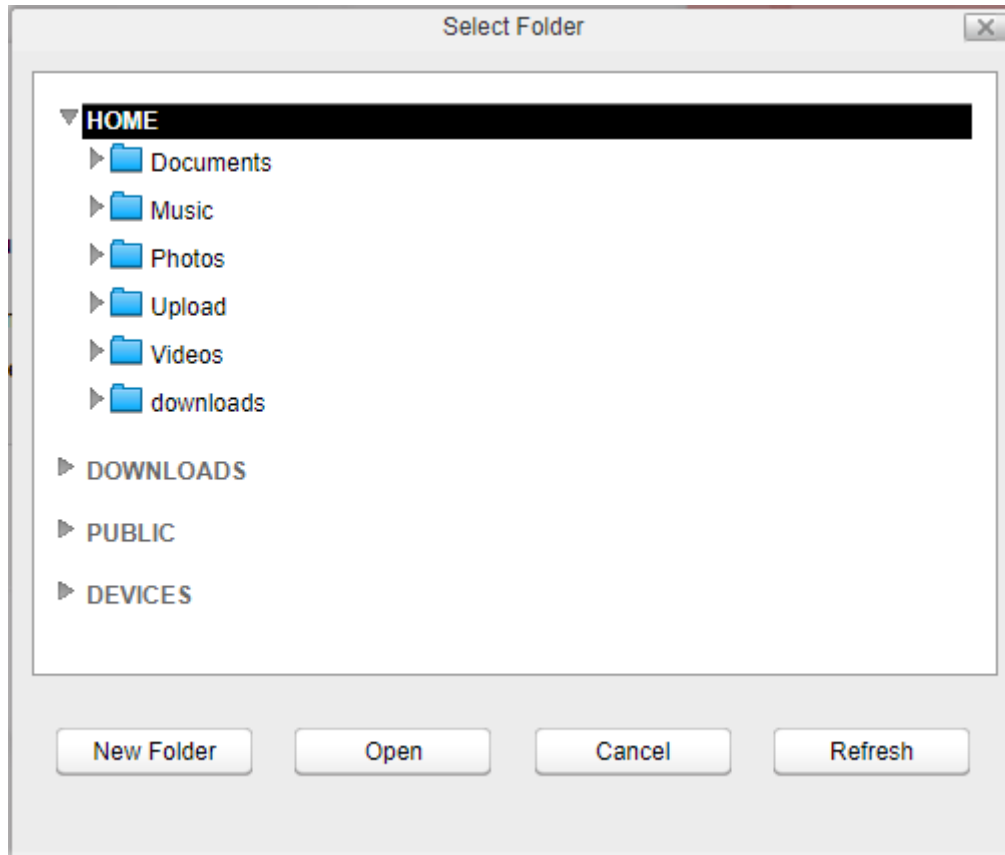
2 Click *iTunes*.



3 Select "Enable iTunes service" to enable the iTunes server and enter a desired server name. If you prefer to use the LinkStation name as the server name, select "Use hostname".



- Click *Browse* and select a folder to use for iTunes, then click *Open*.



- Click *Apply*.

Note: When you access iTunes server from a computer or iOS device right after enabling the service on the LinkStation, the file list may not be displayed properly. In such a case, disconnect and reconnect the LinkStation to the computer or iOS device. The file list should be updated.

Downloader

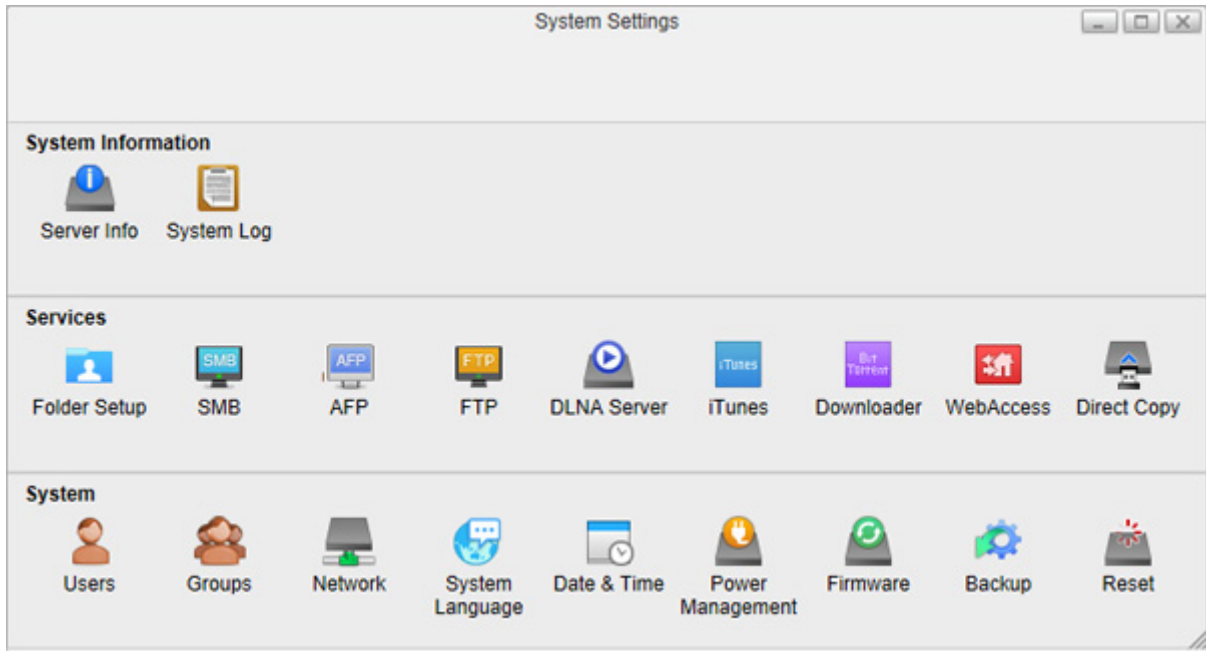
Enable or disable BitTorrent.

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.

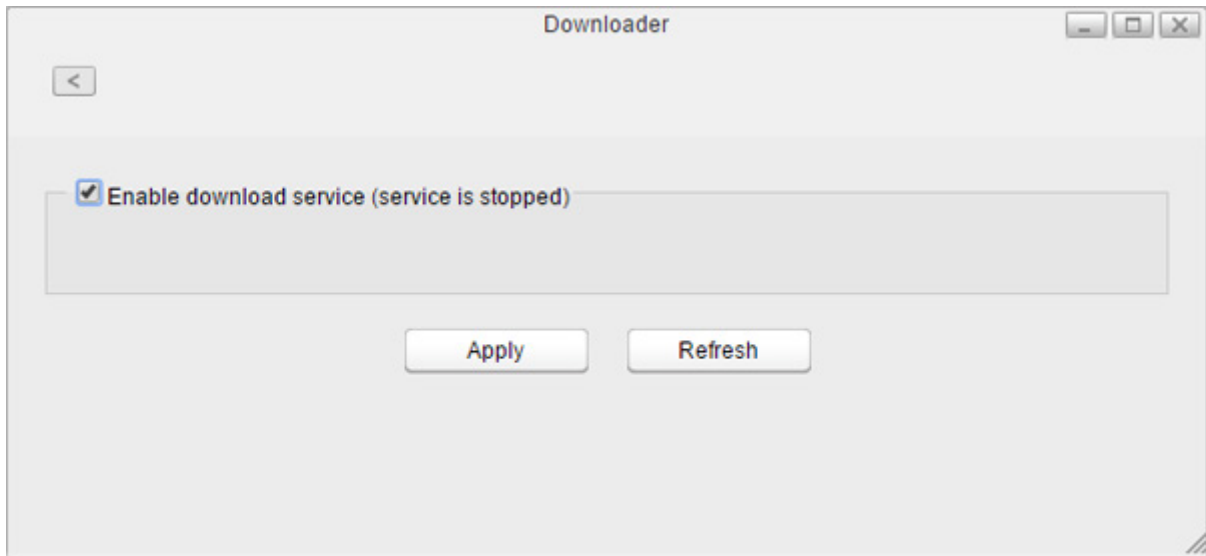
Enabling Downloader Service

- From Settings, click *System Settings* (⚙️).

2 Click *Downloader*.



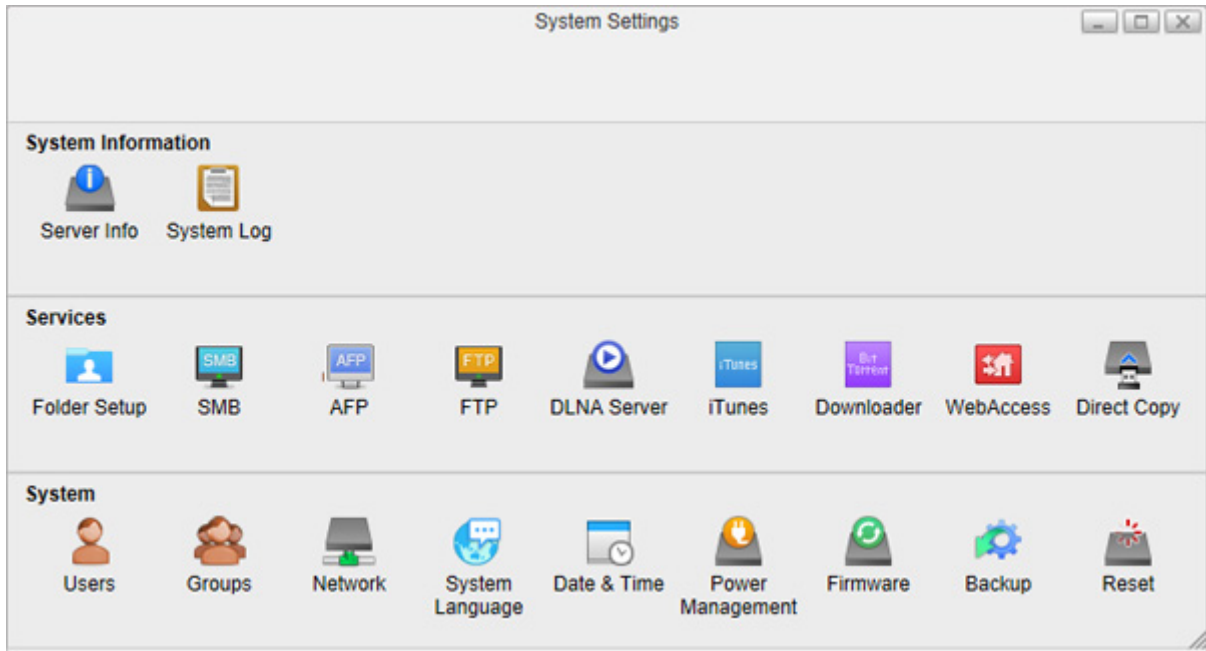
3 Click "Enable download service" to enable BitTorrent and click *Apply*.



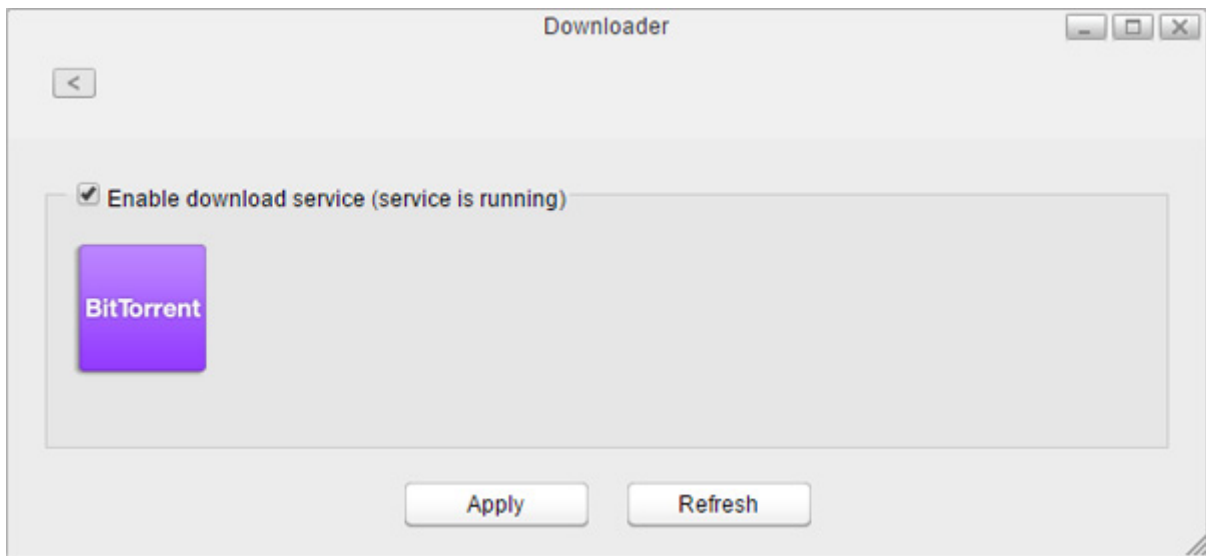
Opening the Download Manager

1 From Settings, click *System Settings* (⚙️).

2 Click *Downloader*.

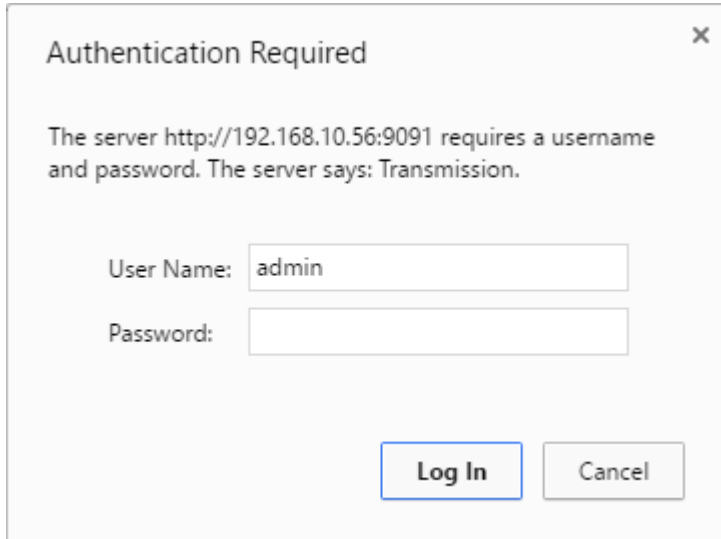


3 Click the icon displayed in the window. If no icon is displayed on the screen such as in the example below, you should enable it by following the procedure in the [“Enabling Downloader Service”](#) section above.

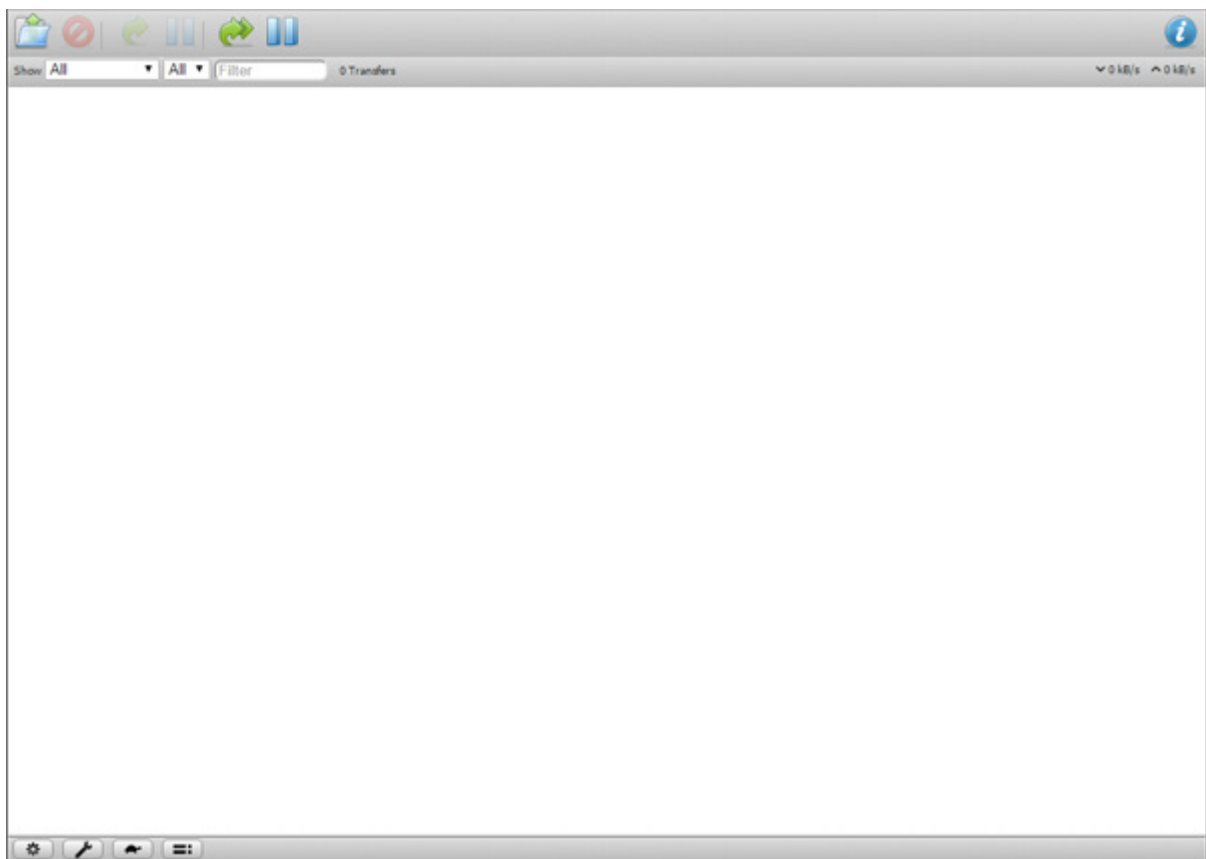


4 Enter a username and password, then click *Log In*.


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



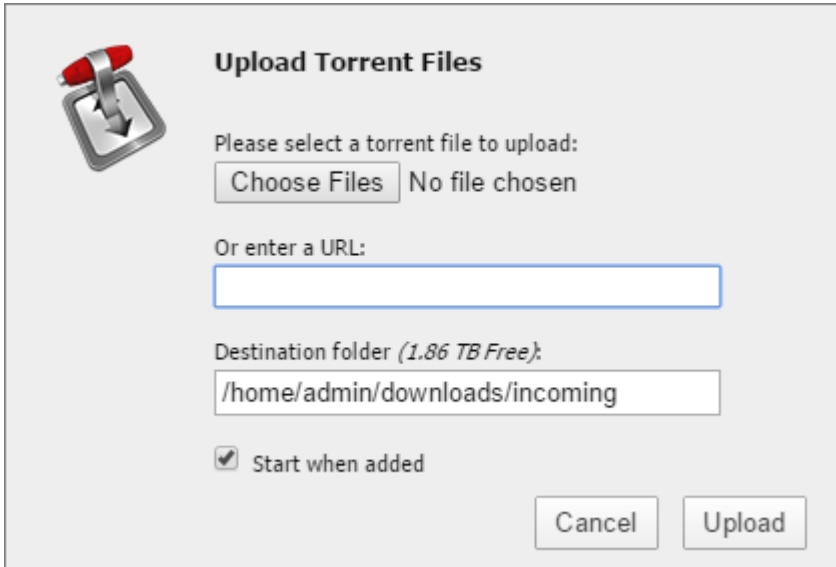
5 The download manager will open.




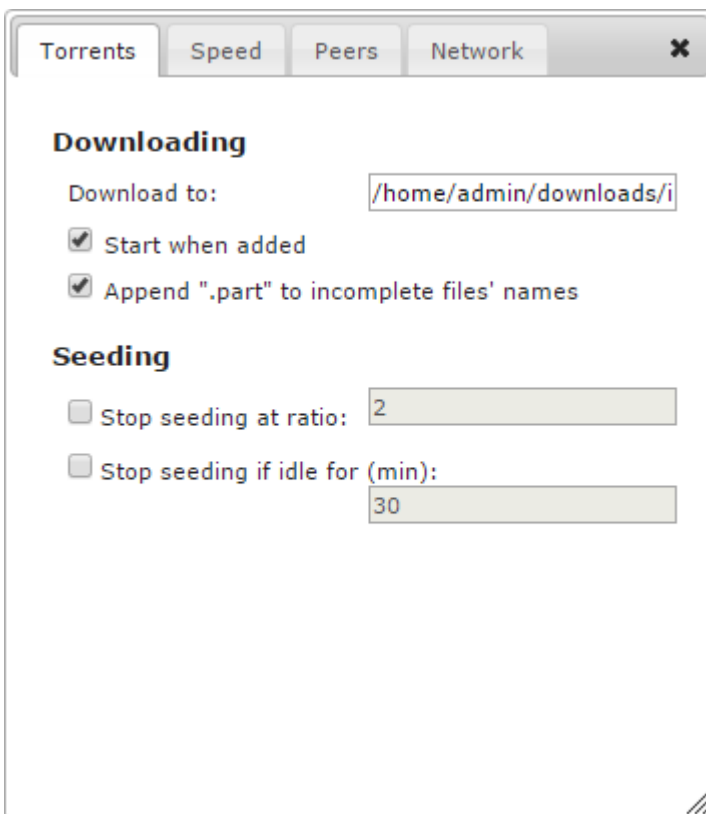
Downloading Files

- 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*.



Note: By default, the downloaded file will be saved in the "incoming" folder in the username folder. To change the default download folder, click the  icon at the left bottom corner and change the directory at "Download to:".



4 The download will start.

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

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.

Configuring WebAccess

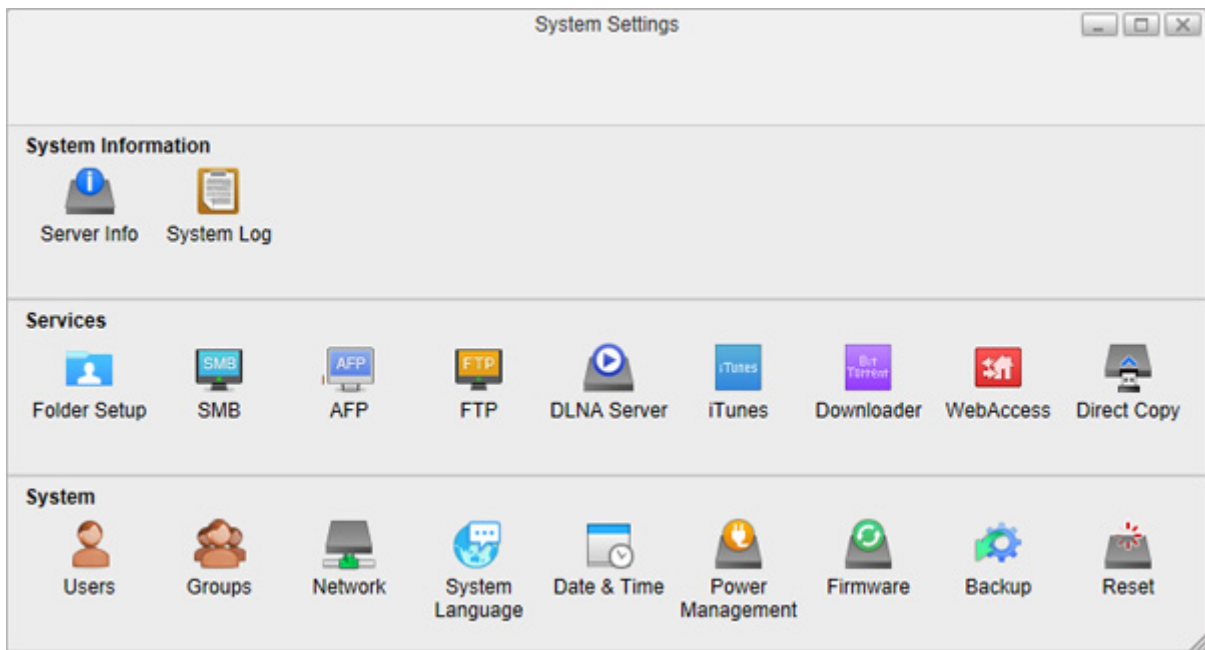
By using remote access options that can be found on the WebAccess screen, you can configure WebAccess settings using a simpler process.

Follow the procedure below to configure WebAccess. To configure WebAccess from a mobile device, refer to the [“Configuring WebAccess”](#) section in chapter 9.

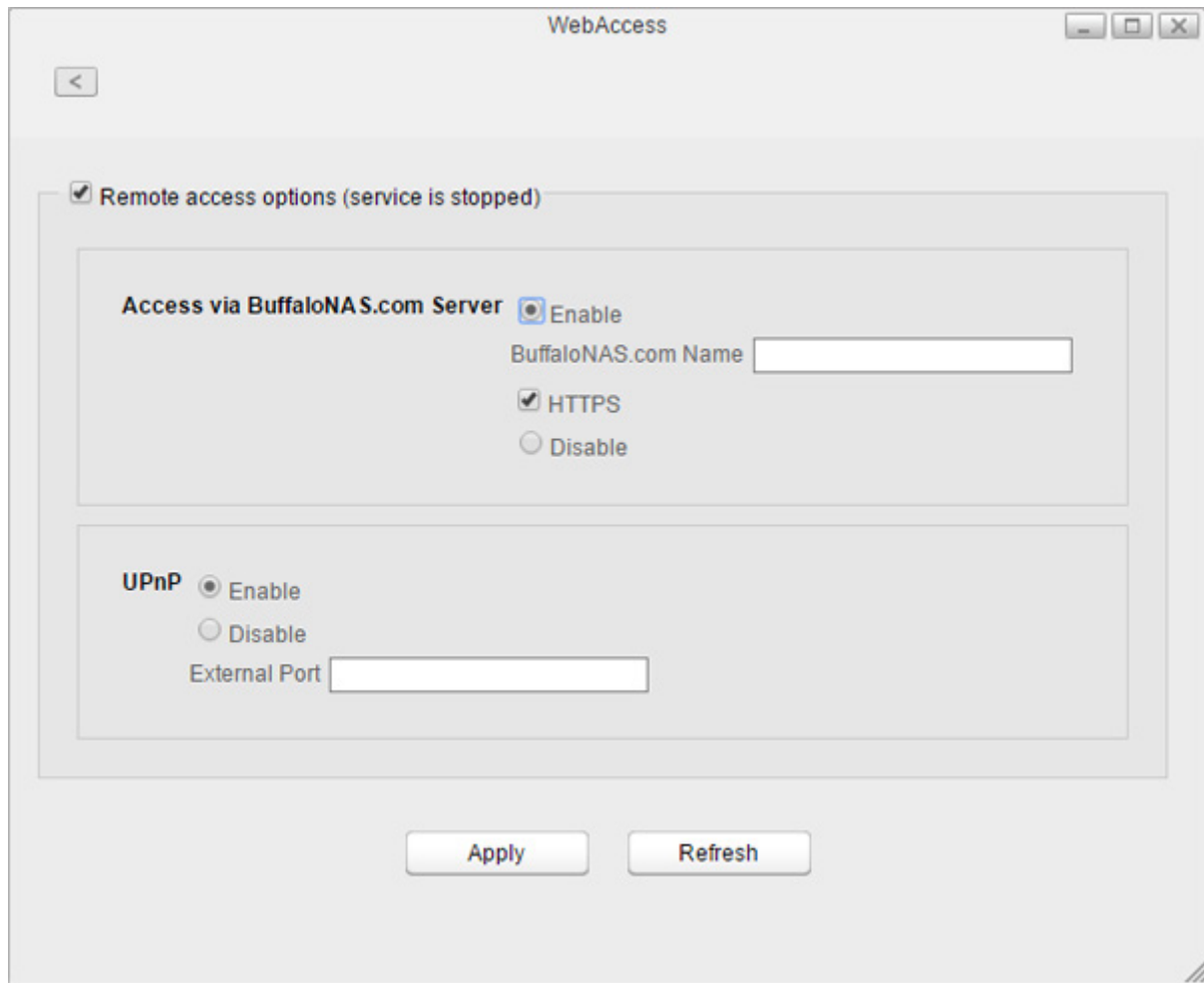
If you are using a LinkStation running firmware version 1.10 or earlier, your admin password may not be changed from the default password. However, WebAccess is always enabled so files on the LinkStation are also published. We highly recommend changing the password from “password”, the default password, to increase security.

