BUFFALO

User Manual

Wireless AC1300 / N900 Gigabit Dual Band Router

WZR-D1800H

www.buffalotech.com

35012589-01

Contents

Chapter 1 - Product Overview

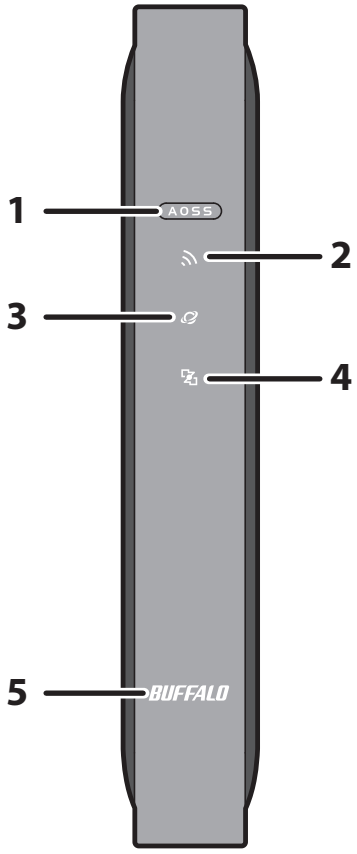
Package Contents

The following items are included in your AirStation package. If any of the items are missing, please contact your vender.

- WZR-D1800H 1
- AirStation Setup Card 1
- AC adapter 1
- Stands 2
- Screws for wall-mounting 2
- LAN cable 1
- AirNavigator CD 1
- Quick Setup Guide 1
- Warranty Statement 1

Hardware Overview

Front Panel LEDs



1 AOSS button To initiate AOSS, hold down this button until the Wireless LED flashes (about 1 second). Then, push or click the AOSS button on your wireless client device to complete the connection. Both devices must be powered on for this to work.

2 Wireless LED (Blue or Amber)

On:	Wireless LAN is enabled.
Randomly blinking:	Wireless LAN is transmitting.
2 blinks:	AirStation is waiting for an AOSS or WPS security key.
Continuously blinking:	AOSS/WPS error; failed to exchange security keys.
Off:	Wireless LAN is disabled.

Note:
Wireless LED is blue : Security settings have been made for the wireless LAN.
Wireless LED is amber : Security settings have not been made for the wireless LAN.

3 Internet access LED (Blue)

On:	Internet access is available.
Off:	Internet access is not available.

4 Router LED (Blue)

On:	Router functionality is enabled.
Off:	Router functionality is disabled.

5 Buffalo LED (White or Red)

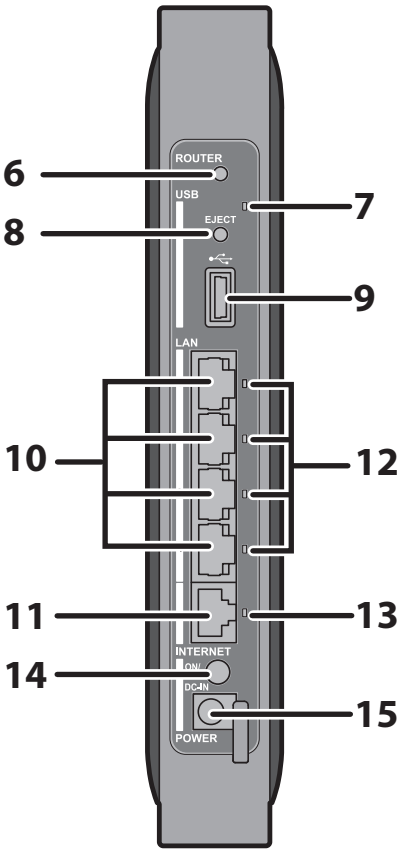
On (White):	Power is on.
Off:	Power is off.
On (Red)*1:	Booting.
2 blinks (Red)*2:	Flash ROM error.
3 blinks (Red)*2:	Wired Ethernet LAN error.
4 blinks (Red)*2:	Wireless LAN error.
5 blinks (Red)*3:	IP address setting error.
9 blinks (Red)*2:	System error.
Continuously blinking*1:	Updating firmware, saving settings, or initializing settings.

*1 Never unplug the AC adapter while the Buffalo LED is blinking continuously.

*2 Turn off AirStation first, wait for a few seconds, then turn it back on.

*3 Because the network addresses of both the Internet port (WAN port) and the LAN port are the same, it is not possible to establish communication. Change the LAN side IP address of the AirStation.

Back Panel



6 **Router button** This button turns the router on and off. The operation mode is changed by holding down the button.

7 **USB LED (Blue)**

On: The USB drive is connected.

Blinking: The USB drive can be removed.

Note: When this LED is blinking, the connected USB drive cannot be used. Remove the connected USB drive. If the LED continues to blink even after the USB drive is removed, restart the AirStation. Do not remove the USB drive or turn off the AirStation while the USB LED is on.

8 **USB Eject button** To dismount a USB hard drive, hold down this button until the USB LED flashes (about 3 seconds). The USB drive can then be unplugged safely.

9 **USB Port** Connect the USB drive.

10 LAN Port Connect your computer, hub, or other Ethernet devices to these ports. This switching hub supports 10 Mbps,100 Mbps, and 1000 Mbps connections.

11 Internet Port 10 Mbps, 100 Mbps, and 1000 Mbps connections are supported.
Note: In bridge/AP mode (router off), the Internet port becomes a regular LAN port, for a total of 5 usable LAN ports.

12 LAN LED (Green)

On: An Ethernet device is connected.

Blinking: An Ethernet device is communicating.

13 Internet LED (Green)

On: The Internet port is connected.

Blinking: The Internet port is transmitting data.

14 Power button This button turns the power on and off.

15 DC connector Connect the included AC adapter here.

Bottom

16 Reset button To reset all settings, hold down this button until the Buffalo LED turns red (about 3 seconds). The power must be on for this to work.

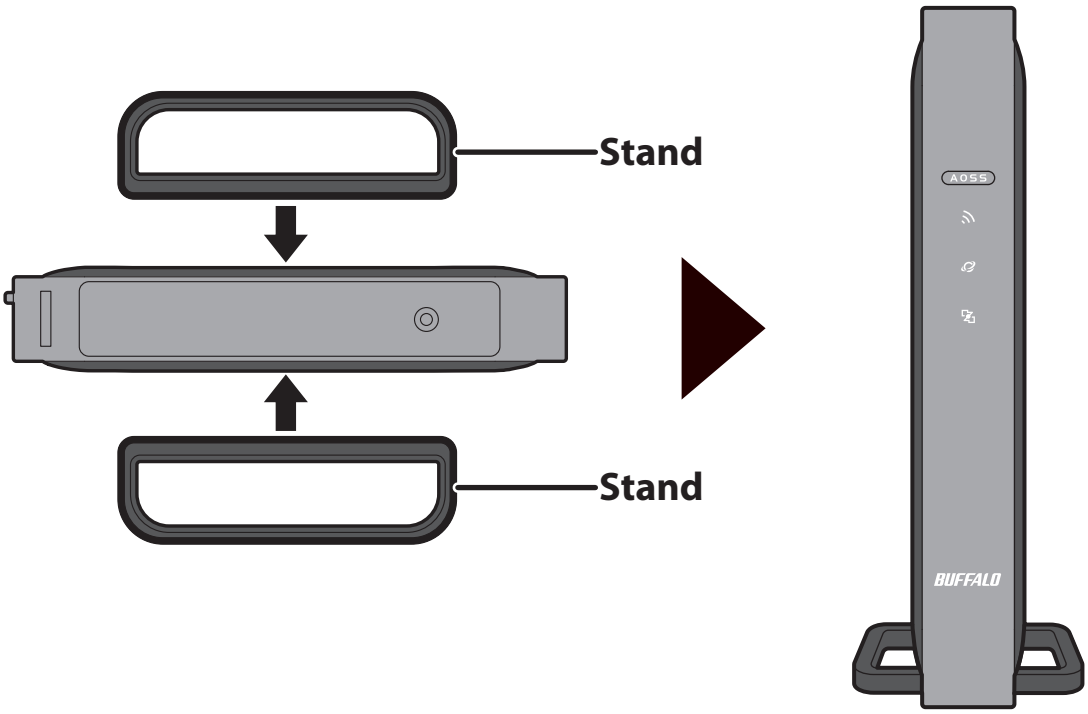
17 Setup card slot This is the slot where the AirStation setup card is stored. The initial settings for the username, password, SSID, and encryption type are provided on the card for logging into the configuration interface.

Right Side

18 Mounting holes Mounting holes are provided for mounting the AirStation to a wall. Use the supplied screws in the holes to mount to a wall.

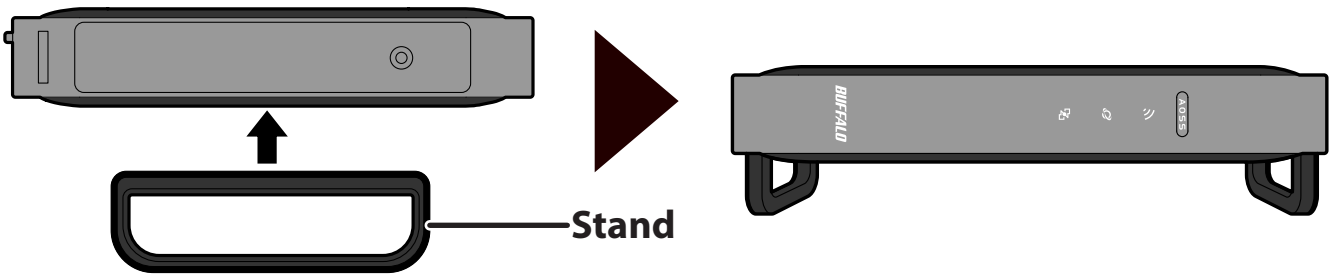
Vertical Placement

Attach the stand as shown in the figure below.



