

**User Manual**  
**LS-CL**  
**LinkStation EZ**

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

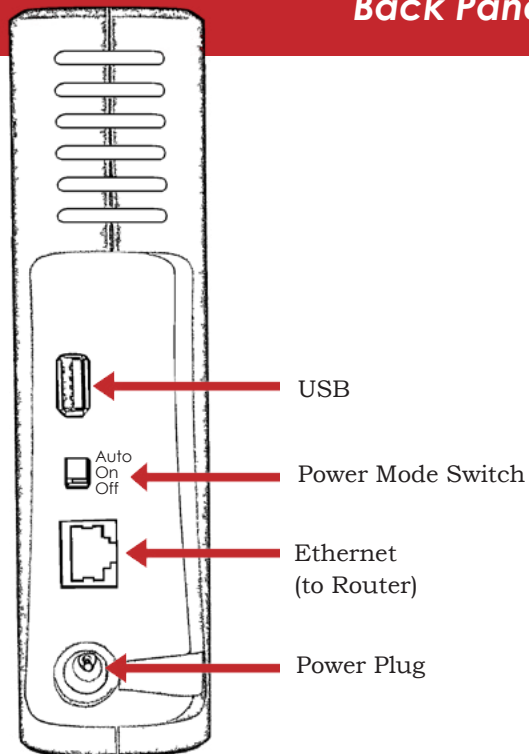
Because we're constantly updating our products, the images and text in this manual may vary slightly from the images and text displayed by your LinkStation. These changes are minor and should not affect the ease of setup adversely. As time passes, future user interfaces, updated software, and later versions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

For best results, attach the LinkStation EZ to an uninterruptable power supply (UPS). Back up all your stored files regularly. See pages 51 - 55 for instructions on how to use the LinkStation EZ'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 70 and 71.

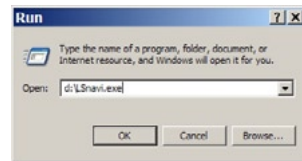
Back Panel Layout .....	4
Installation .....	5
Power Mode Switch .....	8
Using your LinkStation with a PC .....	9
Using your LinkStation with a Mac® .....	13
Add USB Devices .....	17
Front Panel Layout .....	18
Function Button .....	19
Advanced Settings .....	23
Network Settings.....	25
Disk Management.....	27
Shared Folders .....	32
Groups .....	36
Users .....	37
Passwords .....	38
WebAccess.....	39
Installing a Printer.....	44
Troubleshooting Multiple Shares.....	49
Backups .....	51
Time Machine.....	55
Maintenance & Notification.....	56
System Status .....	61
Client Utility .....	65
Troubleshooting.....	67
Technical Specifications.....	69
Contact Information (USA) .....	70
Contact Information (Europe) .....	71
GPL Information .....	72

## Back Panel Layout



Insert the LinkNavigator CD into your computer's CD-ROM drive.

On a PC, setup should automatically launch. If it does not, manually launch `setup.exe` by pressing *Start* and selecting the *Run...* option. When the *Run* dialog opens, type **d:\LSnavi.exe** (where d is the drive letter of your CD-ROM drive). Press *OK* to continue.



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





Choose your preferred language. Mac users can skip this step.

Press the *Begin Installation* button. Click *Next* to step through the installation.

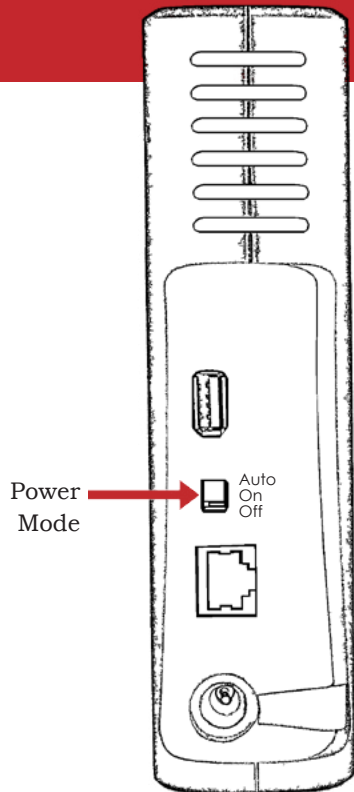




The wizard will guide you through installation. Follow the directions on each screen and continue pressing *Next* to step through the installation.

When installation is complete, you may close the installation window.





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.

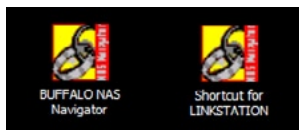
You must have installed the NAS Navigator software on your PC for this feature to work. Otherwise, if you move the switch to “auto”, your unit will power down by itself and you will have to manually turn it back on.

Also note that the unit needs to be powered on if you want to use the Web Access feature. When using Web Access, it is best to leave the Power Mode switch set to “On”.

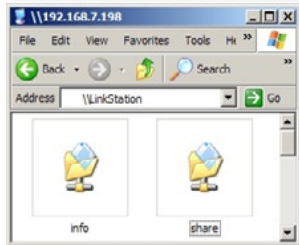
Move the switch to the “Off” position to turn the LinkStation off. It will take about 35 seconds to shut down. Do not unplug or interrupt power to the unit until shutdown is complete and all LEDs are off.



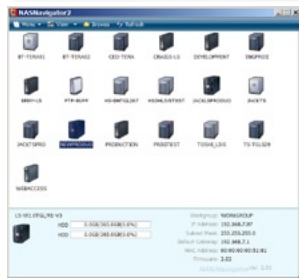
# Using your LinkStation with a Windows PC



Two new icons will be on your desktop: *Shortcut for LinkStation* and *Buffalo NAS Navigator*.



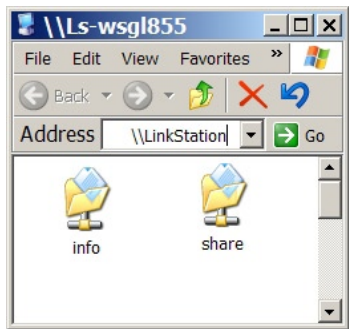
Clicking *Shortcut for LinkStation* takes you directly to the folders on your LinkStation. *Share* is the main folder that you can put files and folders in. *Info* contains a copy of your user manual.



The *Buffalo NAS Navigator* icon opens the LinkStation's client utility. Turn to page 65 for more on using the NAS Navigator client utility.

## To Access LinkStation Data from a PC:

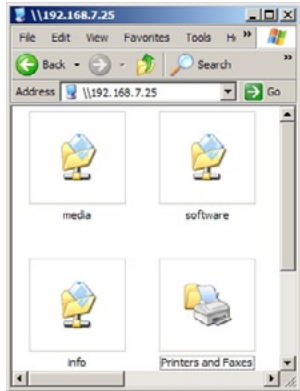
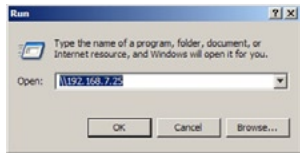
Your LinkStation uses folders to hold data. The default folder is called “share”. This folder is where you place data that you want to share with other users. You can create additional folders using the *Shared Folders* option. To start using your LinkStation, you can either click on the *Shortcut for LinkStation* on your desktop, or you may just use *drive L* in My Computer, which setup has mapped to the default share in your LinkStation.



# Accessing LinkStation Data from your PC

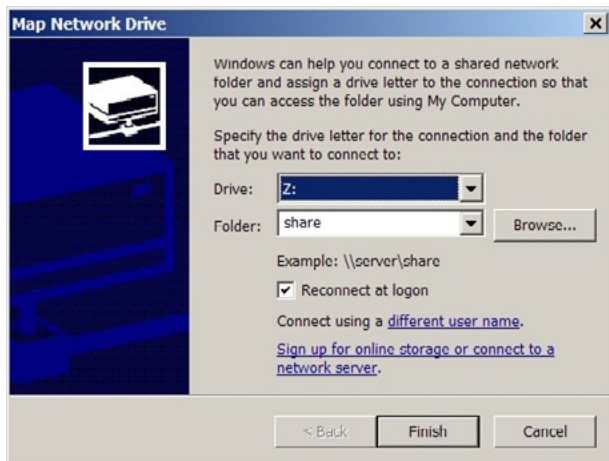
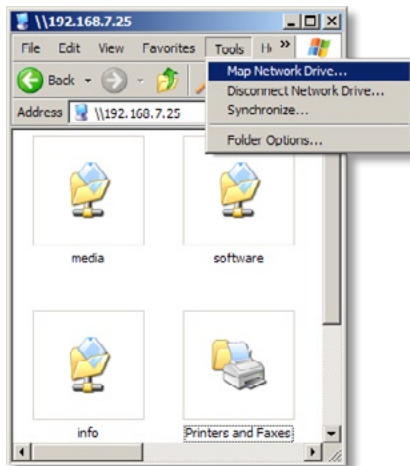
You can map additional drive letters to shares on your LinkStation. From the *Start* menu, select *Run....* Enter your LinkStation's hostname (if you don't know it, you can get it from the NASnavigator2 utility) or IP address. Press *OK*.

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

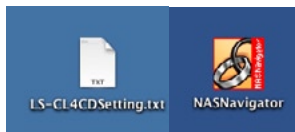


# Accessing LinkStation Data from your PC

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 (page 21) 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.

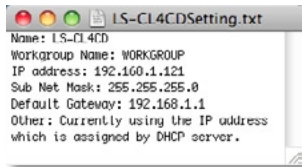


# Using your LinkStation with a Mac



After installing the LinkNavigator software, your Mac will have two new icons on the desktop.