1 From Settings, click *System Settings* (⚙️).

2 Click *WebAccess*.



3 Select “Remote access options” to easily configure WebAccess settings.



4 Configure the desired settings, then click *Apply*.

- You may use the default BuffaloNAS.com registration, or select “Disable” to use a different DNS server.
- Choose a “BuffaloNAS.com Name” for your WebAccess account. Names may contain between 3 and 20 alphanumeric characters, underscores (_), and hyphens (-).
- If your router supports UPnP, enable “UPnP”. If UPnP is not supported or disabled on the router, disable that setting and enter either “80” (HTTP) or “443” (HTTPS) into the “External Port” box. If configuring the external port, port forwarding configuration is required to add the port number on the router. Access the router’s port forwarding configuration page and register the port number “80” or “443” to the router.

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, enter <http://buffalonas.com/> into the address bar on your Internet browser and log in with your BuffaloNAS.com name. Settings will remotely be opened. From My LinkStation, you can access the files on the LinkStation. 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 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.

Access Restrictions When Accessing Remotely

Access attributes for the shared folders on the LinkStation are as below:

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

- For the "Public" folder and shared folders created in Folder Setup

	Access permissions	Available user		
		admin	Registered user	Not logged in
WebAccess i	Read and write	R/W	R/W	-
	Read-only	R/W	R/W	-
	Disabled	R/W	R/W	-
WebAccess A	Read and write	R/W	R	-
	Read-only	R/W	R/W	-
	Disabled	R/W	R	-
My LinkStation	Read and write	R/W	R/W	R
	Read-only	R/W	R/W	R
	Disabled	R/W	R/W	-

- For username folder

	Available user		
	admin	Registered user	Not logged in
WebAccess i	R	R	-
WebAccess A	R/W	R/W	-
My LinkStation	R/W	R/W	-

Direct Copy

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

Follow the procedure below to copy using Direct Copy. To copy using Direct Copy on a mobile device, refer to the ["Starting Direct Copy"](#) section in chapter 9.

Note: Direct Copy will not work while the backup is running. The prior process will work.

- 1 Connect the USB device. When it mounts, the function LED will light up.

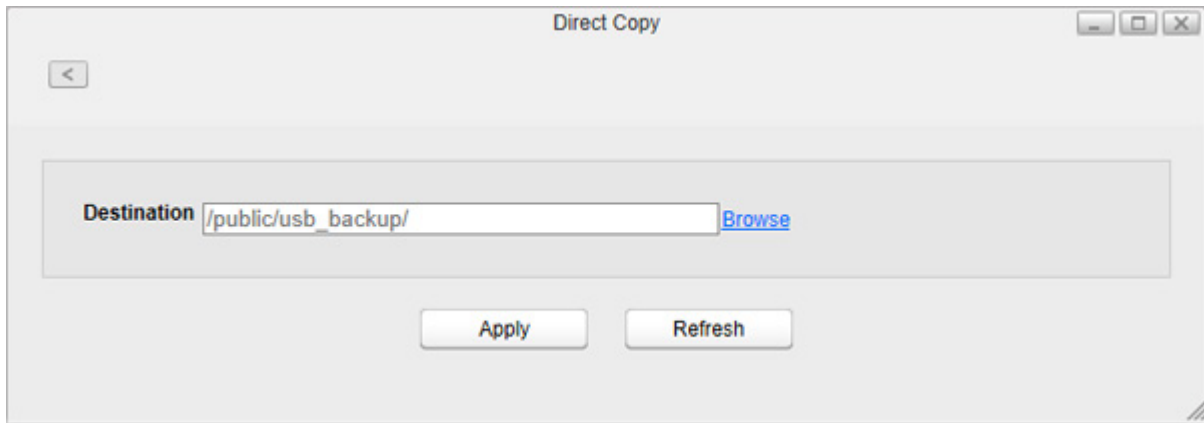
Note: If the function LED does not light up, the device is not supported.

- 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 ("usb_backup" under "Public" folder) of the LinkStation.

Note: While the function LED is flashing, press and hold down the function button for three seconds to cancel Direct Copy.

- 3 When the copy operation is completed, the access LED of the USB device will stop flashing and the function LED on the LinkStation will be extinguished. Dismount the USB device from the LinkStation by referring to the ["Dismounting an External Drive"](#) section in chapter 5.

Note: To change the Direct Copy target folder, navigate to *System Settings > Direct Copy > Browse*, select a new folder, and click *Apply*.



Chapter 8 System

Users

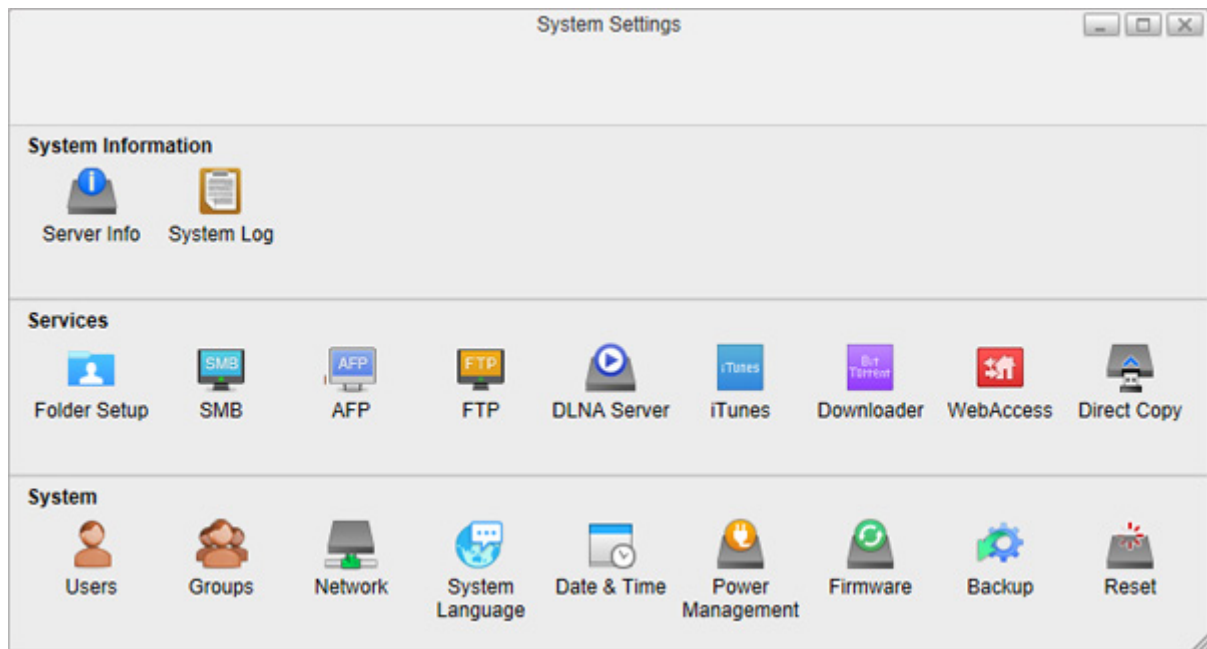
Create or delete users on the LinkStation, or change the administrator password.

Adding a User

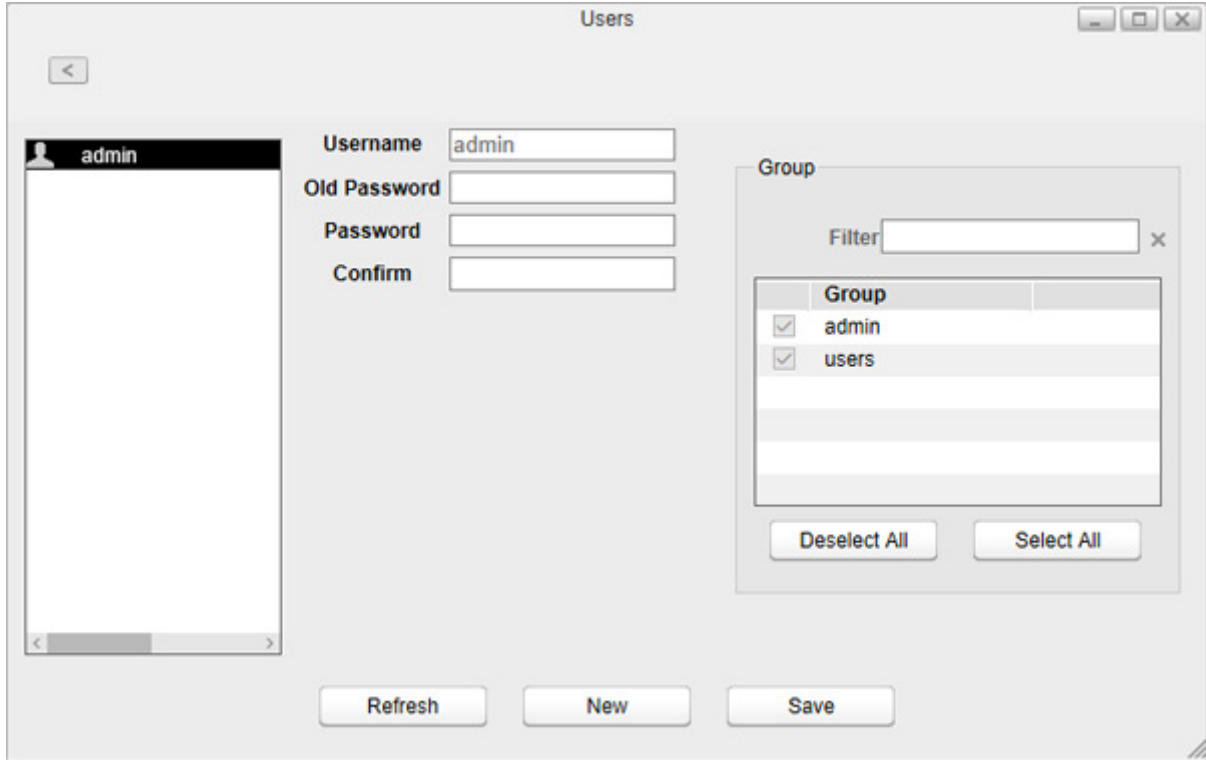
Follow the procedure below to create a user. To create a user from a mobile device, refer to the [“Adding a User”](#) section in chapter 9.

1 From Settings, click *System Settings* (⚙️).

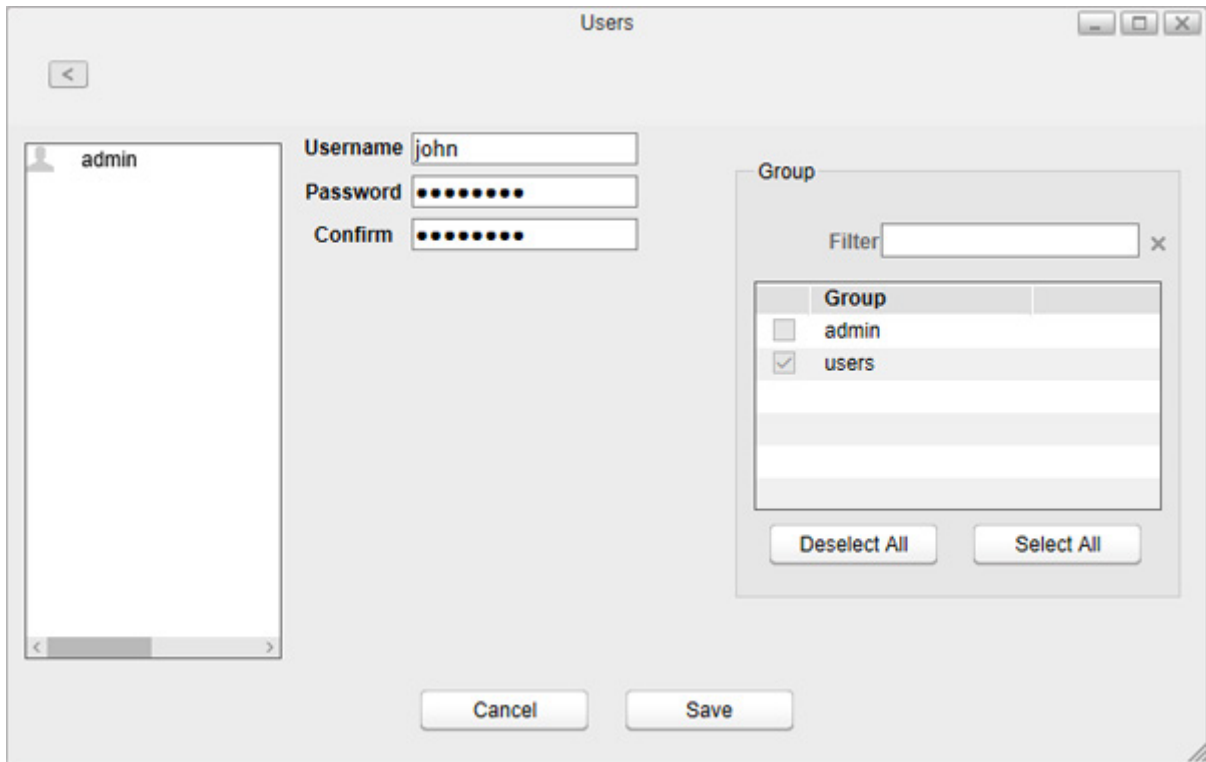
2 Click *Users*.



3 Click *New*.



4 Enter a username and password, and confirm the new password.



5 Select the group to join and click *Save*.

A new user will be added to the list. When a new user is created, a shared folder that uses the username as its folder name is also created.

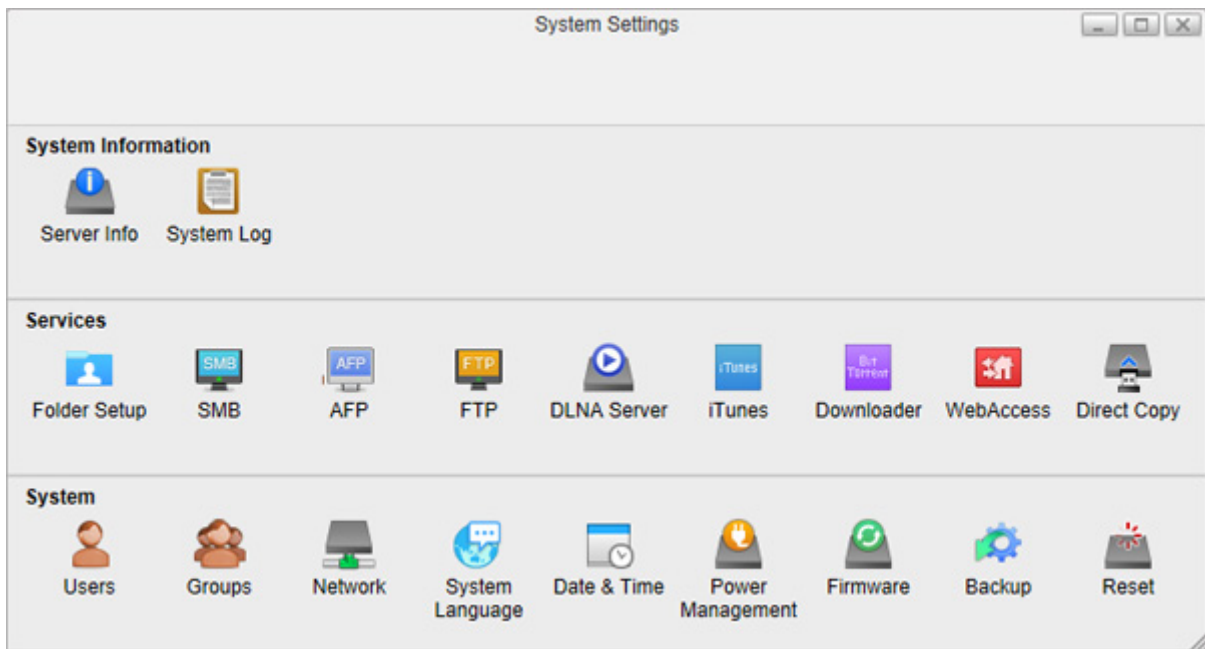
Notes:

- Usernames may contain up to 32 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.
- Names already in use for existing shared folders cannot be used.

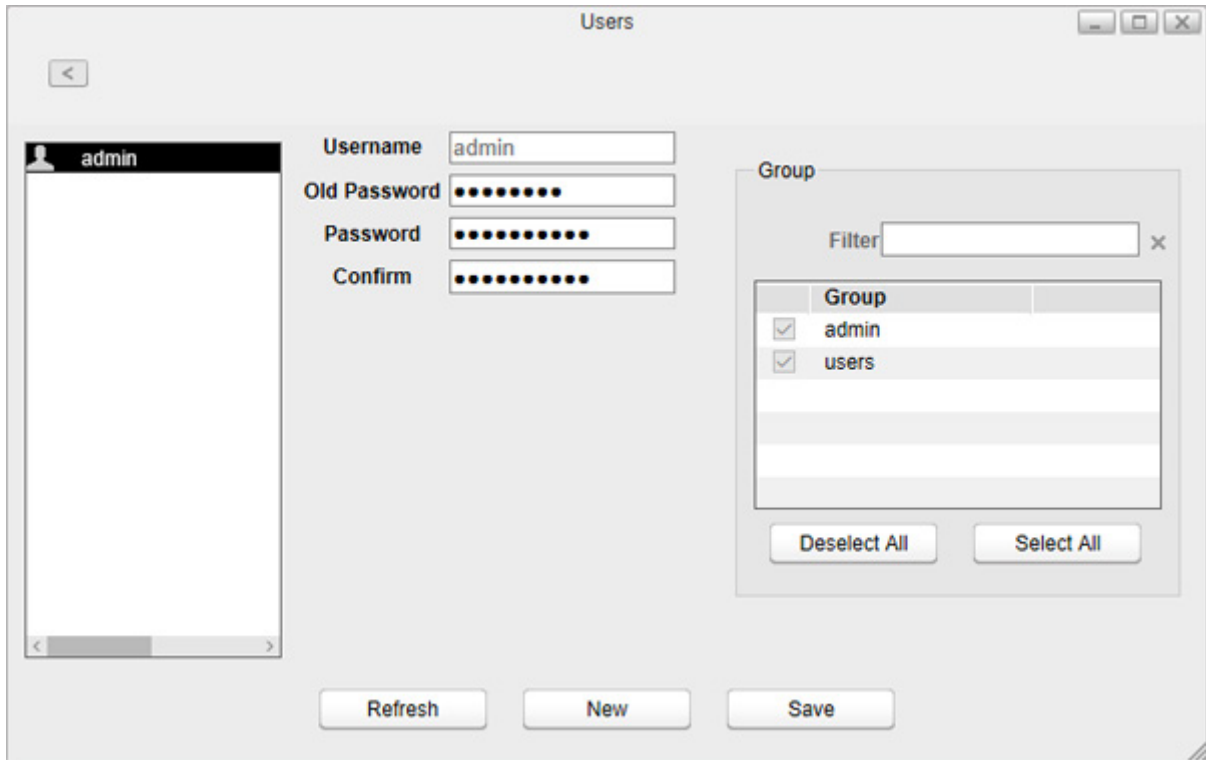
Changing a Password

Administrator Password

- 1 Log in to Settings as the admin user.
- 2 From Settings, click *System Settings* (⚙️).
- 3 Click *Users*.



- Enter the current password and new password, confirm the new password, then click *Save*.



Other Users' Passwords

- Log in to Settings as a user who wants to change their password.
- From Settings, double-click *Applications* on the desktop.
- Double-click *Password*.
- Enter the current password and new password, confirm the new password, then click *Apply*.

Deleting a User

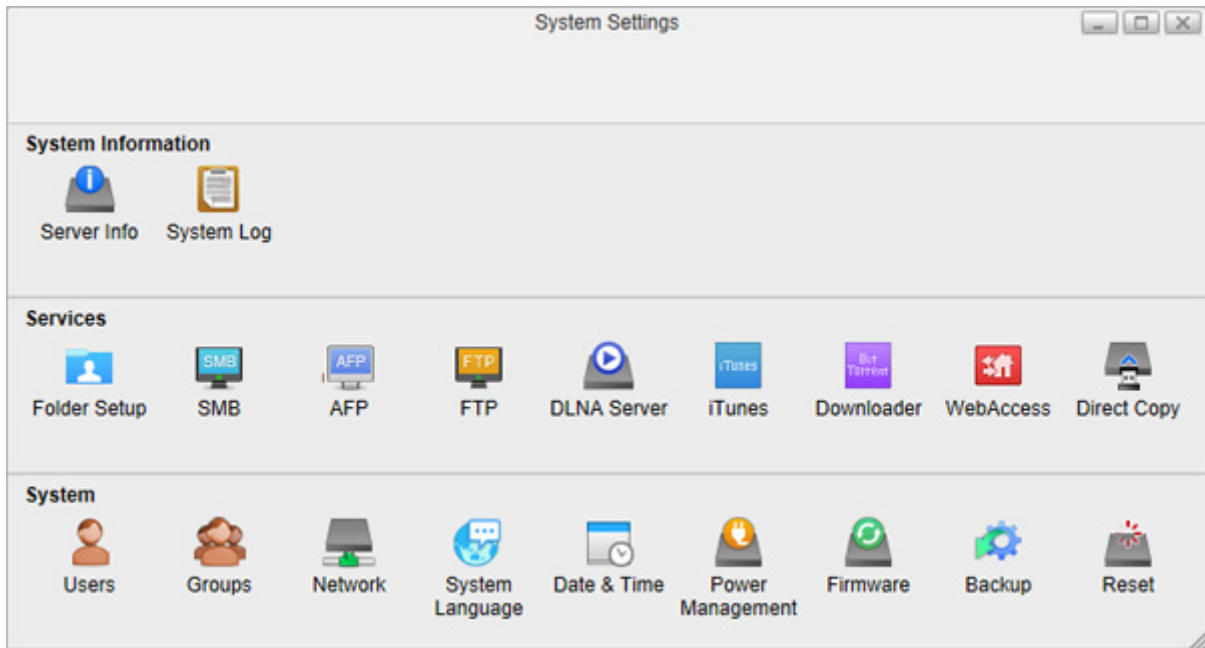
- From Settings, click *System Settings* (⚙️).
- Click *Users*.
- Select a user and click *Delete*.
- Click *OK*.

The selected user is deleted. When the user is deleted, the user's shared folder and data within will be deleted together.

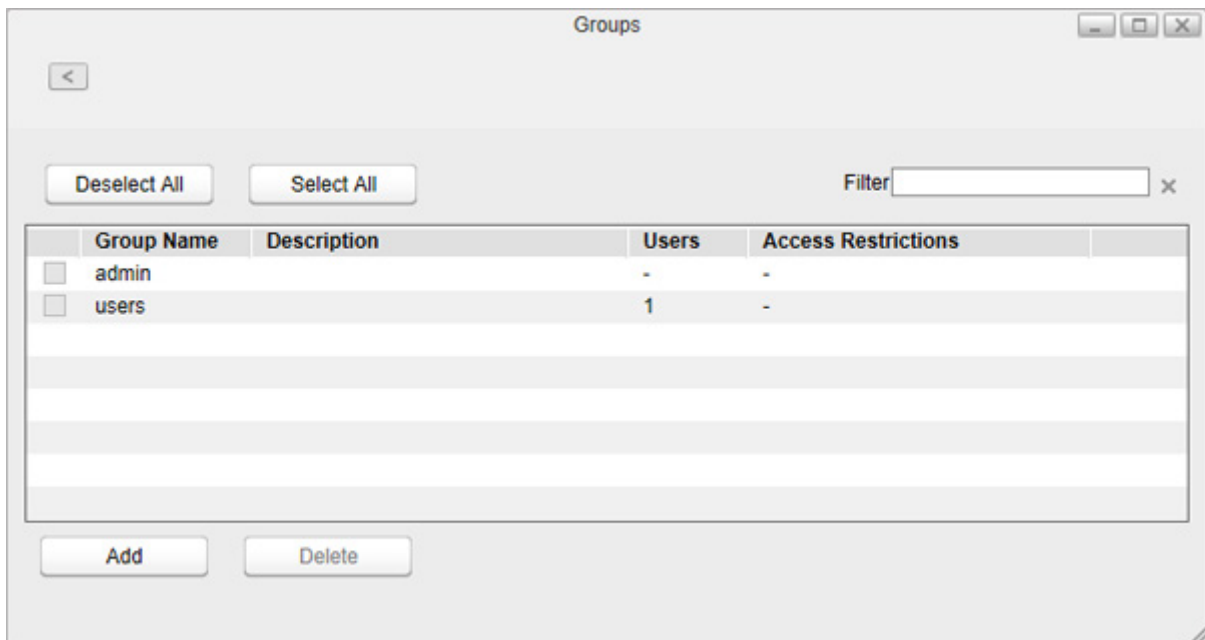
Groups

Adding a Group

- 1 From Settings, click *System Settings* (⚙️).
- 2 Click *Groups*.



- 3 Click *Add*.



- 4** Enter a group name and select the users who will belong to it, then click *Save*.

A new group will be added to the list.

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 space.

Deleting a Group

- 1** From Settings, click *System Settings* (⚙️).
- 2** Click *Groups*.
- 3** Select a group's checkbox and click *Delete*.
- 4** Click *OK*.

The selected group is deleted.

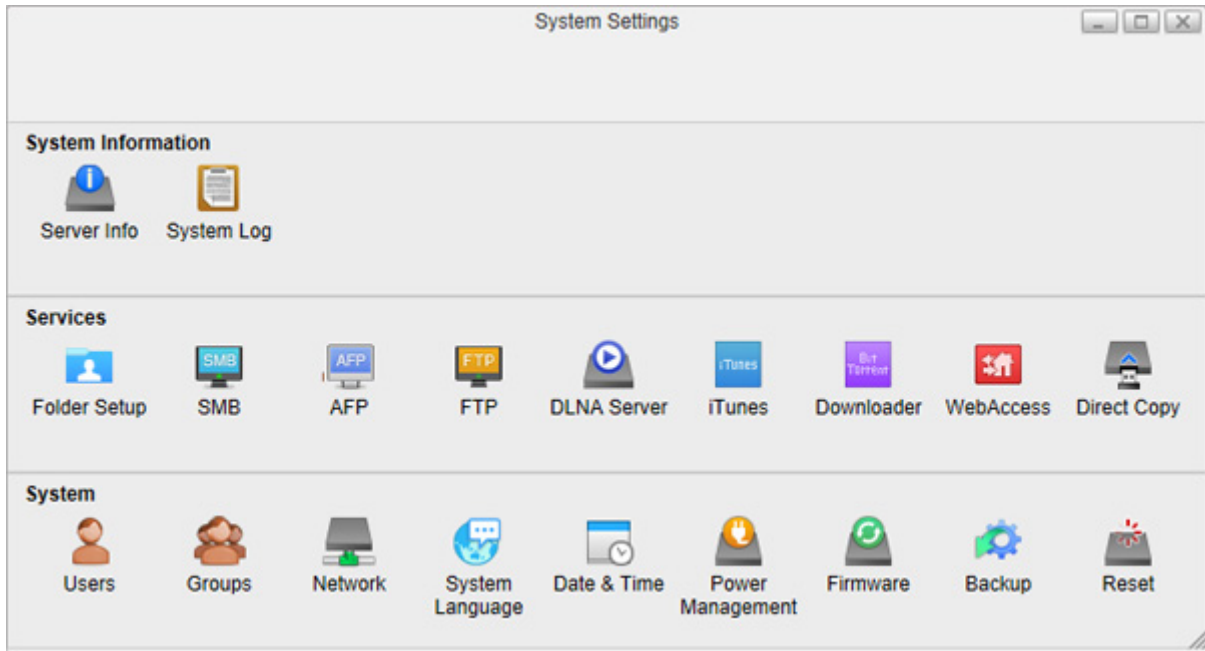
Network

Configure network settings such as a hostname, IP address, or Wake-on-LAN.