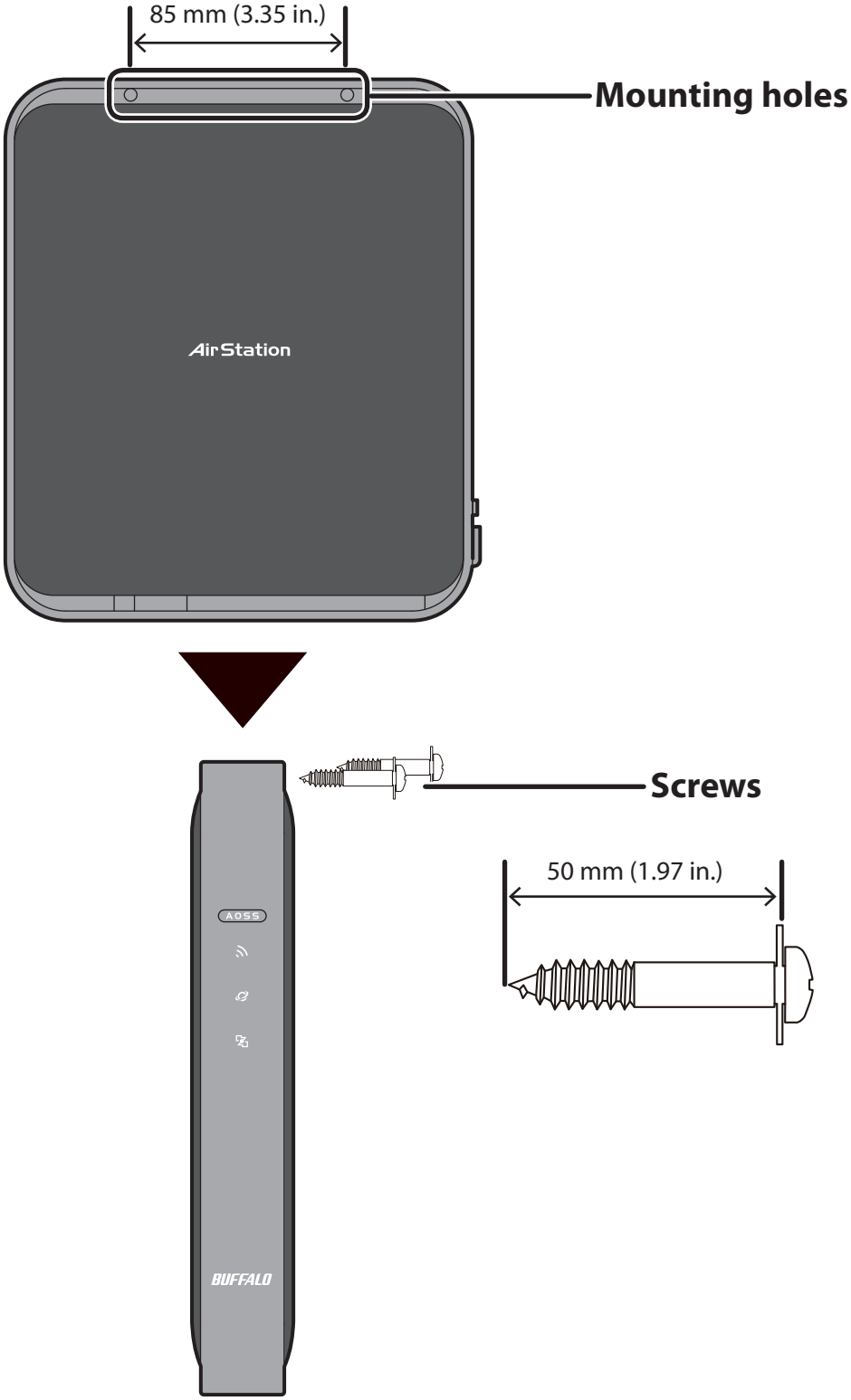
Horizontal Placement

The same stand also allows horizontal placement. Install the stand as shown in the figure below.



Wall-Mounting

Install with the supplied screws in the mounting holes of the AirStation as shown in the figure below.



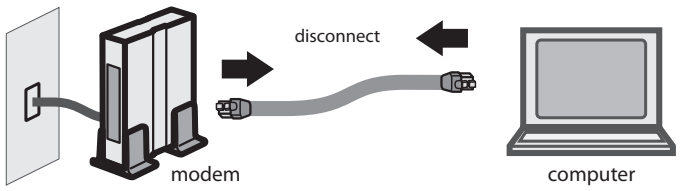
Chapter 2 - Installation

Initial Setup

To configure your AirStation, follow the procedure below.

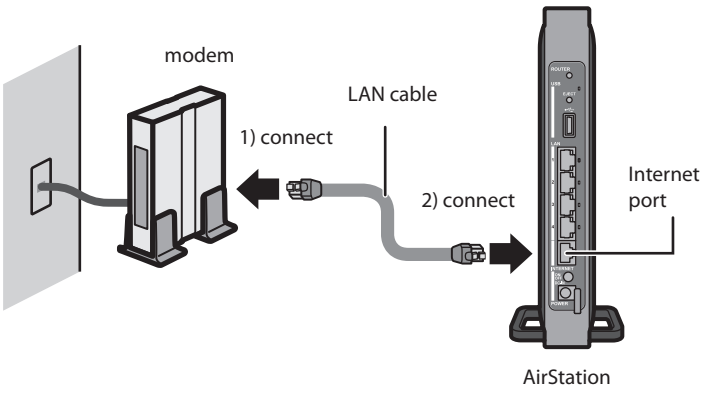
1 Verify that you can connect to the internet without the AirStation, then turn off your modem and computer.

2

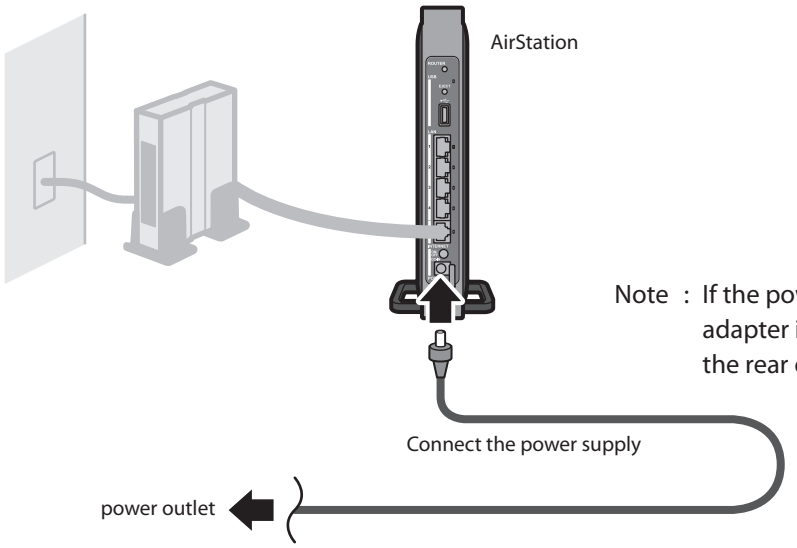


Unplug the LAN cable which connects your computer and modem.

3 Plug one end of the LAN cable into your modem and the other end to the AirStation's Internet (WAN) port. Turn on the modem.

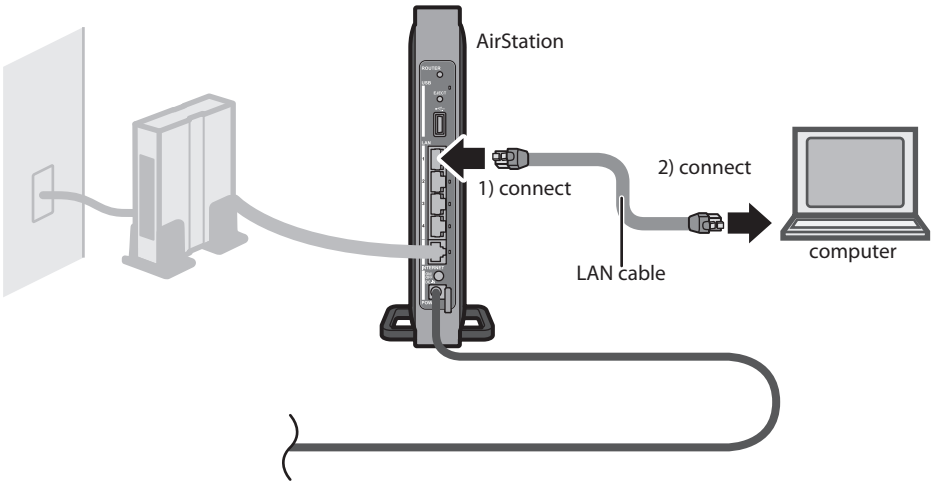


4 Turn on the AirStation, then wait one minute.



Note : If the power does not turn on even when the AC adapter is connected, press the Power button on the rear of the AirStation.

5 If using a wired LAN, connect the AirStation LAN port and computer using a LAN cable.
If using a wireless LAN, connect the computer to the wireless LAN by referring to Chapter 4.



6 Once your computer has booted, the AirStation's LEDs should be lit as described below:

Wireless	On or blinking.
Internet access	On.
Router	On.
Buffalo	White light on.
LAN	Green light on or blinking.
Internet	Green light on or blinking.

For LED locations, refer to chapter 1.

Note: If the router LED is not lit, hold down the router button for about 3 seconds to switch to router mode.

7 Launch a web browser. If the home screen is displayed, setup is complete.
If username and password fields are displayed, enter "admin" for the username and "password" for the password, then click [OK]. Step through the wizard to complete setup.

You've completed the initial setup of your AirStation. Refer to Chapter 3 for advanced settings.

Chapter 3 - Configuration

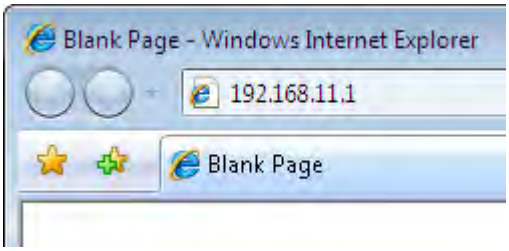
The web-based configuration tool lets you change advanced settings for the AirStation. Don't change these settings unless you know what you're doing.

Accessing the Web-based Configuration Interface

To configure the AirStation's advanced settings manually, log in to the web-based configuration interface as shown below.

1 Launch a web browser.

2



Enter the AirStation's LAN-side IP address in the address field and press the Enter key.