The *LS-CLSettings.txt* file contains the IP address of your LinkStation. *NAS Navigator* is the LinkStation's client utility.



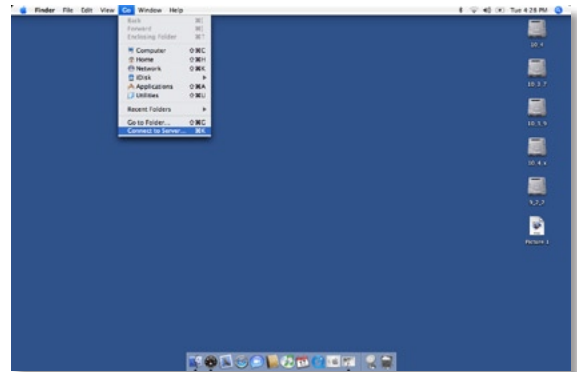
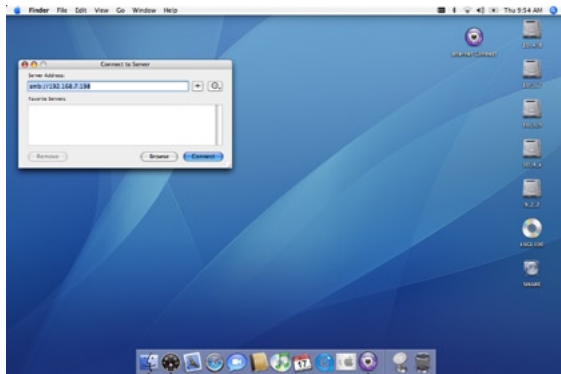
With the information in the *LS-CLSettings.txt* file, you can easily connect to the LinkStation from any of your computers on your local network.



The *NAS Navigator* icon opens the LinkStation's client utility. See page 65 for more on using the NAS Navigator client utility.

# Accessing LinkStation Data from a Mac

You can add a link to your LinkStation's share folder to your desktop by adding it to the Mac's server list. Begin by clicking *Go*, and then choose *Connect to Server*.

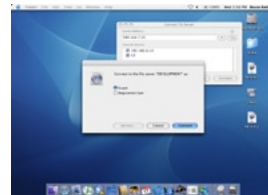


In the *Server Address* field, enter your LinkStation's IP address in the form *smb://ipaddress* (where "ipaddress" is your LinkStation's IP address), and click *Connect*.

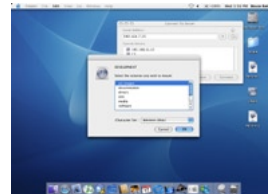
You can get your LinkStation's IP address from the *LS-CLSettings.txt* file on your desktop, or see page 16.

# Accessing LinkStation Data from a Mac

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. A link to it



will appear on your desktop.



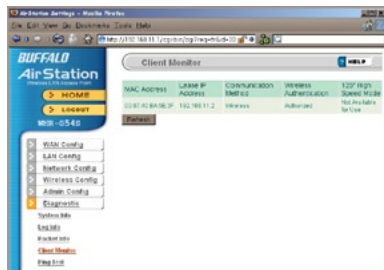
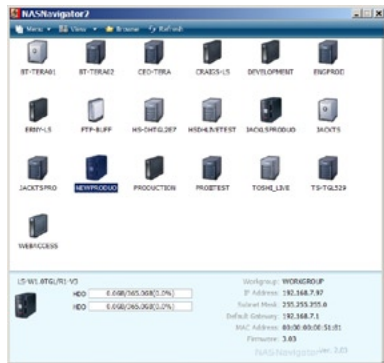
# Accessing LinkStation Data from a Mac

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 Navigator client utility (included on your CD) to find your LinkStation(s). Just click on the icon for your LinkStation and you'll be able to read its IP address.

The *LS-CLSettings.txt* file on your desktop contains the IP address of the LinkStation at the time that the setup program was run.

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.





LinkStation EZ has a USB 2.0 port on the rear. This port can be used for adding an external USB Hard Drive or a USB Printer, or for connecting to a UPS. LinkStation will share connected USB devices, allowing everyone on the network to use them. To connect a USB hard drive to your LinkStation, simply plug it into the USB port.

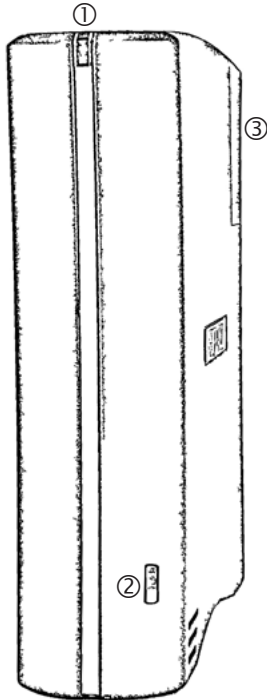
Once your USB hard drive is connected, turn to the “Disk Management” section of this manual for information on configuring your LinkStation to use it.

To configure a USB printer, see “Installing a Printer”.

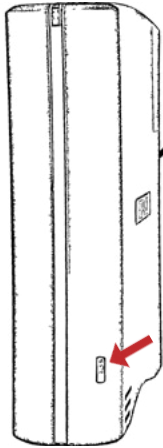
To configure UPS settings, see page 57.

Note that only one USB device may be used at a time. USB hubs are not supported.

# Front Panel Layout

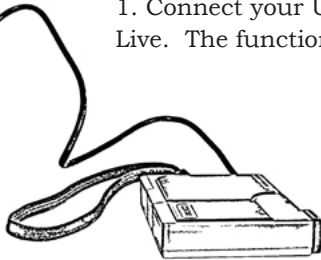


- ① Power LED - Blue. Lit when the LinkStation is on. Flashes during boot or shutdown.
- ② Function Button/LED - See the next page for instructions on using the function button.
- ③ Replaceable fan



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

1. Connect your USB device to the port on the back of the LinkStation Live. The function button will glow solid blue for 60 seconds.



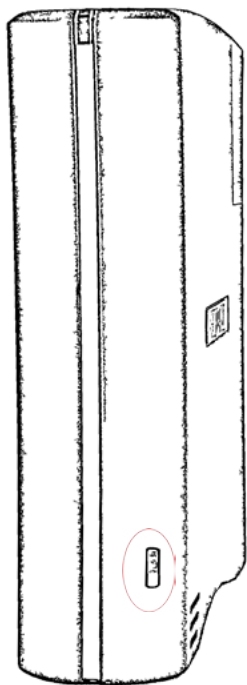
2. While the Function button is still glowing blue, press it once.

The following folder is created automatically:

*DirectCopy/pictures/yyyyymmdd*

where *yyyy* is the year, *mm* is the month, and *dd* is the day.

The following filetypes will be copied to the folder: avi, divx, asf, mpg, mpe, m1v, vob, mts, m2ts, m2t, mpeg, mpeg2, vdr, spts, tp, ts, 3gp, mov, m4v, wmv, dvr-ms, xvid, mp4, m4v, jpg, jpeg, gif, png, tif, tiff, yuv, bmp, mp3, mpa, wma, aac, apl, ac3, lpcm, pcm, wav, m3u, m4a, mp4, m4b, aif, aiff, flac, ogg, mp2, mp1, mp4.

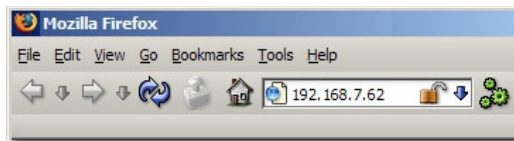


**Initialization** - You can easily bring your LinkStation EZ back to factory settings with the following steps.

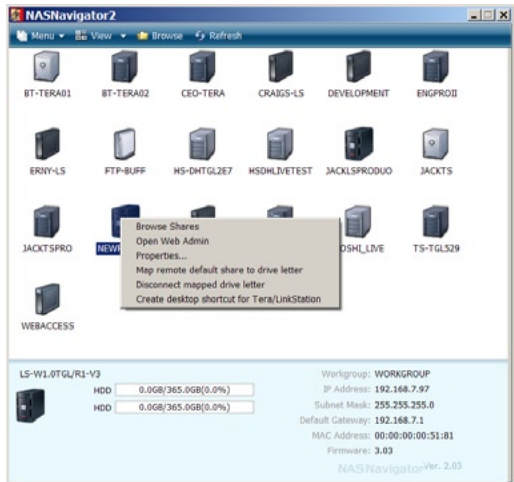
1. Move the power switch to the 'Off' position. The LinkStation EZ will shut down after about 45 seconds.
2. While holding down the function button, move the power switch to the 'On' position. The function button will begin to flash blue.
3. While the function button is still flashing, hold it pressed down for six seconds.

**Dismount** - Before disconnecting USB devices from the LinkStation EZ, they should be dismounted. Hold the function button down until the function LED 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!

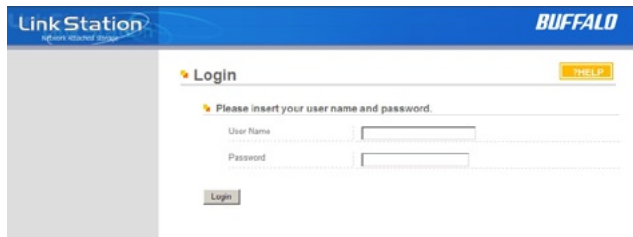


The Web Admin tool may be accessed at any time by typing the IP address of your LinkStation into the URL bar of a browser running on a computer connected to the same network as the LinkStation.



You may also open the Web Admin from NAS Navigator by right-clicking on your LinkStation and choosing *Open Web Admin* from the menu.