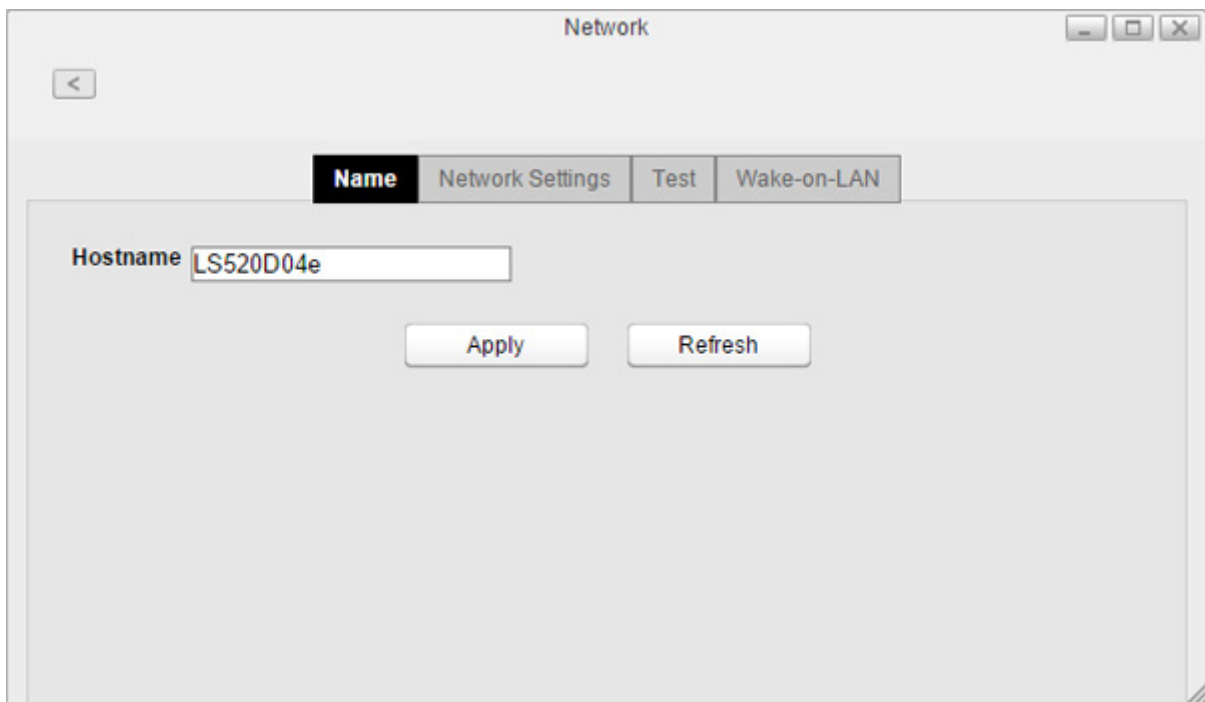
Changing the Hostname

- 1** From Settings, click *System Settings* (⚙️).

2 Click *Network*.



3 Click the *Name* tab, enter a new LinkStation name, and click *Apply*.



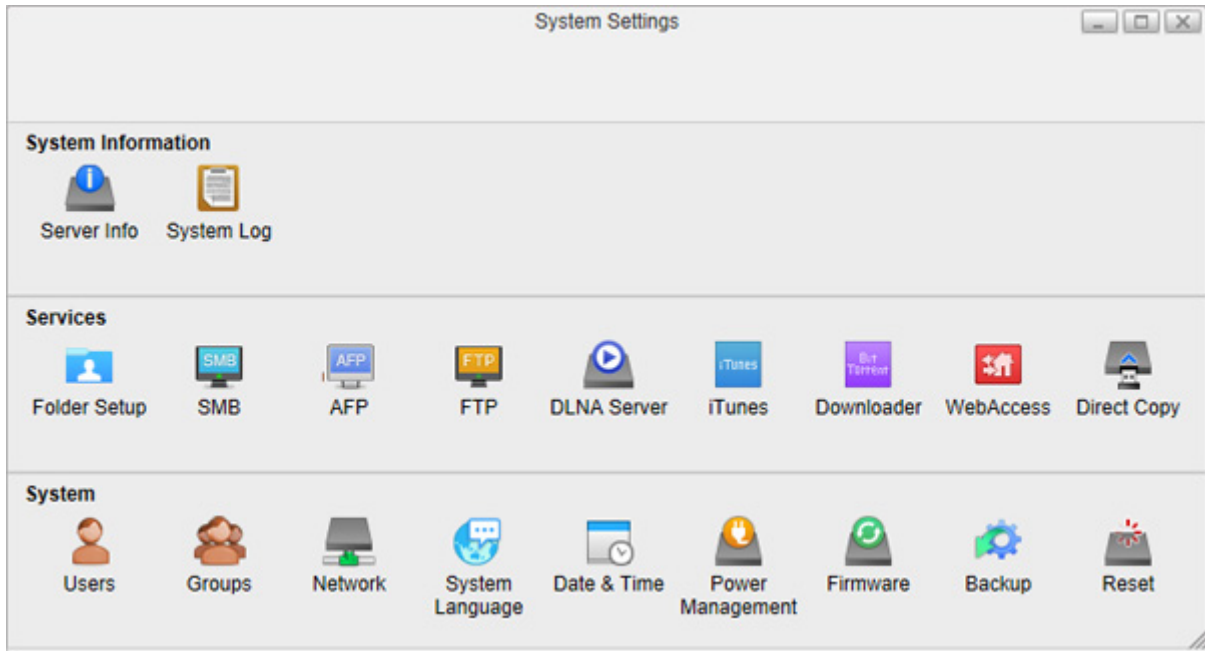
Note: A hostname may contain up to 15 alphanumeric characters.

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.

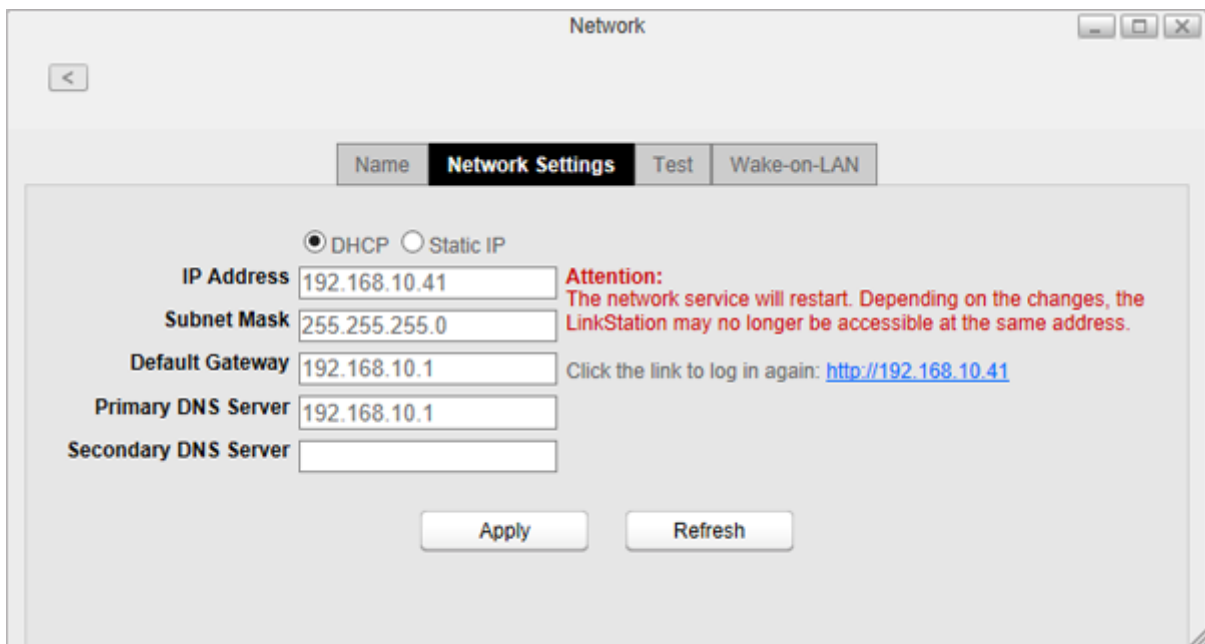
1 From Settings, click *System Settings* (⚙️).

2 Click *Network*.



3 Click the *Network Settings* tab.

4 Select *Static IP*, enter the desired network address settings, and click *Apply*.



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 below.

Local loopback address: 127.0.0.1, 255.255.255.0

Network address: 0.0.0.0, 255.255.255.0

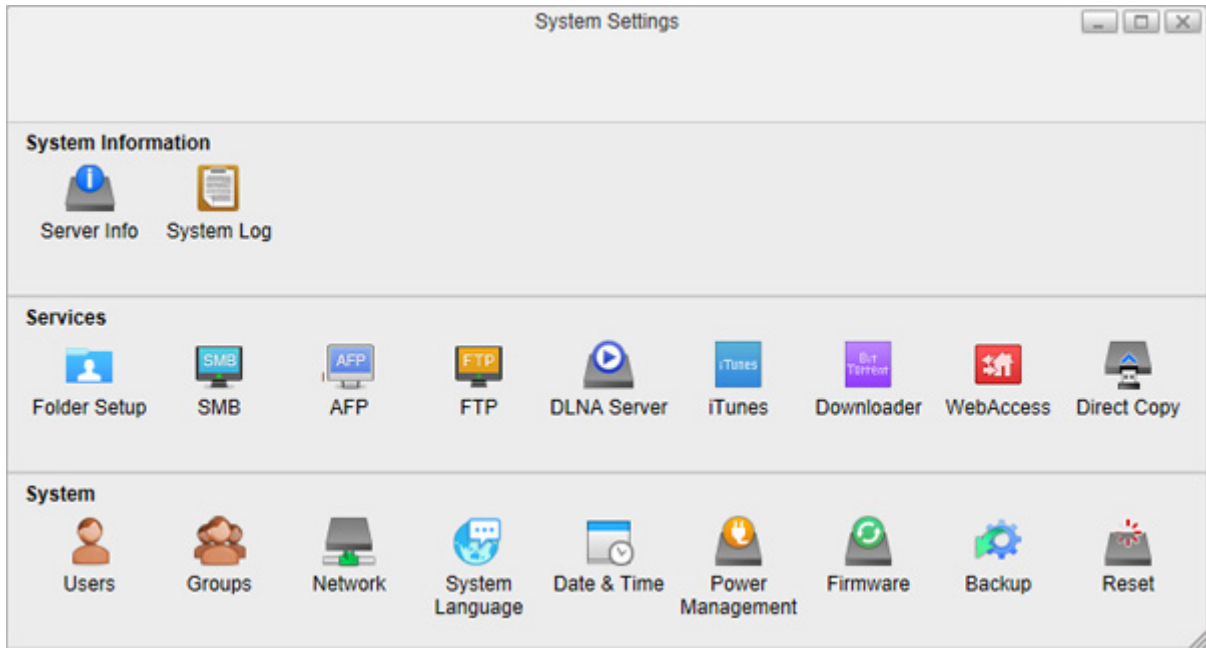
Broadcast address: 255.255.255.255, 255.255.255.0

The IP address range from 224.0.0.0 to 255.255.255.0

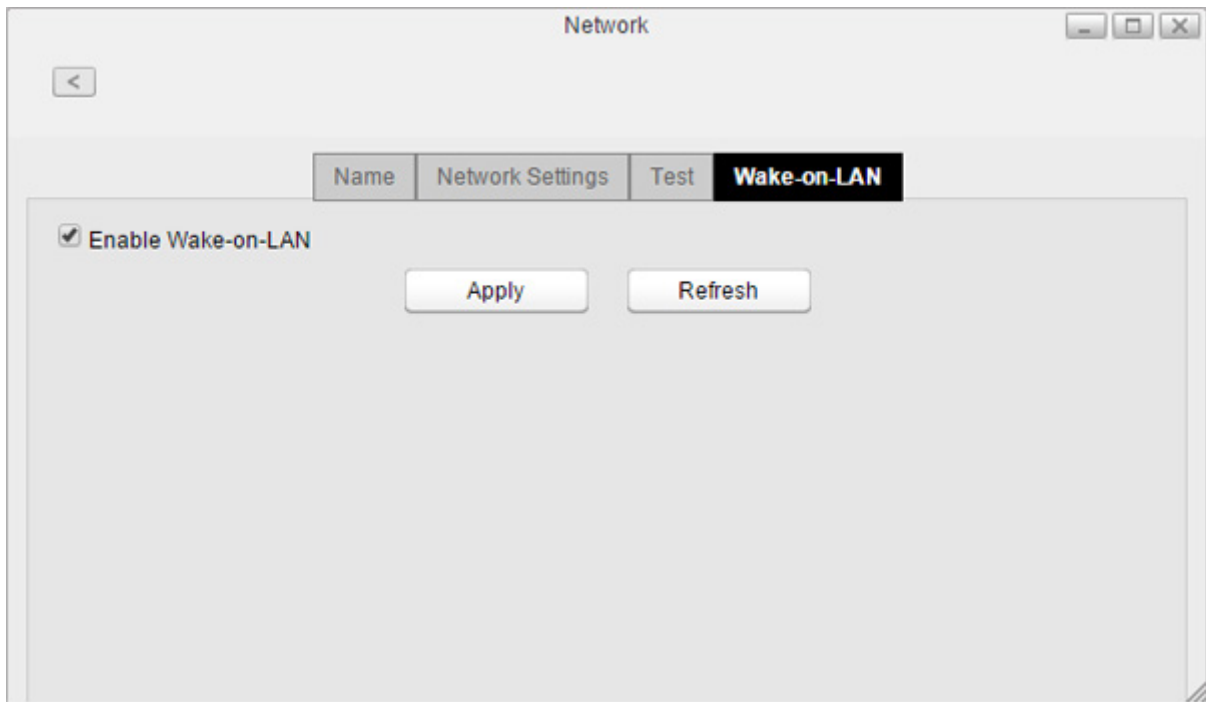
Wake-on-LAN

The LinkStation supports Wake-on-LAN, which allows it to be turned on remotely. You can only wake the LinkStation up when the LinkStation is in sleep (standby) mode.

- 1 From Settings, click *System Settings* (⚙️).
- 2 Click *Network*.



- 3 Click the *Wake-on-LAN* tab and check "Enable Wake-on-LAN" to enable Wake-on-LAN.



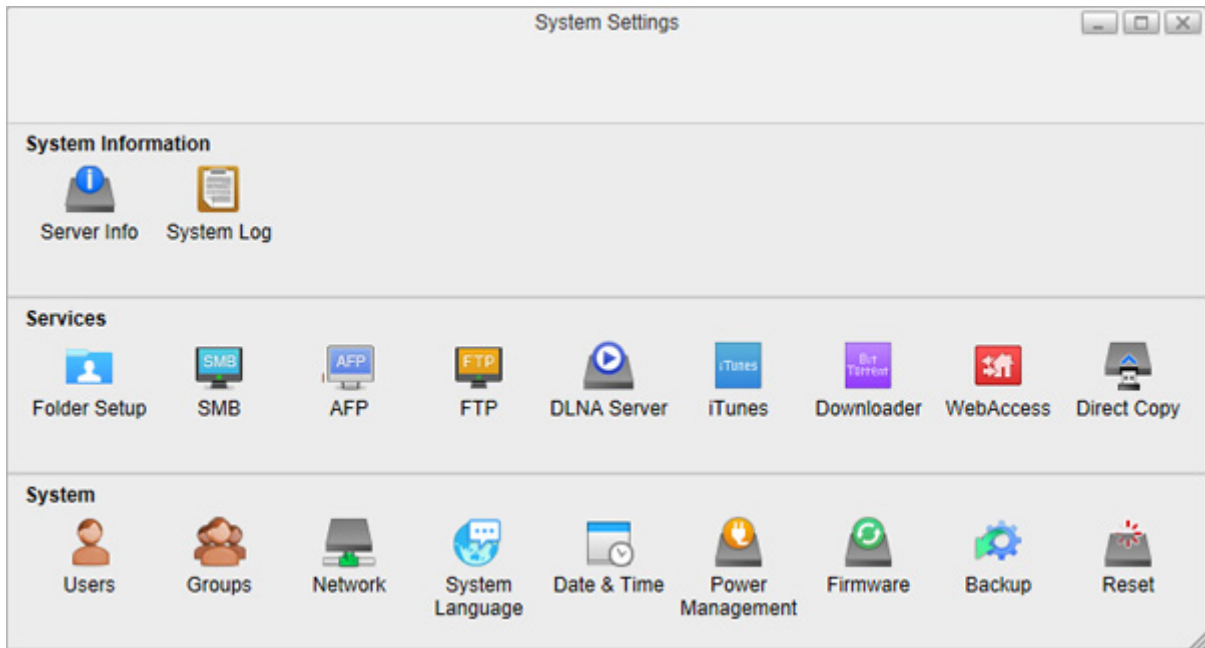
Note: To use Wake-on-LAN, you'll need Wake-on-LAN software that sends Wake-on-LAN packets. The LinkStation does not include Wake-on-LAN software.

System Language

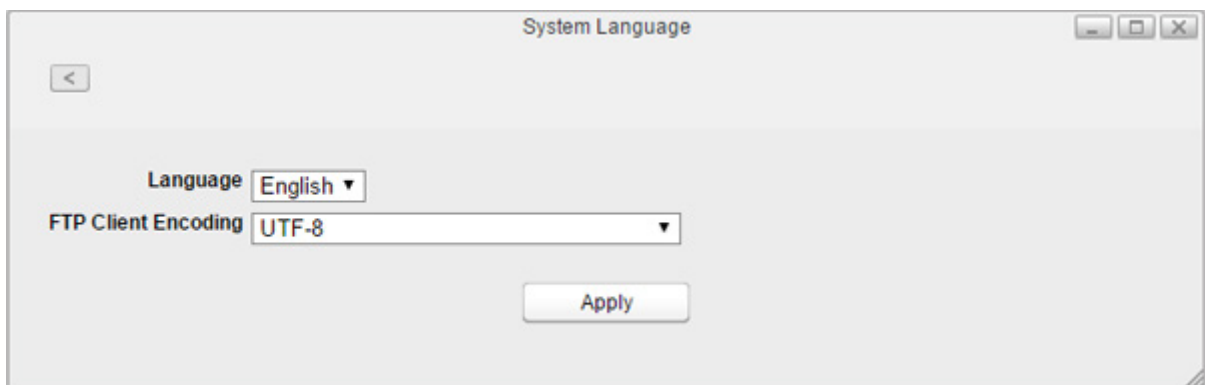
Changing System Languages

This setting changes the language used by the LinkStation for DLNA. To change the language displayed in Settings, refer to the [“Changing Display Languages”](#) section in chapter 2.

- 1 From Settings, click *System Settings* (⚙️).
- 2 Click *System Language*.



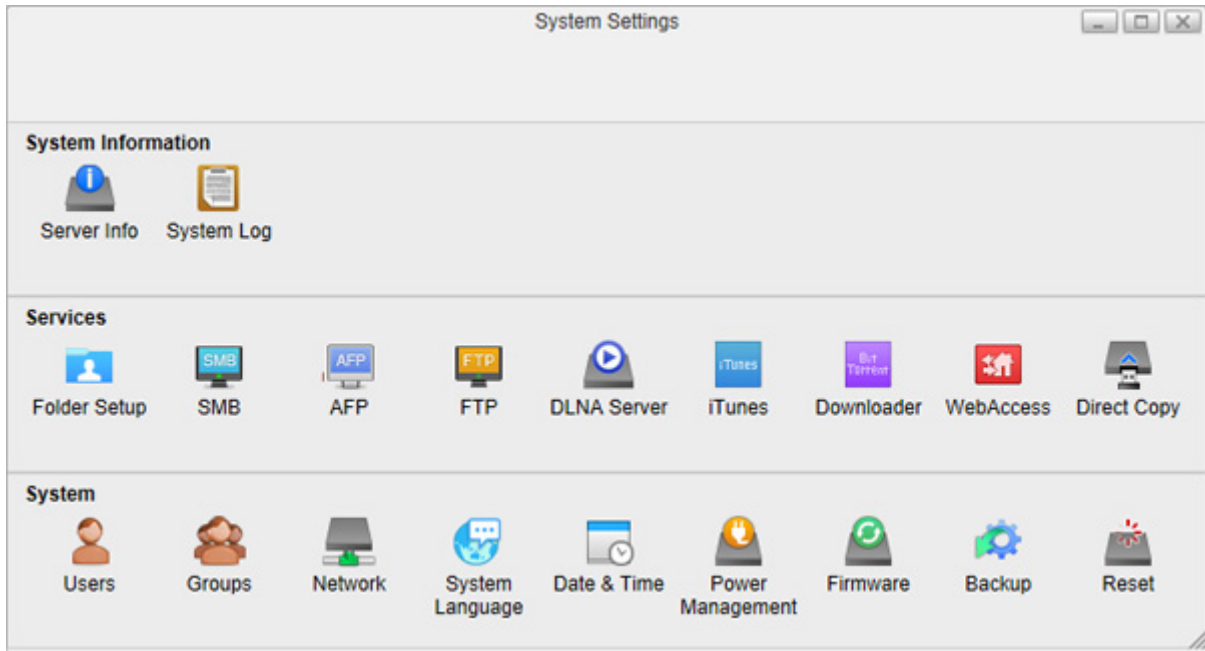
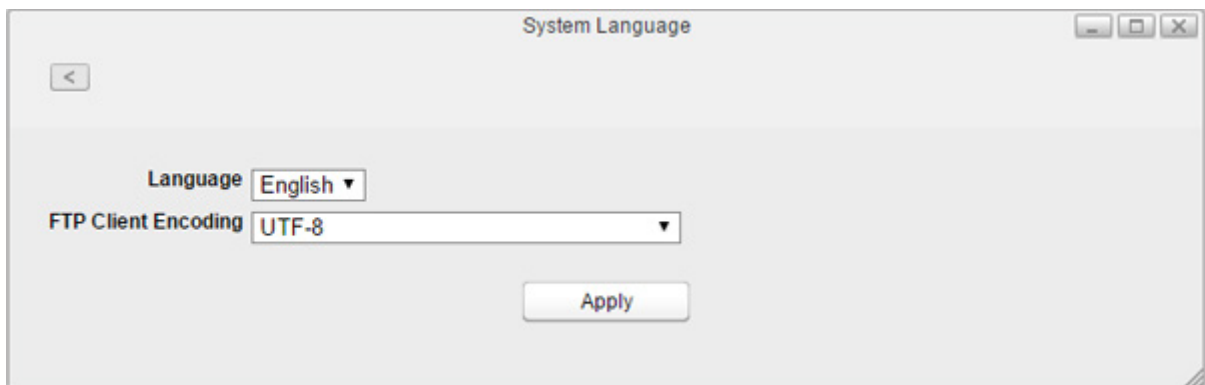
- 3 Select the language from the drop-down list of “Language” and click *Apply*.



Changing FTP Client Character Encoding

To change the FTP client’s character encoding settings, follow the procedure below. These encoding settings should match your FTP client’s settings. If these settings do not match those of the FTP client, characters in a filename may not display properly.

- 1 From Settings, click *System Settings* (⚙️).

2 Click *System Language*.**3** Select the character encoding from the drop-down list of "FTP Client Encoding" and click *Apply*.

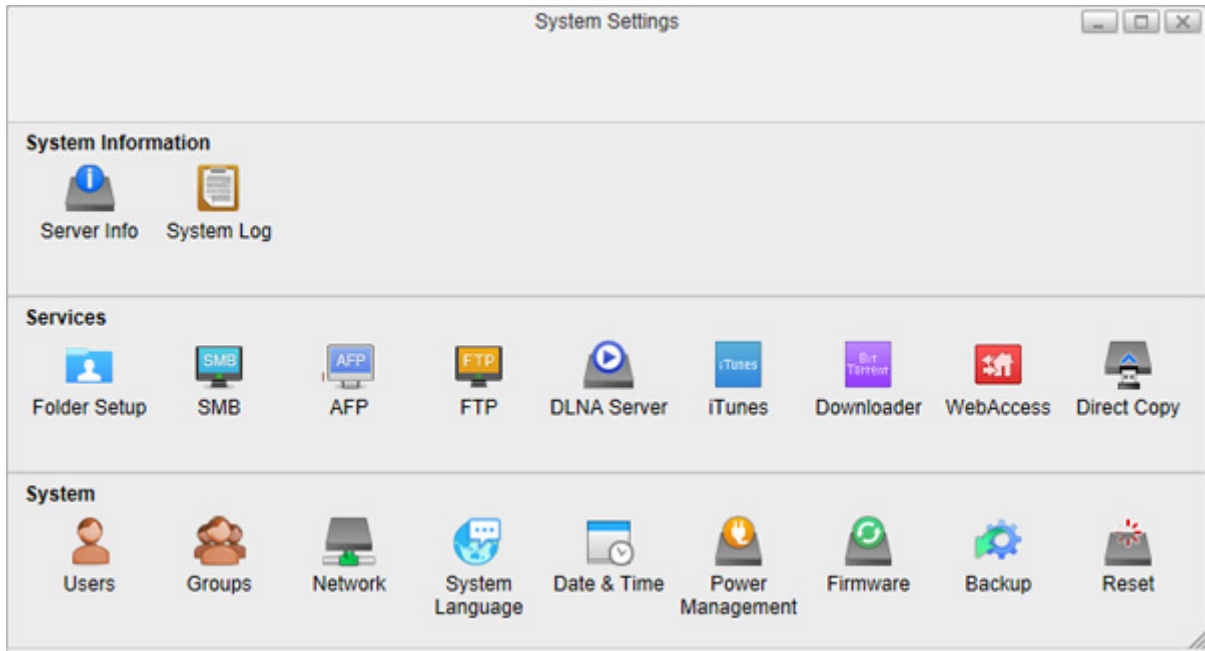
Date & Time

Configures time settings such as date and time, time zone, or NTP settings.

Changing Date and Time

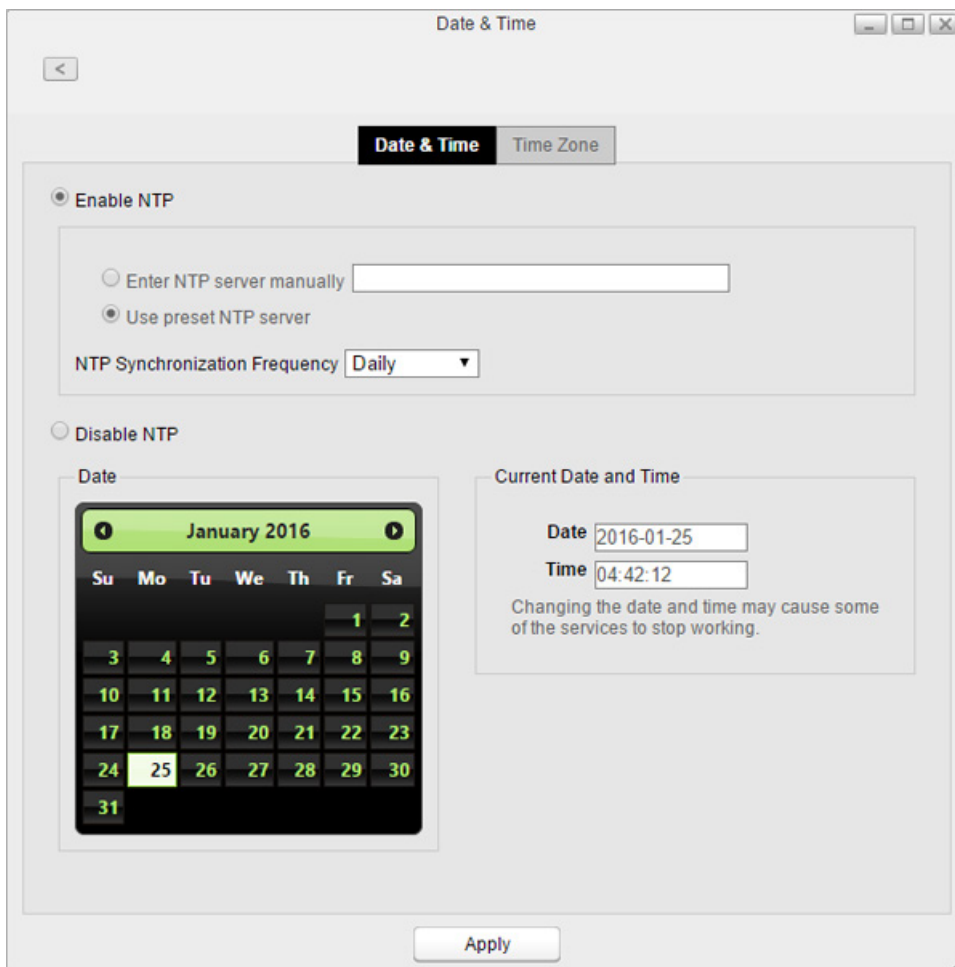
1 From Settings, click *System Settings* (⚙️).