Note: The AirStation's default LAN-side IP address depends on the mode.
In router mode: 192.168.11.1
In bridge mode: 192.168.11.100

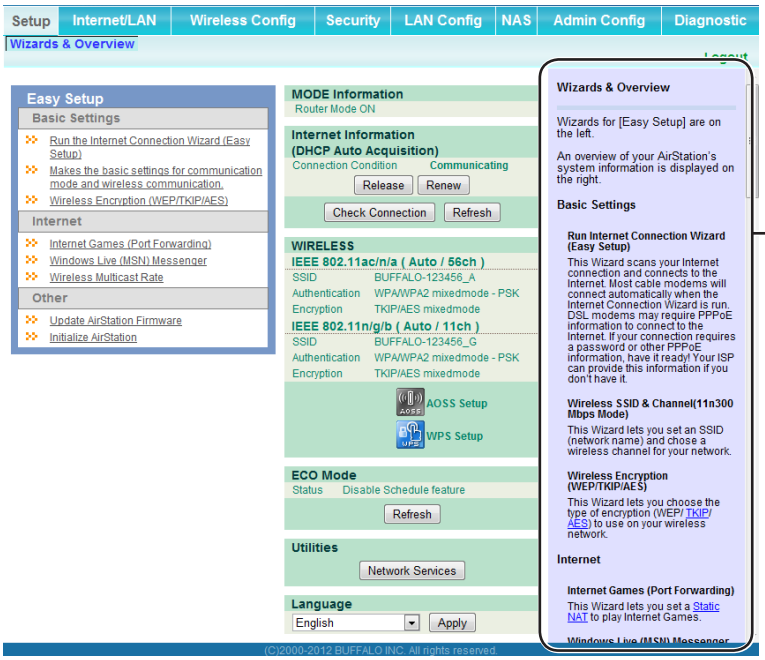
If you changed the IP address of the AirStation, then use the new IP address.

3

Enter "admin" for the username and "password" for the password and click [OK].

Note: If you forget your password, hold down the Reset button (page 9) to initialize all settings. Note that all other settings will also revert to their default values.

4



This is the configuration interface, where most AirStation settings can be configured.

Help is always displayed on the right side of each screen. Refer to the help screens for more information on using the configuration interface.

Configuration Interface Menus in Router Mode

The menu structure for the AirStation in router mode is as follows. Please refer to the pages listed at right for explanations of each item.

Main screen	Descriptions	Page
Internet/LAN		
Internet	Configure Internet side port and settings.	Page 24
PPPoE	PPPoE settings (DSL login).	Page 25
DDNS	DNS settings.	Page 28
VPN Server	VPN server settings.	Page 30
LAN	LAN side port configuration.	Page 32
DHCP Lease	DHCP lease settings.	Page 34
NAT	Network address translation settings, used to connect LAN side devices to the Internet.	Page 35
Route	Configure the AirStation's IP communication route.	Page 36
Wireless Config		
WPS	WPS settings and status.	Page 37
Basic	Configure basic wireless settings.	Page 38
Advanced	Configure advanced wireless settings.	Page 41
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia).	Page 42
MAC Filter	Limit access to specific devices.	Page 44
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port.	Page 45
AOSS	AOSS (AirStation One-touch Secure System) settings and status.	Page 46
Security		
Firewall	Protect your computer from outside intruders.	Page 47
IP Filter	IP filters for packets passing through the LAN side and the Internet side.	Page 49
VPN Passthrough	Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough.	Page 50
LAN Config		
Port Forwarding	Configure port translation and exceptions for games and other programs.	Page 51
DMZ	Configure a destination to transfer communication packets without a LAN side destination.	Page 52
UPnP	Configure UPnP (Universal Plug and Play).	Page 53
QoS	Configure priority for packets that require a guaranteed data flow.	Page 54

NAS		
Disk Management	View the status and configure of attached USB disks.	Page 55
Shared Folder	Set the USB disk to use as shared folders.	Page 57
User Management	Configure users to access shared folders.	Page 59
Shared Service	Configure shared folder access.	Page 60
Web Access	Configure Web Access.	Page 61
Media Server	Configure a Media Server.	Page 63
BitTorrent	Configure a BitTorrent client.	Page 64
Admin Config		
Name	Configure the AirStation's name.	Page 66
Password	Configure the AirStation's login password for access to the configuration interface.	Page 67
Time/Date	Configure the AirStation's internal clock.	Page 68
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock.	Page 69
ECO	Configure the AirStation's ECO Mode.	Page 70
Network-USB	Configure Network-USB from this screen.	Page 71
Access	Configure access restrictions to the AirStation's configuration interface.	Page 72
Log	Configure a syslog server to manage the AirStation's logs.	Page 73
Save/Restore	Save or restore the AirStation's configuration from a configuration file.	Page 74
Initialize/Restart	Initialize the AirStation or reboot it.	Page 75
Update	Update the AirStation's firmware.	Page 76
Diagnostic		
System Info	View current system information for the AirStation.	Page 78
Logs	Check the AirStation's logs.	Page 80
Packet Info	View all packets transferred by the AirStation.	Page 81
Client Monitor	View all devices currently connected to the AirStation.	Page 82
Ping	Test the AirStation's connection to other devices on the network.	Page 83
Logout		
Click this to log out of the AirStation's configuration interface.		

Configuration Interface Menus in Bridge Mode

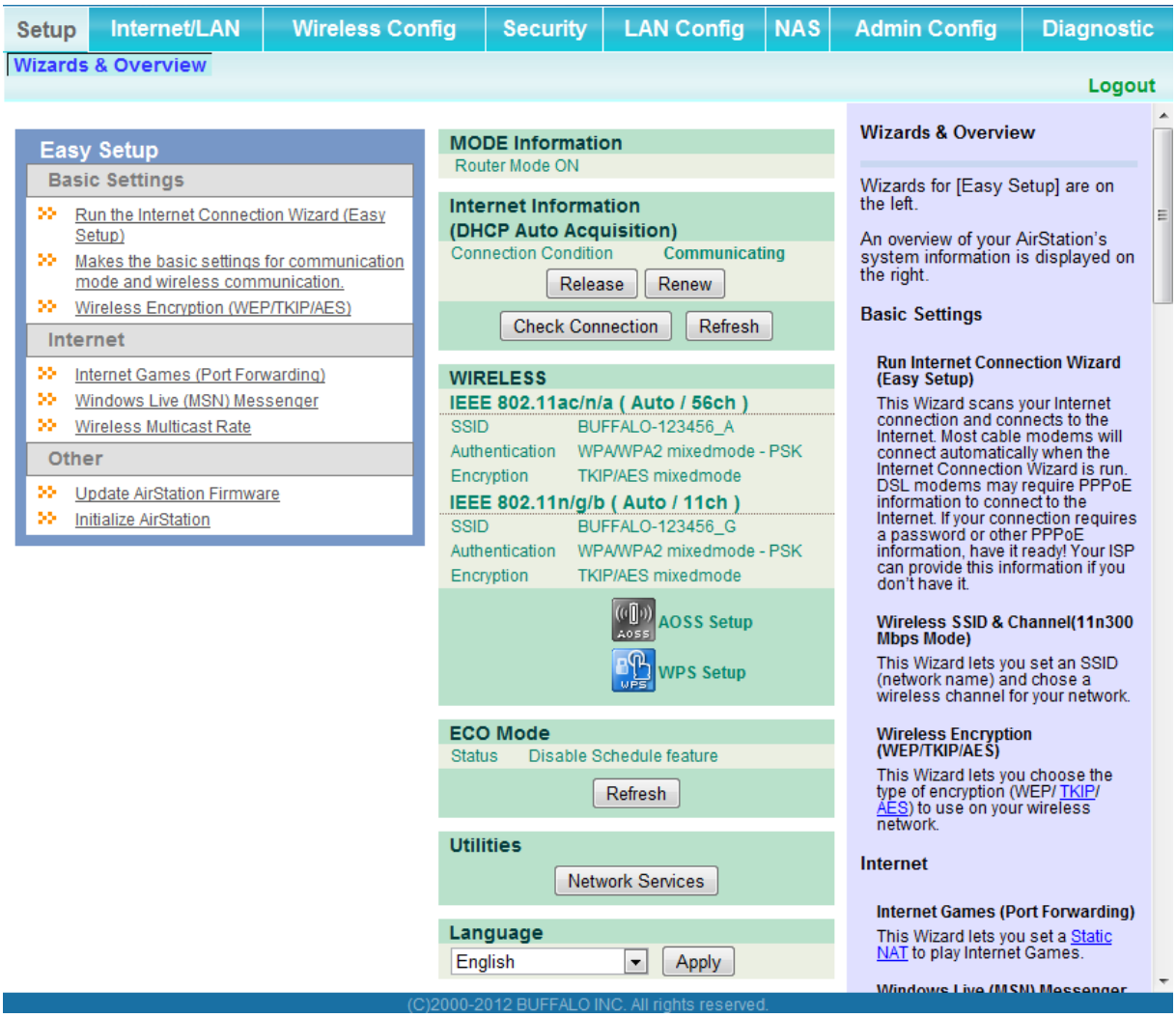
The menu structure in bridge mode is as follows. Please refer to the pages listed at right for explanations of each item.

Main screen	Descriptions	Page
LAN Config		
LAN	LAN side port configuration.	Page 32
Route	Configure the AirStation's IP communication route.	Page 36
Wireless Config		
WPS	WPS settings and status.	Page 37
Basic	Configure basic wireless settings.	Page 38
Advanced	Configure advanced wireless settings.	Page 41
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia).	Page 42
MAC Filter	Limit access to specific devices.	Page 44
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port.	Page 45
AOSS	AOSS (AirStation One-touch Secure System) settings and status.	Page 46
NAS		
Disk Management	View the status and configure of attached USB disks.	Page 55
Shared Folder	Set the USB disk to use as shared folders.	Page 57
User Management	Configure users to access shared folders.	Page 59
Shared Service	Configure shared folder access.	Page 60
Web Access	Configure Web Access.	Page 61
Media Server	Configure a Media Server.	Page 63
BitTorrent	Configure a BitTorrent client.	Page 64
Admin Config		
Name	Configure the AirStation's name.	Page 66
Password	Configure the AirStation's login password for access to the configuration interface.	Page 67
Time/Date	Configure the AirStation's internal clock.	Page 68
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock.	Page 69
ECO	Configure the AirStation's ECO Mode.	Page 70
Network-USB	Configure Network-USB from this screen.	Page 71
Access	Configure access restrictions to the AirStation's configuration interface.	Page 72

Log	Configure a syslog server to manage the AirStation's logs.	Page 73
Save/Restore	Save or restore the AirStation's configuration from a configuration file.	Page 74
Initialize/Restart	Initialize the AirStation or reboot it.	Page 75
Update	Update the AirStation's firmware.	Page 76
Diagnostic		
System Info	View current system information for the AirStation.	Page 78
Logs	Check the AirStation's logs.	Page 80
Packet Info	View all packets transferred by the AirStation.	Page 81
Client Monitor	View all devices currently connected to the AirStation.	Page 82
Ping	Test the AirStation's connection to other devices on the network.	Page 83
Logout		
Click this to log out of the AirStation's configuration interface.		