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 *OK* button when finished.



The screenshot shows the login interface for a Buffalo Link Station. At the top left, it says "Link Station" with a small logo below it. At the top right, it says "BUFFALO". Below the header, there is a "Login" section with a yellow "HELP" button. A message says "Please insert your user name and password." There are two input fields: "User Name" and "Password". Below the fields is a "Login" button.

User name: *admin*

Password: *password*

Instructions for changing your password may be found on page 38.

Welcome to your LinkStation's Web Admin tool! Bookmark this page in your browser so it can be easily accessed for future configuration changes. If the LinkStation's IP Address changes, you will need to recreate the link. You can also get here by typing `http://LinkStation_Name` into a Web browser, where `LinkStation_Name` is the name (hostname) of your LinkStation.

You are now at the *Home* screen. Notice that the *Home* button is lit up in yellow. You can navigate this menu by clicking on the buttons at the left of the screen. Here at "Home", you can see basic information about your LinkStation's current configuration. To exit Web Admin, click on *logout* or close the browser window.

Link Station **BUFFALO**

Home **HELP**

LinkStation Name	701
Model Name	FW 1.00
IP Address	192.168.1.130
Current Date and Time	2009/9/12 13:41:34
HDD Space Used	Disk 1 9.00 GB / 458.16 GB (0.00 %)

Copyright 2002-2008 (C) BUFFALO INC. All Rights Reserved

## Basic

You may modify your LinkStation's hostname and description under *Hostname Setup*. A friendly, easy-to-remember name (e.g. "LinkStation") is recommended.

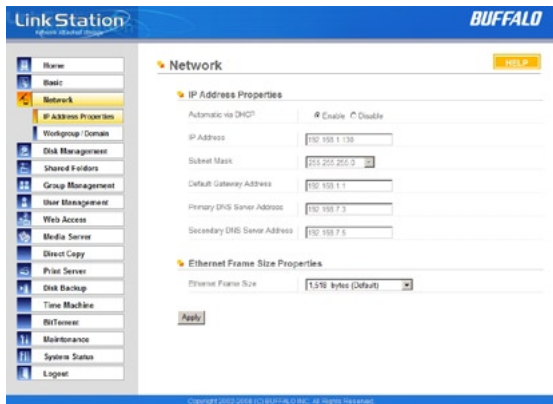
Make sure that the date and time are correct in *Date and Time Setup*. To synchronize time settings with those in your computer, press *Use Local Time*. To have your system time automatically set by an NTP server, enable *NTP Server* and enter an IP Address for an NTP server (e.g. 192.43.244.18) or click on the box below to use the supplied default NTP server.

Ensure that both the *Display Language* and the *Windows Client Language* are set to languages that you're comfortable with.

Once desired fields have been completed, press the *Apply* button.





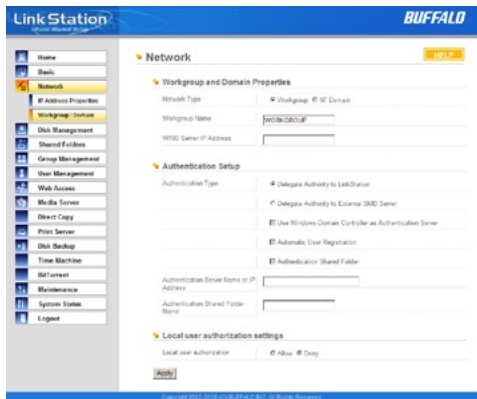


In most networks, LinkStation will get its IP Address automatically from a DHCP server. You may disable DHCP here if you would rather set a static IP address manually. If DHCP is disabled and an IP Address is not set manually, it will default to *169.254.xxx.xxx* with subnet mask *255.255.0.0*. The LinkStation's *IP Address, Subnet Mask, Default Gateway Address, and DNS Server address* may all be entered manually under *IP Address Properties*.

*Ethernet Frame Size* may also be set manually on this page. Only use JumboFrame settings when operating in a Gigabit environment where all other clients support the same JumboFrame setting.

Click *Apply* after making any changes.

# Network (Workgroup/Domain)



If you do not participate in a Domain network, then please leave the *Network Type* selected as *Workgroup* and *Workgroup Name* set to the name of your local workgroup.

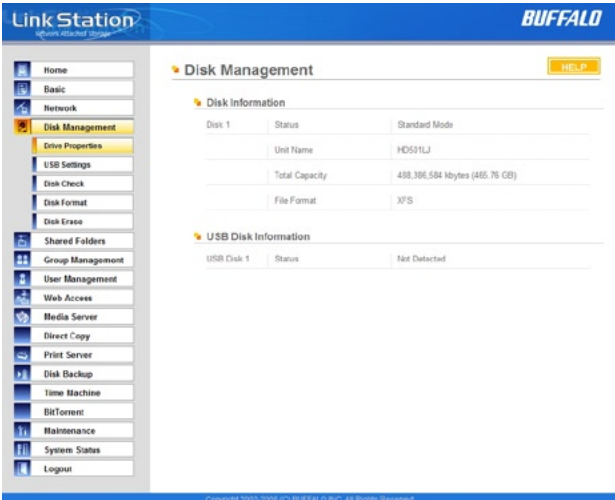
To make your LinkStation a member of a workgroup or an NT domain, enter the appropriate information into the fields on this page and click *Apply*.

If using *NT Domain*, LinkStation must be added as a member computer in the Domain Server.

Setting *NT Domain* for network type integrates the LinkStation with a Windows NT server. The LinkStation Pro participates as a member device in the Domain network, allowing the LinkStation to use Users and Groups from the Domain.

Once you have finished, press *Apply*.

This page shows the properties for the drives in your LinkStation EZ. If you have a USB hard drive plugged into the linkstation, its properties will appear here as well.



The screenshot shows the LinkStation Buffalo web interface. The left sidebar contains a navigation menu with the following items: Home, Basic, Network, Disk Management (highlighted), Drive Properties, USB Settings, Disk Check, Disk Format, Disk Erase, Shared Folders, Group Management, User Management, Web Access, Media Server, Direct Copy, Print Server, Disk Backup, Time Machine, BitTorrent, Maintenance, System Status, and Logout. The main content area is titled "Disk Management" and includes a "HELP" button. It is divided into two sections: "Disk Information" and "USB Disk Information".

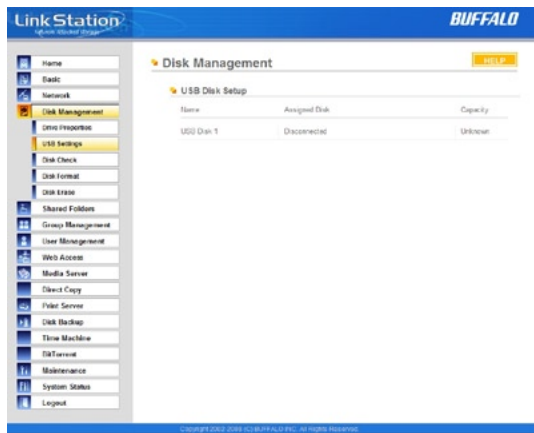
**Disk Information**

Property	Value
Disk 1 Status	Standard Mode
Unit Name	HD531LJ
Total Capacity	488,386,584 bytes (465.76 GB)
File Format	NTFS

**USB Disk Information**

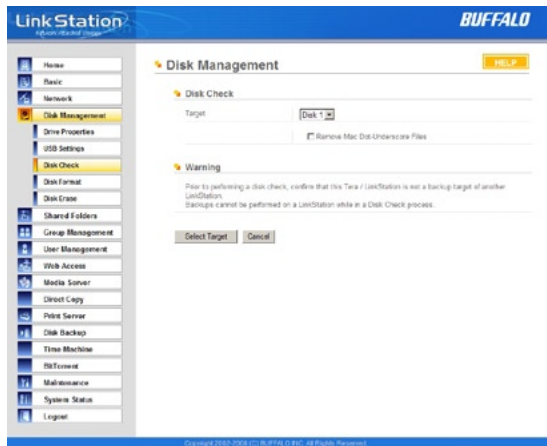
Property	Value
USB Disk 1 Status	Not Detected

Copyright 2000-2008 (C) BUFFALO INC. All Rights Reserved.

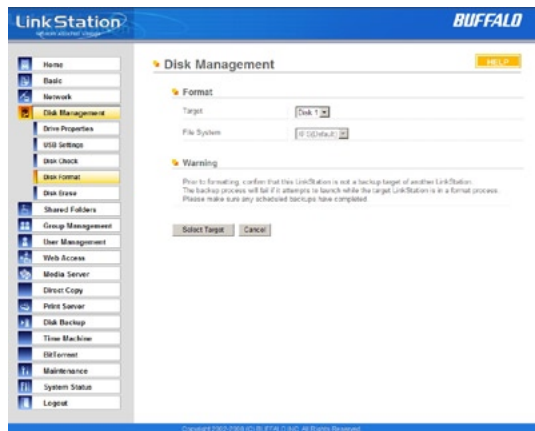


From here you can see your USB hard drive's system information. If the hard drives' information isn't displayed properly, try restarting your USB hard drives and then restarting your LinkStation. Some USB hard drives must be reformatted from within LinkStation before they can be assigned shares. Select *Disk Format* from the left-side menu to format your USB hard disk(s).

Note: Reformatting a drive will erase all data on it! Back up any data on the drive before reformatting it.



