

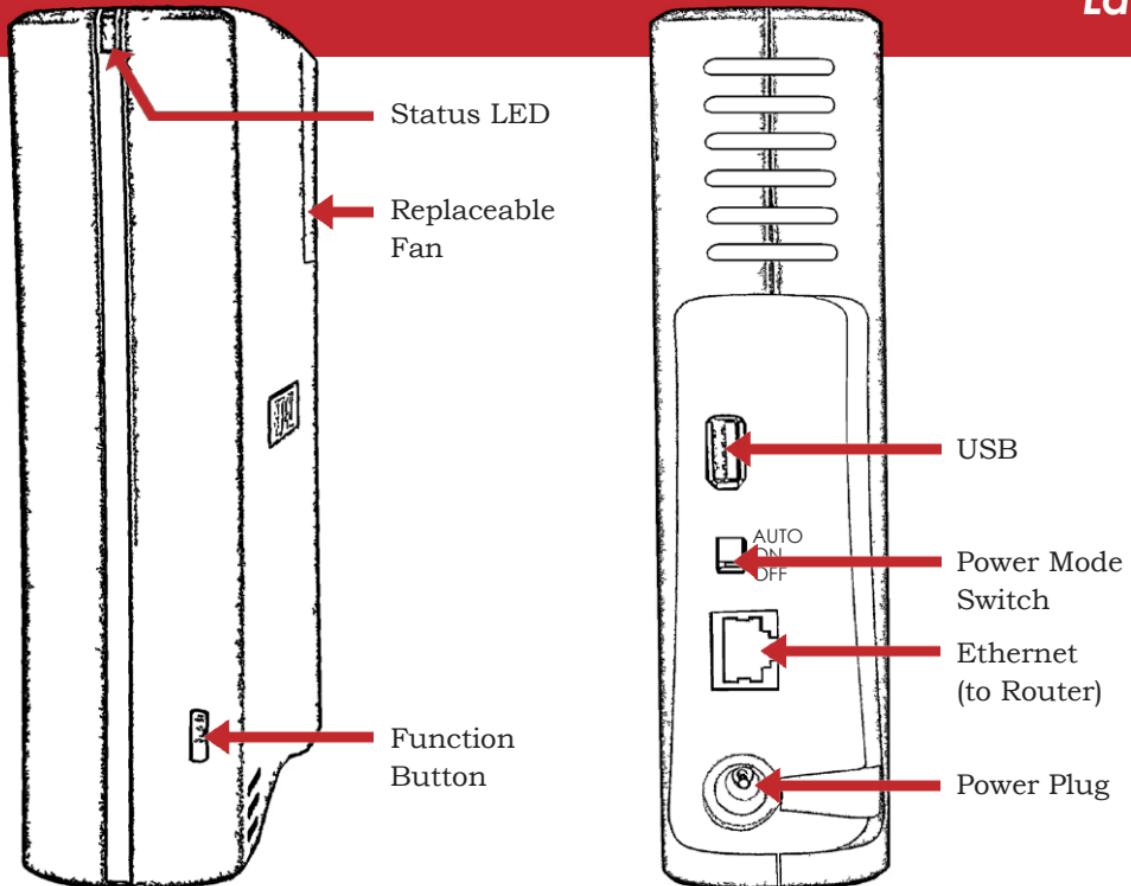
User Manual
LS-XHL
LinkStation Pro

Congratulations on your new LinkStation Pro! This user manual is intended to assist you in configuring it.

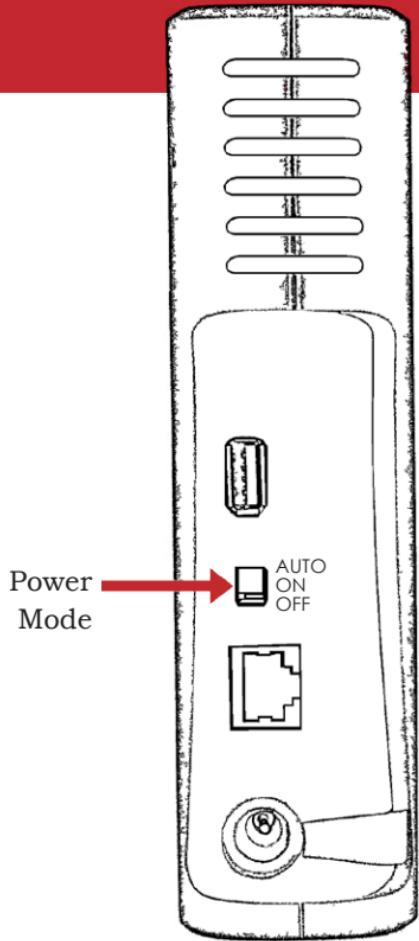
Because we're constantly updating our products, the images and text in this manual may vary slightly from the images and text displayed by your LinkStation. These changes are minor and should not affect the ease of setup adversely. As time passes, future user interfaces, updated software, and later versions of this manual may be freely available for download at our web site www.buffalotech.com.

For best results, attach the LinkStation to an uninterruptable power supply (UPS). Back up all your stored files regularly. See the 'Backup Jobs' page for instructions using the LinkStation's built-in backup utility. If you run into difficulties or need additional help, feel free to contact our technical support. Contact information for Buffalo Technology and our technical support is available on pages 62 and 63.

Introduction		28
Diagrams and Layout	4	30
Power Switch	5	
Installing Software	6	
Using your LinkStation		
Using your LinkStation with a PC	7	31
Using your LinkStation with a Mac	8	32
Finding LinkStation's IP address	12	37
Settings and Configuration		
Web Admin Tool	13	42
Users/Groups		
Adding Users	15	44
Adding Groups	16	45
Network		47
Settings	17	
Workgroup/Domain	18	
System		
Settings	20	48
Disks		
USB Hard Drives	21	53
Formatting Hard Drives	22	
Mapping Additional Shares	23	
Maintenance	25	
Notification	26	
Backup Jobs	27	
Initialization		
UPS		
Extensions		
Sleep Timer		
Print Server		
Time Machine		
DLNA Media Server		
iTunes Server		
BitTorrent Client		
Direct Copy		
Remote Access		
WebAccess		
FTP		
Troubleshooting		
Troubleshooting Multiple Shares		55
Disk Errors		57
Status LED Flash Codes		57
Fan Replacement		59
Appendix		
Specifications		60
Factory Defaults		61
Contact Information (USA)		62
Contact Information (Europe)		63
GPL Source Code Information		64



Power Switch



The “Power Mode” switch on the back of the unit has three positions: “Auto”, “On”, and “Off”. The “Auto” position automatically powers the unit on or off with your PC. If your PC is turned on the LinkStation will power up; if the PC is turned off the LinkStation will power down.

You must have installed the NAS Navigator2 software on your PC for this feature to work. Otherwise, if you move the switch to “auto”, your unit will power down by itself and you will have to manually turn it back on.

Also note that the unit needs to be powered on to use either Web Access or BitTorrent. If you use either of these features regularly, it is best to leave the Power Mode switch set to “On”.

Move the switch to the “Off” position to turn the LinkStation off. It will take about 35 seconds to shut down. Do not unplug or interrupt power to the unit until shutdown is complete and the Status LED is no longer lit.

Insert the Link Navigator CD into your computer's CD/DVD drive. On a PC, the setup wizard will launch automatically. Select your preferred language to continue.

Alternately, you can launch the program manually. Open your LinkNavigator CD and click on "Lang.exe".



If you are installing the software on a Mac, open the CD and click on the LinkNavigator icon to begin installation.