Setup

Setup is the home page of the configuration interface. You can verify settings and the status of the AirStation here.



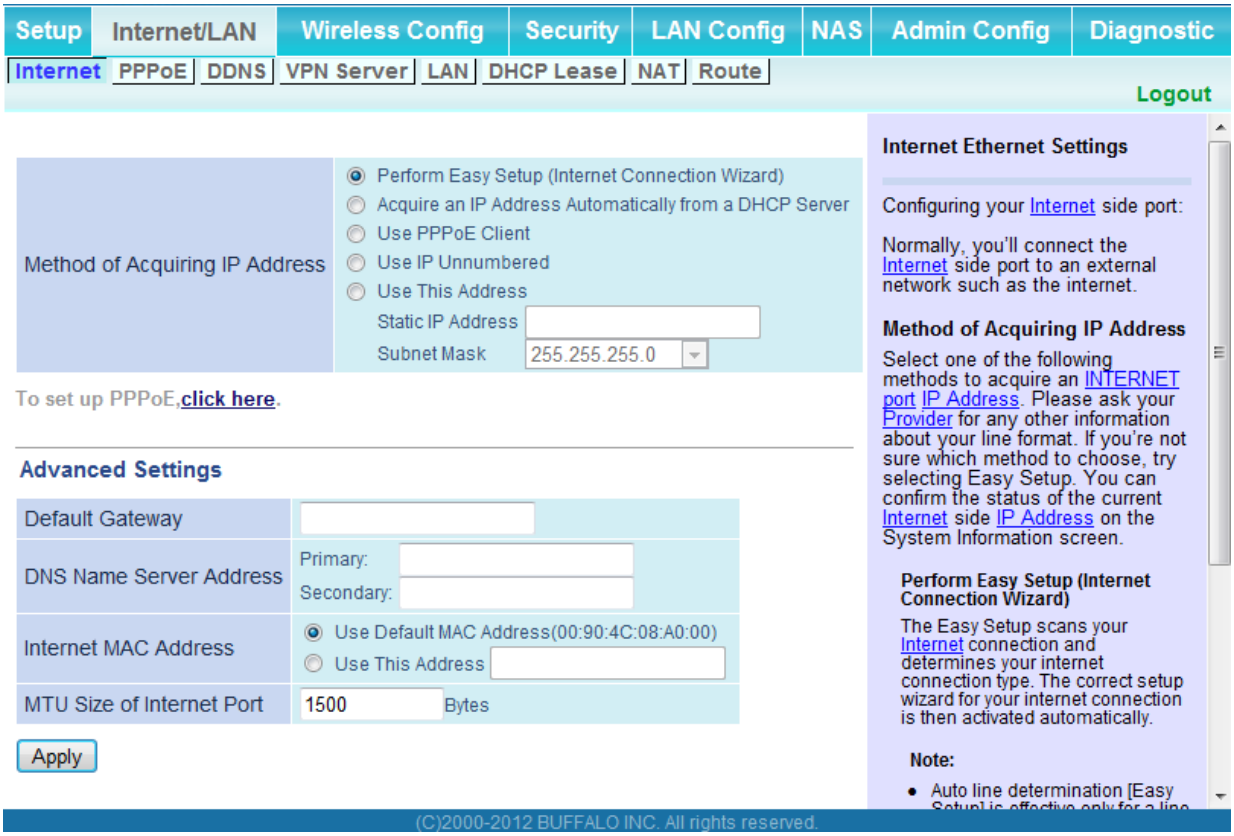
Parameter	Meaning
Internet/LAN (LAN Config)	Displays the configuration screen for the Internet port and LAN ports.
Wireless Config	Click this button to display the configuration screen for wireless settings.
Security	Click this button to display the configuration screen for security.

Parameter	Meaning
LAN Config	Click this button to display the configuration screen to open ports for games and applications.
NAS	Click this button to display the configuration screen for NAS settings.
Admin Config	Click this button to display the configuration screen for administration settings.
Diagnostic	Click this button to display the status of the AirStation.
Easy Setup	Enables you to easily configure the AirStation's network settings automatically.
MODE Information	This indicates the operation mode of the AirStation.
Internet Information	Displays WAN-side system information for the AirStation.
Check Connection	Click this button to check if the AirStation is connected to the Internet properly.
Refresh	Click this button to refresh the current screen.
WIRELESS	Displays the current wireless settings.
AOSS Setup	Click this button to display the AOSS configuration screen.
WPS Setup	Click this button to display the WPS configuration screen.
ECO Mode	This indicates the operating status of ECO Mode.
Network Service List	Displays the list of the network devices for which information is provided from the network on the LAN-side.
Media Server	Displays the status of the media server.
Download List	Displays the list of BitTorrent files downloading.
Language	Enables you to select the language you use.
Logout	Log out of the configuration interface. If the AirStation does not communicate for 5 minutes, it will log out automatically.

Internet/LAN (LAN Config)

Internet (Router Mode only)

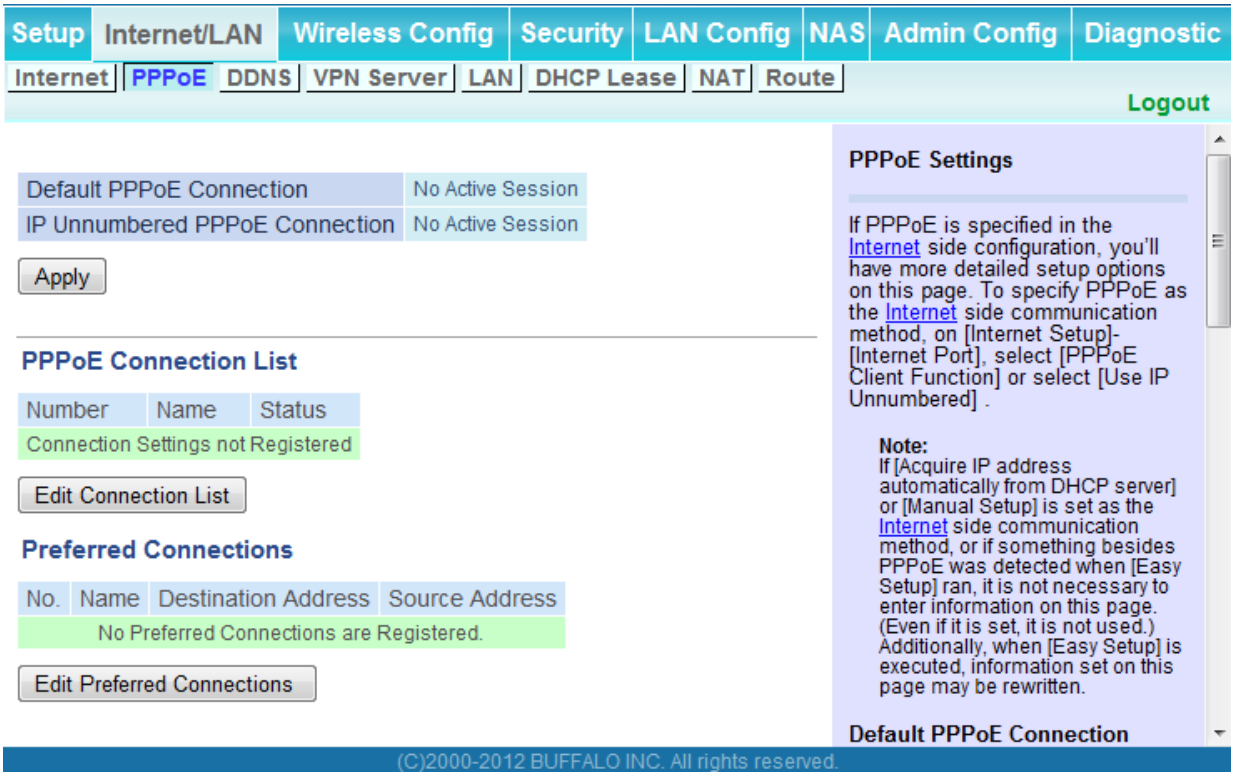
Configure the WAN-side port (“Internet port”).



Parameter	Meaning
Method of Acquiring IP Address	Specify how the WAN-side IP address is obtained.
Default Gateway	Configure an IP address for the default gateway.
DNS Name Server Address	Specify an IP address for the DNS server.
Internet MAC Address	Configure the Internet side MAC address. Note: Configuring an improper MAC address may make the AirStation unusable. Change this setting at your own risk.
MTU size of Internet Port	Configure the MTU value of the Internet port. Values of 578 to 1500 bytes may be entered.

PPPoE (Router Mode only)

Configure PPPoE settings.



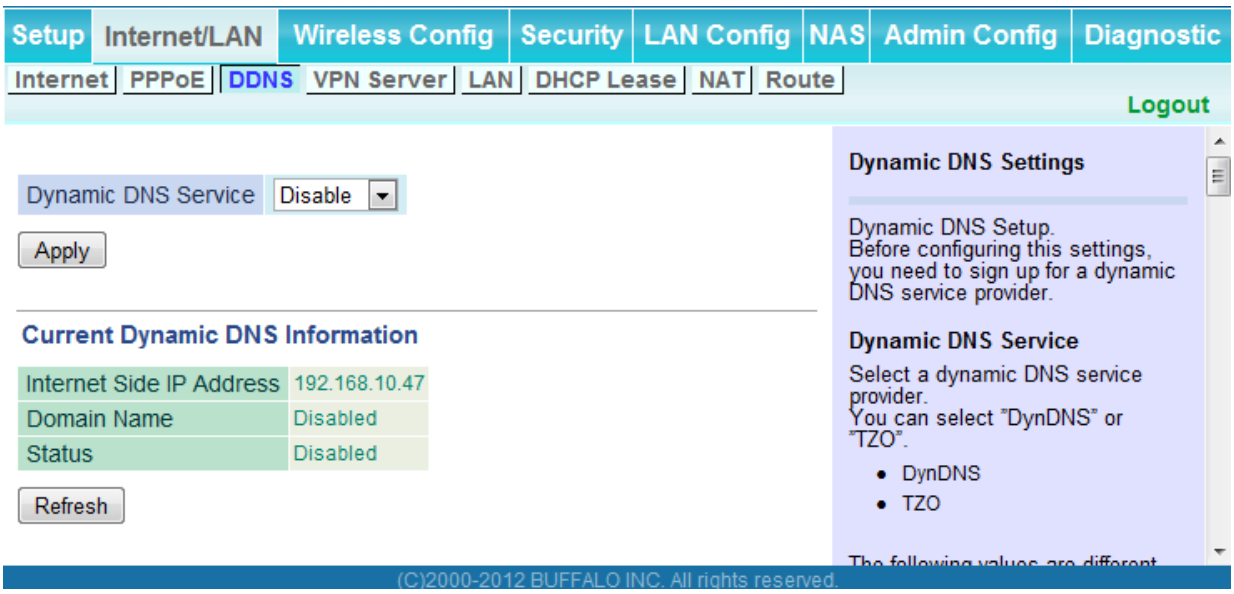
Parameter	Meaning
Default PPPoE Connection	If you have registered multiple connection destinations in the PPPoE Connection List, connection destinations selected here have priority. You need to configure the route to which PPPoE is connected to if you don't use the default settings.
IP Unnumbered PPPoE Connection	Select the destination from the PPPoE Connection List which is used when "Use IP Unnumbered" is chosen for the Method of Acquiring IP Address (page 24).
PPPoE Connection List	Edit PPPoE destination. You can register up to 5 sessions.
[Edit Connection List]	Click this button to edit destination settings.