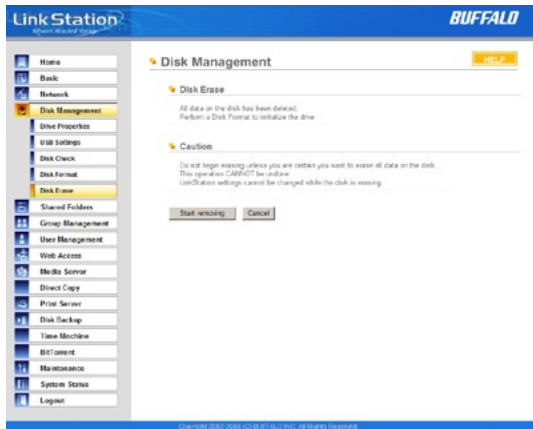
*Disk Check* checks any of your hard drives for errors. To use *Disk Check*, select the disk that you want to check from the target pulldown and click *Select Target*. Then click on *Start Disk Check*.



To format a hard drive or array, select it from the *Target Disk* drop box. Choose the file system desired from the *File System* dropbox (internal drives can only be formatted with XFS). Note that FAT32 has a 4 gigabyte filesize limit for individual files. If you choose FAT32 for your file system, you will not be able to store single files larger than 4 gigabytes on the drive. Use of the *XFS* or *EXT3* file systems is recommended. Press *Select Target Disk* when done, and then *Start format*.

Depending on the size of the target hard disk or array, a disk format may take several hours to complete. Shares on the LinkStation will not be accessible during the disk format.

Note: Reformatting a drive will erase all data on it! Back up any data on the drive before reformatting it.



To remove all data from a Disk, use *Disk Erase*. Once erased, this data cannot be restored.

Note: Disk Erase may take several hours to complete.

The screenshot shows the Buffalo Link Station web interface. The top navigation bar includes the 'Link Station' logo and the 'BUFFALO' brand name. A left-hand sidebar contains a menu with options: Home, Basic, Network, Disk Management, Shared Folders (highlighted), Shared Folders Setup (highlighted), Service Setup, Group Management, User Management, Web Access, Media Server, Direct Copy, Print Server, Disk Backup, Time Machine, BitTorrent, Maintenance, System Status, and Logout. The main content area is titled 'Shared Folders' and features a 'HELP' button. Below this is a 'Shared Folders Setup' section with a table of shares:

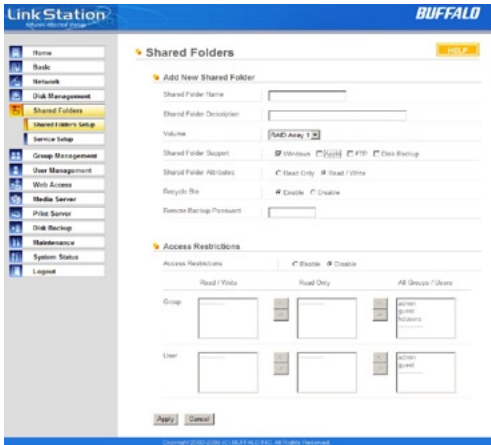
<input type="checkbox"/>	Disk or Array	Shared Folder Name	Shared Folder Description
<input type="checkbox"/>	1 2	info	LinkStation Utilities
<input type="checkbox"/>	1 3 Disk 1	share	recovered

At the bottom of the table are 'Add' and 'Delete' buttons. The footer of the interface reads 'Copyright 2002-2008 (C) BUFFALO INC. All Rights Reserved.'

To add new shares on your LinkStation, select *Shared Folders* from the left side menu, and then click the *Add* button under *Shared Folders Setup*.

To delete a share or shares, check the checkbox next to the shares you'd like to delete, and press the *Delete* button. Deleting shares will remove the share and erase all of the files and folders inside that share.



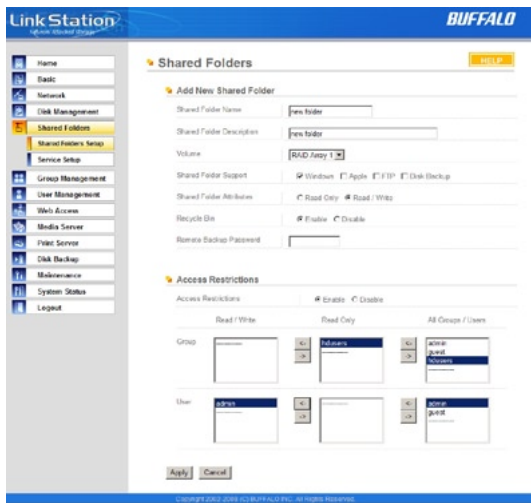


To add a new shared folder, enter a name for it in the *Shared Folder Name* box and choose which *Disk Space* it will reside in. You may also choose which operating systems and features the share will support by putting the appropriate checks next to *Shared Folder Support*, and whether the share supports the Recycle Bin by putting a selecting *Enable* or *Disable*. Enter a *Shared Folder Description* and a *Remote Backup Password* if desired. Click *Apply* to build the new shared folder.

AppleTalk support is available for use with legacy Macs. Checking “Apple” by *Shared Folder Support* turns on AppleTalk, letting you use your LinkStation with older Macs. Note that AppleTalk files are limited to 2GB maximum filesize and 32 characters for filenames. If a folder with AppleTalk

on is accessed from a modern OS through SMB, then these limitations will not apply.

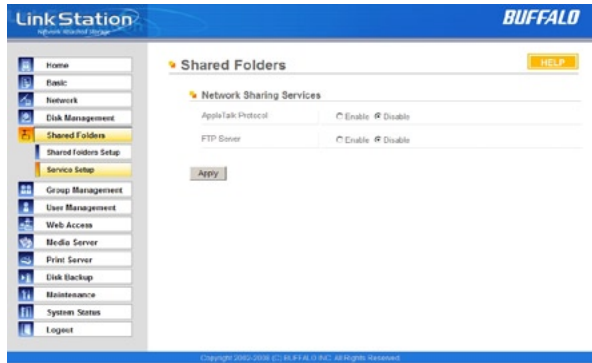
*Remote Backup Password* will set a password on this share for other LinkStations that want to use it as a remote backup target. This password will not affect users attempting to access the share; it only affects remote LinkStations trying to access this share for to store backup files on it.



To use *Access Restrictions* for a share, select *Enable*.

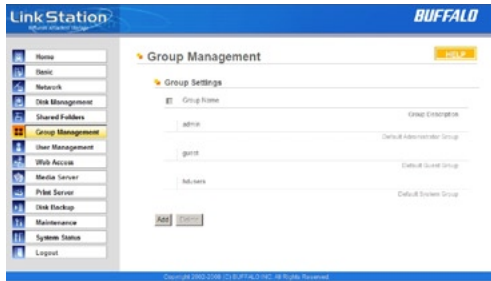
Highlight groups or users in the *All Groups/ Users* column and use the left-pointing arrow buttons (located just to the left of each box) to move individual groups or users from the *All Groups/Users* column to the *Read Only* box (if you want to give them read access only) or all the way to the *Writable* box, if you want to give them full access to the share. Right-pointing arrows will move highlighted users or groups back to the right.

Click *Apply* when you have your groups and users in the appropriate boxes.



To allow FTP Access to your LinkStation, choose *Enable* for *FTP Server*. To enable legacy AppleTalk support, choose *Enable* for *AppleTalk Protocol*. Click *Apply*.

If enabled, FTP lets users access the LinkStation from anywhere. Type `ftp://username:password@IP_address` into a browser window to access the LinkStation remotely. Users will have access to shares that they have local access rights to on the LinkStation. Your network administrator may need to forward traffic on port 21 of the router to the LinkStation's LAN-side IP address for FTP to work over the Internet. Enabling FTP is not recommended unless you've configured access restrictions.



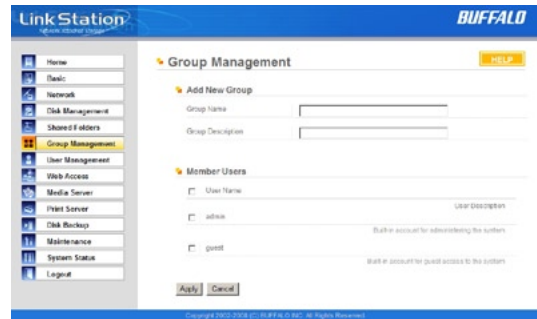
Groups allow for easier management of permissions in some networks, specifically networks with a lot of users in different departments.

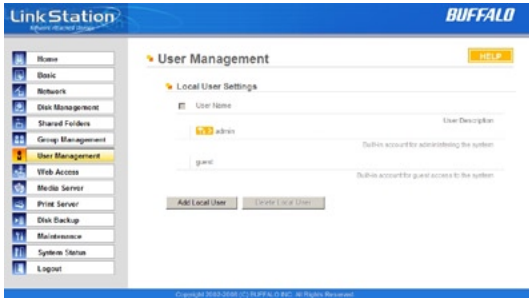
To *Delete* a group, put a check next to its name and click *Delete*. To add a group to your LinkStation, click *Add*.

Add a name and a description to the *Add New Group* fields. Put checks next to each *Member User* that you want to be part of the group. Click *Apply* when your group is set up the way you want it.

Domain Groups are only visible if the LinkStation is participating in an Domain network.

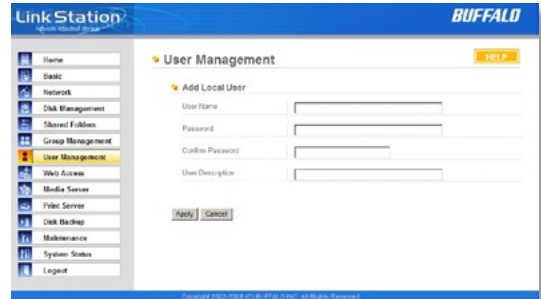
Members can be added or removed from a group at any time by editing the group. This is done by clicking on the *Group name* on the main Group Settings page.