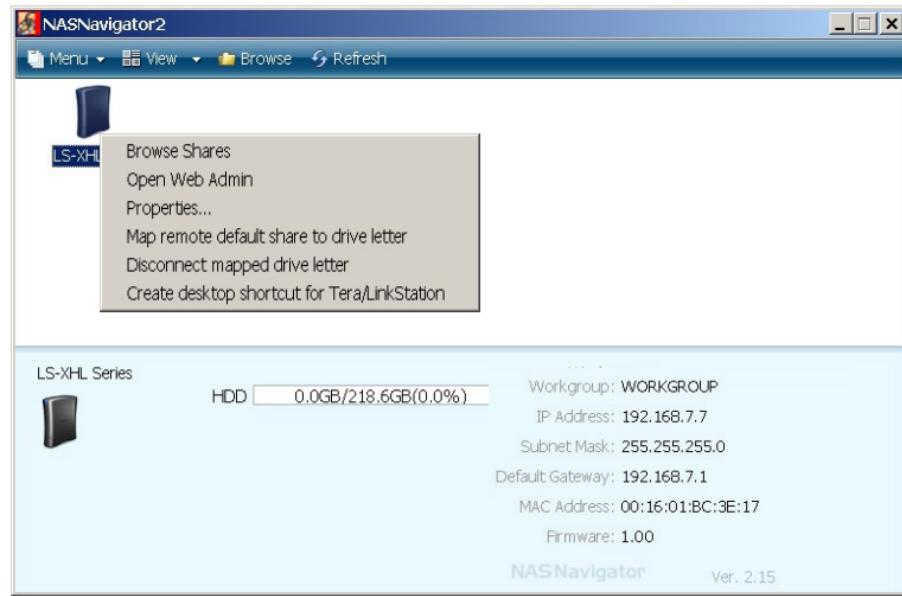
Step through the wizard to install your software.



Using your LinkStation with a PC



After installation, you'll have a new shortcut to *Buffalo NAS Navigator2* on your desktop. Click it to open the NAS Navigator2 client utility.



Double-click on your NAS device's icon to open it. Or, right-click on it for more options.

From NAS Navigator2, you can easily browse the shares on your LinkStation, open its Web Admin Tool, map a drive letter to a share, or make a desktop shortcut to the main share on the LinkStation.

Using your LinkStation with a Mac



After installing the LinkNavigator software, your Mac will have “NAS Navigator2” in the dock.



Clicking on *NAS Navigator2* opens *NAS Navigator2*, the LinkStation’s client utility. Click on the “gear” symbol to drop down available commands.



Open Web opens the Web Admin Tool. *Configure* opens the menu on the next page. *Color Label* lets you color-code your NAS devices in *NAS Navigator2*. *Show View Options* lets you choose the size and order of icons in the *NAS Navigator2* display.



In NAS Navigator2, choose *Configure* from the drop-down menu to get to the Web page. Click *Open Web Page* to go the Web Config Tool, or click *IP Address* to change the LinkStation's IP Address settings.

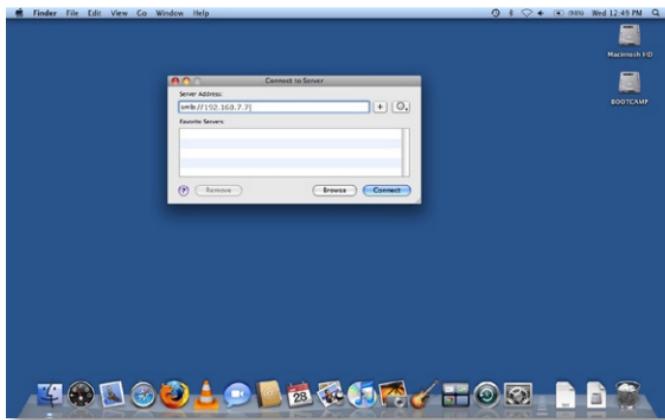


The IP Address page lets you change the LinkStation's IP address settings.



If you have more than one NAS on your network, *Show View Options* can be useful. It lets you choose the order of icons in the NAS Navigator2 display. You may also adjust the size of the icons from here.

You can manually add LinkStation shares (folders) to your desktop by adding them to the Mac's server list. Begin by clicking *Go*, and then choose *Connect to Server*.



In the *Server Address* field, enter your LinkStation's IP address in the form *smb://ipaddress* (where "ipaddress" is your LinkStation's IP address), and click *Connect*. If you don't know your LinkStation's IP address, see page 12.

Select *Guest* and click on *Connect*. Note: If you have configured share permissions on your LinkStation, select *Registered User* and enter your login credentials.



Select the volume that you want to mount, such as *share* or *share-mac*, from the list of folders on the LinkStation.



The share will open.

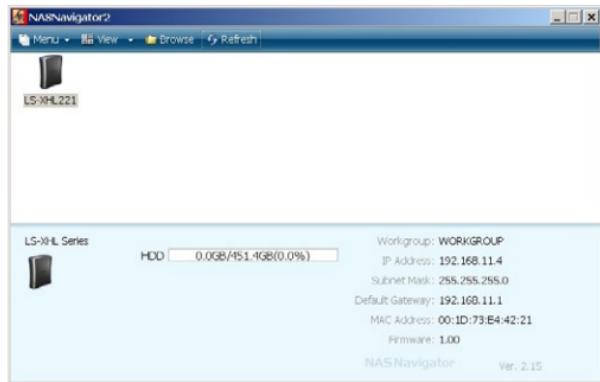


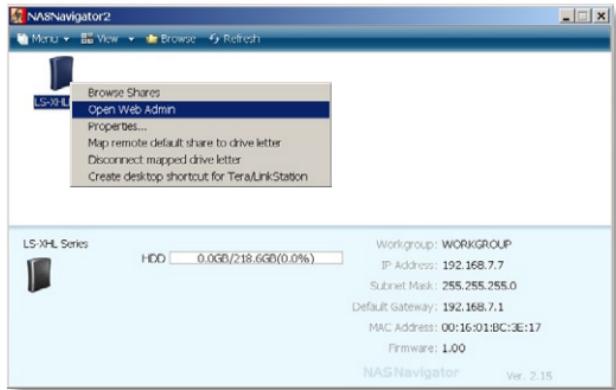
Finding LinkStation's IP address

If you don't know your LinkStation's IP address, there are several ways to get it.

One simple method is to use the NAS Navigator2 client utility (included on your CD) to find your LinkStation. Just click on the icon for your LinkStation and you'll be able to read its IP address.

You can always get the LinkStation's IP address from your router's configuration utility. Many Buffalo routers list this information on the *Client Monitor* page, as shown to the right. Consult your router's documentation for instructions on identifying the LinkStation's IP address.

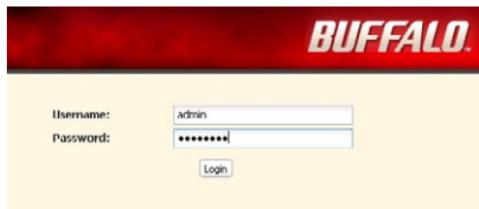




To open the Web Admin Tool, right-click on your LinkStation in NAS Navigator2 and choose *Open Web Admin*.

Alternately, you could type the LinkStation's IP address in the URL bar of a browser running on a computer connected to the same network as the LinkStation. This also works with non-Windows PCs.

This login prompt will appear. Enter **admin** for the user name. Until you change it, the password for the admin account will be **password**. Press the *Login* button when finished.



User name: *admin*
Password: *password*

Welcome to the Web Admin Tool! On the left side, you can see your LinkStation's system information. Tabs and Submenus along the upper edge allow easy access to all of the settings pages for your LinkStation.

Submenus

Individual Settings

Category Tabs

Help and Instructions

System Information

Names

IP Address: 192.168.7.100

Workgroup: ht

Storage: Disk 1: 0.0 GB / 2.144 GB (0.0 %)

Shared Folders

Shared Folders: 3

Volumes: 1

Folder Setup

Name	Volume	Attribute	Recycle Bin	Support	Restrictions
info	Disk 1	Read Only	✗		✗
share	Disk 1	Read & Write	✓	Windows, Disk Backup	✗
test	Disk 1	Read & Write	✓	Windows, Apple	✗

Adding Users

To add users, select the *Users/Groups* tab. *Local Users* is the default submenu. Click on *Create User*.



Enter your user information and click *Save*. For best results, usernames and passwords should match the ones that users use to log in to their computers. Otherwise, they may have to enter them each time that they access the LinkStation.



Adding Groups

To add a group, select the *Local Groups* submenu under the *Users/Groups* tab. Click on *Create Group*.



LinkStation
Network Attached Storage

System Information

Name: LS-XHLDFAF
IP Address: 192.168.7.100
Workgroup: M
Storage: Disk 1: 5.0 GB / 218.6 GB (0.0 %)

Users/Groups

Find
<input type="checkbox"/> admin 0
<input type="checkbox"/> guest 0
<input type="checkbox"/> houses 2
<input type="checkbox"/> engineers 1

Local Groups

Create Group

Group Details

Group Name: admin
Group Id: 52
Description: Default Administrator Group

Enter information for your group and click on *Save*.