Parameter	Meaning
PPPoE Connection No.*-Add	This is displayed when [Edit Connection List] is clicked. **Name of Connection** Enter the name to identify the connected destination. You may enter up to 32 alphanumerical characters and symbols. **Username** Enter the username specified by your ISP for PPPoE certification. You may enter up to 32 alphanumerical characters and symbols. **Password** Enter the password specified by your ISP for PPPoE certification. You may enter up to 32 alphanumerical characters and symbols. **Service Name** Fill in this field only if your ISP specifies a Service Name. Leave blank otherwise. You may enter up to 32 alphanumerical characters and symbols. **Connection Type** Specifies the timing for the AirStation to connect to your provider. **Automatic disconnection** Set time to disconnect after communication is stopped when the connection method is set to [Connection on Demand] or [Manual]. You can enter up to 1440 minutes. **Authorization** Configure an authorization method with a provider. **MTU Size** Configure the MTU size for PPPoE. Values of 578 to 1500 bytes may be entered. **MRU Size** Configure MRU (Maximum Receive Unit) for PPPoE. Values of 578 to 1492 may be entered.

Parameter	Meaning
PPPoE Connection No. *-Add	**Keep Alive** If Keep Alive is enabled, then the AirStation will issue an LCP echo request once a minute in order to maintain the connection with the PPPoE. If the server does not respond for more than 6 minutes, the line is recognized as disconnected and the AirStation will terminate the connection. [Disabled] is the recommended setting.
Preferred Connections	Displays information you have set regarding to the connection destination route.
[Edit Preferred Connections]	Click to edit the connection destination route settings.
Preferred PPPoE Connection -Add	Click [Edit Preferred Connections] to display. **Name** The destination to connect by PPPoE if [Destination address] and [Source address] match. Select the destination registered to the PPPoE Connection List. **Destination address** When communicating to this address, the AirStation will communicate with [Name of Connection.] **Source address** When communicating from this address, the AirStation will communicate with [Name of Connection.]

DDNS (Router Mode only)

Configure Dynamic DNS settings. Many settings are only available when the appropriate Dynamic DNS service is enabled.

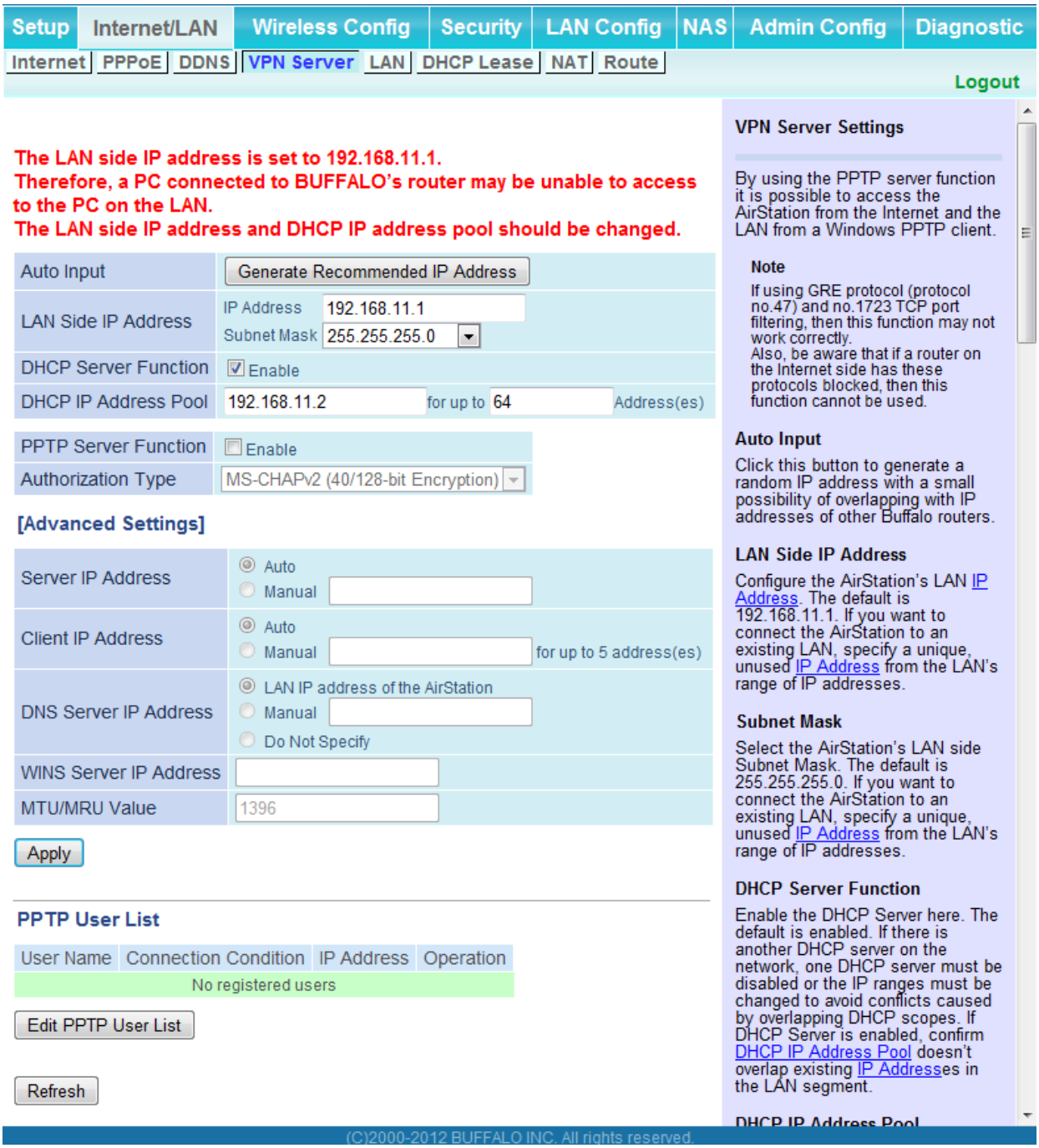


Parameter	Meaning
Dynamic DNS Service	Select a provider (DynDNS or TZO) for Dynamic DNS.
Username	Enter the Dynamic DNS username. You may enter up to 64 alphanumerical characters and symbols.
Password	Enter the Dynamic DNS password. You may enter up to 64 alphanumerical characters and symbols.
Hostname	Enter the Dynamic DNS hostname. You may enter up to 255 alphanumerical characters, hyphens, and periods.
Email Address	Enter the email address which is registered to the Dynamic DNS service. You may enter up to 64 alphanumerical characters and symbols.
TZO Key	Enter the TZO Key which is registered to the Dynamic DNS service. You may enter up to 64 alphanumerical characters and symbols.
Domain Name	Enter the domain name which is registered to the Dynamic DNS service. You may enter up to 255 alphanumerical characters, hyphens, and periods.

Parameter	Meaning
IP Address Update Period	Specifies the period to notify the dynamic DNS service provider of the current IP address. For DynDNS, set it between 0 and 35 days. For TZO, set it between 0 and 99 days. If 0 (zero) days is set, no periodic update is performed.
Internet Side IP Address	The WAN-side IP address of the AirStation's Internet port. This address is sent to the dynamic DNS service provider.
Domain Name	The domain name assigned by the dynamic DNS Service provider. The AirStation can be accessed from the Internet using this domain name.
Status	Display the status of dynamic DNS service.

VPN server (Router Mode Only)

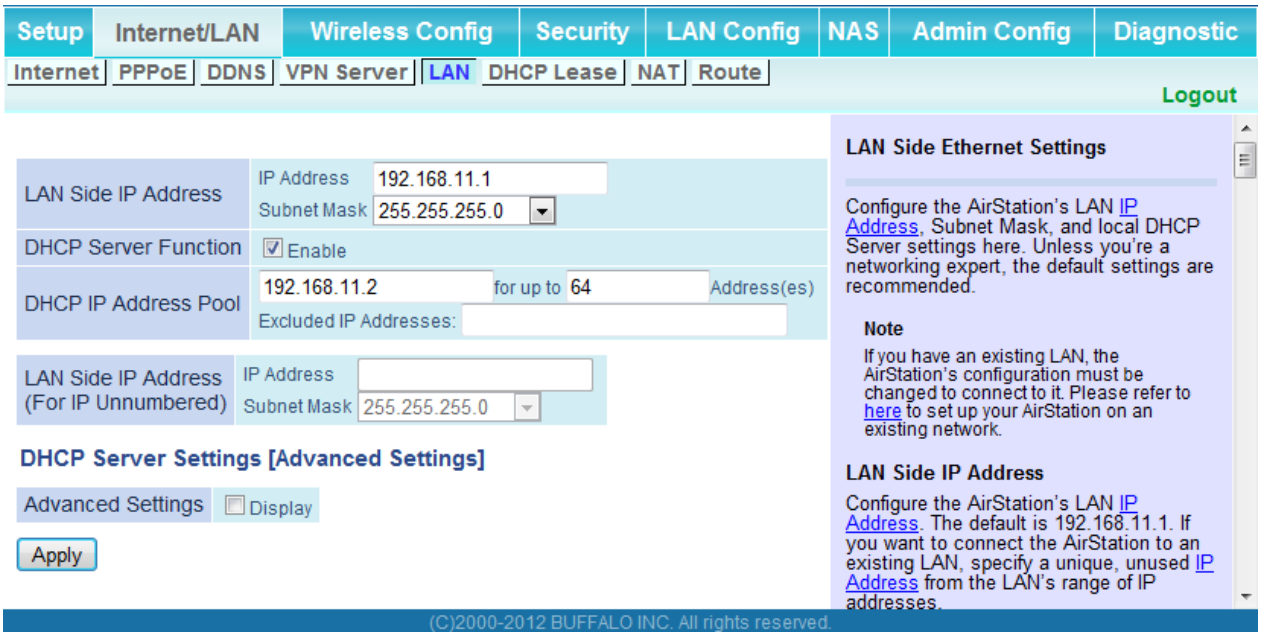
Configure the VPN server.