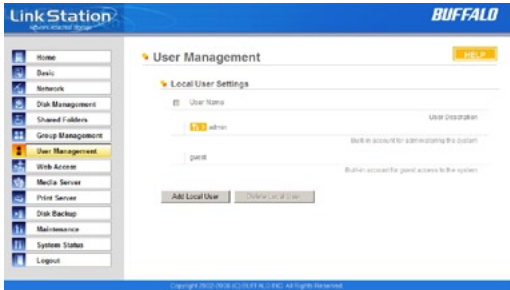


LinkStation is preconfigured with two users, *admin* and *guest*, out of the box. The *admin* and *guest* user accounts cannot be deleted. To delete any other user, put a check next to their name and click *Delete*. To add a new user, click *Add*.

The *Add New User* dialog will appear. Enter a *User Name*, *Password*, and *User Description* for the new user and click the *Apply* button. If a user will be accessing the LinkStation from a Windows 95/98 computer, their password should be 15 characters or less. Mac OS 8 and OS 9 users's passwords should be 9 characters or less. Users of other OSs may have passwords of up to 20 characters. Note: In a Domain network, password changes will need to be made on the Domain Controller.

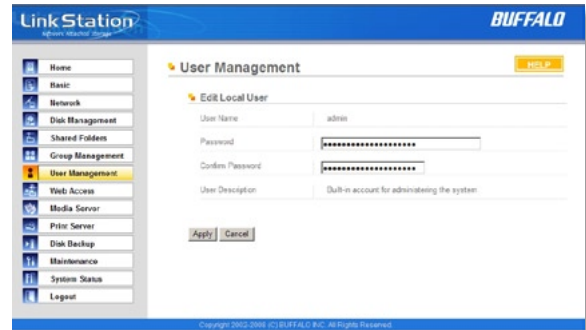


# Changing User Passwords

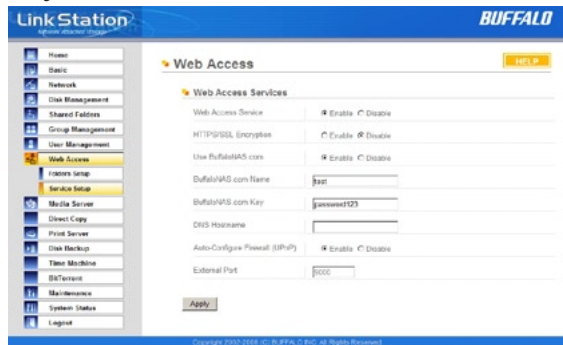


To change an account's password, click on the name of the account under *Local User Settings*. Note: if a user name and password are used to log into a user's windows computer or domain, the same user name and password should be used when creating the user's account on the LinkStation, or problems accessing shared folders may occur.

Enter the desired new password in both boxes and click *Apply*.



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.



WebAccess is set up from within the Web Admin. First, select 'Web Access', and then 'Service Setup' from the menu on the left.

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

You may enable SSL Encryption if desired.

Using 'BuffaloNAS.com' is recommended.

Otherwise, you'll have to manage your own DNS settings.


'Auto-Configure Firewall' is also recommended if your router supports UPnP (most do since 2001). If you choose not to enable this, 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.

# Configuring WebAccess



Select 'Folders Setup' in the left-side menu. Any shares on your LinkStation will appear on the list to the right. Click on the  icon beside it to select a share for web access.

Choose your desired level of Web Access from the 'Web Access Settings' dropbox:

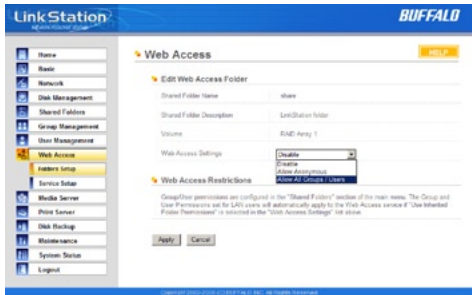
'Disable' will prevent remote access to this share through WebAccess. This is the default setting.

'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.

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

'Use Inherited Folder Permissions' will allow people with an account on the LinkStation to access the share remotely only if they have read permissions on the specific share that they're accessing.

Click the *Apply* button to save your changes.



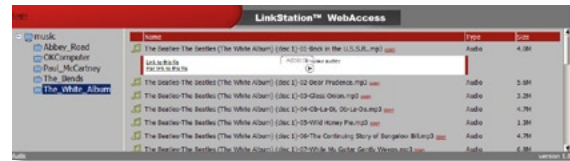


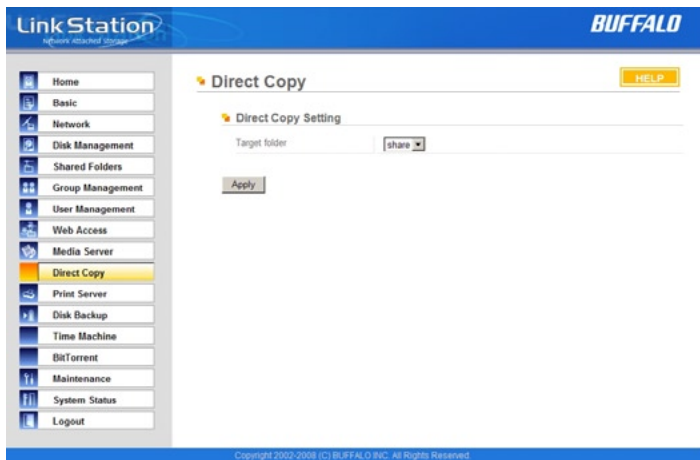




To access individual folders on the right, click on their *open* links.

Clicking on individual files will give you other options, depending on the filetype. Clicking on the *Audio* link at the bottom left corner of the page will give you options for playing music files, including the opportunity to launch a Flash-based music player that will stream your audio files directly through the Web interface.

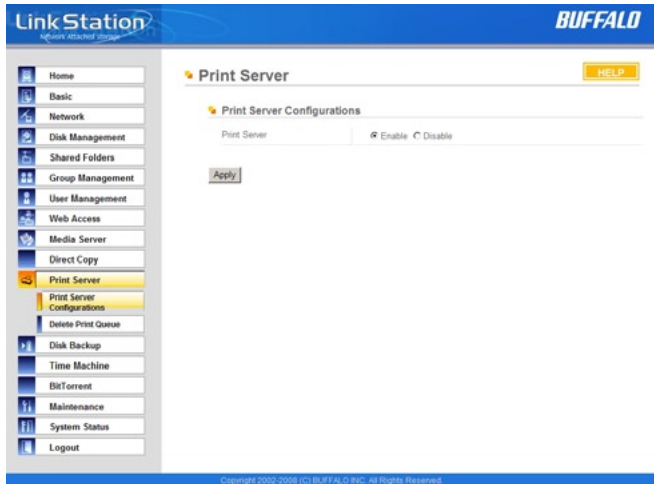




To use Direct Copy, plug a USB device into the LinkStation and press the function button on the front within 60 seconds. Media files will be copied to the LinkStation automatically.

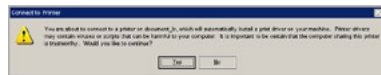
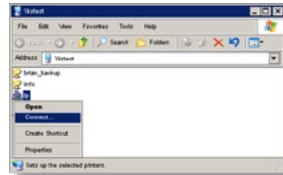
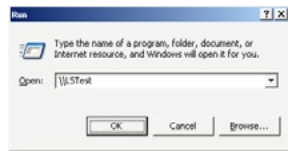
On this page, choose the folder on the LinkStation that Direct Copy copies files to and click *Apply*.

If a USB printer is plugged in to your LinkStation, you can easily add the printer to any Windows PC on your network. Follow these steps for each PC that you want to be able to access the printer.

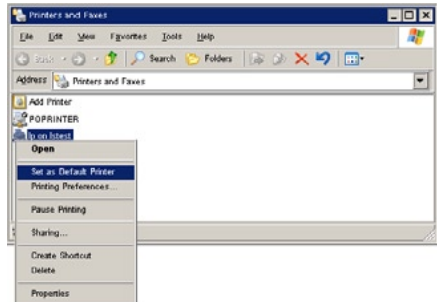
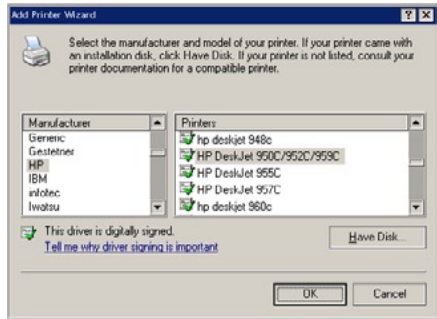


- To begin, enable the print server in the Web Admin for your LinkStation.

- Access the LinkStation by pressing *Start*, selecting the *Run...* option, and entering `\\LinkStation_Name` (where `LinkStation_Name` is the DNS name of your LinkStation). Press the *OK* button when finished.
- Right click on the *lp* icon and select *Connect*.
- You may receive a warning about installing from a trustworthy source. If you receive this message, press *Yes* to continue.
- You will receive a warning that the server does not have the proper drivers. Press *OK* to continue.