2 Click *Date & Time*.



3 Click the *Date & Time* tab.

4 Select whether to enable NTP or manually set the date and time.



If NTP is enabled, the LinkStation adjusts its clock automatically by using the NTP server. You can either enter the NTP server manually or use a preset NTP server on the LinkStation and how often to sync with it. If

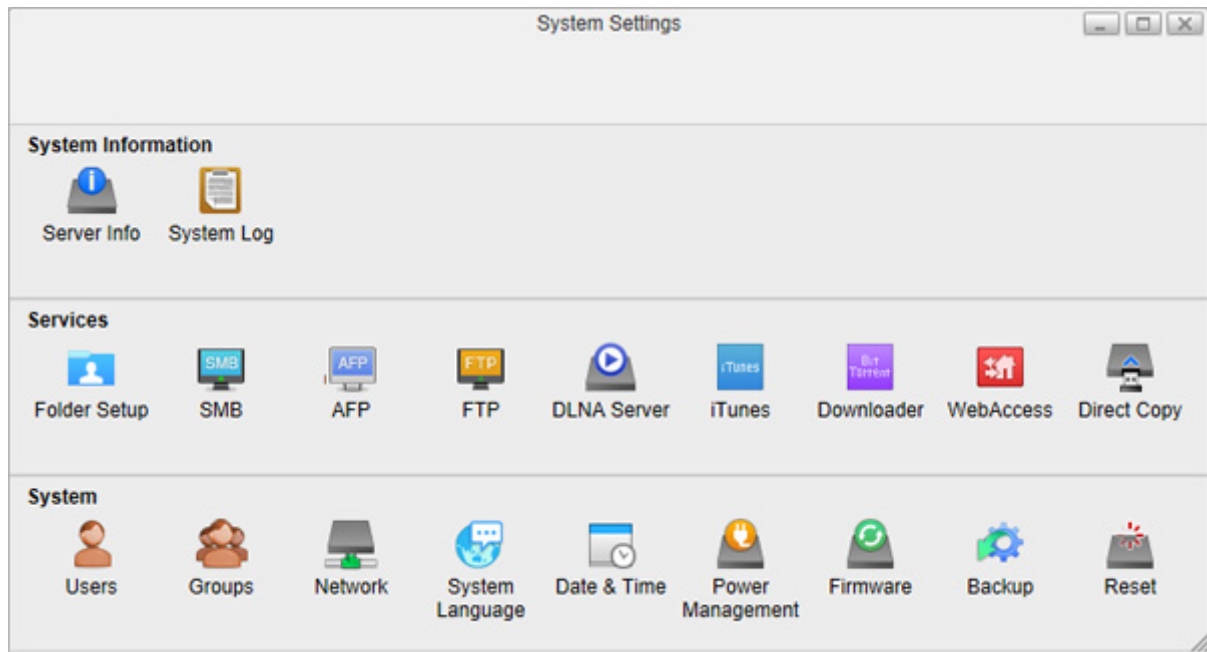
disabled, select the date from the calendar or enter the date into the “Date” box, and enter the time directly into the “Time” boxes.

5 Click *Apply*.

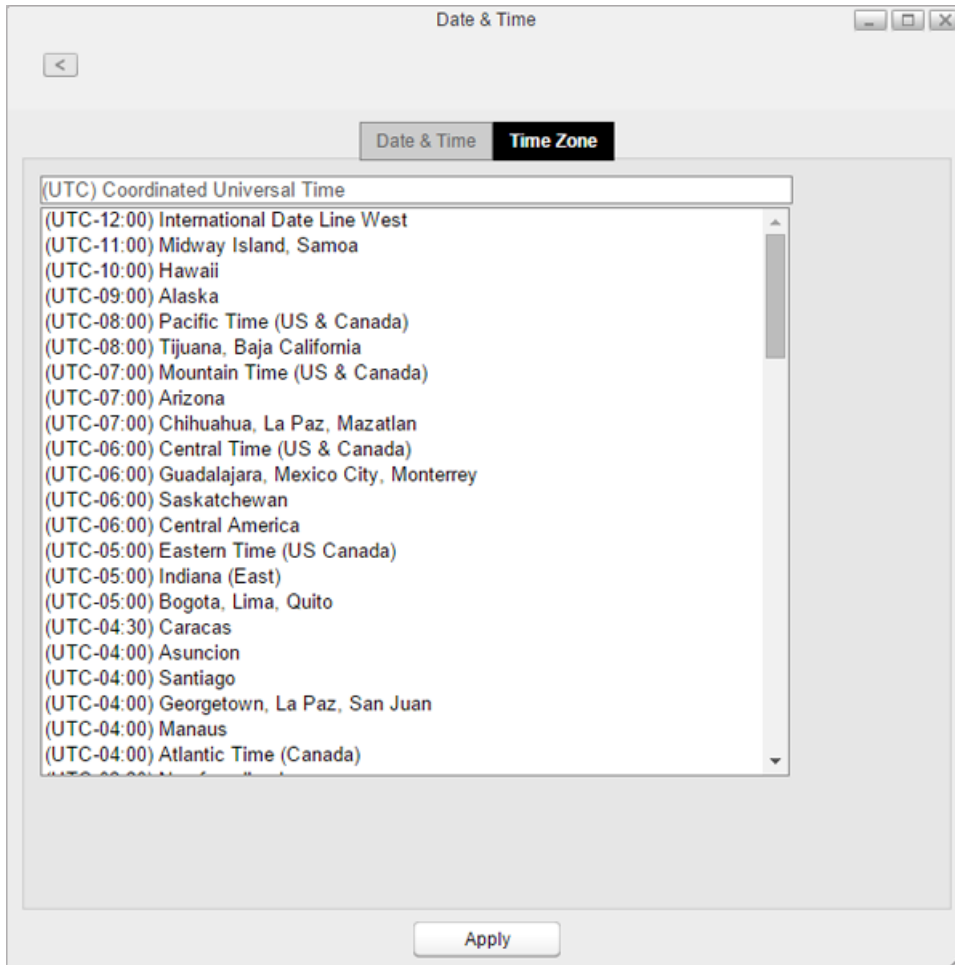
Changing Time Zone

1 From Settings, click *System Settings* (⚙️).

2 Click *Date & Time*.



- 3 Click the *Time Zone* tab and select the desired time zone from the list, then click *Apply*.



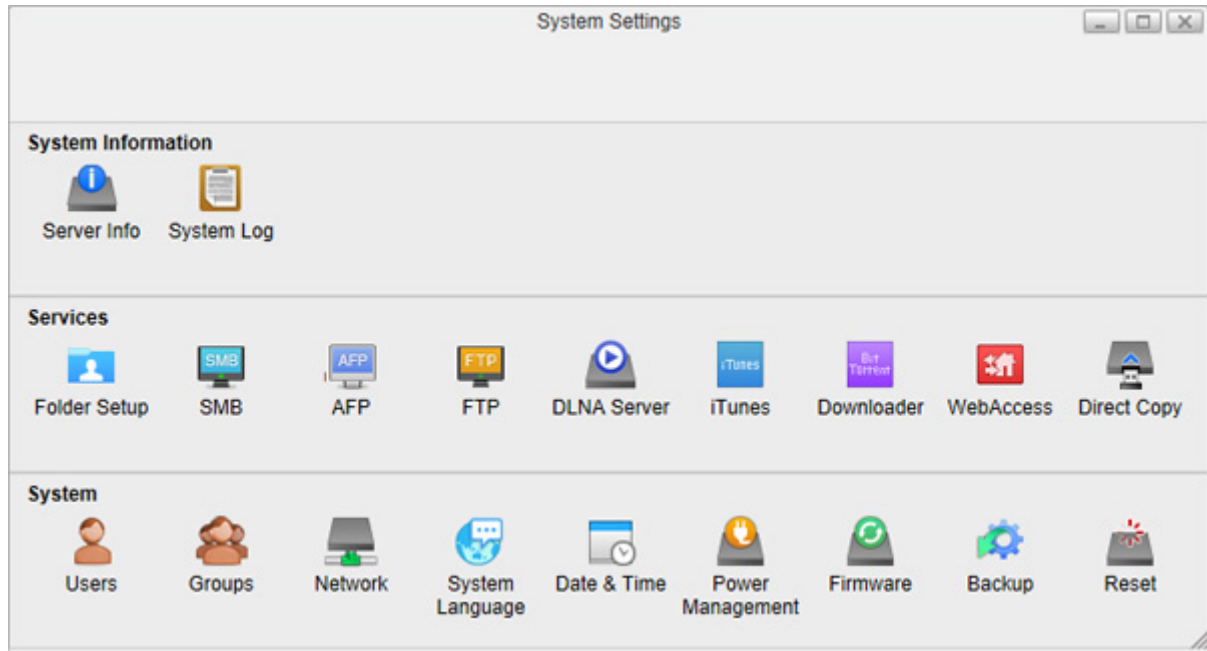
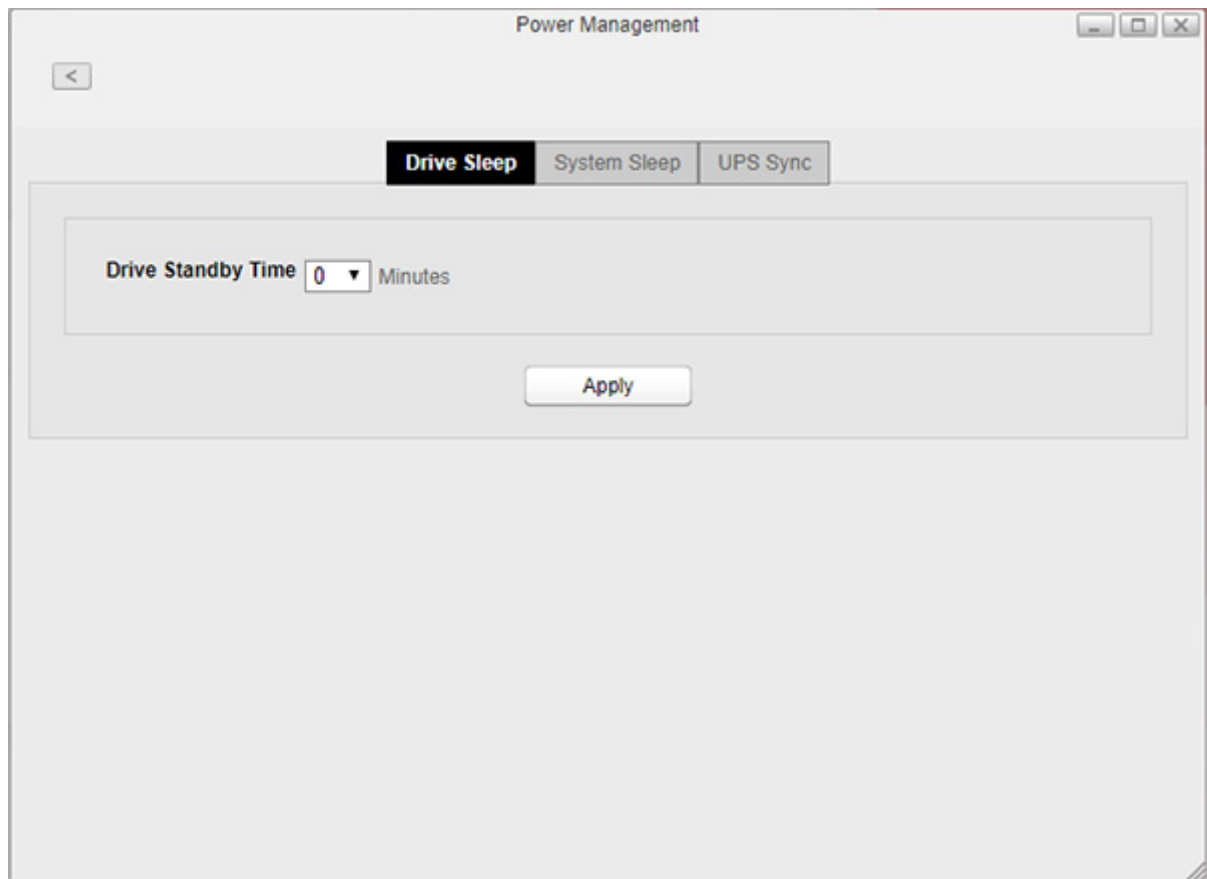
Power Management

Configures sleep settings for the system or drives.

Drive Spin Down

With this function, only drives will enter sleep mode. This may help maintain drive longevity. While in spin down, drives will start working again once the LinkStation is accessed.

- 1 From Settings, click *System Settings* (⚙️).

2 Click *Power Management*.**3** Click the *Drive Sleep* tab and configure the time interval when the drive will spin down. For example, if you select five minutes as the standby time, the drive will spin down five minutes after no drive access.**4** Click *Apply*.

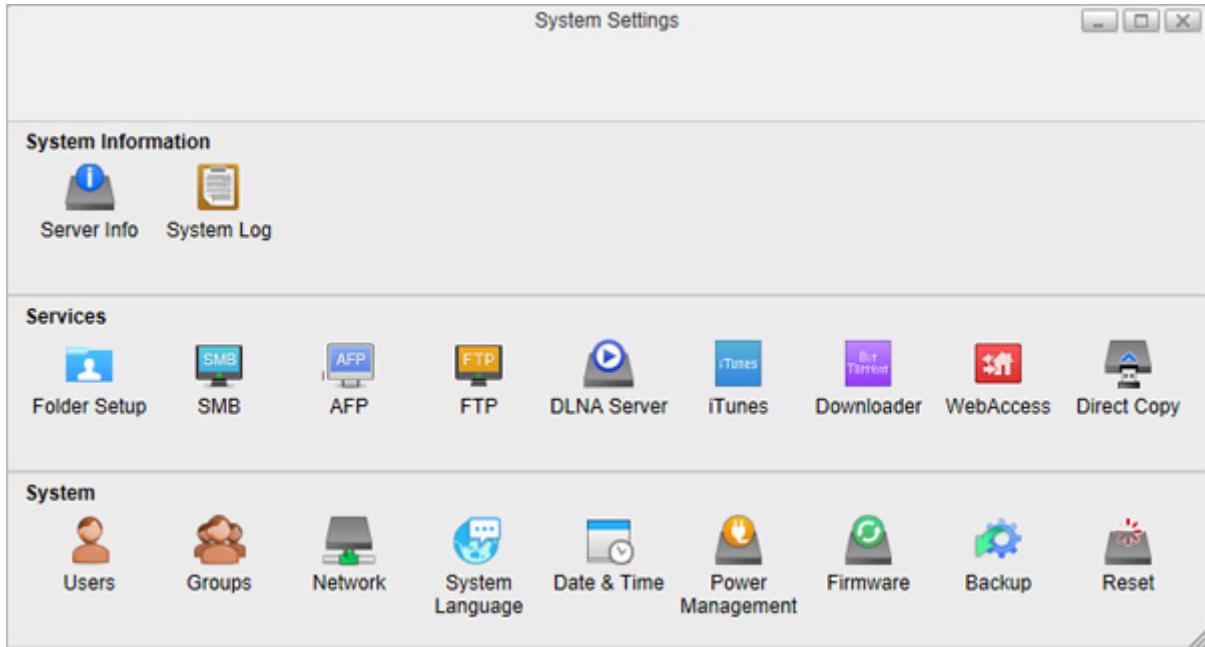
Note: If you configure spin down settings after formatting internal drives or creating the RAID array, drive spin down will not occur during specific periods because the formatting process is still working in the background.

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 Settings, click *System Settings* (⚙️).

2 Click *Power Management*.

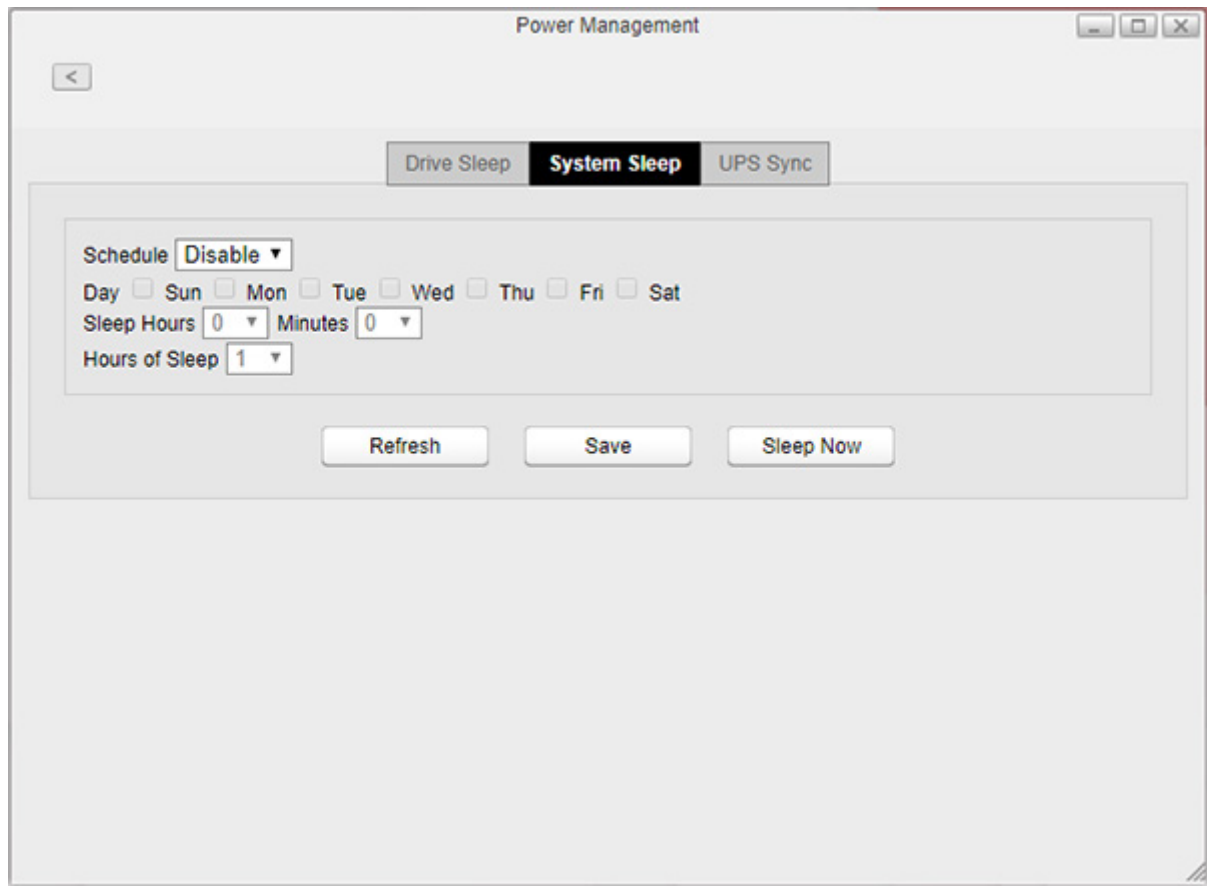


3 Click the *System Sleep* tab.

4 Select the timer interval from “Daily” or “Weekly”, time to enter sleep mode, and how long the LinkStation will be in sleep mode.

If you want to make the LinkStation enter sleep mode immediately, click *Sleep Now*. When you make the LinkStation enter sleep mode using the *Sleep Now* button, the LinkStation will not wake up even if the

configured timer interval has passed. In such a case, press the function button or use Wake-on-LAN (if enabled) to wake the unit up.



5 Click *Save*.

Notes:

- Examples of timer settings are shown below:
 - **Example 1:**
If running at a current time of 10:00 a.m. Wednesday
Schedule: Daily
Sleep Hour: 0:00
Hours of Sleep: 12
The unit enters sleep mode at 12:00 a.m. and wakes up after 12 hours, 12:00 p.m. on Thursday.
 - **Example 2:**
If running at a current time of 10:00 a.m. Wednesday
Schedule: Weekly Wednesday
Sleep Hour: 20:00
Hours of Sleep: 12
On every Wednesday, the unit enters sleep mode at 8:00 p.m. and wakes up after 12 hours, 8:00 a.m. on Thursday.
- To wake the LinkStation from sleep mode before the wake-up time, press the function button, use Wake-on-LAN, or turn off, then on the LinkStation.

UPS Sync

If a UPS (Uninterruptible Power Supply, sold separately) is attached, the LinkStation can be automatically shut down to protect data in the event of a power outage.

Follow the procedure below to configure connecting a UPS device. To configure connecting a UPS device from a mobile device, refer to the [“Configuring UPS Sync”](#) section in chapter 9.

Notes:

- If the LinkStation is connected directly to a UPS, select “Sync with UPS connected to this LinkStation”. If a different Buffalo NAS device is connected to the UPS, select “Sync with a UPS connected to another NAS on the same network”. After making this selection, enter the IP address of the Buffalo NAS device that will be the sync source into “Other NAS’s IP Address”.
- When the LinkStation restarts after an automatic shutdown such as from a power outage or power supply issue, verify that external power has been restored. If the LinkStation is turned on while it is still running on the UPS and external power has not been restored, the automatic shutdown will not be performed, even after the specified time elapses.

1 Plug the power cable of the UPS to a wall socket.

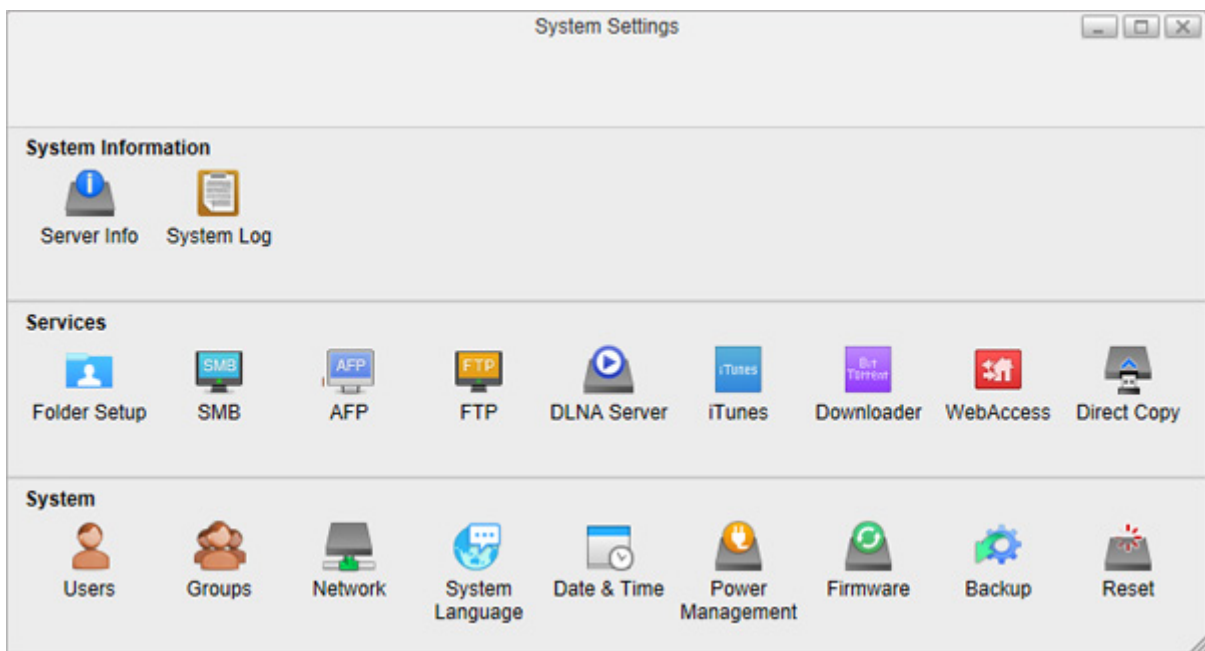
2 Connect the AC cable of the LinkStation to the UPS.

3 Connect the UPS and LinkStation using a USB cable.

4 Turn on the UPS, then the LinkStation.

5 From Settings, click *System Settings* (⚙️).

6 Click *Power Management*.



7 Click the *UPS Sync* tab.

8 Configure the desired settings, then click *Save*.

The screenshot shows the 'Power Management' window with the 'UPS Sync' tab selected. The window has a title bar with standard OS controls and a back arrow in the top left. Below the title bar are three tabs: 'Drive Sleep', 'System Sleep', and 'UPS Sync'. The main content area is divided into sections:

- Power Supply Status:** A box containing the text 'UPS settings are not configured.'
- Sync with UPS connected to this LinkStation:** A radio button is selected. Below it is a box containing:
 - UPS Connection Type:**
 - Shutdown Will Occur If:**
 - Power outages longer than minutes
 - UPS sends low battery signal
 - How Should the UPS Behave after a LinkStation Shutdown?:**
 - Turn off
 - Stay on
- Sync with a UPS connected to another NAS on the same network:** A radio button is unselected. Below it is a box with the label 'Other NAS's IP Address:' and an empty text input field.
- Do not synchronize with UPS:** A radio button is unselected.

At the bottom of the window are two buttons: 'Refresh' and 'Save'.

Firmware

Check the firmware version or update the LinkStation's firmware. There are two ways to update the firmware.

Online Update

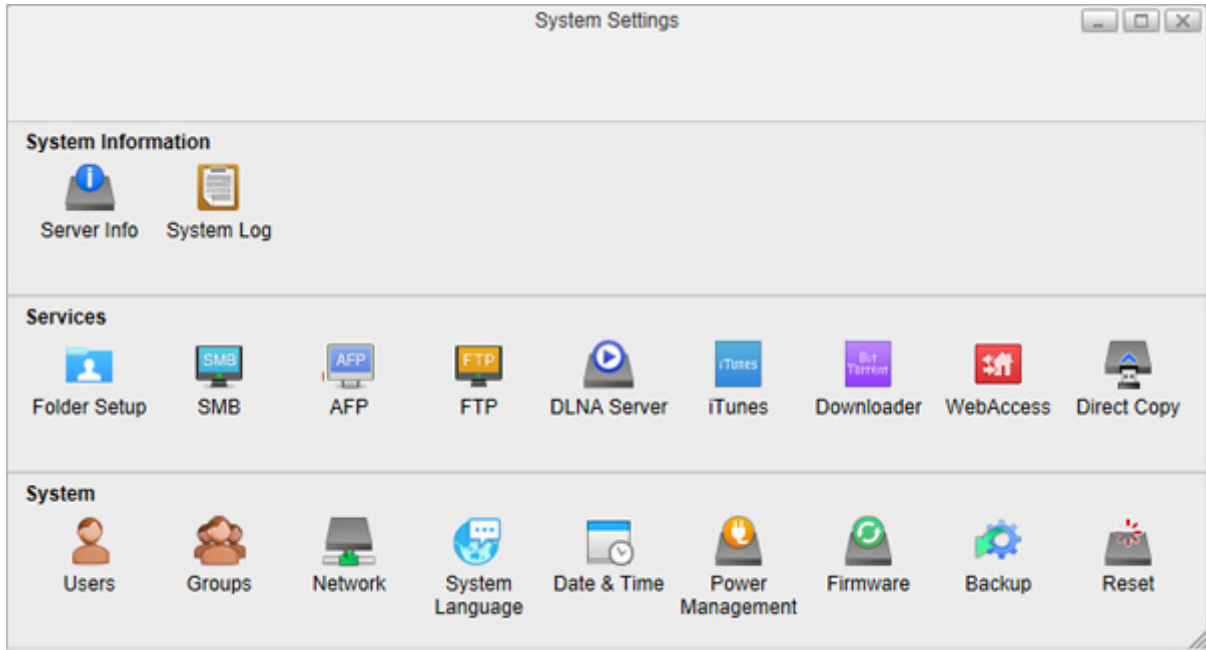
If a new firmware version is available, a message and button are displayed in Settings.