LinkStation
Network Attached Storage

System Information

Name: LS-XHLDFAF
IP Address: 192.168.7.100
Workgroup: M
Storage: Disk 1: 5.0 GB / 218.6 GB (0.0 %)

Users/Groups

Find
<input type="checkbox"/> admin
<input type="checkbox"/> guest

Local Groups > New Group

Group Name: engineering
Group Id:
Description:
Group Quota: Enable
Hard Limit (GB):

Local Users

Find
<input type="checkbox"/> admin <small>built-in account for admin...</small>
<input type="checkbox"/> guest <small>built-in account for guest...</small>

Group Members

Find
<input type="checkbox"/> me
<input type="checkbox"/> john

Network Settings

Network Settings contains settings that affect your Ethernet connection. In most networks, LinkStation will get its IP Address automatically from a DHCP server. You may disable DHCP here and configure the IP address settings manually if desired. If no DHCP server is available and an IP Address is not set manually, then the IP address will be assigned to a random address on the 169.254. xxx.xxx subnet with subnet mask 255.255.0.0.

Ethernet Frame Size and Services are also set from this page. Only use JumboFrame settings when operating in a Gigabit environment where all other clients support the same JumboFrame setting.



Workgroup/Domain Settings

To add the LinkStation to your workgroup or domain, click *Modify Settings*.



Depending on your network type, you may choose to authenticate in *Workgroup* or *NT Domain* mode.

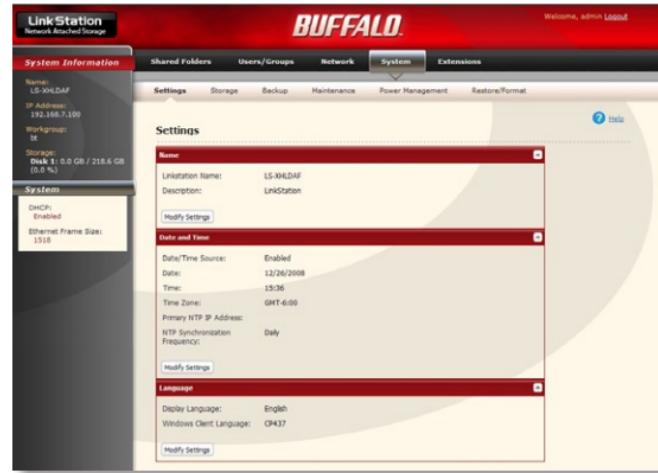


Screens are different depending on whether you authenticate in *Workgroup* or *NT Domain* mode. Whichever mode you choose, enter the information needed to log in to the network and click *Save* when finished.



System Settings

In *System Settings*, you can modify the NetBIOS name of your LinkStation, date and time settings, and language settings.



USB Hard Drives

Add a USB hard drive to the LinkStation simply by plugging it in to USB port on the LinkStation. It will then appear in the master folder as a new share on the LinkStation. Not all USB hard drives are supported. Some USB hard drives may need to be reformatted with the LinkStation's format utility before working properly.

Before disconnecting a USB device from the LinkStation, it should be dismounted. Hold the function button down until it glows blue, and then turns off. It's now safe to unplug your USB device. You may also dismount your USB device from within *System/Storage/Disks* in the Web Admin Tool.

Note: Unplugging USB devices without dismounting them first may corrupt your data!



Formatting Hard Drives

Formatting of hard drives is done in the *System/Storage* area of the Web Admin Tool. To format hard drives, select the hard drive(s) that you want to format and click on *Format Disk*.

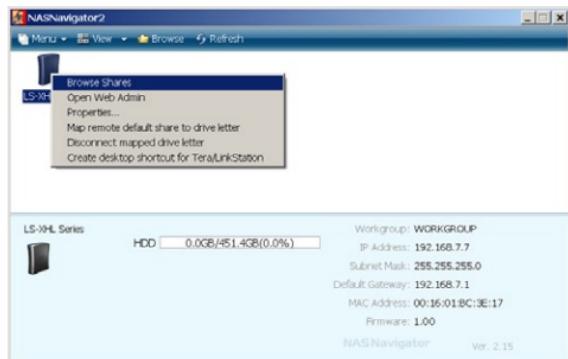


The screenshot shows the Buffalo LinkStation Network Attached Storage Web Admin Tool interface. The top navigation bar includes 'LinkStation Network Attached Storage', the 'BUFFALO' logo, and a 'Welcome, admin' message. The main menu has tabs for 'Shared Folders', 'Users/Groups', 'Network', 'System', and 'Extensions'. Below the main menu, sub-tabs for 'Settings', 'Storage', 'Backup', 'Maintenance', 'Power Management', and 'Restore/Format' are visible. The 'Storage' tab is selected, and the 'Disks' sub-tab is active. A table lists the disk information:

Disk	Unit Name	Unit Capacity	Amount Used	% Used	File Format
Disk 1	WD2500JS-55NCB1	229.216.000 KB	4.460 KB	0.00 %	XFS

Mapping Additional Shares

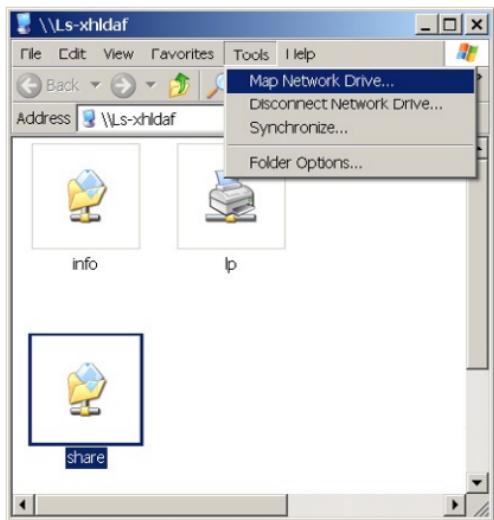
You can map additional drive letters to shares on your LinkStation. From NAS Navigator2, right-click on your LinkStation and select *Browse Shares*.



Your LinkStation will open. “Share” is a data folder in your LinkStation by default. “Info” contains your user manuals. If you have created other folders, then they will be visible here too. You can map drive letters to any of these folders.



From the *Tools* pull-down menu, select *Map Network Drive*. Choose a drive letter from the *Drive:* pull down menu. To specify the folder to map, either find it with *Browse* or enter `\LinkStation_Name\share_name` in the *Folder:* field, where *LinkStation_Name* is your LinkStation's hostname and *share_name* is the name of a folder on your LinkStation. Check the *Reconnect at logon* checkbox to have Windows connect to this mapped drive everytime it starts. When finished, press the *Finish* button. Your share is now mapped to a drive letter.

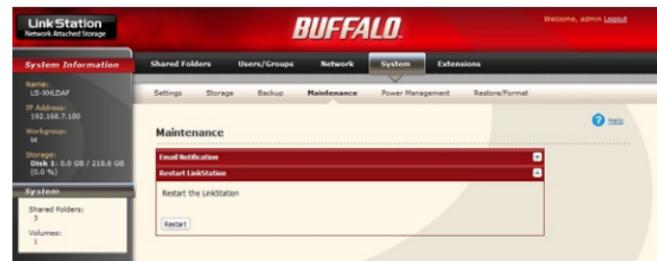


Maintenance

The Maintenance submenu holds settings for Email notification.



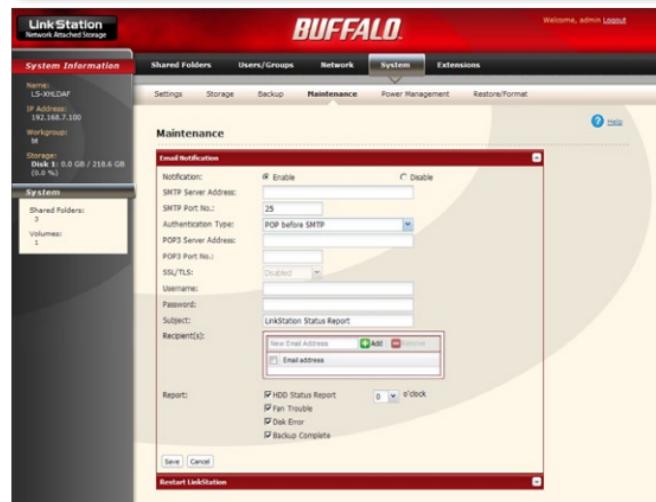
You can also restart the LinkStation from here.