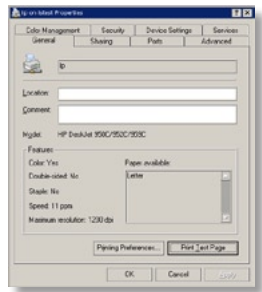
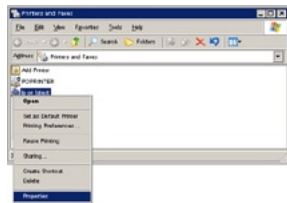
- The *Add Printer Wizard* will launch. Select the proper driver for your printer. If the specific printer is not in the list, you will be required to insert the CD that came with your printer into your PC's CD-ROM drive and press the *Have Disk* button. Refer to your printer documentation for further information on installing your printer if necessary. Press *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* printer icon and selecting the *Set as Default Printer* option from the *File* drop-down menu.



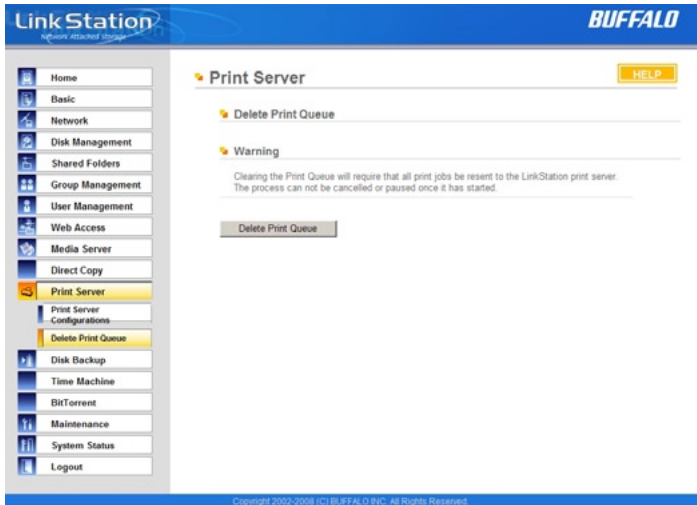
- To print a test page or configure additional printer settings, right click on the *lp* printer icon and select *Properties*. This will open the printer's driver properties page.
- Press the *Print Test Page* button to print a test page. You can also browse through the available settings for the printer.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



# Print Server (Delete Print Queue)



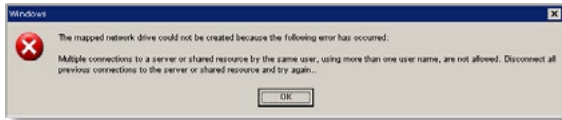
If a corrupt print job is sent to a printer, printing may suddenly fail. If your print jobs seem to be locked up, clearing the print queue may resolve the issue.

To delete the print queue, press the *Delete* button. 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 printing to the printer, then check the printer manufacturer's documentation for troubleshooting information. Also, verify that the USB cable is securely fastened to both the printer and the LinkStation. Finally, you may try turning the LinkStation off, turning the printer off, turning the printer back on, and then turning the LinkStation back on again.



# Accessing Multiple Shares from a single PC

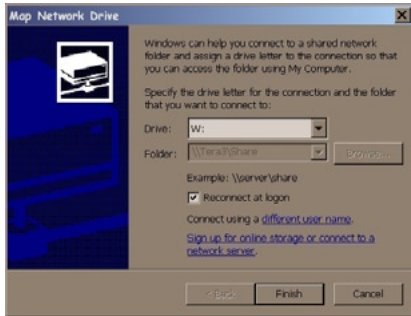


When accessing multiple shares to a Windows PC, you may see this error message.

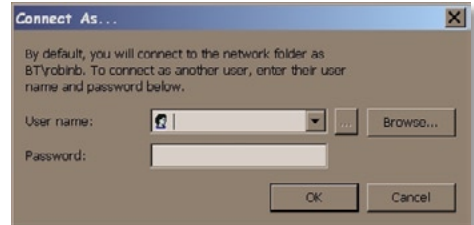
This is caused by having multiple shares to the same resource using different login credentials.

The error occurs when connecting to at least one 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, 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.

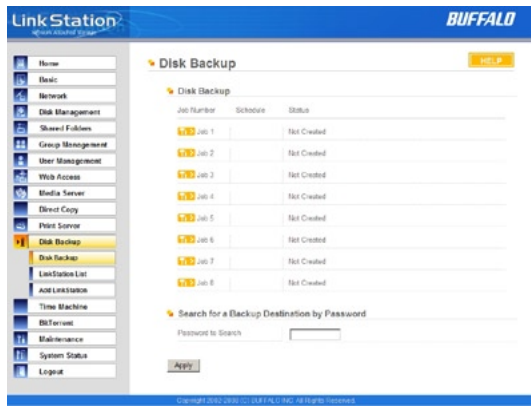
## Mapping Multiple Shares



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 both 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.



The LinkStation's built-in backup utility can back up files on your LinkStation to an attached USB hard drive or to another LinkStation on the local network. For best results, reformat attached USB hard drives with ext3 before use as backup storage.

If backing up to another LinkStation, then the target LinkStation should be connected to the same network as the LinkStation doing the backup. If the target LinkStation is on a different subnet or network, then you'll need to create a VPN connection between the two networks before it can be used as a backup target.

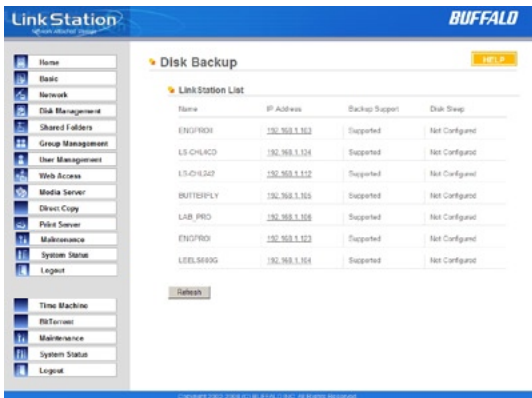
To create a backup job, click on a job number. The *Edit Backup Job* dialog will appear.



A *Backup Job* can run regularly on a daily or weekly schedule, or immediately by appropriate choices in the *Backup Job Schedule* field. *Date* and *Time* for the backup may be entered, and *Encryption* and *Compression* enabled or disabled. Enable *Overwrite Backup* to have each scheduled backup write over the previous backup, or *Differential Backups* to backup only files changed since the previous backup.

Select the folder to be backed up from the *Local Backup Shared Folder* dropdown, and the destination for the backup files from the *Destination Backup Shared Folder* dropdown. The destination folder may be on a USB drive attached to the LinkStation, or another LinkStation on the network. Click on *Select* to approve the backup targets.

Click the *Apply* button when your backup job is set up the way you want it, or *Clear Job* to stop a job from running again.

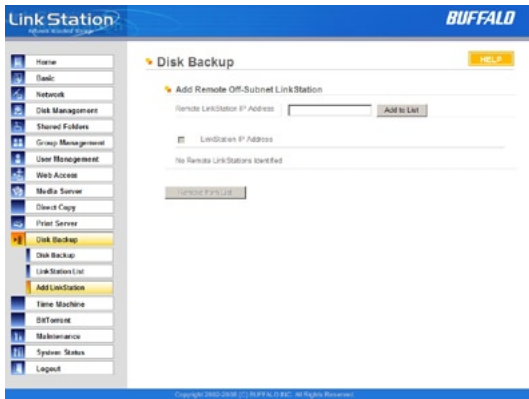


The screenshot shows the LinkStation web interface. The left sidebar contains navigation links: Home, Basic, Network, Disk Management, Shared Folders, Group Management, User Management, Web Access, Media Server, Direct Copy, Print Server, Maintenance, System Status, and Logout. The main content area is titled "Disk Backup" and contains a "Link Station List" table. A "Refresh" button is located below the table. The table lists several LinkStations with their names, IP addresses, backup support status, and disk swap status.

Name	IP Address	Backup Support	Disk Swap
ENGPRO	192.168.1.102	Supported	Not Configured
LS-CHKCD	192.168.1.104	Supported	Not Configured
LS-CHKSD	192.168.1.112	Supported	Not Configured
BUTTERFLY	192.168.1.105	Supported	Not Configured
LAB_PROD	192.168.1.106	Supported	Not Configured
ENGPRO	192.168.1.102	Supported	Not Configured
LEEL500G	192.168.1.104	Supported	Not Configured

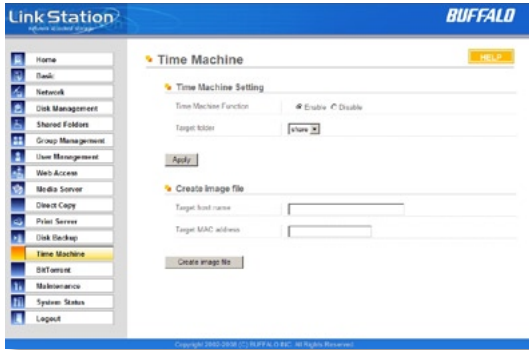
The LinkStation list shows other LinkStations in your network that you can configure network backups to.

Press *Refresh* to get a list of LinkStations on your network.



To add a remote LinkStation to your network, enter its numerical IP Address in the *Remote LinkStation IP Address* field and click the *Add to List* button. For remote LinkStation backups, make sure both firewalls are configured to allow traffic in and out of their networks.

Note: Disk Backups between two LinkStations use port 8873 for encrypted backups and port 873 for backups with no encryption.