Manual Update

You can update the LinkStation's firmware manually.

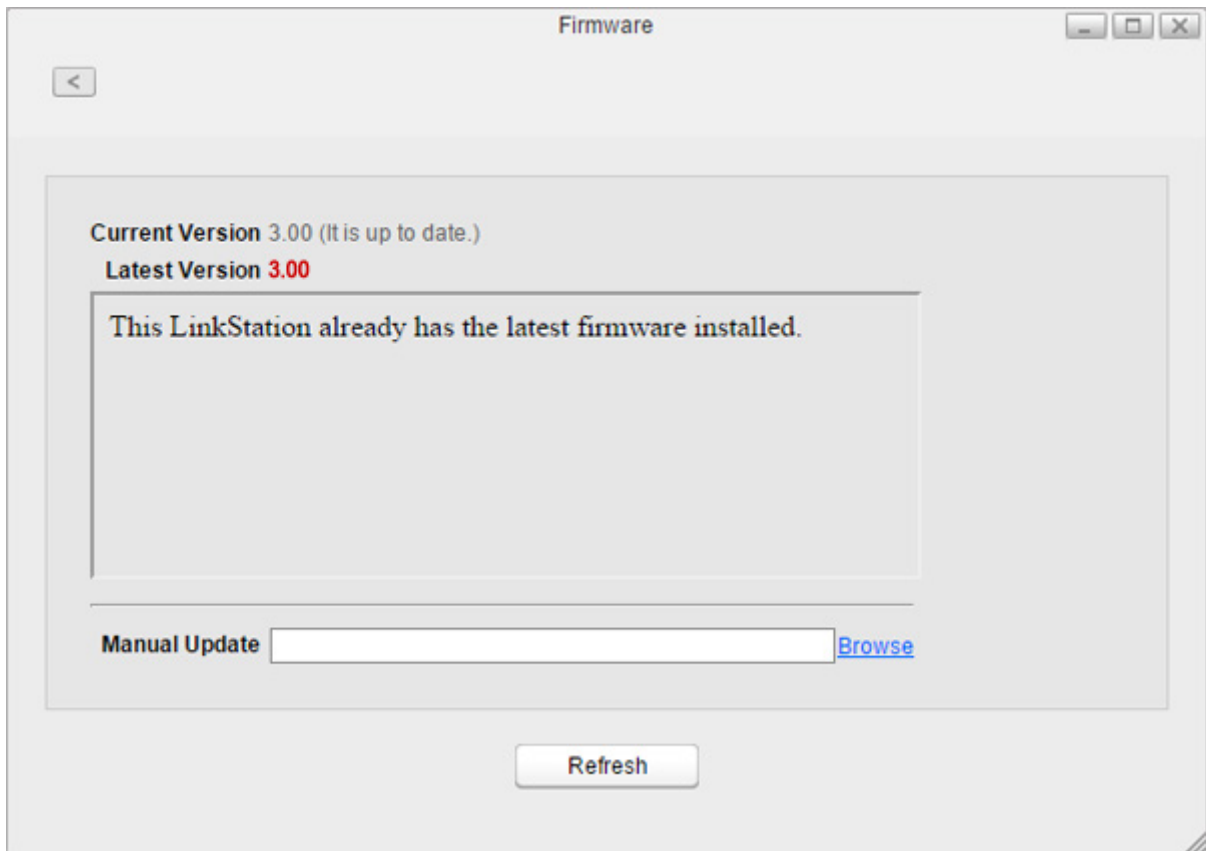
- 1** Download the latest firmware image file from the [Buffalo website](#) and save the firmware image file to the LinkStation's shared folder.

2 From Settings, click *System Settings* (⚙️).

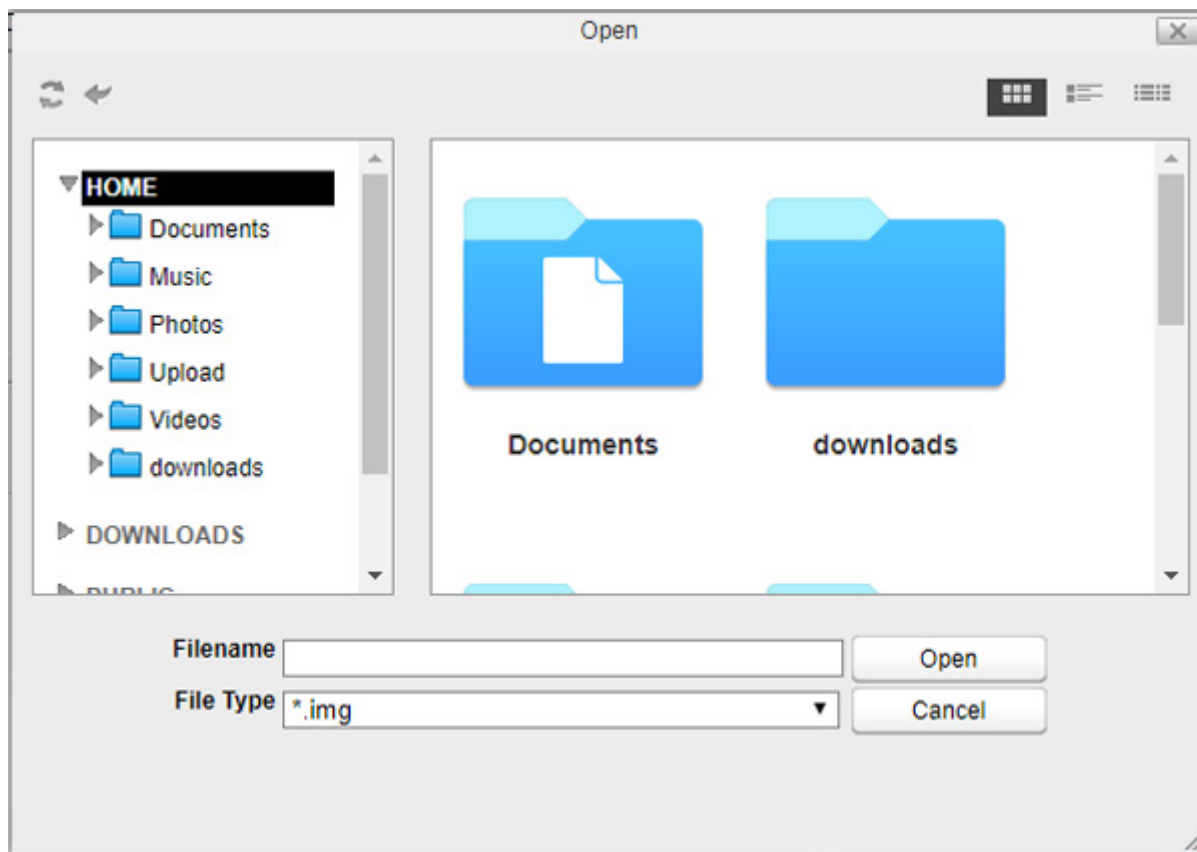


3 Click *Firmware*.

4 Click *Browse*.



- 5** Specify the firmware image file that was saved in the LinkStation's shared folder and click *Open*.



- 6** Click *Apply*.

- 7** While the firmware updates, the power LED blinks amber. Wait until the update is complete and the LED returns to white.

Backup

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.

Full 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
 - 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
 - USB drive connected to the backup source LinkStation
 - Shared folder on another Buffalo NAS device

Incremental Backup

The first backup job runs like a full backup. As each subsequent backup job runs, only files that have been changed since the last full 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
 - 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
 - USB drive connected to the backup source LinkStation
 - Shared folder on another Buffalo NAS device

Differential Backup

The first backup job runs like a full backup. As each subsequent backup job runs, only files that have been changed since the last full 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.

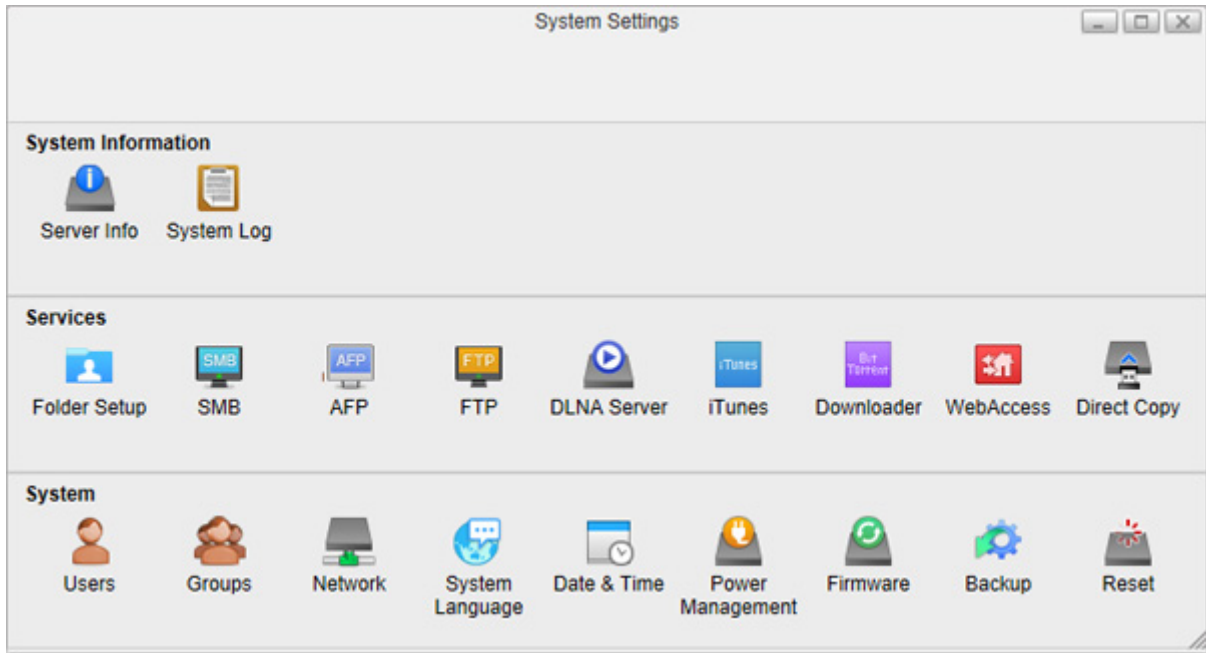
- **Folders available as backup sources:**
 - Shared folder on the backup source LinkStation
 - USB drive connected to the backup source LinkStation
 - Shared folder on another Buffalo NAS device
- **Folders available as backup destinations:**
 - Shared folder on the backup source LinkStation
 - USB drive connected to the backup source LinkStation
 - Shared folder on another Buffalo NAS device

Preparing a Backup Destination

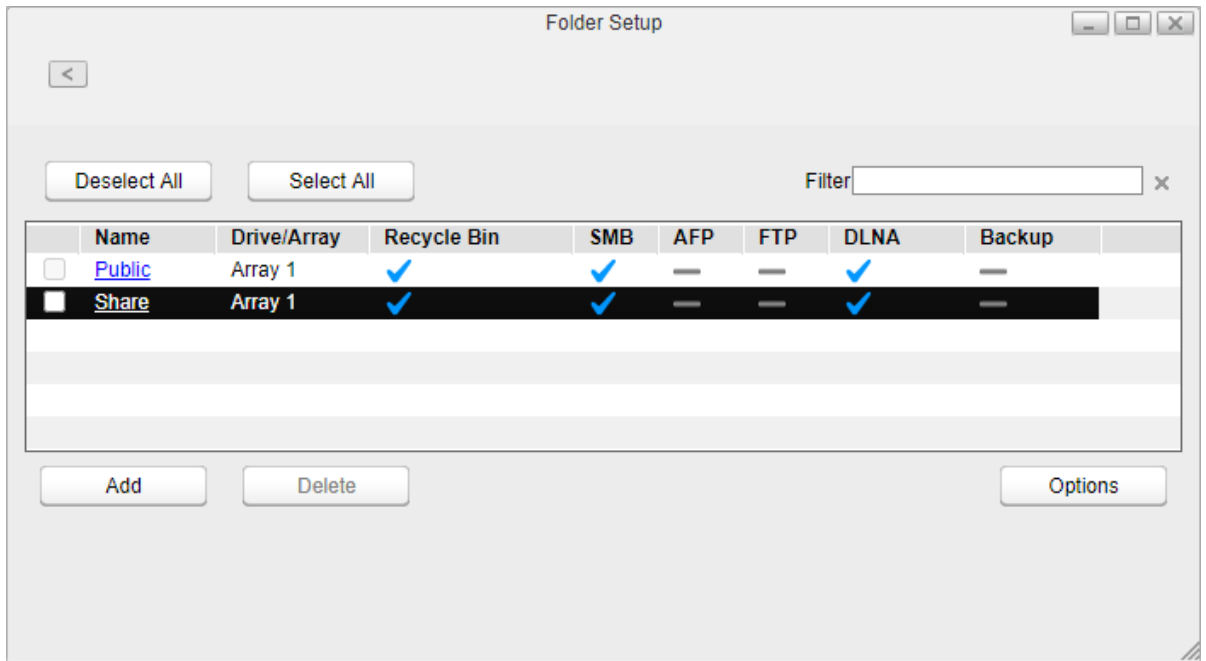
Configure a shared folder on a Buffalo NAS device or connected USB drive as a backup destination. The following procedure explains using another shared folder on the LS500 series LinkStations as a backup destination. The procedure may vary depending on which Buffalo NAS device is selected as a destination.

- 1 From Settings, click *System Settings* ().

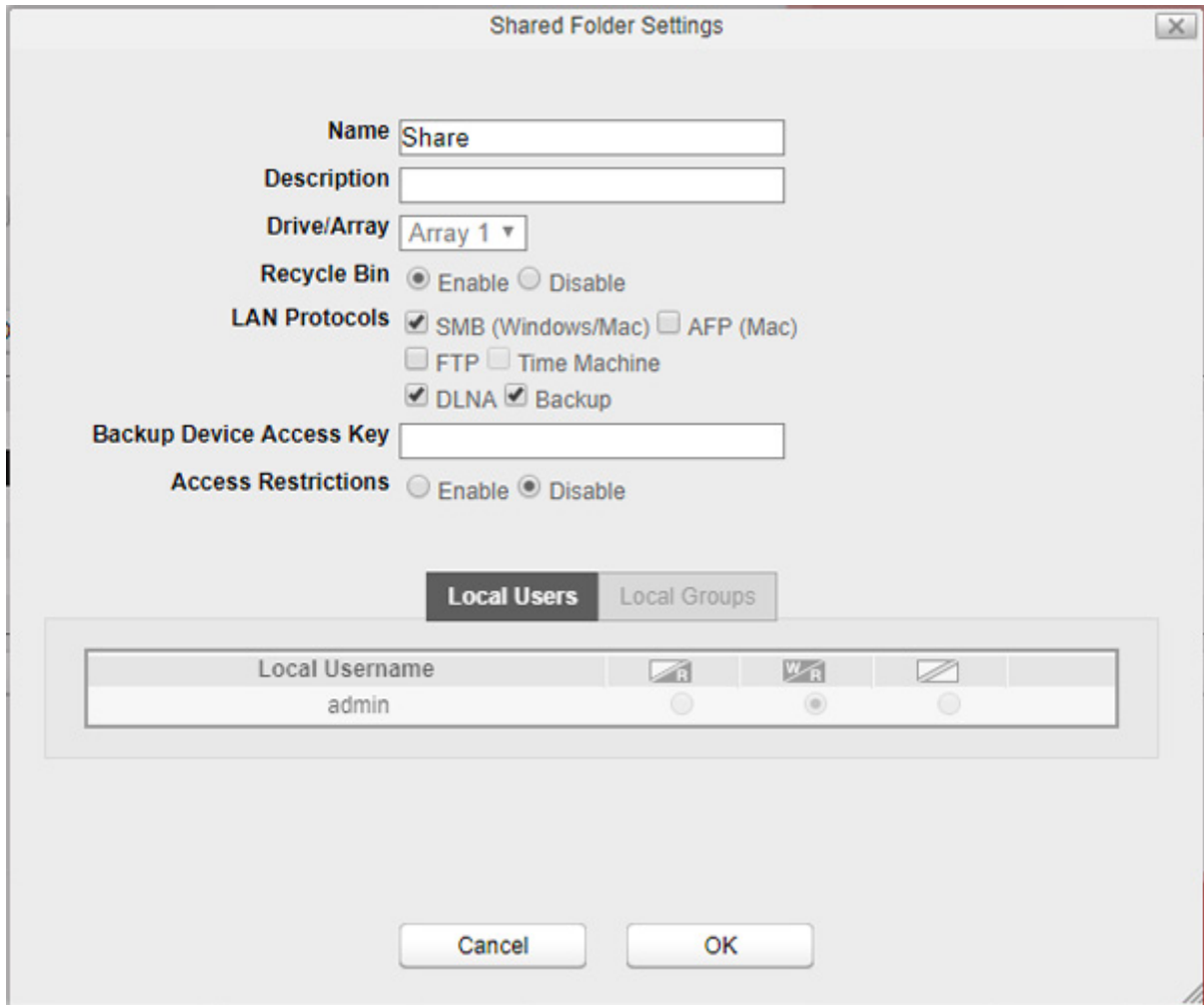
2 Click *Folder Setup*.



3 Choose the folder to set as a backup destination.



- 4** Select the “Backup” checkbox for “LAN Protocols”.



- 5** Enter the desired characters into the backup device access key field and click *OK*.

Backup Device Access Key

Note: You may leave this field blank if you do not want a backup device access key, but for security reasons we highly recommend entering one for the shared folder. If a backup device access key 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 device access keys for backup, but only one access key can be used on the LinkStation. Folders that are configured with a different access key cannot be used.

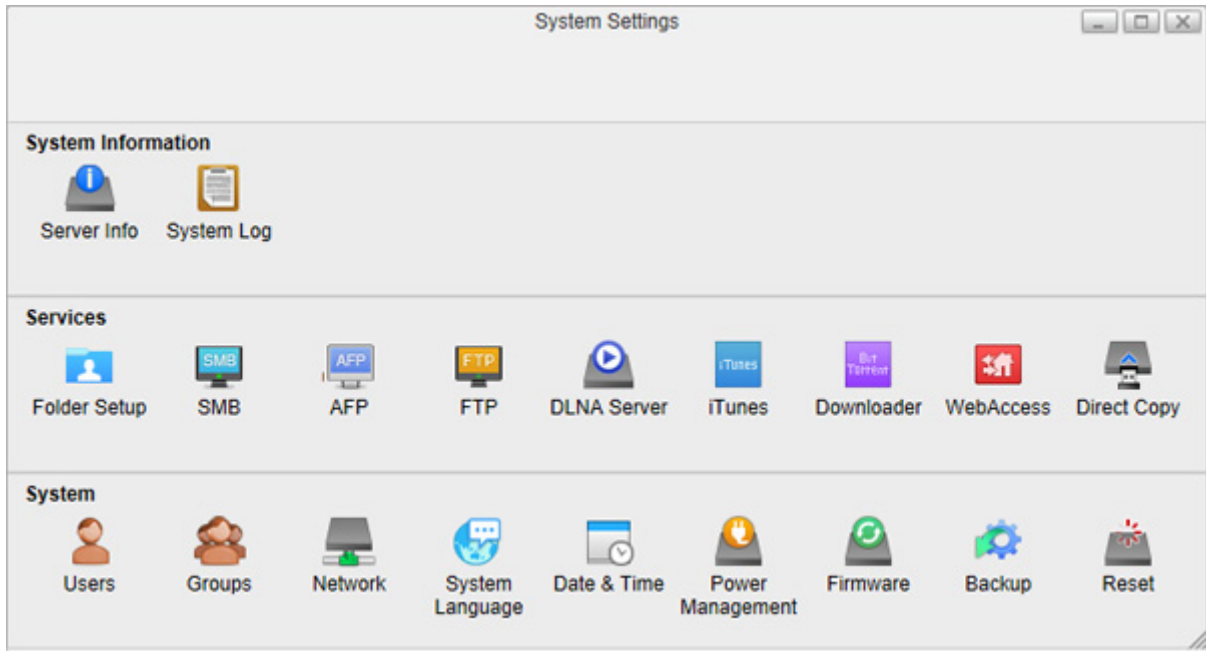
A backup destination has been created.

Configuring a Backup Job

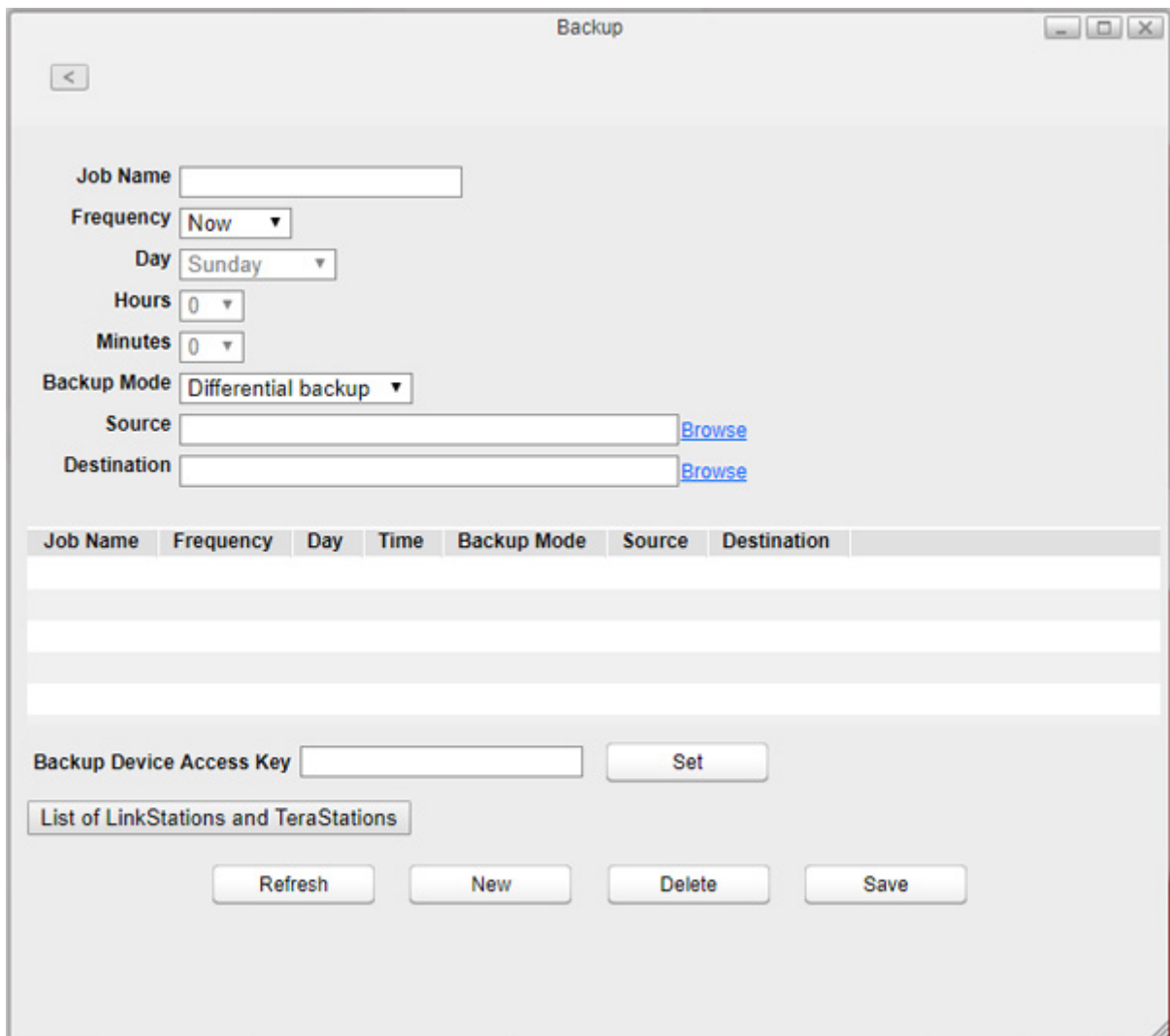
You can configure backup jobs by using another shared folder on the Buffalo NAS device or a USB drive connected to the LinkStation as a destination. You can also back up to a Buffalo NAS device on another network as long as the two networks are connected by a VPN or the route is configured properly.

- 1** From Settings, click *System Settings* (⚙).

2 Click *Backup*.



3 If you had configured a backup device access key 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.



- 4 Enter the backup device access key and click *OK*.

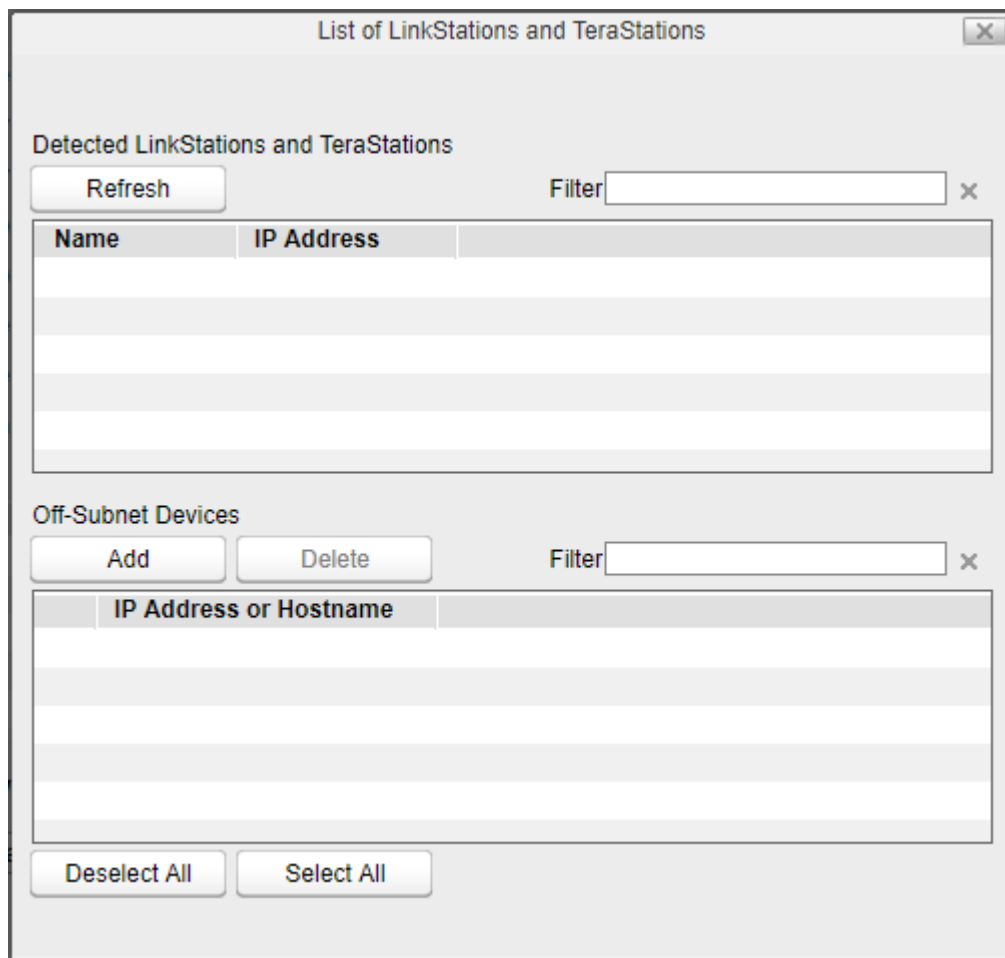
- 5 Click *List of LinkStations and TeraStations*.