Email Notification

If you have access to an SMTP mail server, your LinkStation can send you reports and alerts. To configure this, navigate to *System/Maintenance*, open *Email Notification*, and click on *Modify Settings*.

Enable notification and enter your SMTP server address and port. If your SMTP server requires authentication, choose the authentication type from the drop-down menu and enter any necessary login information. Change the title and types of emails you'll receive if desired. Click *Save* when done.



Backup Jobs

To create a new backup job, click *Create New Job* in *System/Backup/Backup Jobs Setup*.



Select the desired job schedule and properties and click *Apply* when done.



Initialization

You can restore settings to their factory defaults by clicking *Restore LinkStation*. You can choose to either keep the current admin password after initialization, or revert the password to its default setting of “password”.

You can also restore factory settings with the following procedure:

1. Move the power switch to the ‘Off’ position. The LinkStation will shut down after about 45 seconds.
2. While holding down the function button, move the power switch to the ‘On’ position. The function button will begin to flash blue.
3. While the function button is still flashing, press it again. Initialization may take several minutes.



Initialization will affect different settings on the LinkStation depending on which method you use.

Initializing the LinkStation from within the Web Admin Tool restores the following settings to their factory defaults: LinkStation name, description, NTP settings, Workgroup settings, shared services, shared folder access, user list, group list, email notification, UPS settings, and backup jobs. The Admin password may optionally be reset as well.

Initializing the LinkStation with the function button and power switch restores the following settings to their factory defaults: DHCP, frame size, and Admin password.

UPS

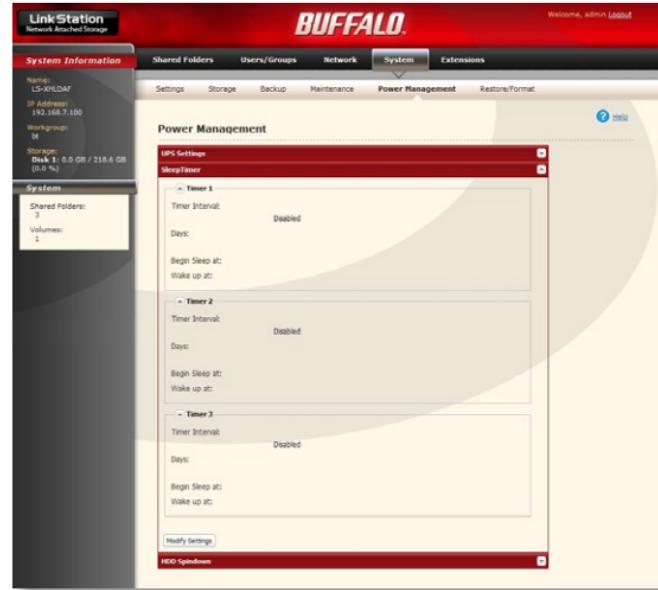
An Uninterruptable Power Supply may be attached to the LinkStation Pro's USB port. Once attached, you may configure it from *System/Power Management/UPS Settings*.



Sleep Timer

The LinkStation can be configured to go into power-saving (“sleep”) mode at regular intervals. Click *Modify Settings* to configure a sleep interval.

To manually wake a LinkStation from sleep mode before its wake-up time, hold down the power button on the front panel for 3 seconds.



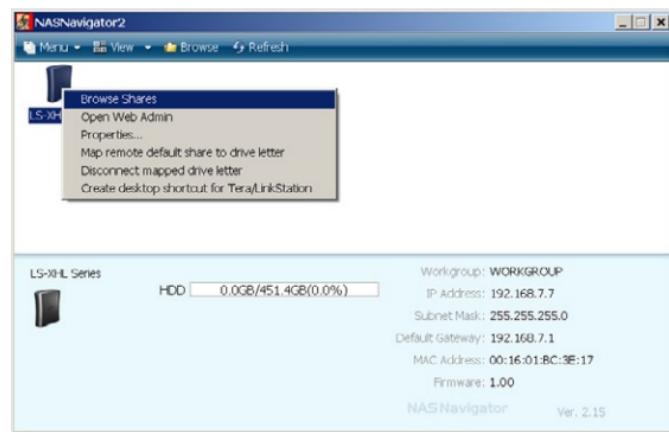
The screenshot shows the Buffalo LinkStation Network Attached Storage web interface. The top navigation bar includes links for Shared Folders, Users/Groups, Network, System, Extensions, Power Management, and Restore/Format. The 'Power Management' tab is selected. The main content area is titled 'Power Management' and contains 'UPS Settings' and 'Sleep Timer' sections. The 'Sleep Timer' section is expanded and shows three timer intervals, each with 'Timer Interval' set to 'Disabled', 'Days' set to 'None', and 'Begin Sleep at:' and 'Wake up at:' fields. A 'Modify Settings' button is located at the bottom of the timer list.

Print Server

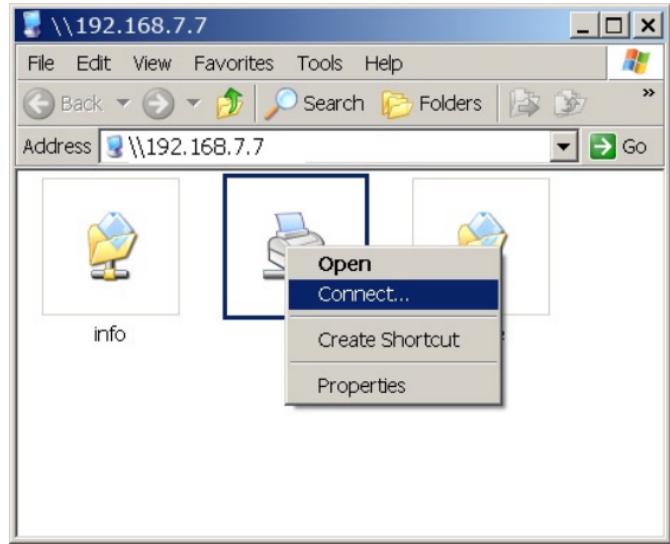
- To share a USB printer with the LinkStation, navigate to *Extensions/PrintServer* in the Web Admin Tool and *Enable* print server functionality. Connect the printer to a USB port on the LinkStation and power it on.



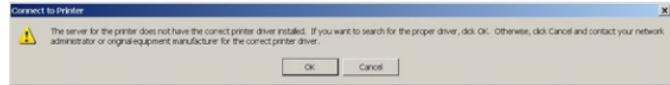
- In NAS Navigator2, right-click on the LinkStation and choose *Browse Shares*.



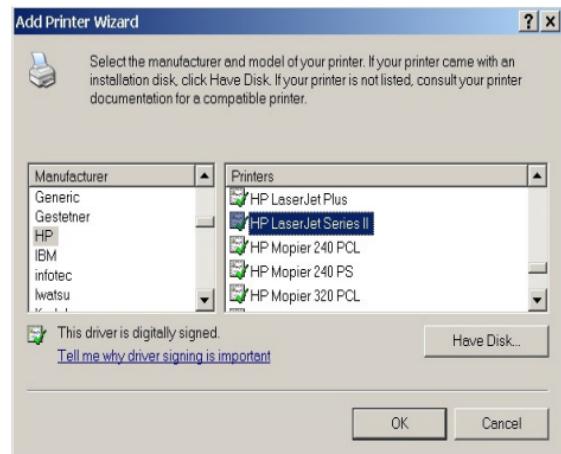
- Right-click on the *lp* icon and select *Connect*.