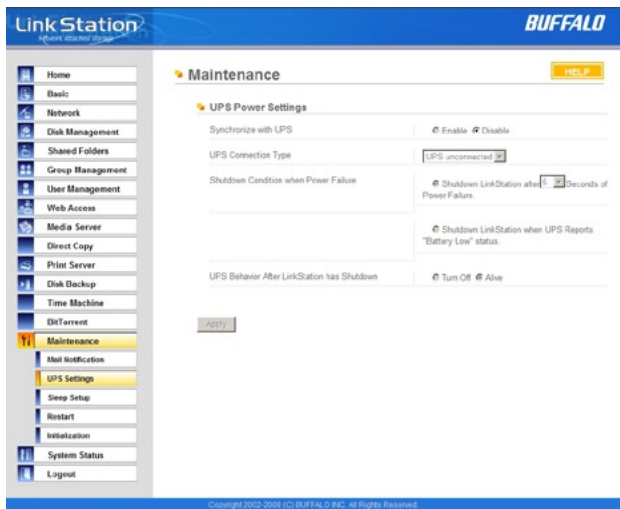


To use the LinkStation as a location for backups from a Mac running Time Machine, click *Enable* and then *Apply*.



If your LinkStation is remotely managed, you may choose to receive daily status reports and be notified of any disk events by email. To set this up, enable *Mail Notification* and enter the IP Address of your SMTP server in the *SMTP Server Address* field. Select a *Subject* line for the emails (i.e. “LinkStation Status Report”) and enter the email address of each person you want to receive notification emails into a *Recipient Mail Address* field.





If using an Uninterruptible Power Supply, configure the LinkStation's UPS settings here.

Supported UPS products include USB models in APC's Smart-UPS and Back-UPS series.

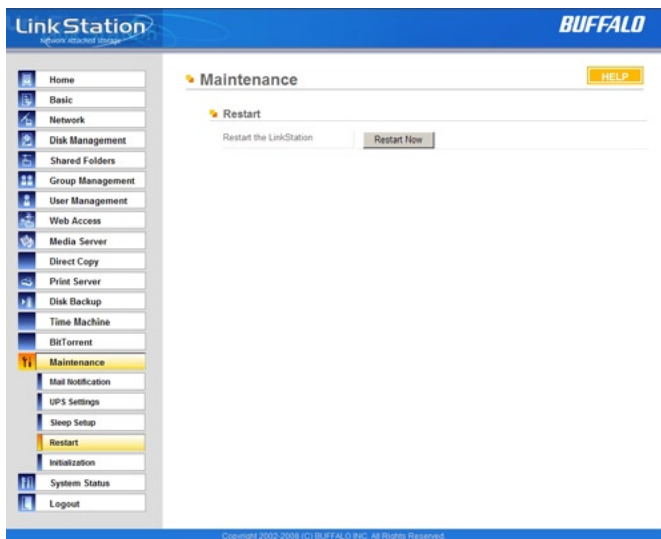
Note: Settings on this page can only be changed while a supported UPS is connected to the LinkStation.

APC is a registered trademark of American Power Conversion Corporation.

The screenshot shows the 'Maintenance' configuration page in the LinkStation Buffalo web interface. The left sidebar contains a navigation menu with options like Home, Basic, Network, Disk Management, Shared Folders, Group Management, User Management, Web Access, Media Server, Direct Copy, Print Server, Disk Backup, Time Machine, BitTorrent, Maintenance (highlighted), Mail Notification, UPS Settings, Sleep Setup, Restart, Initialization, System Status, and Logout. The main content area is titled 'Maintenance' and features a 'HELP' button. It contains three timer configuration sections: 'Timer1', 'Timer2', and 'Timer3'. Each timer section includes a 'Timer Interval' dropdown menu set to 'Disable', a set of radio buttons for days of the week (Sunday through Saturday), and two time selection fields for 'Wakeup Time' and 'Suspend Time', each with 'Hour' and 'Min' spinners. An 'Apply' button is located at the bottom of the configuration area. The footer of the interface reads 'Copyright 2002-2008 (C) BUFFALO INC. All Rights Reserved.'

You may configure up to three situations where the LinkStation powers down for a set period.

Example: To have the LinkStation enter sleep mode every night between noon and 3 pm, set a timer with *Daily* as the timer interval, 15:00 as the wakeup time, and 12:00 as the sleep time.

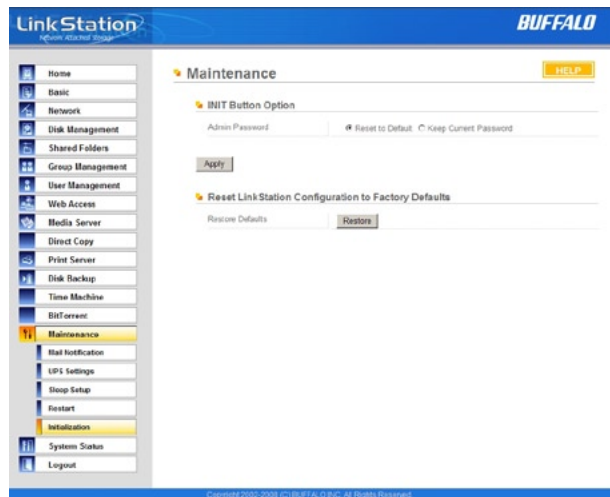


From the *Restart* page, press *Restart Now* button to reboot the LinkStation, bringing it back to functionality after about 120 seconds.

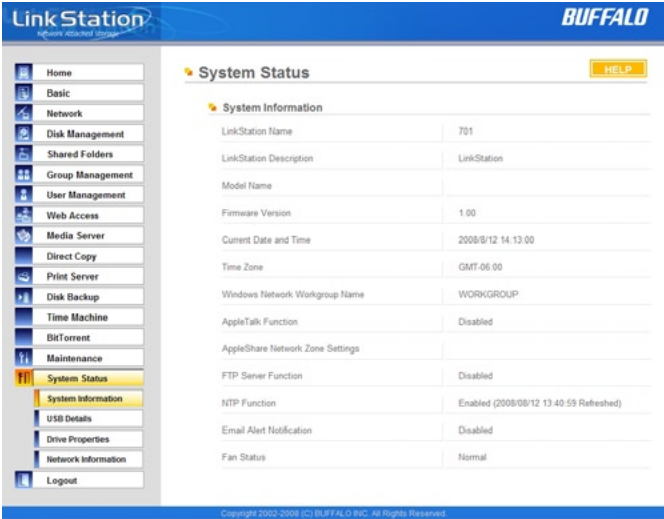
Initialization is a reset procedure that restores all settings back to the default, out of box, configuration. All configuration, users, groups, and backup jobs are lost, but actual data and shares on the hard drive are NOT lost. If you want all data to be erased, erase the drive.

Specify whether the LinkStation shall keep its administrator password after a initialization or whether the password should be reset to the default password (default password is *password*). Press the *Apply* button once you make the selection.

Press the *Restore* button to begin the initialization process; this will restore all settings to factory defaults but will NOT erase the data on the hard drives.



# System Status (System Information)



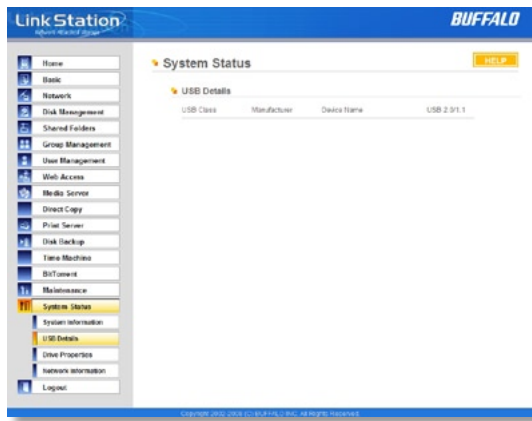
The screenshot displays the LinkStation web interface. The left sidebar contains a navigation menu with the following items: Home, Basic, Network, Disk Management, Shared Folders, Group Management, User Management, Web Access, Media Server, Direct Copy, Print Server, Disk Backup, Time Machine, BitTorrent, Maintenance, System Status (highlighted), System Information (highlighted), USB Details, Drive Properties, Network Information, and Logout. The main content area is titled 'System Status' and includes a 'HELP' button. Below this is a section for 'System Information' containing a table of system details.

System Information	
LinkStation Name	701
LinkStation Description	LinkStation
Model Name	
Firmware Version	1.00
Current Date and Time	2008/8/12 14:13:00
Time Zone	GMT-06:00
Windows Network Workgroup Name	WORKGROUP
AppleTalk Function	Disabled
AppleShare Network Zone Settings	
FTP Server Function	Disabled
NTP Function	Enabled (2008/08/12 13:40:59 Refreshed)
Email Alert Notification	Disabled
Fan Status	Normal

Copyright 2002-2008 (c) BUFFALO INC. All Rights Reserved

This page shows you the System Information for your LinkStation.

Firmware updates are occasionally available from [www.buffalotech.com](http://www.buffalotech.com) for the LinkStation EZ. These must be executed from a Windows PC on the same network. Your router, switch, or hub should pass through ports 8873 and 22939 for this to work (most do).



The screenshot shows the LinkStation web interface. The top navigation bar includes the LinkStation logo and the Buffalo logo. A left sidebar contains a menu of system management options, with 'System Status' selected and highlighted in yellow. The main content area is titled 'System Status' and contains a sub-section for 'USB Details'. Below this, there is a table with the following structure:

USB Class	Manufacturer	Device Name	USB 2.0/1.1

The table is currently empty, indicating no USB devices are plugged in. A 'HELP' button is visible in the top right corner of the System Status section. The footer of the page contains the copyright notice: 'Copyright 2002-2008 © Buffalo, Inc. All Rights Reserved.'