Parameter	Meaning
Auto Input	Click to generate a random IP address.
LAN Side IP Address	Set a LAN side IP address and subnet mask.
DHCP Server Function	Enable or disable the DHCP server, which assigns IP addresses automatically.
DHCP IP Address Pool	Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 0-253 may be entered.
PPTP Server Function	Enable to use a PPTP server.
Authorization Type	Select the authentication method for PPTP connection.
Server IP Address	Select the server IP address.
Client IP Address	Select the IP address range.
DNS Server IP Address	Choose the IP address for the DHCP server.
WINS Server IP Address	Choose the IP address for the WINS server.
[Edit PPTP User List]	Click to edit user information.
Username	Enter the username to connect to the PPTP server. You may enter up to 16 alphanumerical characters and symbols.
Password	Enter the password to connect to the PPTP server. You may enter up to 16 alphanumerical characters and symbols.
Method of Acquiring IP Address	Select the method to be used to assign the IP address is assigned to the PPTP client.
PPTP User List	Displays the PPTP connection user information.

LAN

Configure LAN-side and DHCP Server settings.

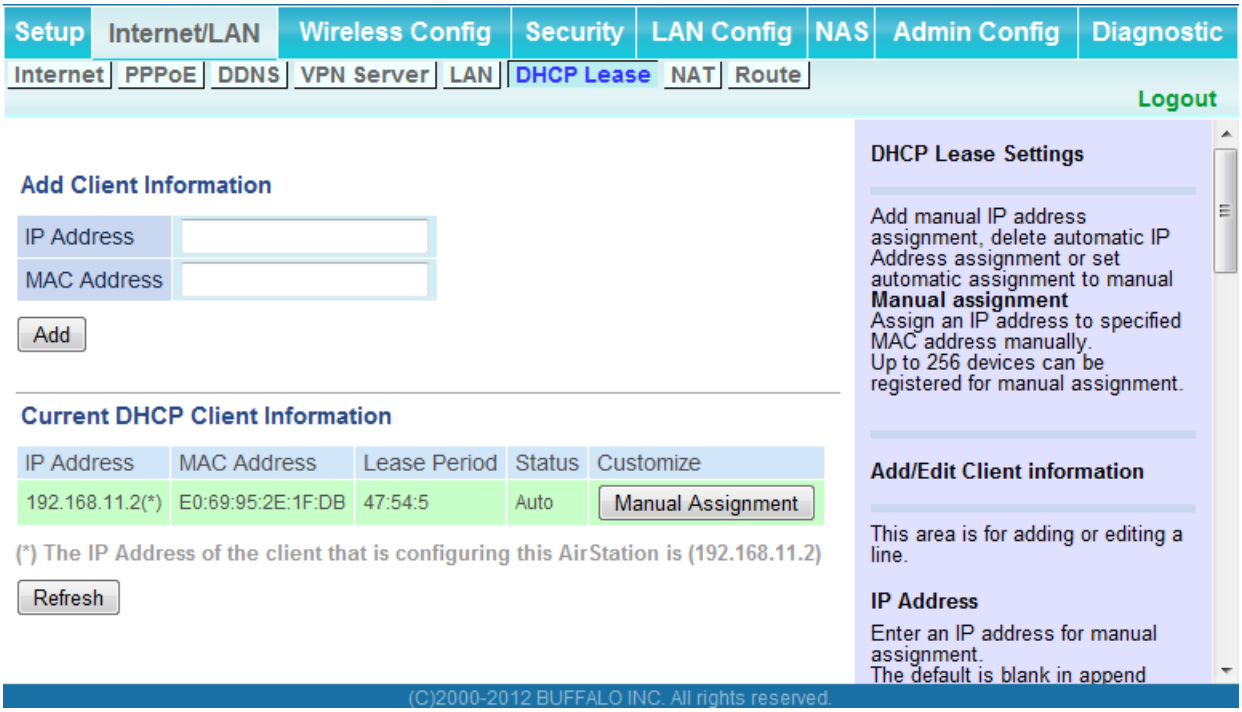


Parameter	Meaning
LAN Side IP Address	By default, the LAN side IP address is 192.168.11.1 with subnet mask 255.255.255.0. You may change it here.
DHCP Server Function	Enable or disable the DHCP server, which assigns LAN-side IP addresses automatically.
DHCP IP Address Pool	Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 0-253 may be entered.
LAN Side IP Address (For IP Unnumbered)	Set an IP unnumbered LAN side IP address. Note: A PC with a normal LAN side IP address and a PC with an IP Unnumbered IP address cannot communicate each other.
Advanced Settings	Check [Display] to display DHCP server advanced settings options.
Lease Period	Set the effective period of an IP address assigned by the DHCP server. Up to 999 hours may be entered.
Default Gateway	Set the default gateway IP address for the DHCP server to issue to clients.

Parameter	Meaning
DNS Servers Router mode only	Set the DNS server IP address for the DHCP server to issue to clients.
WINS Server Router mode only	Set the WINS server IP address for the DHCP server to issue to clients.
Domain Name Router mode only	Set the domain name for the DHCP server to issue to clients. You may enter up to 127 alphanumerical characters, hyphens, and periods.
Default Gateway Bridge mode only	Set the default gateway IP address.
DNS Server Address Bridge mode only	Set the DNS server IP address.

DHCP Lease (Router Mode only)

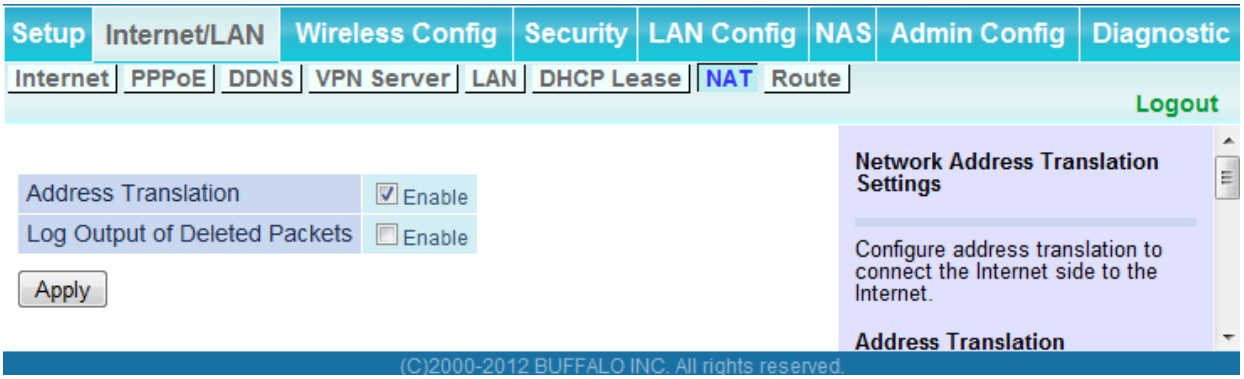
Configure DHCP Exceptions.



Parameter	Meaning
IP Address	Enter an IP address to lease manually. The IP address should be from the same subnet as the DHCP scope, but not be within the range that DHCP is assigning to other devices.
MAC Address	Enter the MAC address which identifies the client.
Current DHCP Client Information	Displays information for current leases. An IP address which is leased automatically can be changed to manual leasing by clicking [Manual Assignment].

NAT (Router Mode only)

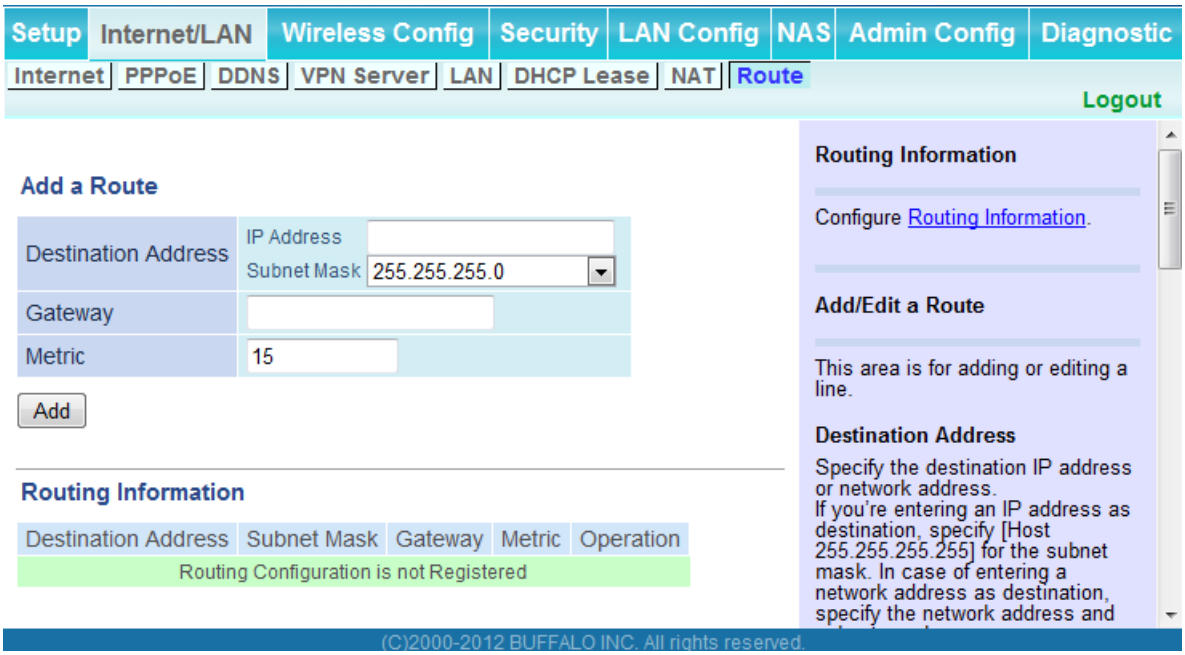
Configure network address translation settings. This enables LAN-side devices to communicate with the Internet.