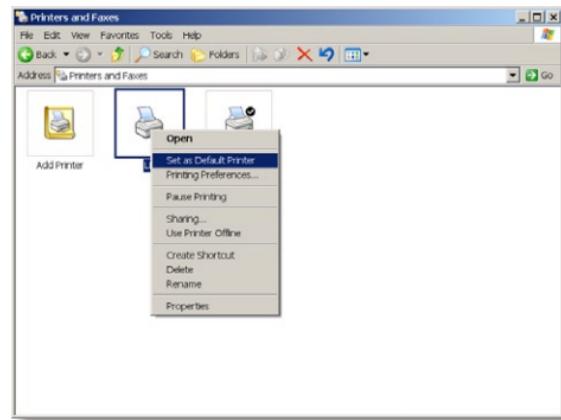
- You will receive a warning that the server does not have the proper drivers. Click *OK* to continue.



- The *Add Printer Wizard* will launch. Select the proper driver for your printer. If the specific printer is not in the list, you will be required to insert the CD that came with your printer into your PC's CD-ROM drive and click *Have Disk*. Refer to your printer documentation for further information on installing your printer if necessary. Click *OK* to finish.



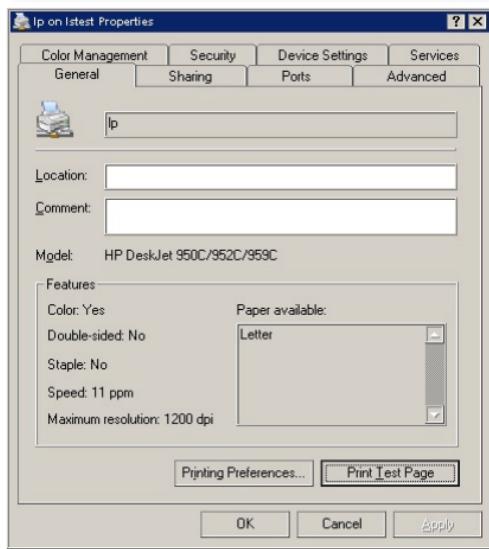
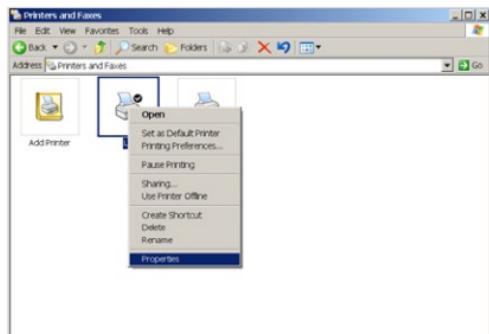
- If *lp* is the only printer installed on the PC, then it will automatically be set as the default printer. If it's not the only printer, you may make it the default printer by clicking *Printers and Faxes* in Control Panel, right-clicking on the *lp* icon and selecting the *Set as Default Printer* option from the drop-down menu.



- To print a test page or configure additional printer settings, right click on the *lp* printer icon and select *Properties*. This will open the printer's driver properties page.
- Click *Print Test Page* to print a sample page. You can also browse through the available settings for the printer. Please refer to the printer's documentation for more information on changing the printer's settings.

NOTES: The printer installation process can be done on any machine on your network. Multiple machines may print to the printer at the same time. Repeat this process on all computers that require access to the printer.

Not all USB printers are supported. Multifunction printers are specifically *not* supported.



The screenshot shows the Buffalo LinkStation web interface. The top navigation bar includes links for Shared Folders, Users/Groups, Network, System, and Extensions. The Extensions tab is currently selected. Below the navigation is a sub-menu with links for WebAccess, MediaServer, PrintServer, BitTorrent, and Time Machine. The main content area is titled 'PrintServer' and contains a configuration box with the following settings:

PrintServer	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Modify Settings Delete Print Queue	

jobs to the printer, shut down the LinkStation and the printer. Turn the printer on, and then turn the LinkStation back on again. Verify that the USB cable is securely fastened to both the printer and the LinkStation. Finally, you may consult the printer manufacturer's documentation for more troubleshooting information.

If a corrupt print job is sent to a printer, printing may suddenly fail. If your print jobs seem to be locked up, clearing the print queue may resolve the issue.

To delete the print queue, click *Delete Print Queue*. This will clear all current print jobs. Users will have to re-send any incomplete print jobs to the printer.

If there are still problems sending

Time Machine

To use the LinkStation as a location for backups from a Mac running Time Machine, begin by creating a folder for the backups.

In *Shared Folder Setup*, click on *Create Folder*.

Name	Volume	Attribute	Recycle Bin	Support	Restrictions
ddos		Read Only	X		
share	Disk 1	Read & Write	✓	Windows, Disk Backup	X
tsst	Disk 1	Read & Write	✓	Windows, Apple	X

Shared Folders > New Folder

Copy Settings From:

Name:

Description:

Volume:

Shared Folder Attributes:

Read Only Read & Write

Enable Disable

Recycle Bin: Windows Apple Ipa Disk Backup

Shared Folder Support:

Remote backup password:

Access Restrictions:

Name the folder. Make sure that *Apple* is checked for Shared Folder Attributes. *Disable* Recycle Bin support. Click *Save*.



Navigate to *Extensions/Time Machine* and click *Modify Settings*.



Enable Time Machine. For the Target Folder, choose the folder you created for the backups. Click Save.



Enter the Mac's "Computer Name" (from its Sharing page) as the *Target Host Name*. For the *Target MAC address*, enter the Mac's Ethernet ID from Advanced Settings in its Network Preferences page. See the next page for instructions on finding the right values for these fields. Click *Create* when done.



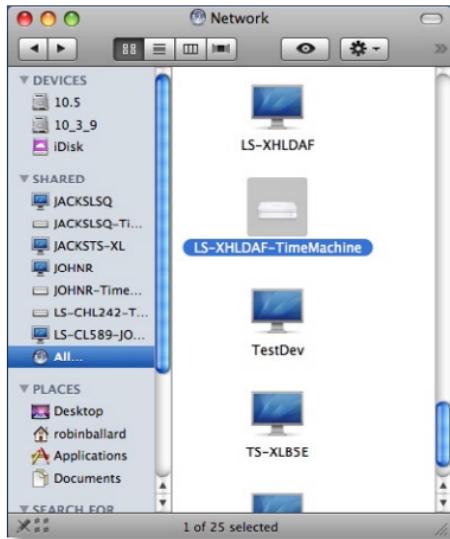
For the *Target Host Name* field, enter the Mac's "Computer Name" from the Sharing page. Navigate to this page by selecting *Sharing* in *System Preferences*. To work with Time Machine, the Computer Name should contain only the following characters: 0123456789-abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ and “-”(hyphens). Spaces, underscores, and other characters should not be used if Time Machine is to function properly.



For the *Target MAC address*, enter the Mac's Ethernet ID from *Advanced Settings* in its *Network Preferences* page. If more than one Ethernet ID is listed, use the first one. To get to this page, select *Network* in *System Preferences*. Select *Ethernet* and click the *Advanced* button. Click on *Ethernet* at the top right.



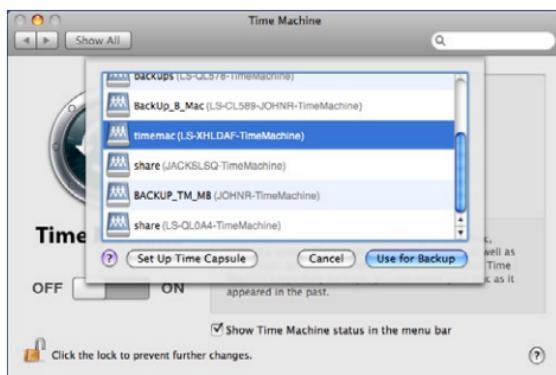
It will take several minutes for the image file to be created. The file 'TargetHostName_TargetMACAddress.sparsebundle' is being created in the backup folder. To be safe, wait ten minutes before continuing.



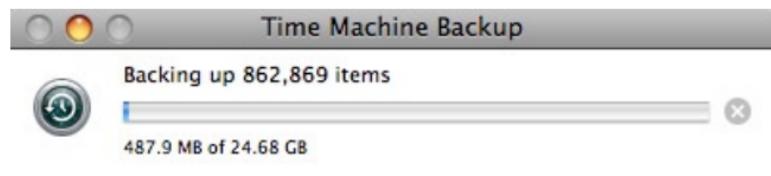
After ten minutes have passed, open the Finder. Click on *All* below *Shared*. Find your LinkStation in the window and double-click on it. It will now appear below *Shared* on the left-side list. Close the Finder.



Open Time Machine. Click on *Choose Backup Disk*.