This page shows you details on USB hard drives and UPSs plugged into your LinkStation. In this example, no USB hard drives are plugged in to the LinkStation.

# System Status (Drive Properties)

The screenshot displays the Link Station Buffalo web interface. The left sidebar contains a navigation menu with the following items: Home, Basic, Network, Disk Management, Shared Folders, Group Management, User Management, Web Access, Media Server, Direct Copy, Print Server, Disk Backup, Time Machine, BitTorrent, Maintenance, System Status (highlighted), System Information, USB Details, Drive Properties (highlighted), Network Information, and Logout. The main content area is titled "System Status" and includes a "HELP" button. It is divided into two sections: "Disk Information" and "USB Disk Information".

**System Status** HELP

**Disk Information**

Disk 1	Status	Standard Mode
	Unit Name	HD501LJ
	Total Capacity	498,396,584 bytes (465.76 GB)
	File Format	XF5

**USB Disk Information**

USB Disk 1	Status	Not Detected
------------	--------	--------------

Copyright 2002-2008 (C) BUFFALO INC. All Rights Reserved.

This page shows you the properties of all hard drives in and attached to your LinkStation.

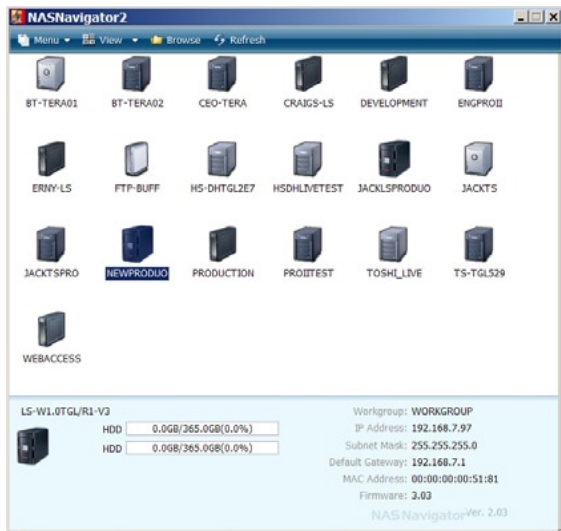
The screenshot displays the Link Station Buffalo web interface. The top navigation bar includes the 'Link Station' logo and the 'BUFFALO' brand name. A left-hand sidebar contains a menu with various system management options, with 'System Status' currently selected. The main content area is titled 'System Status' and features a 'HELP' button. Underneath, the 'Network Information' section is expanded, showing a table of network parameters.

Network Information	
MAC Address	00-1D-73-4C-88-55
IP Address	192.168.7.133
Subnet Mask	255.255.255.0
Primary DNS Server Address	192.168.7.5
Secondary DNS Server Address	192.168.7.3
Default Gateway	192.168.7.1
Ethernet Frame Size	1,518 bytes
Link Speed	1000 Mbps (Full Duplex)
Packets Received	143,621 Packets
Packets Received with Errors	0 Packets
Packets Transmitted	12,546 Packets
Packets Transmitted with Errors	0 Packets

Copyright 2002-2008 (C) BUFFALO INC. All Rights Reserved.

This page shows you the System Information for your network connection.



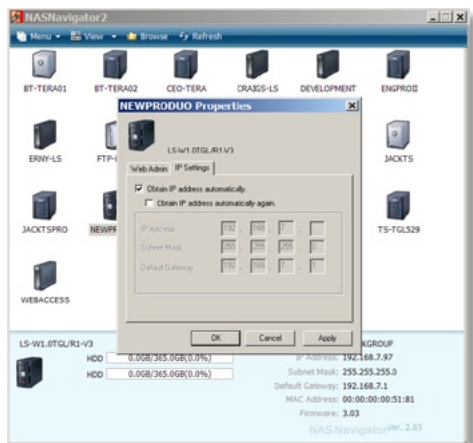


This is the *Buffalo NASnavigator2 Client Utility*. Installed on your PC, it allows you to access each of the LinkStations (and TeraStations) on your network. Click *View* to get icons for each of your LinkStations. Highlight each tab to show the Host Name, Workgroup, IP Address, and Subnet Mask, Gateway, and MAC Address of the associated LinkStation, as well as the firmware version it's running.

Right-click on a LinkStation for more options. You can open the Web Admin GUI, map a share to a drive letter, or create a shortcut on your desktop.

To change a LinkStation's IP Address, click *Menu* and choose *Properties*.

## IP Address Setup



From the *IP Settings* tab, you may enter your *IP Address* and *Subnet Mask* manually, or enable your LinkStation to acquire them automatically from a DHCP server. Press *OK* when you're done.

## Disk Errors

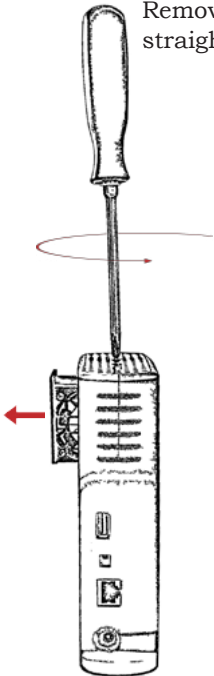
If LinkStation encounters a disk error, it will be reported in the LinkStation status on the top of any of the Web-Based configuration screens. Run a *Disk Scan* in the event of this error. If that doesn't work, try a reformat. Reformatting the drive will delete all of the data on it so try to backup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

### LED Flash Codes:

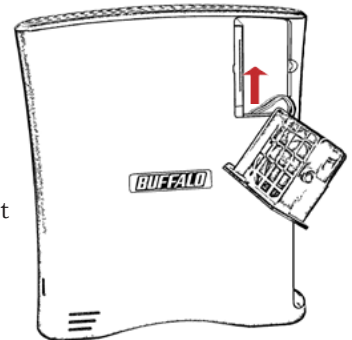
The blue LED will flash to indicate error type:

- 3 flashes - Partition problem with hard drive. Reformat the hard drive.
- 4 flashes - RAID problem.
- 5 flashes - ROM problem.
- 6 flashes - Hard Drive not recognized.
- 7 flashes - Problem with motherboard (RAM, LAN, or Hard Drive controller).

Remove the screw from the top of the LinkStation. The fan will now slide straight out to the side.



Unplug the connector by pulling it straight up.



# Technical Specifications

Data Transfer Rates:	10/100/1000 Mbps
Hard Drives:	3.5" SATA
Main Connector Type:	RJ-45 (Ethernet)
USB Interface:	USB 2.0/1.1
Protocol Support:	TCP/IP SMB, FTP, AppleTalk (File Sharing) HTTP (Management) NTP (Time Synchronization)
Power Supply:	100-240V 50/60Hz
Client OS Support:	Windows <sup>®</sup> Vista™, XP, 2000, Mac OS <sup>®</sup> 10.3.9 or later
Power Consumption:	~24W (with no USB devices connected)
Dimensions:	6.9" x 1.8" x 6.1" (174 x 45 x 156 mm)
Weight:	~17.6 ounces (.5 kg)
Operating Environment:	41°- 95° F, 5°- 35° C; 20-80% non-condensing

Mac and Mac OS are trademarks of Apple Inc., registered in the U.S. and other countries. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Buffalo Technology USA Inc.  
11100 Metric Blvd., Suite 750  
Austin, TX 78758

### GENERAL INQUIRIES

Monday through Friday  
8:30am-5:30pm CST

**Direct:** 512-794-8533 | **Toll-free:** 800-456-9799 | **Fax:** 512-794-8520 | **Email:** [sales@buffalotech.com](mailto:sales@buffalotech.com)

### TECHNICAL SUPPORT

North American Technical Support by phone is available 24 hours a day, 7 days a week. (USA and Canada).

**Toll-free:** (866) 752-6210 | **Email:** [info@buffalotech.com](mailto:info@buffalotech.com)

Buffalo Technology UK Ltd.  
2 Bracknell Beeches, Old Bracknell Lane  
Bracknell, Berkshire, RG12 7BW  
United Kingdom

### **GENERAL INQUIRIES**

Email: [sales@buffalo-technology.com](mailto:sales@buffalo-technology.com)

### **TECHNICAL SUPPORT**

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](http://www.buffalo-technology.com/contact)

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

To have a copy of the source code for an individual product mailed to you, please send one individually packaged self addressed padded CD shipping envelope containing a blank CD-R to the following address:

**Buffalo Technology USA Inc.**  
**11100 Metric Blvd., Suite 750**  
**Austin, TX 78758**  
**Attn. GPL Department**

Within the envelope containing the self addressed padded CD shipping envelope, please include a bank draft or money order for \$20 (USD) (made out to Buffalo Technology) to cover our handling fee, postage and CD preparation. The CD-R should have the name of the product and revision number clearly written on the actual CD-R (not on the insert).

Sorry, but we do not send GPL source code in bulk. Source code for a single product will be sent with each request.



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

To have a copy of the source code for an individual product mailed to you, please send one individually packaged self addressed padded CD shipping envelope containing a blank CD-R to the following address:

**Buffalo Technology Ireland Ltd**  
**Free Zone East, Shannon, Co. Clare**  
**Ireland**  
**Attn. GPL Department**

Within the envelope containing the self addressed padded CD shipping envelope, please include a bank draft or money order for €20 (Euro) (made out to Buffalo Technology) to cover our handling fee, postage and CD preparation. The CD-R should have the name of the product and revision number clearly written on the actual CD-R (not on the insert).

Sorry, but we do not send GPL source code in bulk. Source code for a single product will be sent with each request.