Parameter	Meaning
Address Translation	Enable to use Network Address Translation.
Log Output of Deleted Packets	Enable to log deleted packets (such as errors) during address translation.

Route

Configure the AirStation's IP communication route.

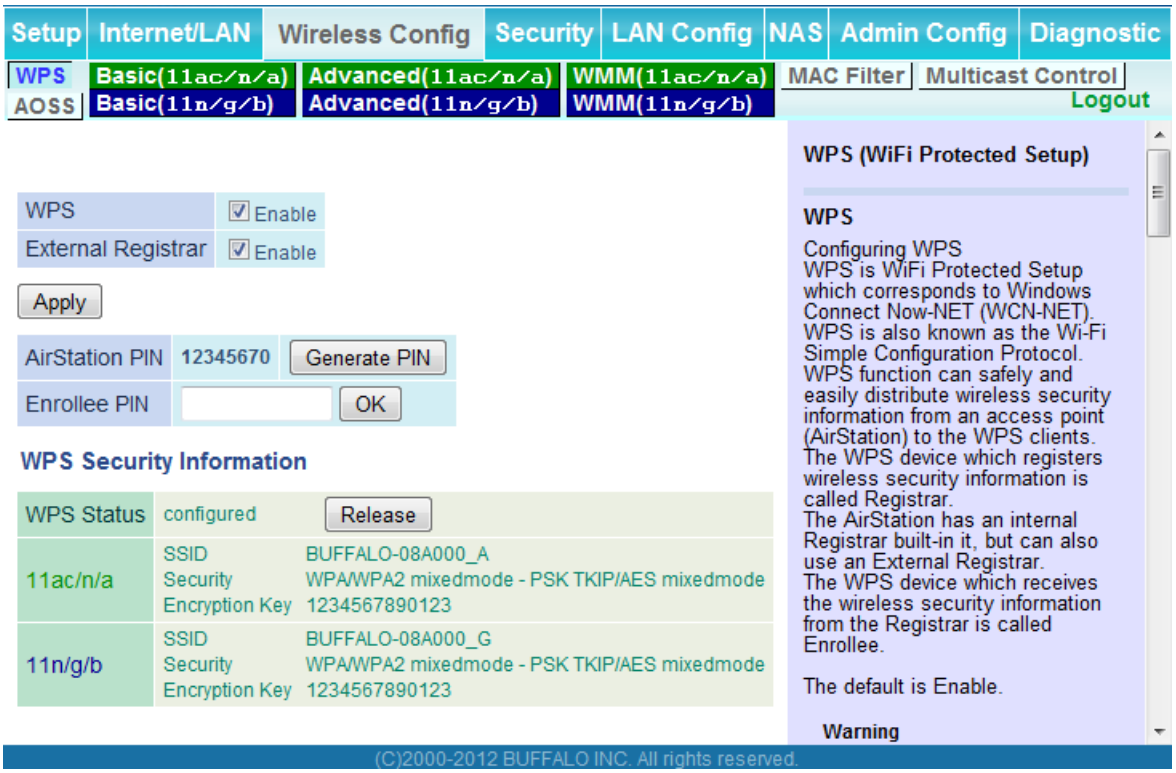


Parameter	Meaning
Destination Address	Adds a destination IP address and subnet mask to a routing table.
Gateway	Adds a gateway address to a routing table.
Metric	The metric is the maximum number of router hops a packet may take on the way to its destination address. Values between 1 and 15 may be entered. The default value is 15.
Routing Information	Manual entries will appear here after being added.

Wireless Config

WPS

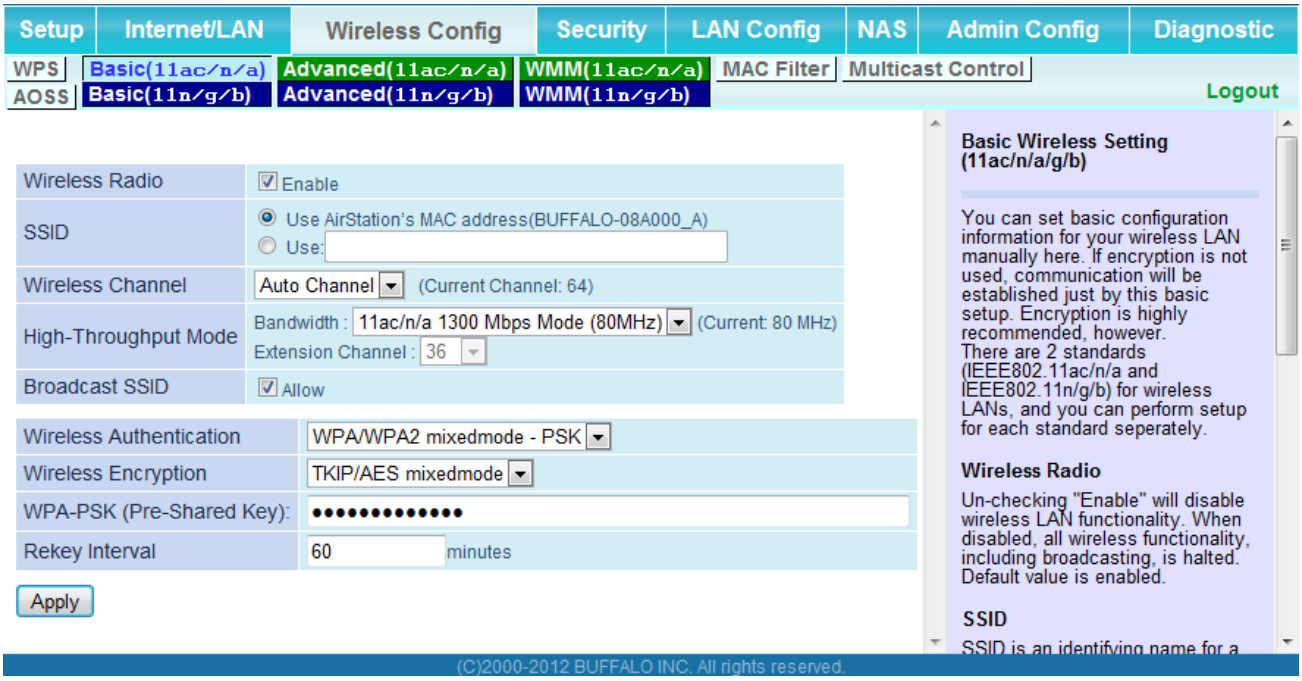
WPS Status and Settings.



Parameter	Meaning
WPS	Enable to use WPS automatic configuration.
External Registrar	Enable to accept configure requests from other WPS devices. Note: Configure requests will not be accepted if AOSS is in use.
AirStation PIN	Displays the PIN code of the AirStation. Clicking [Generate PIN] will generate a new PIN code. This code can be entered into other wireless devices that support WPS.
Enrollee PIN	Enter the PIN code for the other wireless device and click [OK].
WPS status	Displays "configured" if all available wireless bands are configured. Displays "unconfigured" if at least one wireless band is unconfigured.

Basic

Configure basic wireless settings from here.



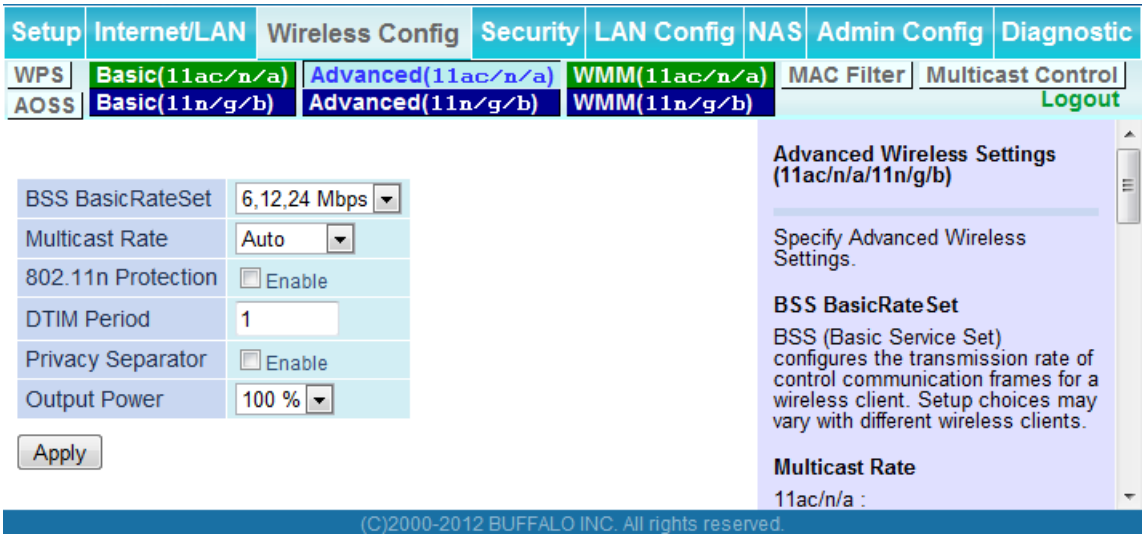
Parameter	Meaning
Wireless Radio	Determines whether to allow wireless communication. If this is unchecked, then no wireless connections will be allowed.
SSID	The SSID may contain 1 - 32 alphanumeric characters.
Wireless Channel	Sets a channel (a range of frequencies) for wireless connections. With Auto Channel selected, the AirStation will automatically use the best available channel.
High-Throughput Mode	High-throughput mode uses triple the normal frequency range, 80 MHz instead of 20 MHz. In uncongested areas this can increase performance. To use High-throughput mode, set the Bandwidth to 80 MHz and choose an Extension Channel. Note: If Auto Channel is selected, then the Extension Channel is set automatically.
Broadcast SSID	If [Allow] is checked, then the AirStation will respond to SSID searches from wireless devices by broadcasting its SSID. If [Allow] is unchecked, then the AirStation ignores SSID searches from wireless devices.