Note: If you want to back up a Buffalo NAS device on another network, follow the procedure below to add the Buffalo NAS device on another network.

- (1) Click *Add*; enter the IP address or hostname of the destination Buffalo NAS device and click *OK*.
- (2) Click *Refresh*. Make sure the desired Buffalo NAS device has been added to the list.

Job Name	Frequency	Day	Time	Backup Mode	Source	Destination

6 Click *Refresh*. The Buffalo NAS devices will be added to the list.



7 Close the window.

- 8 Enter a job name and configure backup settings such as date and time to run, then select a backup mode. Refer to the differences between the backup modes in the “[Backup Modes](#)” section above.

Backup

Job Name

Frequency

Day

Hours

Minutes

Backup Mode

Source [Browse](#)

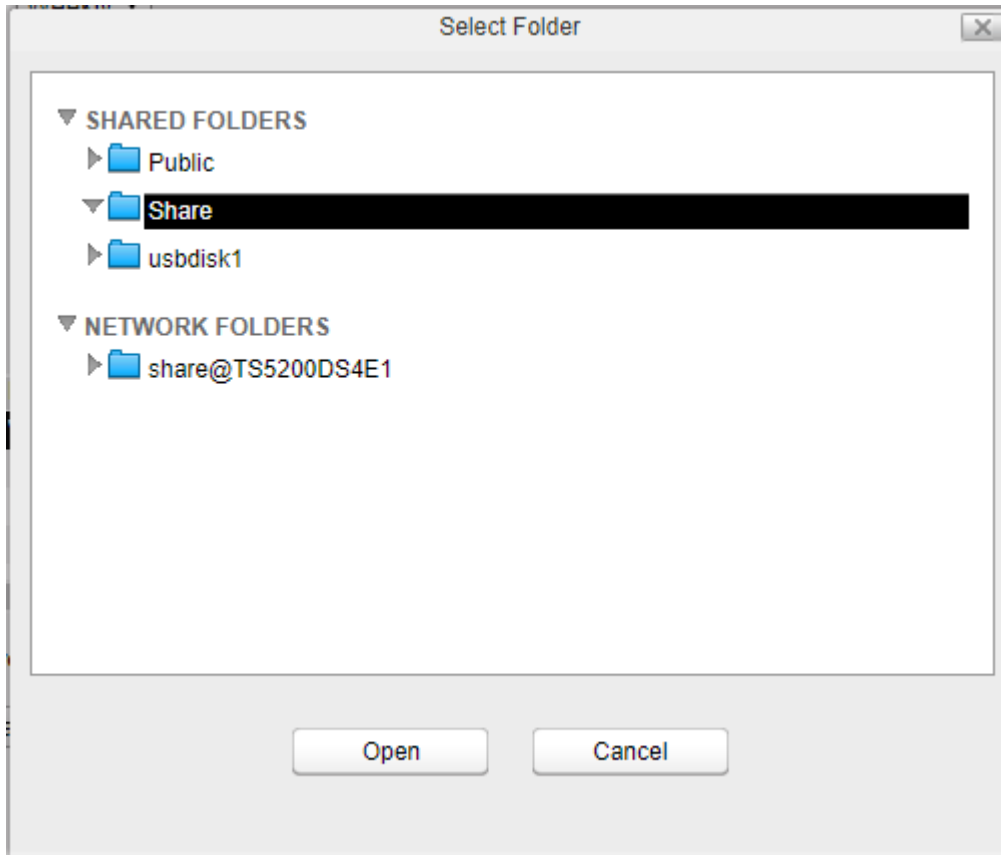
Destination [Browse](#)

Job Name	Frequency	Day	Time	Backup Mode	Source	Destination

Backup Device Access Key

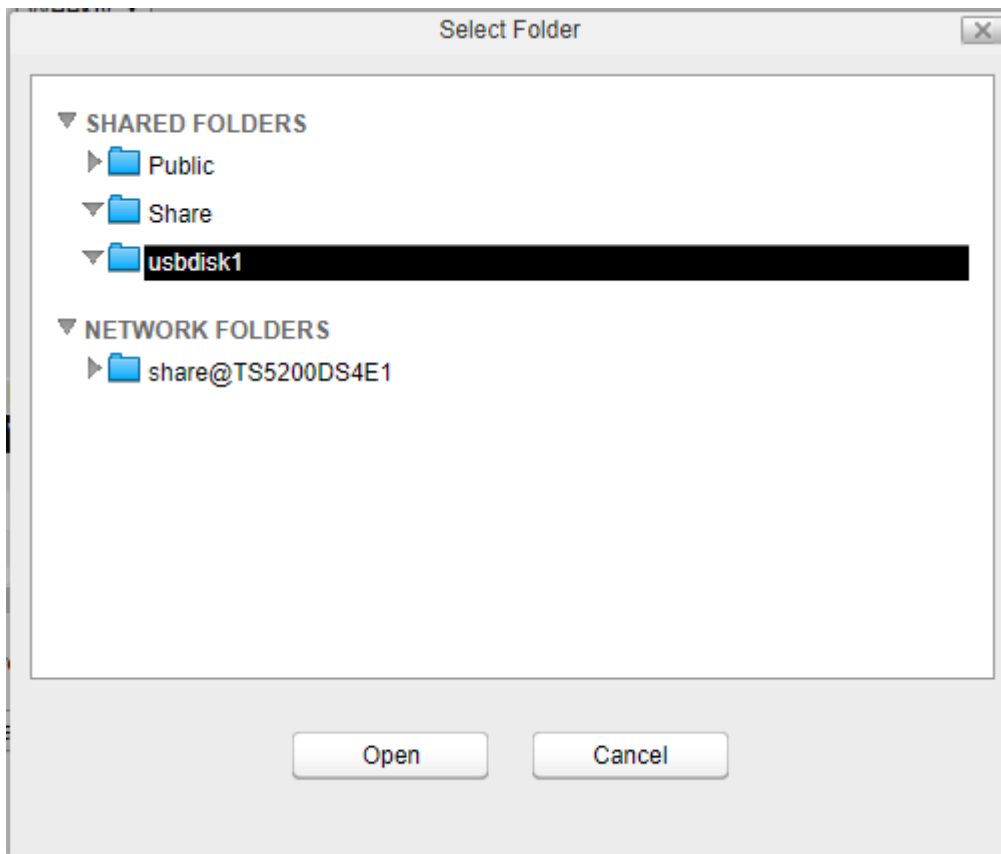
- 9 Click *Browse* to the right of “Source”.

10 Select the folder that will be the backup source, then click *Open*.



11 Click *Browse* to the right of "Destination".

12 Select the folder that will be the backup destination, then click *Open*.



13 Click *Save*.

Backup

Job Name

Frequency

Day

Hours

Minutes

Backup Mode

Source [Browse](#)

Destination [Browse](#)

Job Name	Frequency	Day	Time	Backup Mode	Source	Destination

Backup Device Access Key

14 If you have selected differential or incremental backup for the backup mode, a warning message will appear. Read it carefully and click *Yes*. The backup job will be added to the backup jobs list.

Notes:

- Up to eight backup jobs can be configured.
- When a backup job starts, a folder that contains the backup date in its folder name will be created in the backup destination automatically and all data will be backed up to that folder.
- If a backup job is scheduled to run while Direct Copy is running, the job will be canceled. The prior process will work.

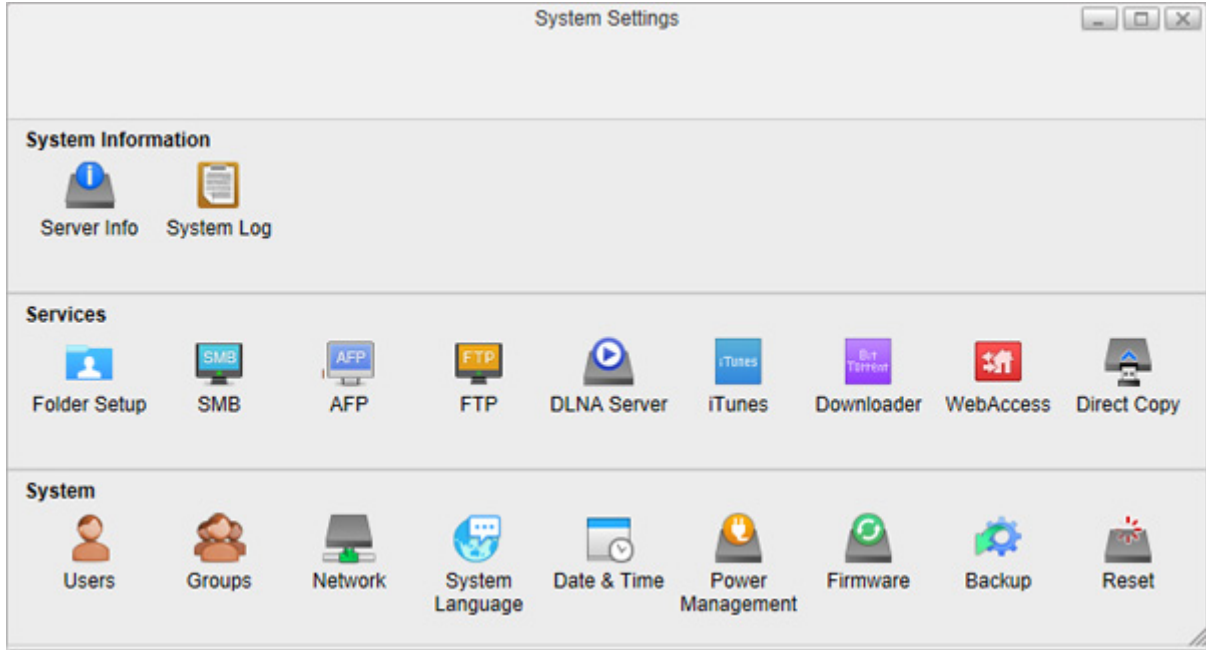
Backing Up Your Mac with Time Machine

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

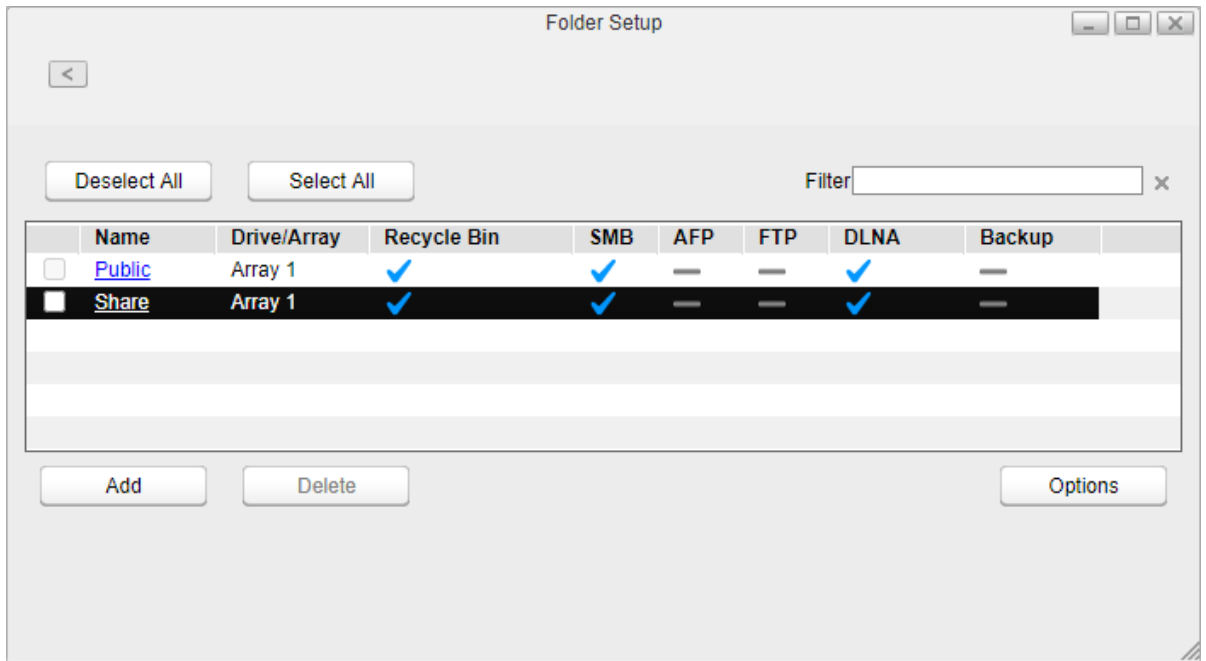
1. Preparing a Shared Folder for Time Machine

1 From Settings, click *System Settings* (⚙️).

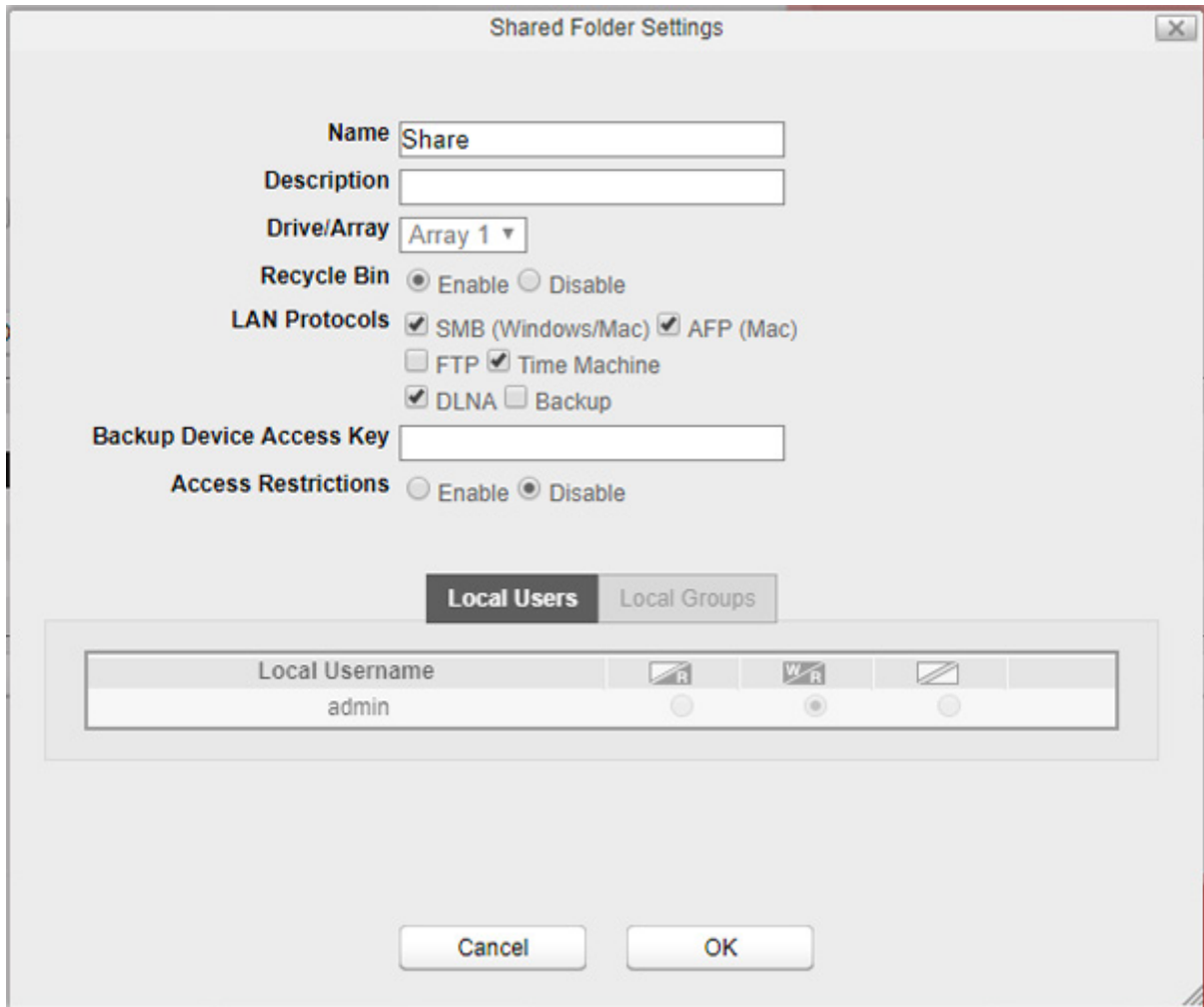
2 Click *Folder Setup*.



3 Choose a shared folder as your backup destination for Time Machine.



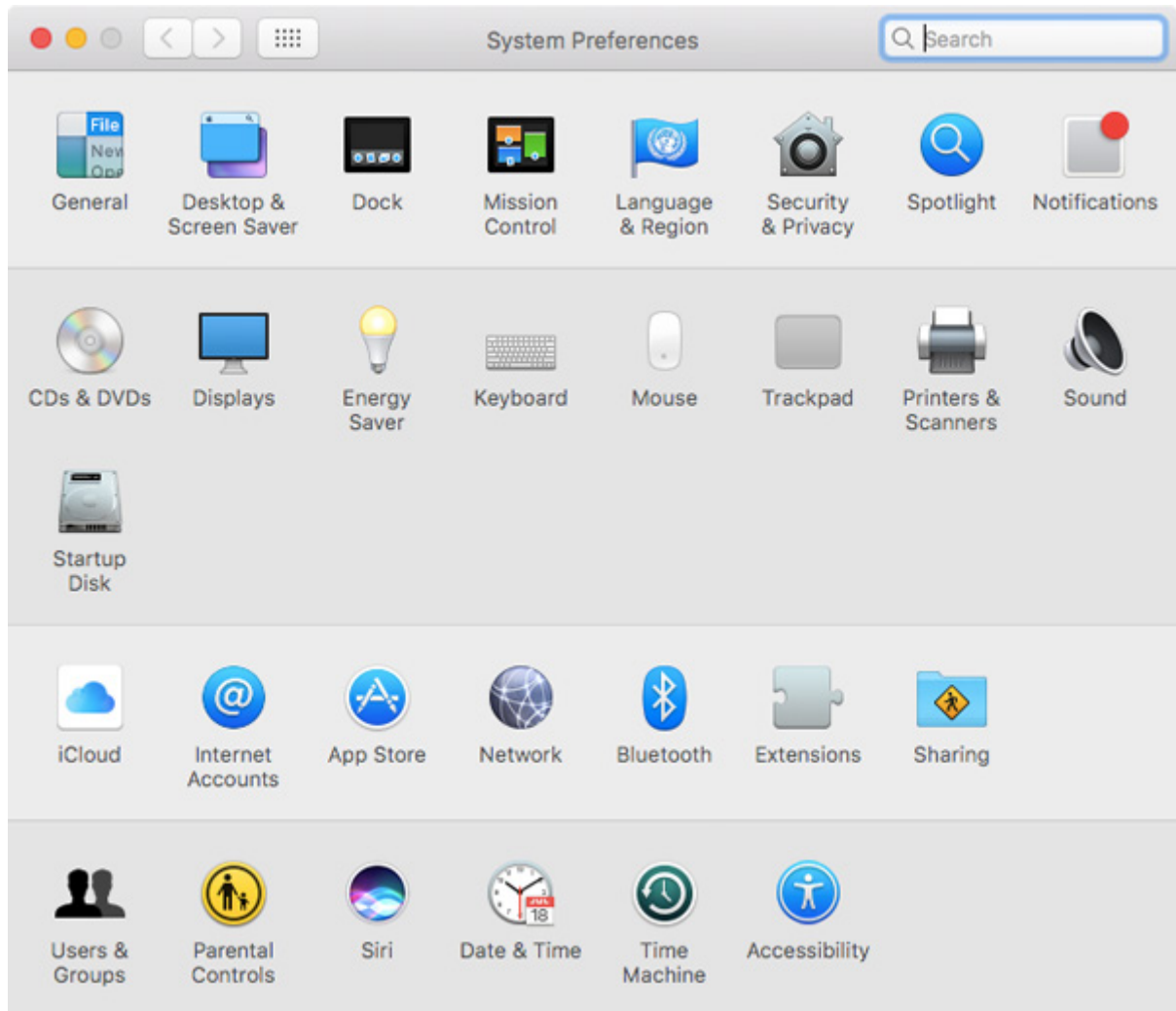
- 4** Select the “AFP (Mac)” and “Time Machine” checkboxes for “LAN Protocols” and click OK.



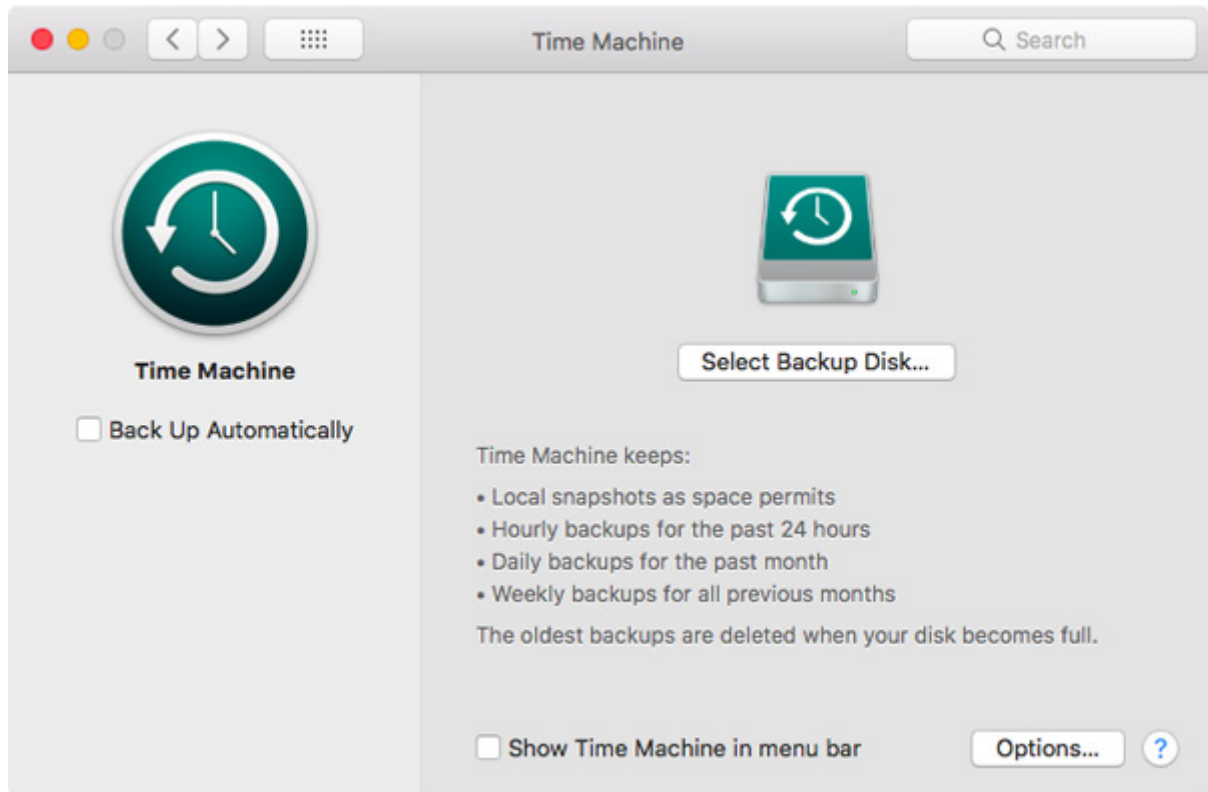
2. Configuring Time Machine on macOS

- 1** From the Apple menu, open *System Preferences*.

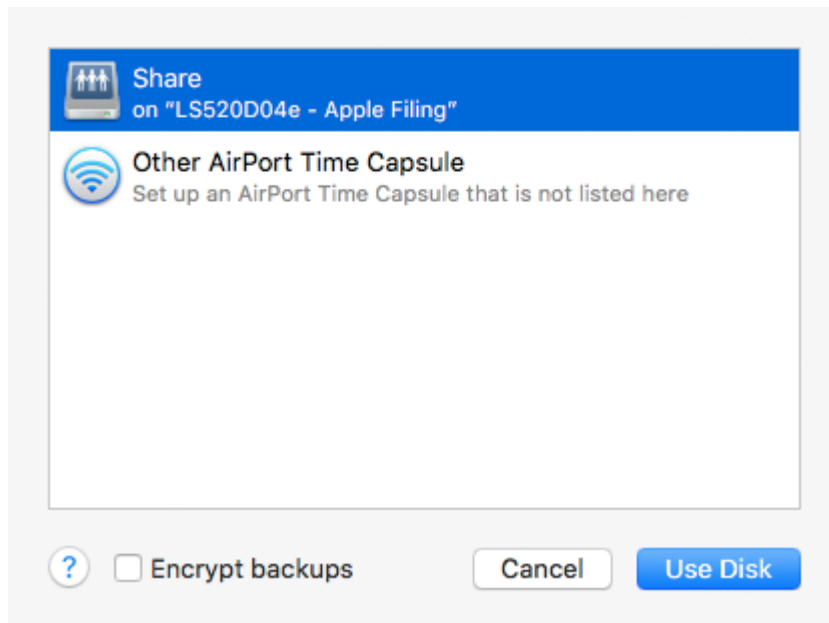
2 Click *Time Machine*.



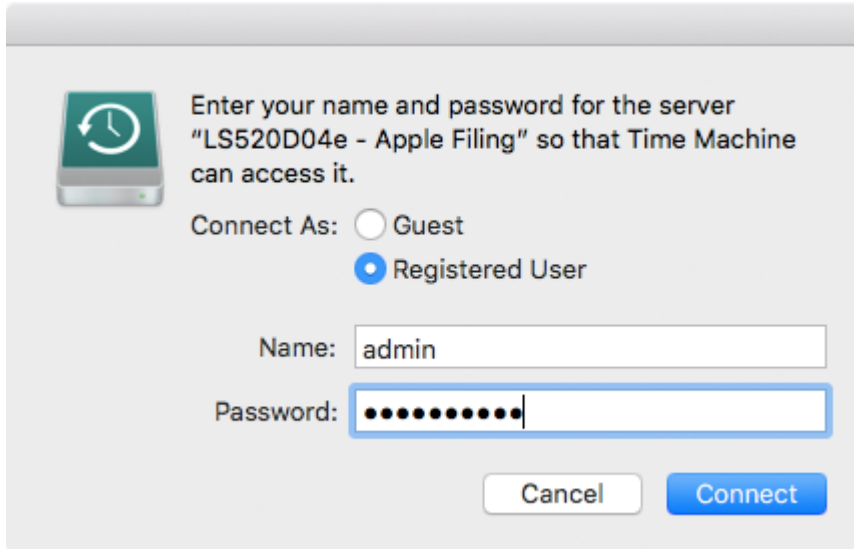
3 Click *Select Backup Disk*.