Choose your LinkStation from the list and click *Use for Backup*. In 120 seconds, Time Machine will begin running a backup.



DLNA Media Server

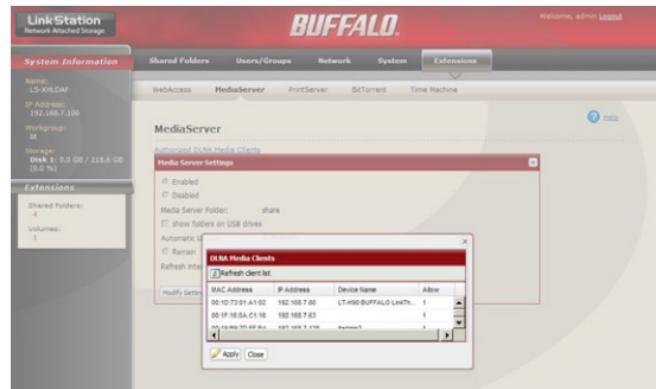
A share on the LinkStation can be streamed to DLNA compatible media players on your network. To configure DLNA media streaming, click on *Modify Settings*.



Highlight *Enabled* and choose the media folder on your LinkStation to share. Click *Save* when done.



Clicking *Authorized DLNA Media Clients* opens this screen, where you can see all of the available media players on your network. Click *Close* when done.



The screenshot shows the Buffalo LinkStation Network Attached Storage interface. The top navigation bar includes 'LinkStation', 'Shared Folders', 'Users/Groups', 'Network', 'System', and 'Extensions'. The 'Extensions' tab is selected. Below the navigation is a 'MediaServer' section with 'Authorized DLNA Media Clients' and 'Media Server Settings' sub-sections. The 'Media Server Settings' section has radio buttons for 'Enabled' (selected), 'Disabled', and 'Revert'. It also includes checkboxes for 'Media Server Folder' (set to 'share'), 'share folders on USB drives', 'Automatic', and 'Revert'. A 'Refresh Interval' dropdown is set to '10 sec'. The 'DLNA Media Clients' table lists three devices:

MAC Address	IP Address	Device Name	Allow
00:1D:73:91:A1:02	192.168.7.30	LT-490 BUFFALO LinkSt...	1
00:1F:18:9A:01:18	192.168.7.83		1
00:1F:18:9A:01:18	192.168.7.118	MediaServer	1

At the bottom of the table are 'Apply' and 'Close' buttons.

iTunes Server

Your LinkStation includes iTunes server capability. The iTunes server will be available as long as a share is enabled in the LinkStation's DLNA media server settings. Computers running iTunes on the network with your LinkStation will detect the server, which will appear on the left side of iTunes under "Shared". Click on it to see the music stored on the LinkStation.

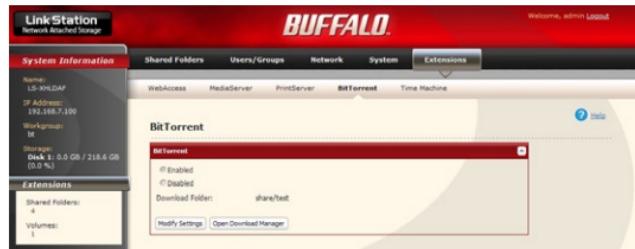


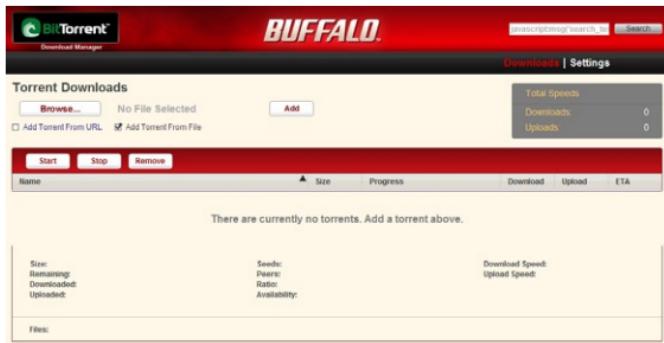
BitTorrent Client

LinkStation's built-in BitTorrent client will download your files for you. To enable it, select *Enabled*. Choose a target folder for downloaded files to go to and click *Save*.

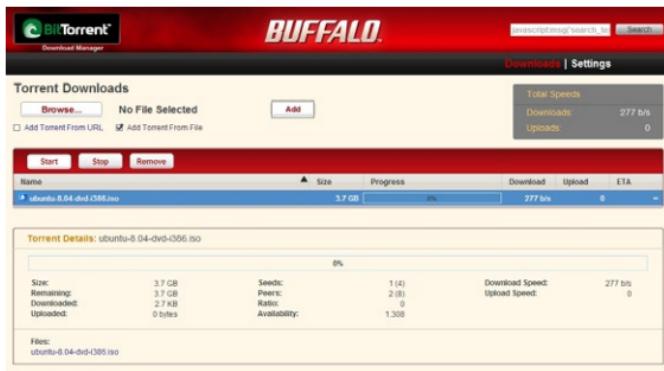


Then, click *Open Download Manager*.





The screenshot shows the BitTorrent interface. At the top, there are buttons for 'Browse...', 'Add', 'Add Torrent From URL', and 'Add Torrent From File'. Below this is a table with columns for 'Name', 'Size', 'Progress', 'Download', 'Upload', and 'ETA'. A message 'There are currently no torrents. Add a torrent above.' is displayed. On the left, there are status metrics: Size, Remaining, Downloaded, and Uploaded. On the right, there are metrics for 'Total Speeds', 'Downloads', and 'Uploads'. At the bottom, there is a 'Files:' section.



The screenshot shows the BitTorrent interface with a single torrent download listed: 'ubuntu-8.04-dvd-386.iso'. The download progress is at 0%. The torrent details table shows the following information: Size (3.7 GB), Remaining (3.7 GB), Downloaded (2.7 KB), Uploaded (0 bytes), Seeds (114), Peers (210), Ratio (0), and Availability (1308). The download speed is 277 b/s and the upload speed is 0 b/s.

To add a torrent, select either *Add Torrent From Add* or *File Torrent From URL*, and then *Browse*. Navigate to the torrent file and open it. Click *Add*.

The file(s) will automatically download in the background.

Note: For best results, move the power mode switch on the back of the LinkStation to the “On” position while the BitTorrent client is running. Otherwise, the LinkStation may shut down in the middle of a download.

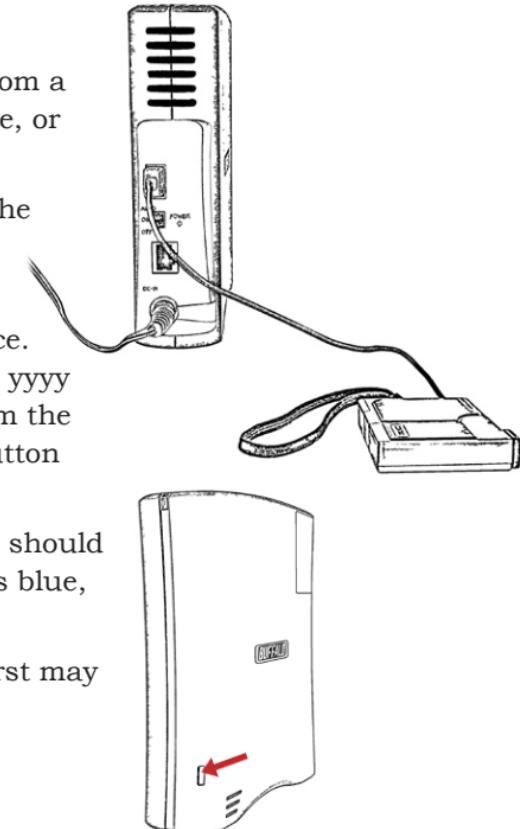
Direct Copy

You can copy digital media files directly to the LinkStation from a USB storage device, such as a digital camera, USB flash drive, or external hard disk.

1. Connect your USB device to the USB port on the back of the LinkStation. The function button on the front of the unit will glow blue for 60 seconds.
2. While the function button is still glowing blue, press it once. A new folder *yyyymmdd* is created in the share folder, where *yyyy* is the year, *mm* is the month, and *dd* is the day. All files from the source USB device are copied to that folder. The function button will flash during file transfer and turn off when it's done.