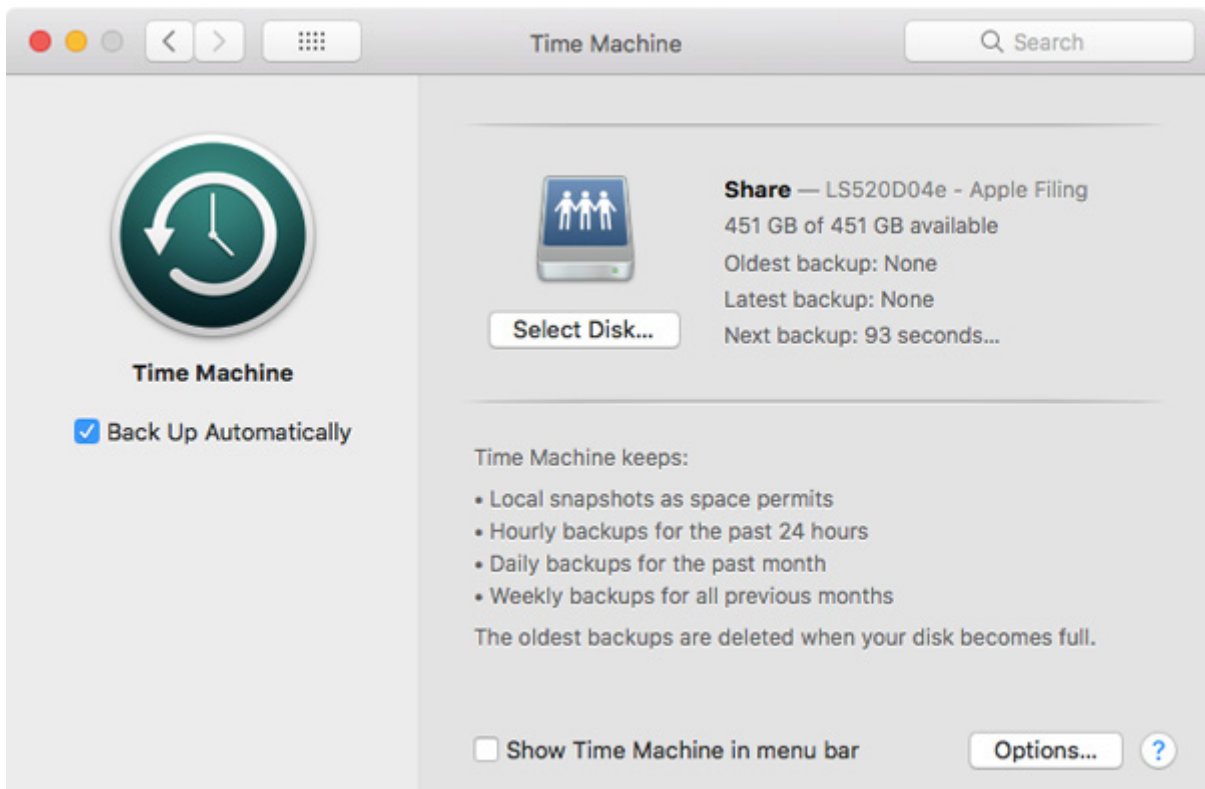
4 Select the shared folder, then click *Use Disk*.



- 5 Enter a username and password to be used for accessing the shared folder and click *Connect*.



- 6 Time Machine will count down from 120 seconds, then backup will begin.



Note: A FAT32-formatted USB drive cannot be used as a Time Machine backup destination folder.

Reset

Enable or disable function button initialization or initialize the LinkStation to factory defaults from Settings.

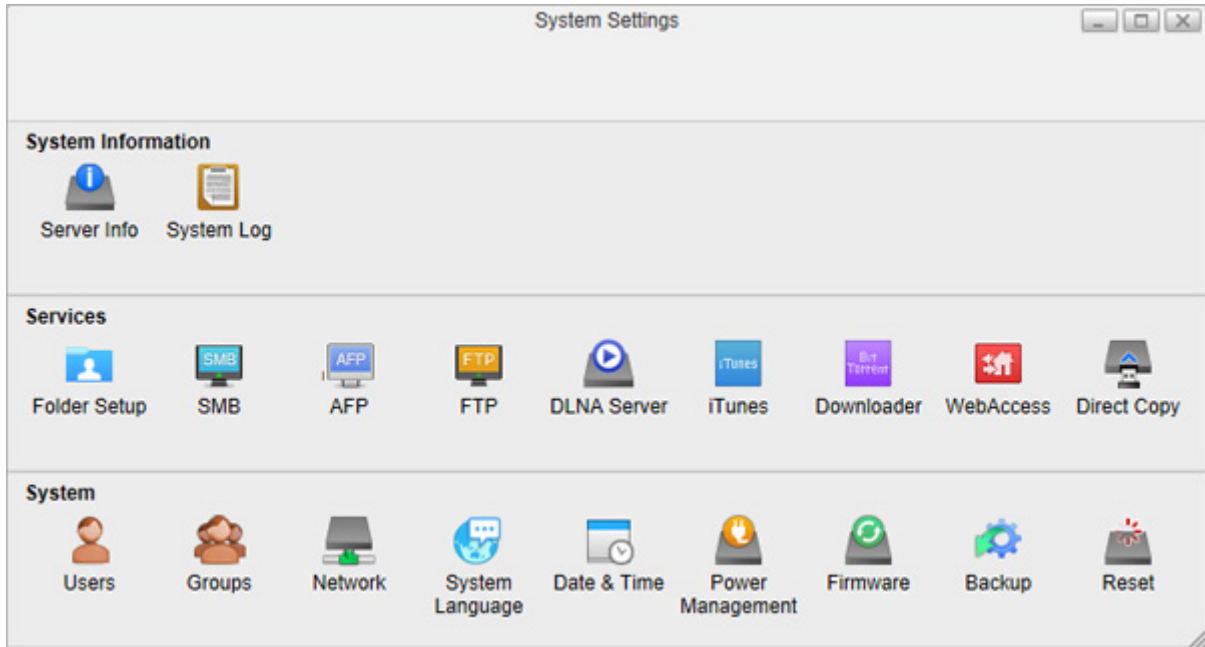
Note: If you are using your LinkStation with two or more partitions and running firmware version 2.00 or earlier, you will lose your data when initializing settings because the disk management process has been changed since version 3.00. Before initializing the settings, make sure all your data has been backed up to the external device.

Initializing from Settings

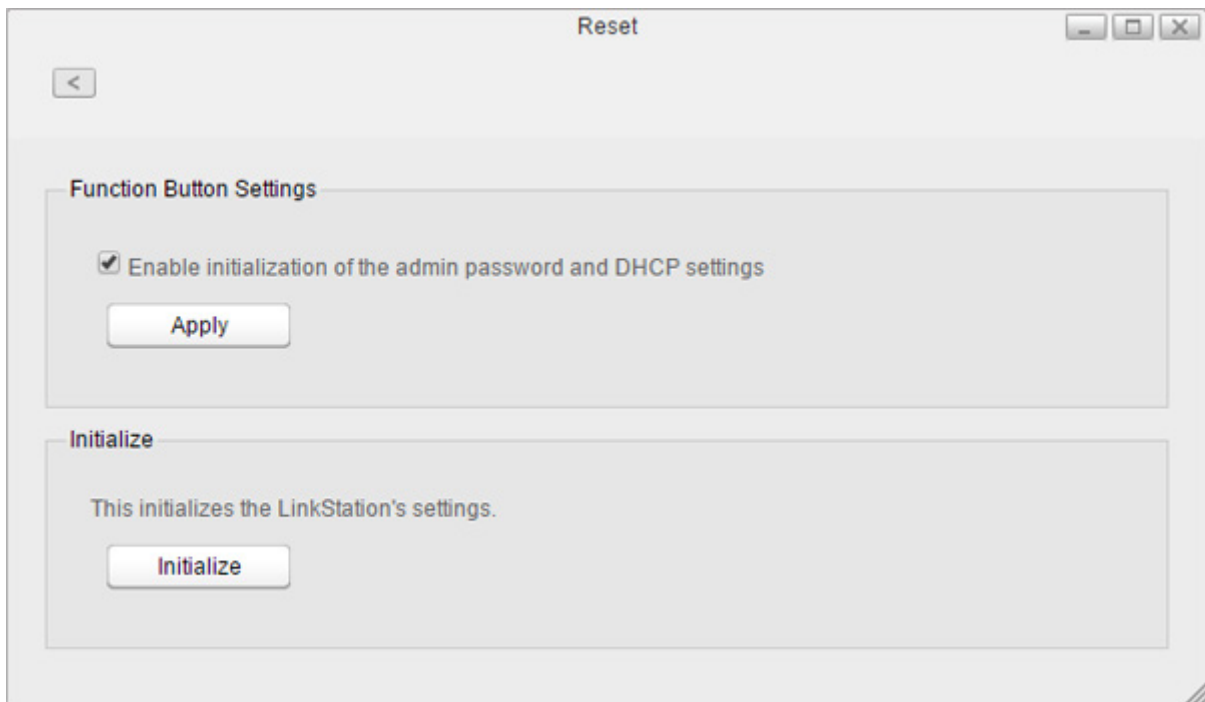
When initializing the LinkStation from Settings, all values will be erased and restored to its factory default. The data stored on the LinkStation will be kept.

1 From Settings, click *System Settings* (⚙️).

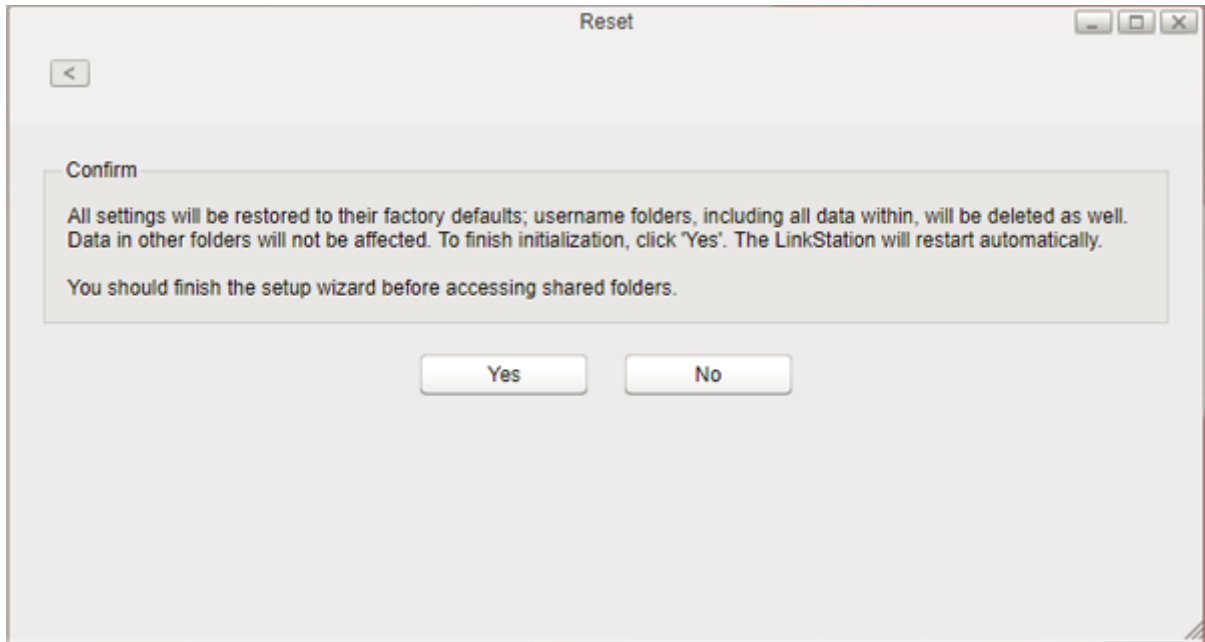
2 Click *Reset*.



3 Click *Initialize*.



4 Read the confirmation and click Yes.



5 The LinkStation will be restored to its factory default settings.

Initializing Using the Function Button

You can also initialize the admin password and IP address with the function button. The IP address will only be restored from manual to DHCP. It is enabled by default.

- 1** Turn off the LinkStation.
- 2** Turn the LinkStation on while holding down the function button until the power LED flashes amber.
- 3** Initialization will start. Do not power down the LinkStation while the power LED is blinking.
- 4** When the power LED glows a steady white, initialization is finished.
- 5** Once you reset the admin password, open Settings and run the setup wizard to configure a new password.

Note: To disable the function button reset, navigate to *System Settings > Reset* and clear the “Enable initialization of the admin password and DHCP settings” checkbox. Be careful with this option! If this is cleared and you lose your admin password, you will not be able to reset it.

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.
- Configure WebAccess settings to remotely access your LinkStation.
- Configure your LinkStation to use with DLNA-compatible devices on the LAN.
- Configure and dismount a USB device connected to your LinkStation, including Direct Copy options.
- Change the RAID mode and recover the RAID array if a drive fails (models with 2+ drives only).
- Configure UPS synchronization.

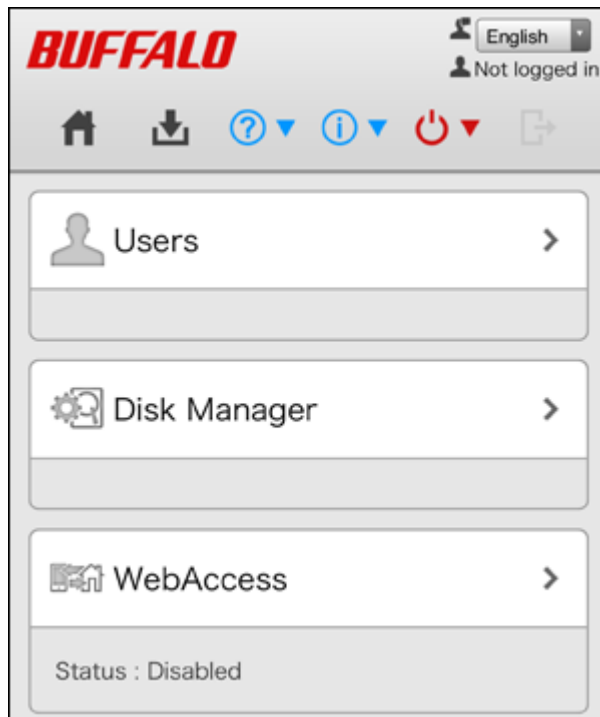
For the procedure of opening Settings from your mobile device, refer to the [“Using a Mobile Device”](#) section in chapter 2.

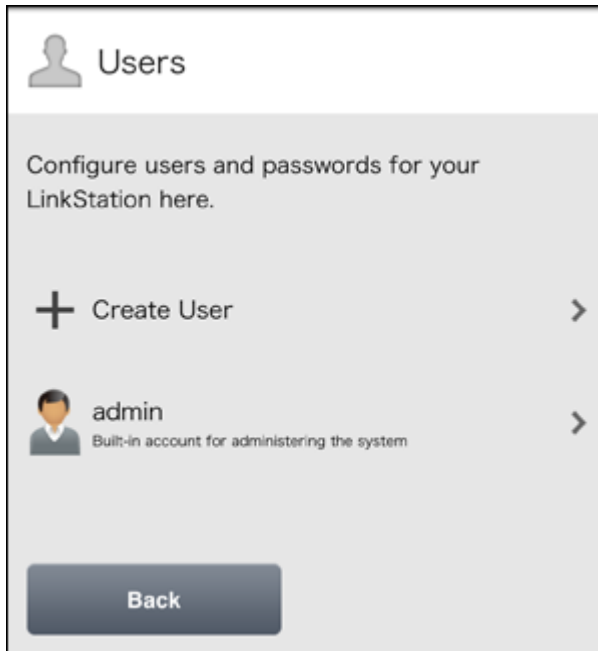
Configuring Users

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

Adding a User

- 1 From Settings, tap *Users*.



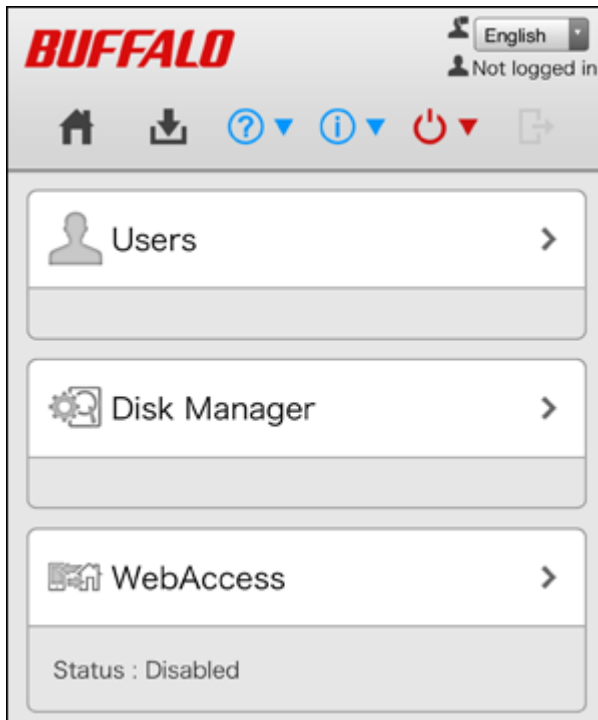
2 Tap *Create User*.**3** Enter the desired username and password (twice), then tap *Apply*.

4 Tap *Close* when completed.**Notes:**

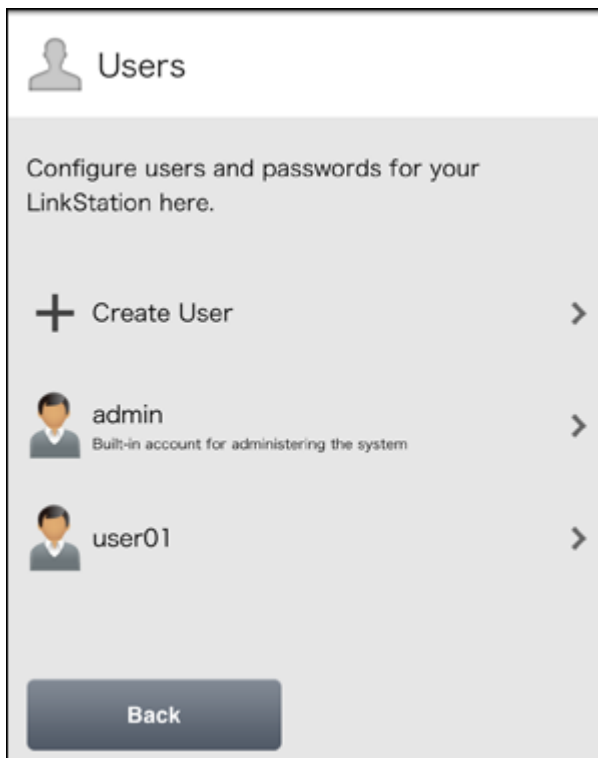
- Usernames may contain up to 32 alphanumeric characters, hyphens (-), underscores (_), periods (.), and the symbols ! # + \$ ^ %. The first character should not be a symbol.
- Passwords may contain up to 20 alphanumeric characters, hyphens (-), underscores (_), commas (,), periods (.), semicolons (;), 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.



3 Enter the new password (twice) and click *Apply*.

Edit User

If you change the username and password here, reconfigure your applications with the new username and password or you may not be able to access this LinkStation any longer.

Username:
user01

Password:

Password (Confirm):

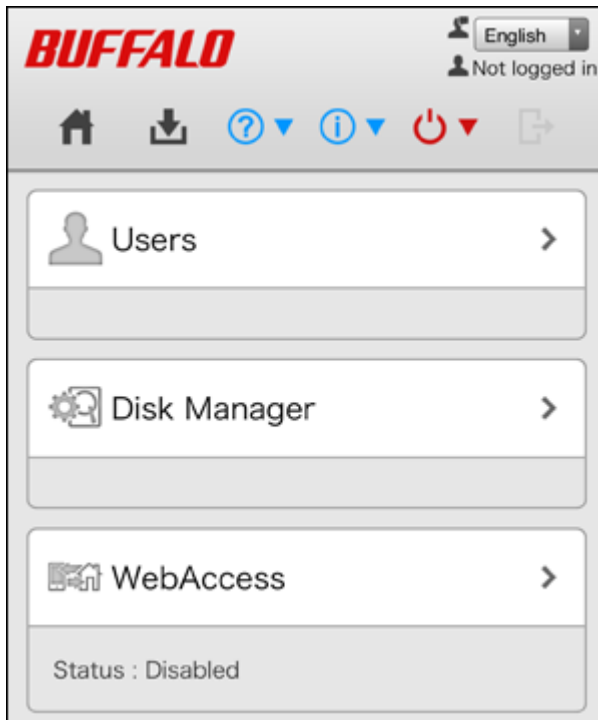
Delete This User

Back **Apply**

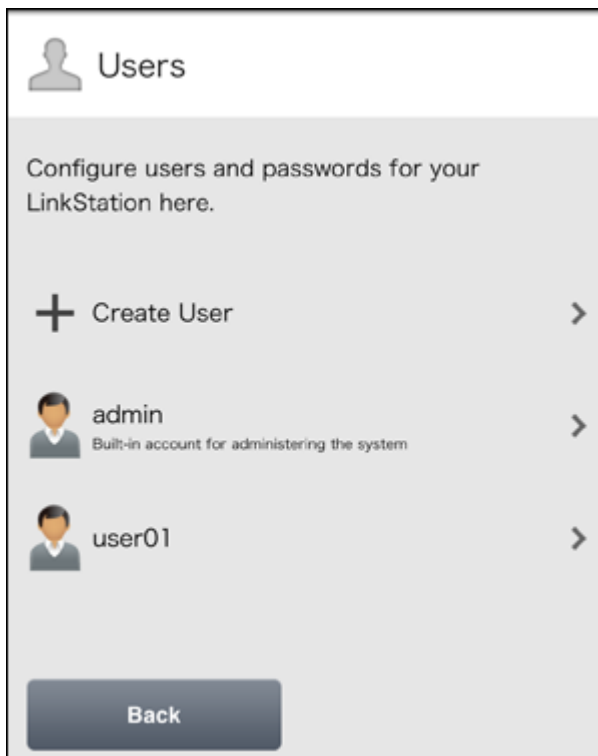
4 Tap *Close* when completed.

Deleting a User

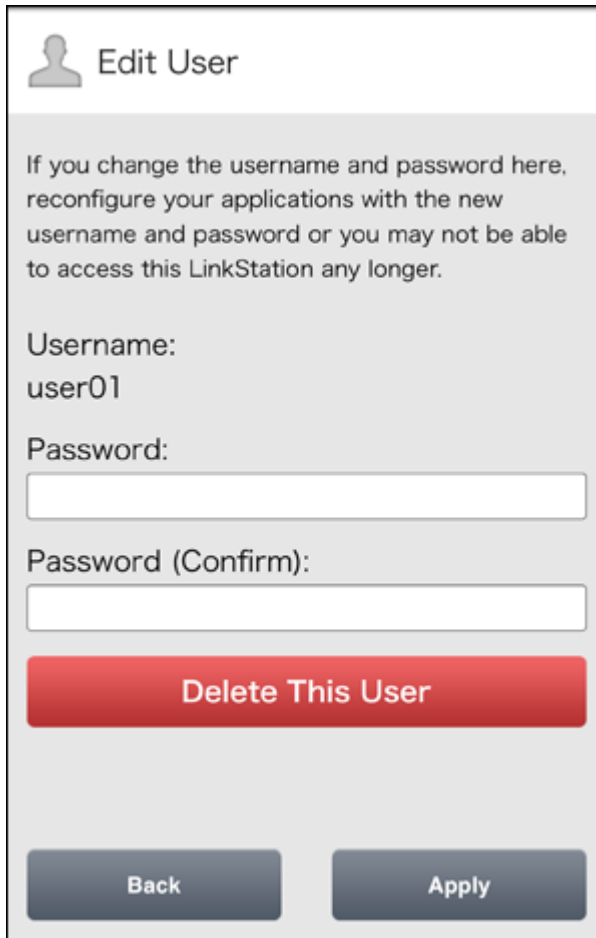
1 From Settings, tap *Users*.



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



3 Tap *Delete This User*.



4 Tap Yes.

5 The “Confirm Operation” screen will open. Enter the confirmation number, then tap *OK*.

6 Tap *OK* when completed.

Configuring WebAccess

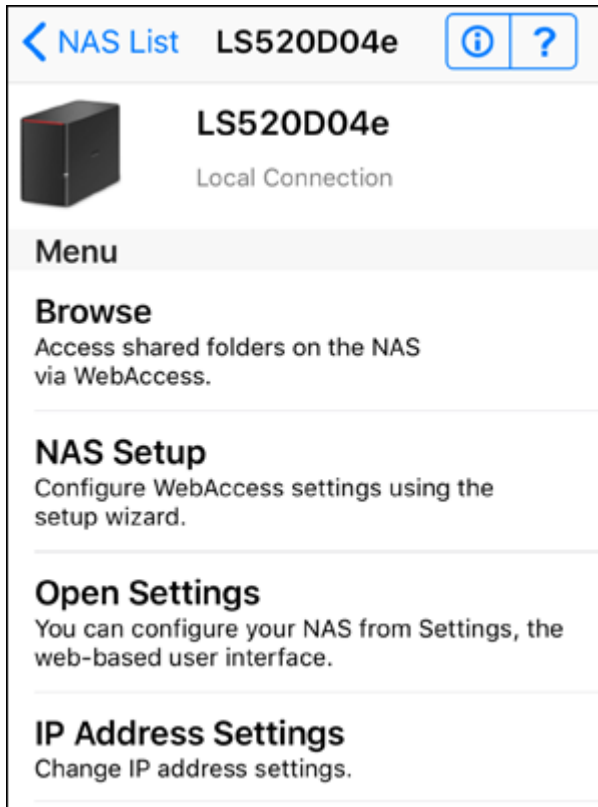
Note: On your mobile device, download and install the “SmartPhone Navigator” and “WebAccess” apps from App Store (iOS devices) or Google Play (Android devices).

1 Tap the “SmartPhone Navigator” icon on your mobile device.

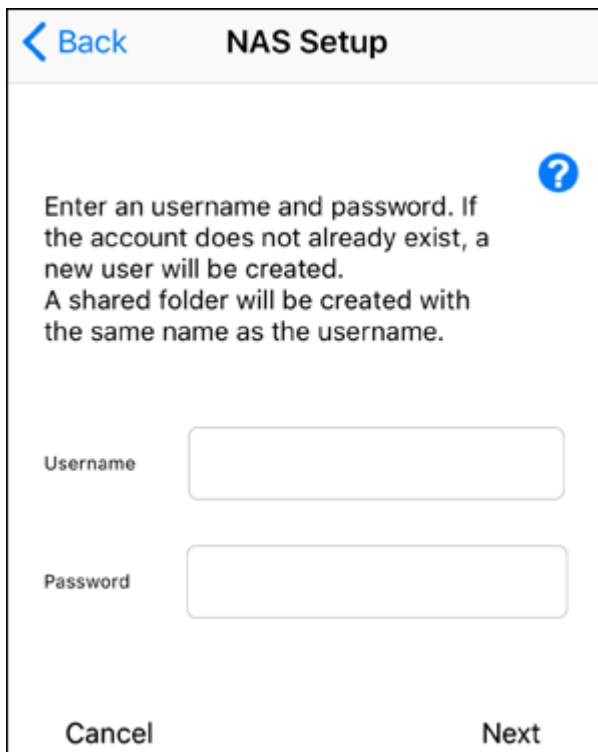


2 Select the LinkStation to configure WebAccess.

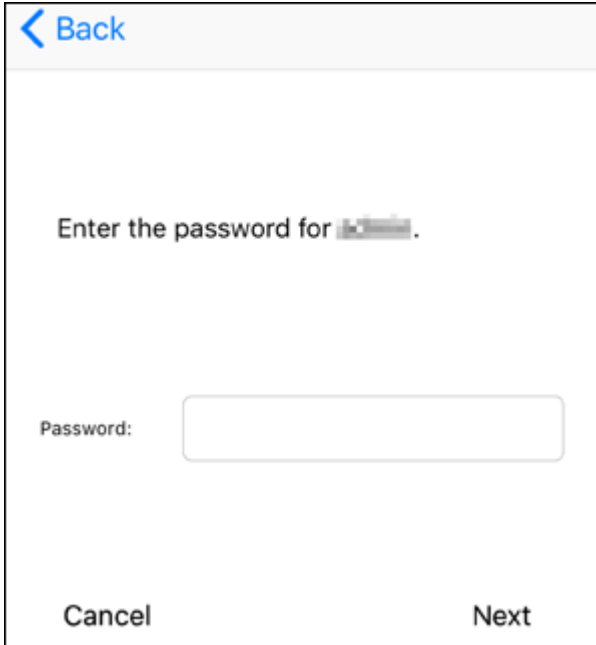
3 Tap *NAS Setup*.



4 Enter a username and password. This will create a new user. Tap *Next*.

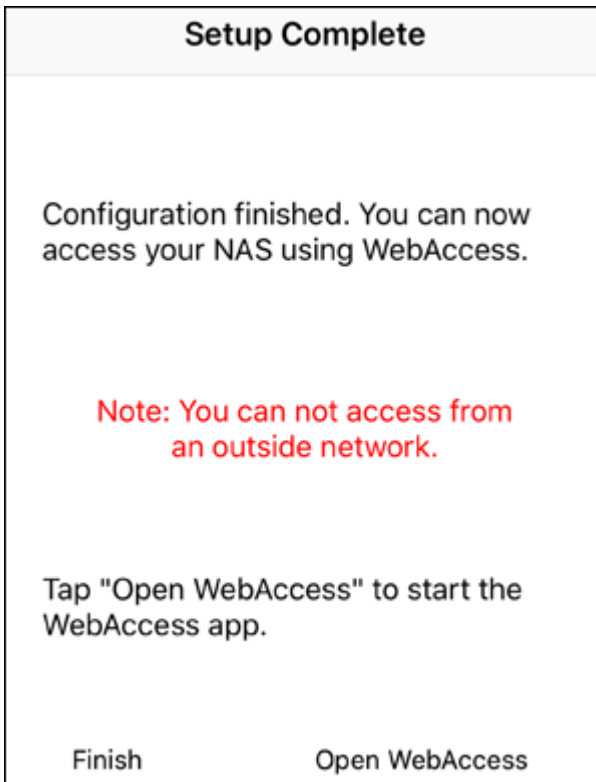


5 Enter the password from the previous step again and tap *Next*.



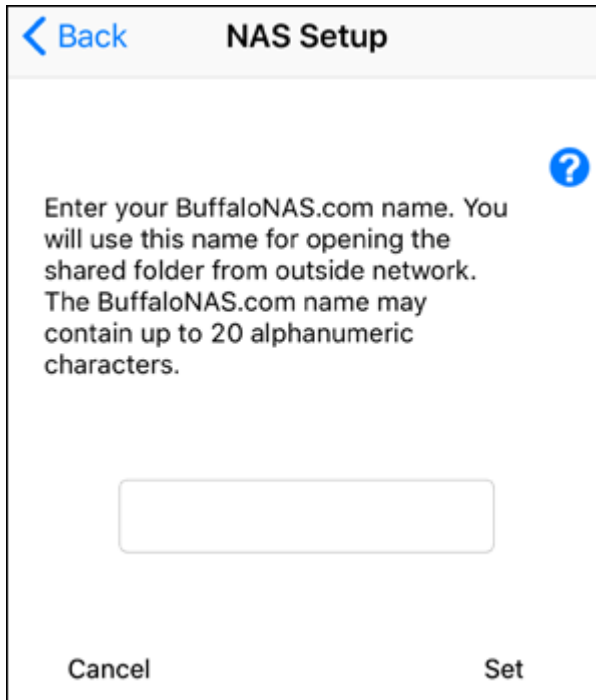
A screenshot of a mobile application interface. At the top left, there is a blue back arrow and the word "Back". The main text in the center reads "Enter the password for [redacted]". Below this, the word "Password:" is followed by a rectangular text input field. At the bottom of the screen, there are two buttons: "Cancel" on the left and "Next" on the right.

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.

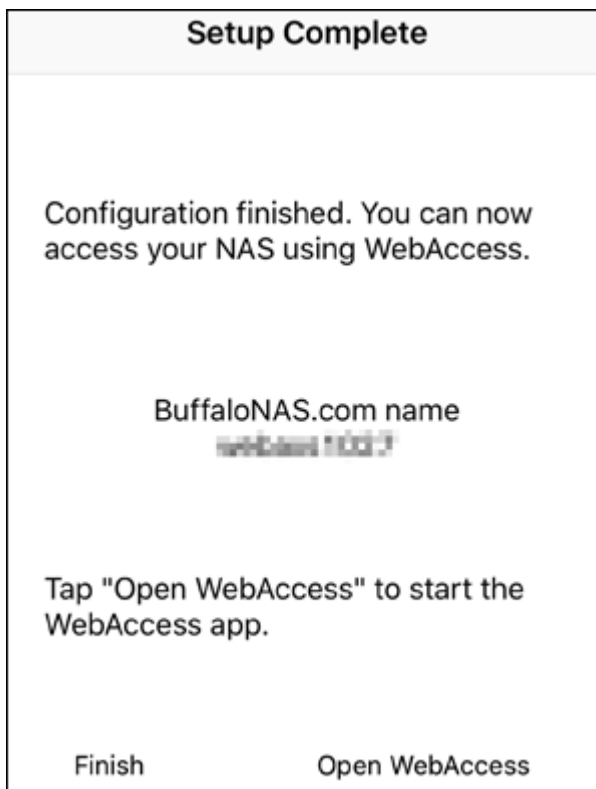


A screenshot of a mobile application interface showing a completion screen. The title at the top is "Setup Complete". The main text reads "Configuration finished. You can now access your NAS using WebAccess." Below this, there is a red note: "Note: You can not access from an outside network." At the bottom, it says "Tap 'Open WebAccess' to start the WebAccess app." There are two buttons at the bottom: "Finish" on the left and "Open WebAccess" on the right.

6 Enter the BuffaloNAS.com name and tap *Set*.

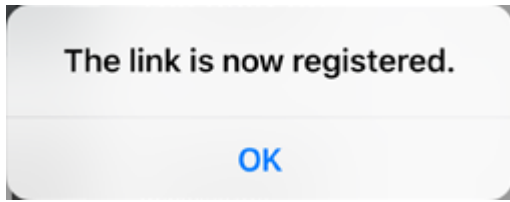


7 Tap *Open WebAccess*.



8 WebAccess will launch.

- 9 Tap *OK* if the following message is displayed.



- 10 Tap your LinkStation's hostname to open the shared folder.

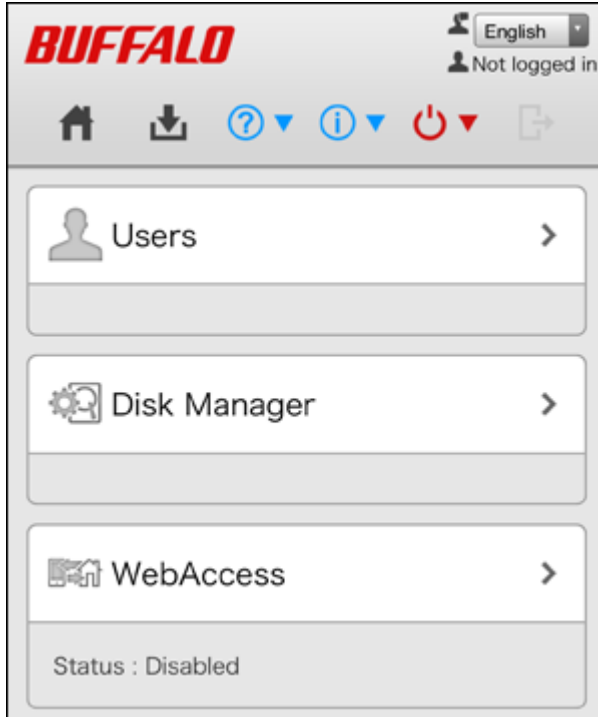


If Unable to Create a BuffaloNAS.com Name

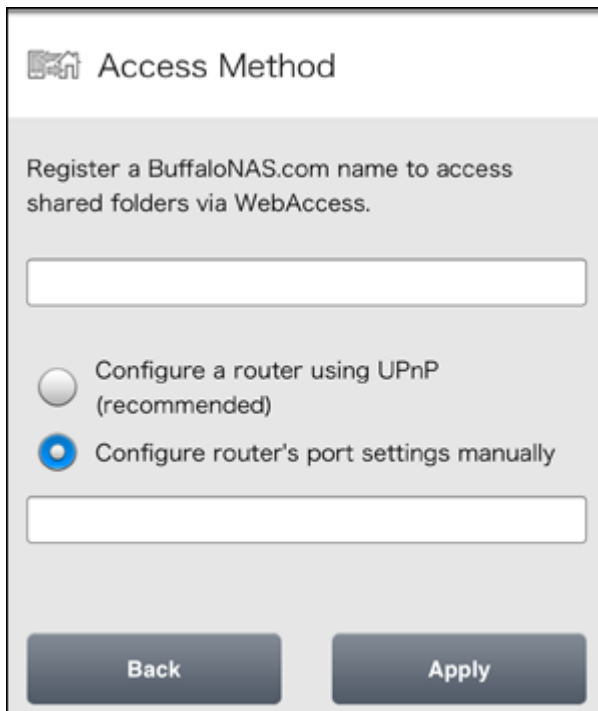
If UPnP is disabled on your router, creating the BuffaloNAS.com name from SmartPhone Navigator may fail. If this occurs, try the following procedure.

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

3 Tap *WebAccess*.



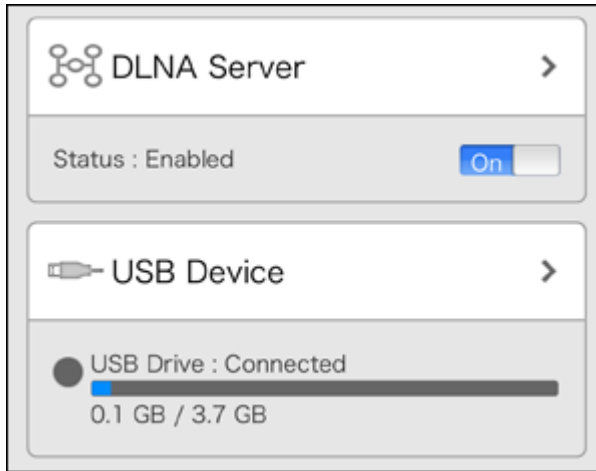
4 Enter the desired BuffaloNAS.com name.



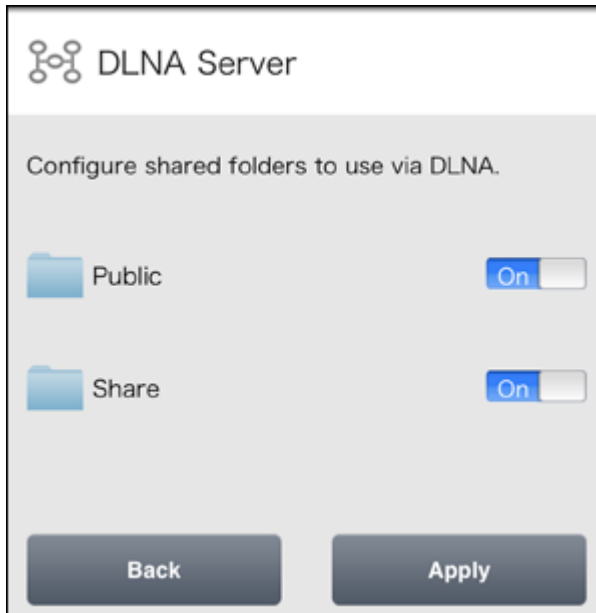
5 Select "Configure router's port settings manually"; enter the router's port number, and tap *Apply*.

Configuring the DLNA Server

1 From Settings, tap *DLNA Server*.



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



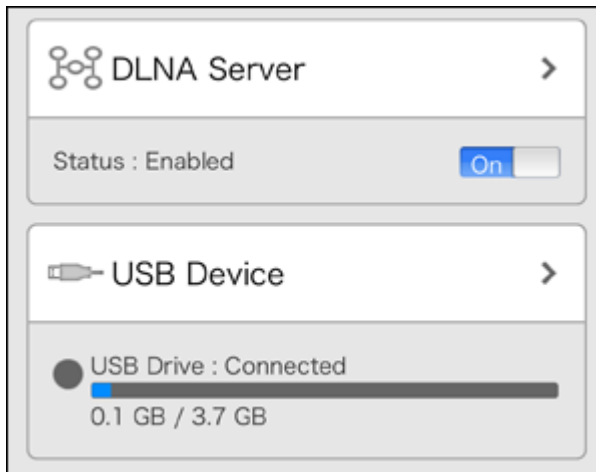
You can add a shared folder for sharing via DLNA from Settings using the computer. Refer to the [“Adding a Shared Folder”](#) section in chapter 7 for the procedure.

Managing USB Devices

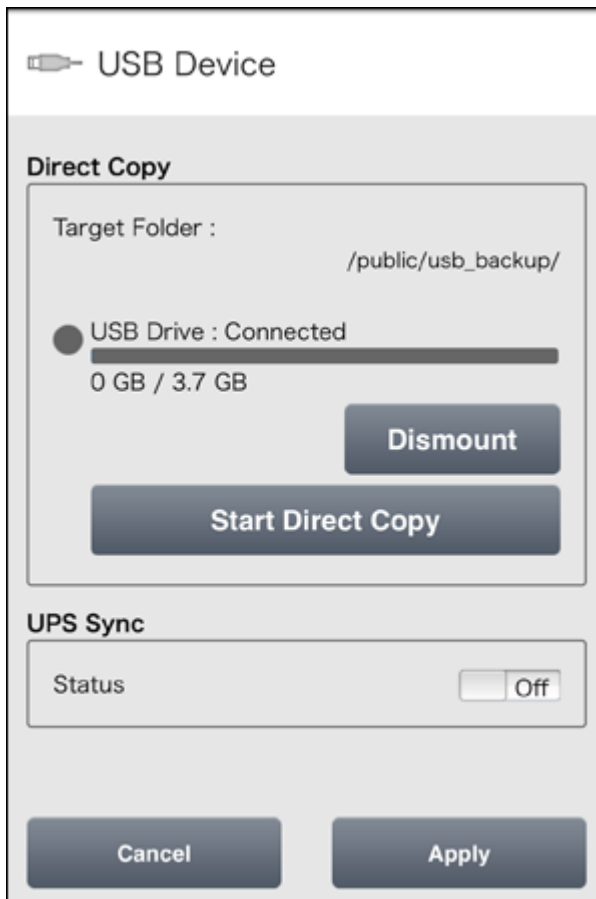
From the “USB Device” option in Settings, you can dismount the USB drive, working with Direct Copy, and configuring UPS sync settings.

Dismounting USB Drives

1 From Settings, tap *USB Device*.



2 Tap *Dismount*.



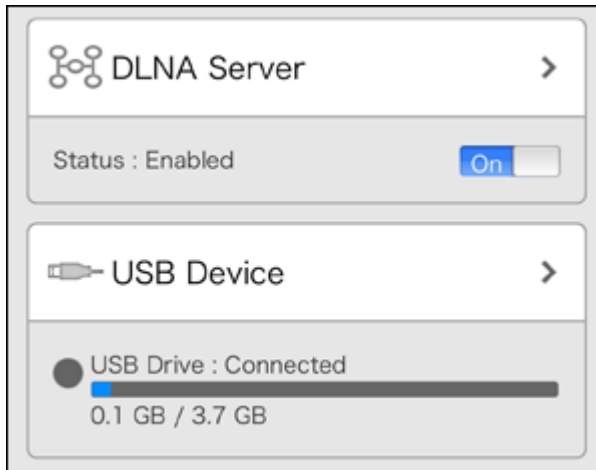
3 When the completion message is displayed, unplug the USB device and tap *OK*.

Starting Direct Copy

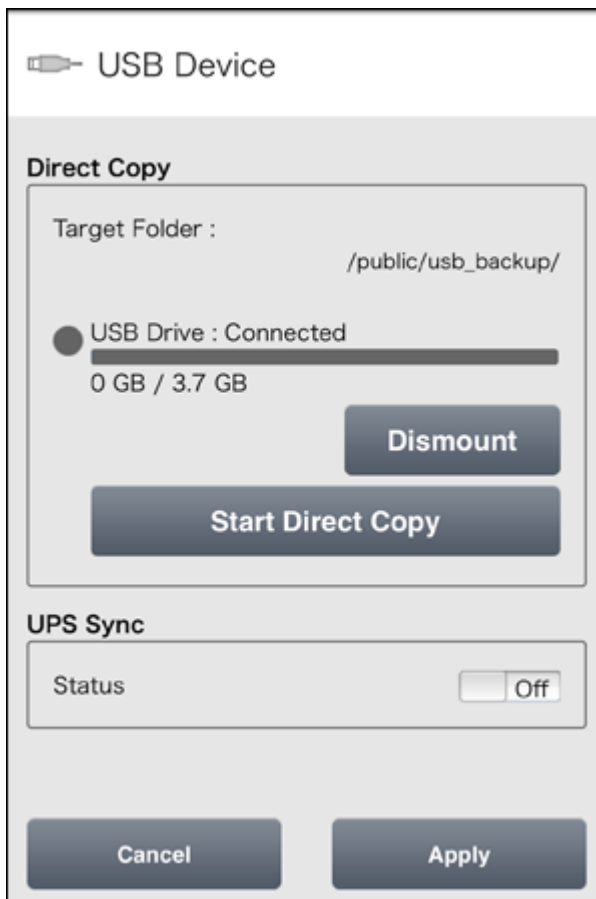
Certain USB devices allow you to copy their data directly to your LinkStation using a mobile device.

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.

2 From Settings, tap *USB Device*.



3 Tap *Start Direct Copy*.



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

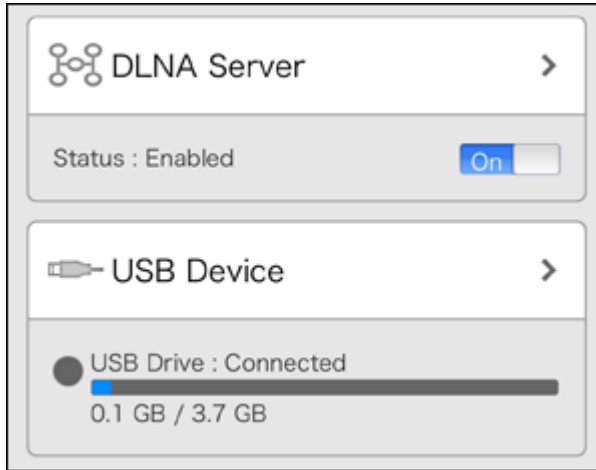
Note: By default, the Direct Copy folder is configured to the "usb_backup" folder in the "Public" folder. You can change the destination folder from Settings using the computer. Refer to the "[Direct Copy](#)" section in chapter 7 for the procedure.

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.

Configuring UPS Sync

You can enable/disable UPS sync settings from your mobile device. For other settings such as changing the shutdown process when using UPS sync, open Settings from the computer. Refer to the [“UPS Sync”](#) section in chapter 8 for the procedure.

- 1 From Settings, tap *USB Device*.

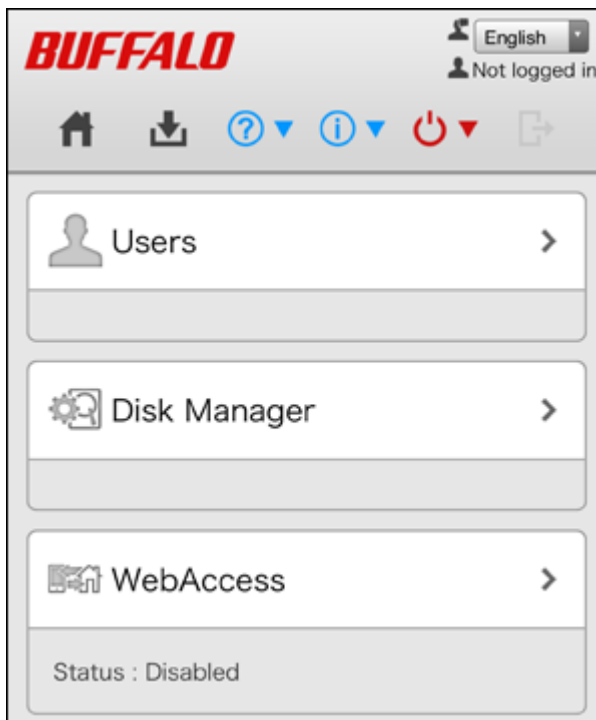


- 2 Move the UPS sync switch to the **on** or **off** position to enable or disable UPS sync.

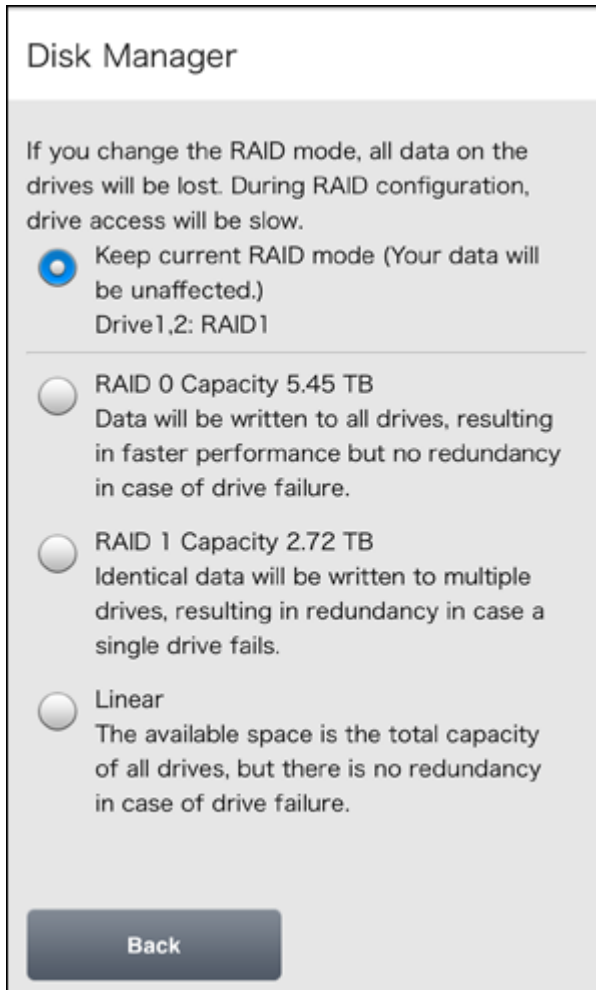
Changing the RAID Mode

You can change the RAID settings easily from your mobile device.

- 1 From Settings, tap *Disk Manager*.



2 Select the desired RAID mode and tap *Apply*.



3 Tap Yes.

4 The “Confirm Operation” screen will open. Enter the confirmation number, then tap *OK*.

Once you tap *OK*, the RAID array will be changed. Changing the RAID array will delete all data on the drives.

5 Tap *OK*.

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/LS500/>. 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/LS500/>. 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.

Code	Description	Corrective Action
E04	The firmware is corrupted.	Save the firmware file to the root directory of a FAT32-formatted USB memory device. Power off the LinkStation, connect the USB memory device, then power the LinkStation back on. The firmware file will be restored automatically. 86886.jp/ls500-r/ Note: By recovering the firmware, all the LinkStation's settings will be initialized to default values, but the data on the LinkStation will be kept.
E10	The LinkStation is running on the UPS battery due to a power outage. The system will now be shut down safely.	Check that power is being supplied to the UPS, and that there are no problems, turn on the LinkStation.
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 " Checking Drives " section in chapter 5.
E15	The number of bad sectors has reached a dangerous level.	Replace the drive by referring to the " Drive Replacement " section in chapter 5.
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.

Code	Description	Corrective Action
E30	A drive error occurred.	Replace the drive by referring to the “Drive Replacement” section in chapter 5.

Amber

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.

Code	Description	Corrective Action
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.	-
I16	Creating the RAID array.	-
I18	Rebuilding the RAID array. Note: Transfer speeds are slower during the rebuilding process.	-
I19	Rewriting the RAID array.	-
I20	Formatting the drive.	Do not turn off the LinkStation’s power.
I21	Checking the drive.	Do not turn off the LinkStation’s power.
I22	Rewriting the drive.	-
I23	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.
I28	Formatting the USB drive.	Do not turn off the LinkStation’s power.
I46	Data migration or conversion (RAID migration) is in progress.	Do not turn off the LinkStation’s power.
I52	A new firmware version has been released.	Update the firmware by referring to the “Firmware” section in chapter 8.
I54	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.

Default Settings

Administrator’s Name	admin
Shared Folders	“Public” and “admin” (for both Windows and Mac computers).
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

Microsoft Network Group Settings	WORKGROUP
SMB	Enabled
AFP	Disabled
FTP	Disabled
DLNA Server	Enabled
iTunes	Disabled
Downloader	Disabled
WebAccess	Disabled
Wake-on-LAN	Enabled
NTP	Enabled
Enable initialization of the admin password and DHCP settings	Enabled
RAID Mode	LS520D, LS520DN: RAID 1

Specifications

Check the [Buffalo website](#) for the latest product information and specifications.

LAN Interface	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)
	Number of Ports	1
	Connector Type	RJ-45 8-pin (auto MDI-X)
	Supported Protocols	TCP/IP
	Network File Services	SMB/CIFS, AFP, FTP, HTTP
USB Interface	Standards Compliance	USB 3.0
	Data Transfer Rates	Max. 5 Gbps
	Number of Ports	1
	Connector Type	Type A
Internal Drive	Number of Drive Bays	LS510D: 1 LS520D, LS520DN, LS520DE: 2
	Drive Interface	SATA 3 Gbps
	Supported RAID	LS520D, LS520DN, LS520DE: 0, 1, JBOD
	Replacement Drive	LS520D, LS520DE: Buffalo OP-HDBST series drive LS520DN: Buffalo OP-HDBN series drive Notes: <ul style="list-style-type: none"> If using a LS520DE unit, you can also use compatible non-Buffalo drives that are listed on the compatible information of the Buffalo website. The replacement drive should be the same size or larger as the original drive.

Others	Power Supply	AC 100–240 V, 50/60 Hz
	Dimensions (W × H × D, excluding protruding parts)	LS510D: 45 × 128 × 205 mm; 1.8 × 5.0 × 8.1 in. LS520D, LS520DN, LS520DE: 87 × 128 × 205 mm; 3.4 × 5.0 × 8.1 in.
	Weight	LS510D: approx. 1.1 kg; 2.4 lbs LS520D, LS520DN: approx. 2.5 kg; 5.5 lbs LS520DE: approx. 0.9 kg; 1.9 lbs
	Power Consumption	LS510D: max. 24 W LS520D, LS520DN, LS520DE: max. 36 W
	Operating Environment	Temperature: 5–35°C; 41–95°F Humidity: 20–80% non-condensing
	Compatible Devices	Windows PCs, Intel Mac computers, iOS devices, and Android devices with wired or wireless Ethernet connection.
	Supported OS	Windows 10, 8.1, 8, 7, Vista macOS 10.13, 10.12, 10.11, 10.10, 10.9, 10.8, 10.7 iOS 7.0 or later Android 4.1 or later

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.

MET

Label Information

	Direct current
	Polarity of DC connector

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

CE

Dansk

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 specifically instructed to in the documentation.

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.

LS510D	Asian Power Devices Inc. WA-24Q12R-Z079x
LS520D, LS520DE	Asian Power Devices Inc. WA-36A12R-Z077x



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.

WA-24Q12R-Z079x	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
	Input AC frequency	50-60 Hz
	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

WA-36A12R-Z077x	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
	Input AC frequency	50–60 Hz
	Output voltage	12.0 V
	Output current	3.0 A
	Output power	36.0 W
	Average active efficiency	88.2%
	Efficiency at low load (10%)	85.8%
	No-load power consumption	0.08 W

CB**Label Information**

	Direct current
	Polarity of DC connector