Before disconnecting the USB device from the LinkStation, it should be dismounted. Hold the function button down until it glows blue, and then turns off. It's now safe to unplug your USB device.

Note: Unplugging USB devices without dismounting them first may corrupt your data!



Remote Access - WebAccess

With Buffalo's WebAccess, you can access your LinkStation from anywhere in the world with an Internet connection. It's easy to access your files, or share them with other people, wherever they may be.

To use Webaccess, *Enable 'Web Access Service'*.

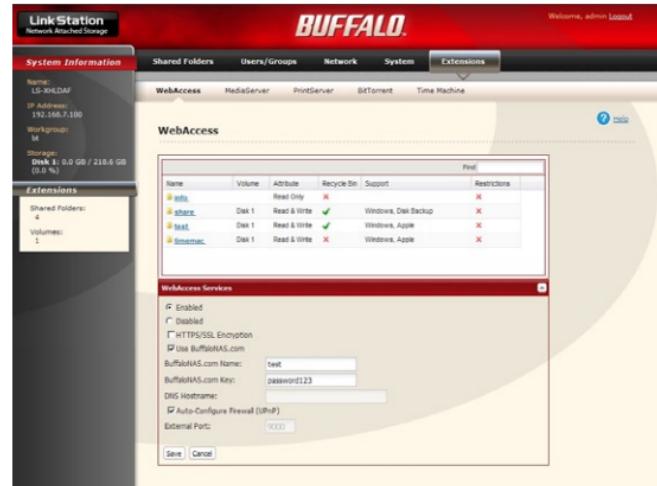
You may also enable SSL Encryption if desired.

Using 'BuffaloNAS.com' is recommended. Otherwise, you'll have to manage your own DNS settings.

'Auto-Configure Firewall' is recommended if your router supports UPnP (most do since 2001). If you choose not to enable this, then you must manually configure your router and firewall to forward internal port 9000 to the Internet.

Choose a name for your BuffaloNAS account and a password ("key"). This name is the name that will be used to access your LinkStation and to share with your friends. The password for this protects other people from using it, so picking a strong password is recommended.

Click *Help* in the top right of the window for detailed information on each setting.



LinkStation
Network Attached Storage

BUFFALO

Welcome, admin [Logout]

System Information

Name: LS-XHDAF
IP Address: 192.168.7.100
Workgroup: M
Storage: Disk 1: 0.0 GB / 218.6 GB (0.0 %)

Extensions

Shared Folders: 4
Volumes: 1

WebAccess

Shared Folders Users/Groups Network System Extensions

WebAccess

MediaServer PortServer BitTorrent Time Machine

WebAccess

Name	Volume	Attribute	Recycle Bin	Support	Restrictions
edit				Read & Write	X
edit.	Das 1	Das 1		Windows, Das Backup	X
edit.	Das 1	Das 1		Windows, Apple	✓
edit.	Das 1	Das 1		Windows, Apple	X
edit.	Das 1	Das 1		Windows, Apple	X

WebAccess Services

Enabled
 Disabled
 HTTPS/SSL Encrypt
 use BuffaloNAS.com
BuffaloNAS.com Name: test
BuffaloNAS.com Key: password123
DNS Hostname:
 Auto-Configure Firewall (UPnP)
External Port: 10000
Save Cancel

LinkStation
Network Attached Storage

BUFFALO

Welcome, admin [Logout]

System Information

Name: LS-XHDAF
IP Address: 192.168.7.100
Workgroup: M
Storage: Disk 1: 2.2 GB / 218.6 GB (1.4 %)

Extensions

Shared Folders: 4
Volumes: 1

WebAccess

MediaServer PortServer BitTorrent Time Machine

WebAccess Settings > share

Name: share
Description: Unitstation folder
WebAccess Settings:
 Double
 Allow Anonymous
 Allow All Groups / Users
 Use Inherited Folder Permissions

Save Cancel

To enable WebAccess for a share, double-click on the sharename from *Extensions/ WebAccess*.

Choose your desired level of Web Access from the 'Web Access Settings' drop-down menu:

'Disable' will prevent remote access to this share through WebAccess. This is the default setting.

'Allow Anonymous' will allow *anyone* to access the share. Choose this if you want your LinkStation share and all files on it to be freely available to everyone in the world.

'Allow All Groups/Users' will allow only people who have an account on the LinkStation to access this share remotely.

'Use Inherited Folder Permissions' gives each user the same rights to folders remotely that they have locally.

Click the *Save* button to save your changes.

Using WebAccess

To access your LinkStation remotely, open a browser window on any computer connected to the Internet and go to buffalonas.com.

In the dialog box, type the BuffaloNAS name that you set on page 48.

Alternately, you can go directly to your share by typing BuffaloNAS.com/your_BuffaloNAS_name in the URL window.



The folders from your LinkStation's share will appear. Files from anonymous shares will appear to the right. To see files from shares that are not set to anonymous, or to upload files, you will need to *log in*. The 'login' link is on the top left corner of the page.



LinkStation™ WebAccess

The screenshot shows a file browser interface titled "LinkStation™ WebAccess". On the left, there is a sidebar with a "music" folder expanded, containing subfolders: "Abbey_Road", "OKComputer", "Paul_McCartney", "The_Bends", and "The_White_Album". The main content area displays a table with the following data:

Name	Type	Size
Abbey_Road	Folder	
OKComputer	Folder	
Paul_McCartney	Folder	
The_Bends	Folder	
The_White_Album	Folder	

To access individual folders on the right, click on their *open* links.

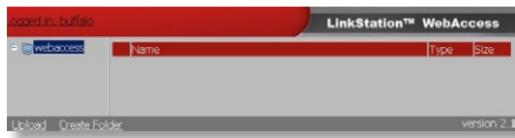
Clicking on individual files will give you other options, depending on the filetype.

LinkStation™ WebAccess

The screenshot shows a file browser interface titled "LinkStation™ WebAccess". On the left, there is a sidebar with a "music" folder expanded, containing subfolders: "Abbey_Road", "OKComputer", "Paul_McCartney", "The_Bends", and "The_White_Album". The main content area displays a table with the following data:

Name	Type	Size
The Beatles-The Beatles (The White Album) (disc 1)-01-Back in the U.S.S.R_.mp3	Audio	4.0M
The Beatles-The Beatles (The White Album) (disc 1)-02-Dear Prudence.mp3	Audio	5.6M
The Beatles-The Beatles (The White Album) (disc 1)-03-Glass Onion.mp3	Audio	3.2M
The Beatles-The Beatles (The White Album) (disc 1)-04-O-Le-Di, O-Lo-Da.mp3	Audio	4.7M
The Beatles-The Beatles (The White Album) (disc 1)-05-Wild Honey Pie.mp3	Audio	1.3M
The Beatles-The Beatles (The White Album) (disc 1)-06-The Continuing Story of Bungalow Bill.mp3	Audio	4.7M

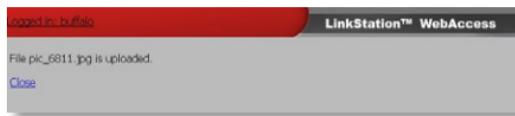
Uploading Files with WebAccess



To upload files to the LinkStation, click *Upload* in the bottom left corner of the window. Note: This option will not appear unless you are logged in and at least one user (besides admin) has been given access to the share.



This window will pop up. Click on *Browse* and navigate to the file that you want to upload. Then, click *Upload*.



The file uploads to your LinkStation.



Once the upload is complete, the file is available on the LinkStation.

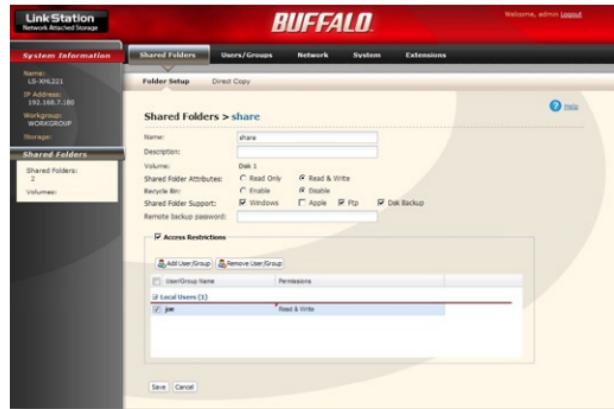
Remote Access - FTP

The LinkStation includes FTP server capability, allowing you to access files on it from anywhere. If FTP is enabled for a folder, then you can read, edit, and save to any files in that folder from anywhere. To use FTP,

1: Set up your account. In Users/Groups, make a user account for yourself. For convenience, give this account the same username and password that you use to log in to your computer. Then, you won't have to retype it in each time you access the LinkStation locally.

2: Enable remote access. In Shared Folders Setup, click on the folder that you want to be able to access remotely. It will be named "share" unless you have added new folders to your LinkStation. Enable FTP in Shared Folder Support. Enable Access Restrictions. Give yourself Read or Read and Write permissions. Click 'Apply'. Then, check 'FTP' in Shared Folder Support. Click 'Save'.

3: Forward your port. In your router's setup utility, forward port 21 to the LAN-side IP address of the LinkStation.





File Edit View History Bookmarks Tools Help



ftp://joe:password@64.172.93.21/share



To access your LinkStation remotely, type *ftp://username:password@ipaddress/share* into a web browser where

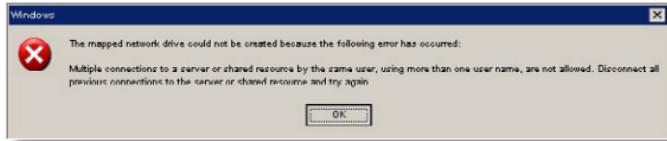
username - is your username

password - is your password

ipaddress - is the WAN side IP address of your router (can get this from your ISP or go to <http://whatismyip.com>)

share - is the name of the folder on your LinkStation that you're accessing.

Troubleshooting Multiple Shares



secure, restricted share. Due to a constraint in Microsoft Windows, only one set of login credentials can access or map drive letters for a network resource such as the LinkStation. As such, only one username and password can be used while mapping drives to a PC. If unsecure, unrestricted shares are mapped and then an attempt to map a secure, restricted share is made from the same PC, then this error will occur. To prevent this, you must create all mapped shares using the same login and password information. Please follow the steps on the next page to remedy this problem.

When accessing multiple shares from a Windows PC, you may see this error message.

This is caused by having multiple shares to the same resource using different login credentials. The error occurs when connecting to at least one

Mapping Multiple Shares



When mapping any share, select the *Connect using a different user name* option. A login and password prompt will appear. Use the username and password required by any secure, restricted shares for *all* shares. All mapped shares on a single PC must use the same username and password!



If only unrestricted shares are being mapped, then it's not necessary to set a username and password for shares. Multiple mapped drives to unrestricted shares can exist without a username or password as long as no restricted, secure shares are mapped. If an unrestricted share and a restricted share are being mapped or accessed, use the restricted username and password for the unrestricted share login by using the *Connect using a different user name* option. This will allow a Windows PC to access both shares without any problems.

Disk Errors

If LinkStation encounters a disk error, it will be reported in the LinkStation status on the top of any of the Web-Based configuration screens. Run a *Disk Scan* in the event of this error. If that doesn't work, try a reformat. Reformatting the drive will delete all of the data on it, so try to back up any data you can before beginning. Finally, if none of the above help, then please contact Technical Support for further assistance.

LED Error Codes:

During normal operation, the Status LED is lit blue. It flashes during boot and shutdown. It will flash red in case of errors, alternating between flashing for 1 second (tens digit) and 1/2 second (ones digit). Combine the number of longer flashes with the number of shorter flashes to produce a two digit error code:

- | | |
|----------------------------------|------------------------------------|
| E00 - (no flashes) MPU failure. | E20 - circuit board error. |
| E01 - DRAM data line problem. | E21 - internal controller error. |
| E02 - DRAM address line problem. | E22 - mount error. |
| E03 - RTC chip error. | E23 - hard disk is malfunctioning. |
| E04 - failed to extract kernel. | |
| E06 - corrupted firmware. | |
| E07 - a hard disk was not found. | |
| E10 - UPS error. | |
| E11 - fan error. | |
| E15 - hard drive I/O error. | |
| E16 - no hard disks detected. | |
| E17 - internal controller error. | |

LED Information Codes:

The status LED will flash amber to give information codes. Like the error codes, these alternate between flashing for 1 second (tens digit) and 1/2 second (ones digit). Combine the number of longer flashes with the number of shorter flashes to produce a two digit information code:

I19 - erasing disk.

I23 - initializing system.

I25 - updating firmware.

I26 - initializing web configuration.

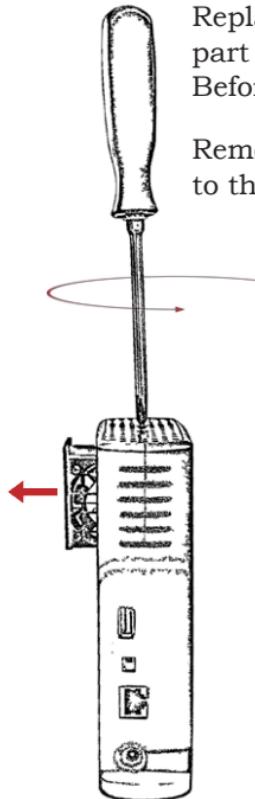
I27 - checking USB disk.

I28 - formatting USB disk.

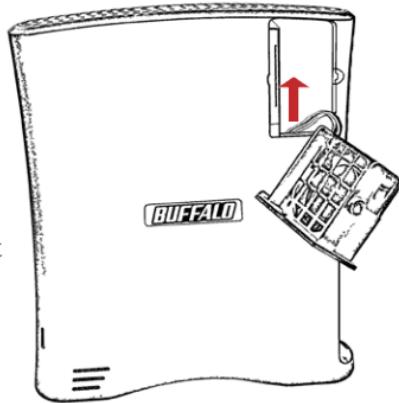
Fan Replacement

Replacement fans for the LinkStation Pro are available from Buffalo Technology. The part name is “OP-FAN/LS”. This is the only fan you should use in your LinkStation! Before replacing the fan, power down the LinkStation.

Remove the screw from the top of the LinkStation. The fan will now slide straight out to the side. For detail, refer to the Quick Setup Guide of OP-FAN/LS.



Unplug the connector by pulling it straight up.



Data Transfer Rates:	10/100/1000 Mbps
Hard Drive:	3.5" SATA
Main Connector Type:	RJ-45 (Ethernet)
USB Interface:	USB 2.0/1.1
Protocol Support:	TCP/IP SMB/CIFS, HTTP, FTP, AppleTalk (File Sharing) HTTP (Management) NTP (Time Synchronization)
Power Supply:	100-240V 50/60Hz
Client OS Support:	Windows® Vista™/XP/2000, Windows XP MCE 2005/2004, Windows Server 2008/2003, Mac OS® 10.3.9 or later
Power Consumption:	Avg.17W, Max.24W (with no USB devices connected)
Dimensions:	6.9" x 1.8" x 6.1" (175 x 45 x 156 mm)
Weight:	~2.5 pounds (1.1 kg)
Operating Environment:	41°- 95° F, 5°- 35° C; 20-80% non-condensing

Administrator Name: *admin* (cannot be changed)

Password: *password*

Default Shared Folder: *share*

Recycle Bin: *enabled* for share

DHCP Client: *Automatic*. If no DHCP Server is available, then the IP address is assigned randomly to the 169.254.xxx.xxx subnet with subnet mask 255.255.0.0.

Three default groups are always available on the LinkStation: *hdusers*, *admin*, and *guest*. These groups may not be deleted or edited.

Microsoft Network Group: *WORKGROUP*

Ethernet frame size: *1518 bytes*

AFP: *enabled*

FTP Server: *disabled*

NTP: *enabled*

Print Server: *enabled*

WebAccess: *disabled*

Time Machine: *disabled*

DLNA Media Server: *disabled*

BitTorrent: *disabled*

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Buffalo Technology provides technical support in English, German, French, Italian and Spanish. For opening hours and relevant telephone numbers, please go to:

www.buffalo-technology.com/contact

GPL Source Code Information

Source code for Buffalo products that use GPL code is available at <http://opensource.buffalo.jp>.