Parameter	Meaning
Wireless authentication	Specifies the authentication method used when connecting to a wireless device.
Wireless encryption	You may use any of the following types of encryption: **No encryption** Data is transmitted without encryption. With this setting, anyone within range can connect to your wireless network and might be able to access data on the network. Not recommended for anyone with private data that needs to be kept secure. [No encryption] can be selected only when [No authentication] is selected for wireless authentication. **WEP** WEP is a common encryption method supported by most devices. WEP can only be selected when wireless authentication is set to [No authentication]. Note that WEP's encryption is weak, and networks protected with WEP are not much more secure than those with no encryption at all. Not recommended for anyone with private data that needs to be kept secure. **TKIP** TKIP is an encryption method which is more secure than WEP, but slower. Use an pre-shared key to communicate with a wireless device. TKIP can be selected only when WPA-PSK or WPA2-PSK is selected for wireless authentication. **AES** AES is more secure than TKIP, and faster. Use a pre-shared key to communicate with a wireless device. AES can be selected only when WPA-PSK or WPA2-PSK is selected for wireless authentication. **TKIP/AES mixed mode** TKIP/AES mixed mode allows both TKIP and AES authentication and communication. This is no more secure than TKIP alone, but more convenient for some users. TKIP/AES mixed mode can be selected only when WPA/WPA2 mixed mode - PSK is selected for wireless authentication.

Parameter	Meaning
WPA-PSK (Pre-Shared Key)	A pre-shared key or passphrase is the password for your wireless connections. There are two different formats for a pre-shared key. Use 8 to 63 alphanumeric characters (case-sensitive) for an ASCII passphrase, or use 64 alphanumeric characters (0 to 9 and a to f, not case-sensitive) for a hexadecimal passphrase.
Rekey interval	Set the update interval for the encryption key between 0 and 1440 (minutes).
Setup WEP encryption key	A WEP encryption key (passphrase) may have any of four different formats. An ASCII passphrase may use either 5 or 13 alphanumeric characters (case-sensitive). A hexadecimal passphrase may use either 10 or 26 alphanumeric characters (0 to 9 and a to f, not case-sensitive).

Advanced

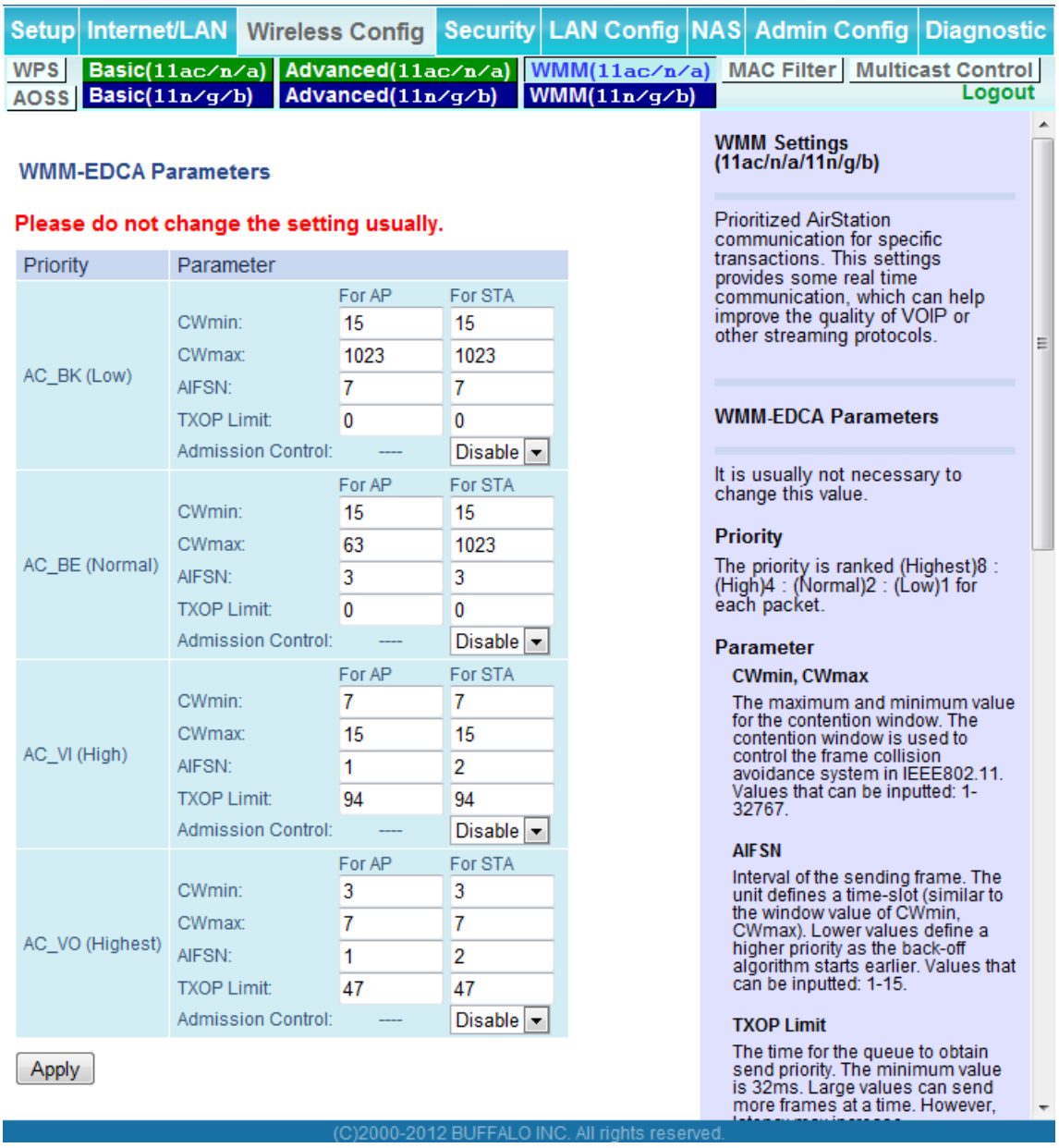
Configure advanced wireless settings.



Parameter	Meaning
BSS Basic Rate Set	BSS (Basic Service Set) configures the transmission rate of control communication frames for a wireless client. Setup choices may vary with different wireless clients.
Multicast Rate	Set the communication speed of multi-cast packets.
802.11n Protection	Enable to use 802.11n protection. 802.11n protection gives priority to 802.11n devices in mixed mode (11b/g or 11a) networks.
DTIM Period	Set the beacon responding interval (1 -255) for which the AirStation responds to a wireless device. This setting is effective only when power management is enabled for the wireless device.
Privacy Separator	If enabled, the Privacy Separator blocks communication between wireless devices connected to the AirStation. Wireless devices will be able to connect to the Internet but not with each other. Devices that are connected to the AirStation with wired connections will still be able to connect to wireless devices normally.
Output Power	This sets the output of the wireless signal. Because the wireless transmission output and signal distance range are nearly proportional, when the wireless transmission output is reduced, the signal distance range also becomes shorter.

WMM

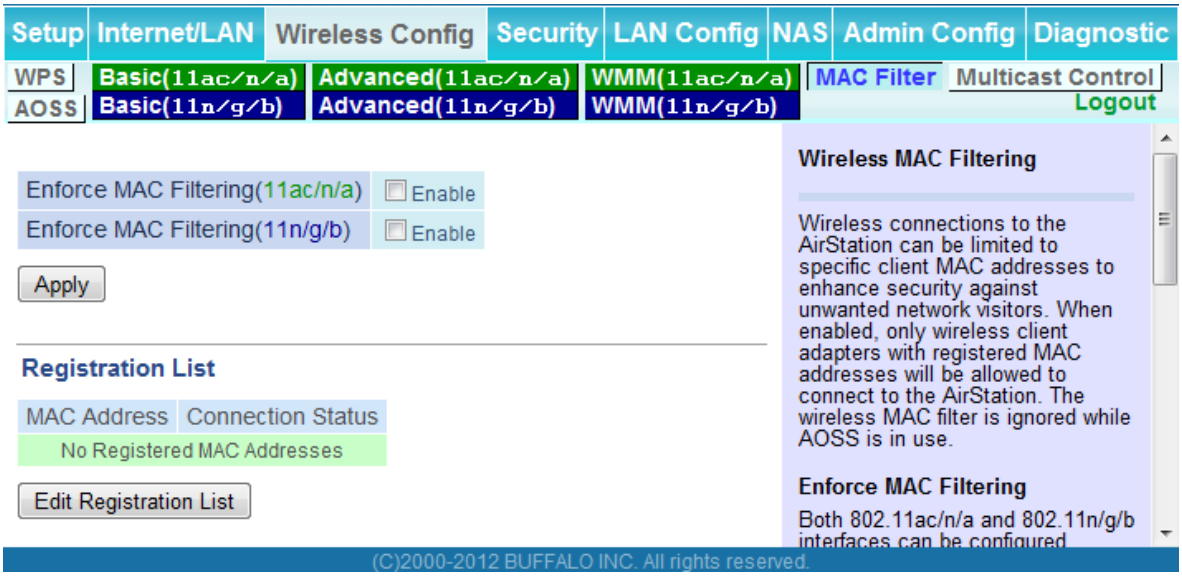
Set priorities for specific communications.



Parameter	Meaning
WMM-EDCA Parameters	You don't usually need to change these settings. Using the default settings is recommended. **Priority** The following priorities may be applied to individual transmission packets: (Highest) 8, (High) 4, (Normal) 2, and (Low) 1. From the queue, these packets are processed in order of priority. **CWmin, CWmax** The maximum and minimum value of the contention window. The contention window is used in the frame collision avoidance structure performed in IEEE802.11, and generally, the smaller the value in the window, the higher the probability that the queue obtains the right to send. **AIFSN** The interval to send frames. The unit of the AIFSN is a slot, just as the window defined by CWmin and CWmax is. The smaller the interval of sending frames, the faster the algorithm can restart. As a result, the priority of the queue is higher. **TXOP Limit** The period of time that the queue can use after obtaining the right to send. The unit is 32 ms. The longer this time, the more frames can be sent per right to send. However, the queue may interfere with other packet transmissions. If TXOP Limit is set to 0 (zero), only one frame can be sent per right to send. **Admission Control** Restricts new frames from interfering with a previous queue. New packets are prioritized lower until a queue of them is collected. As the new queue accumulates more packets, its priority increases.

MAC Filter

Restrict access to specific wireless devices.



Parameter	Meaning
Enforce MAC Filtering	Enable to restrict wireless connections to devices with registered MAC addresses.
Registration List	Displays the MAC addresses of registered devices which are permitted to connect wirelessly.
Edit Registration List	Adds a wireless device to the list of permitted devices.
MAC Addresses to be Registered	Enter a MAC address of a wireless device to permit to connect to the AirStation. Click [Register] to add that MAC address to the list.
List of all clients associated with this AirStation	Display the list of all MAC addresses of wireless devices connected to the AirStation.

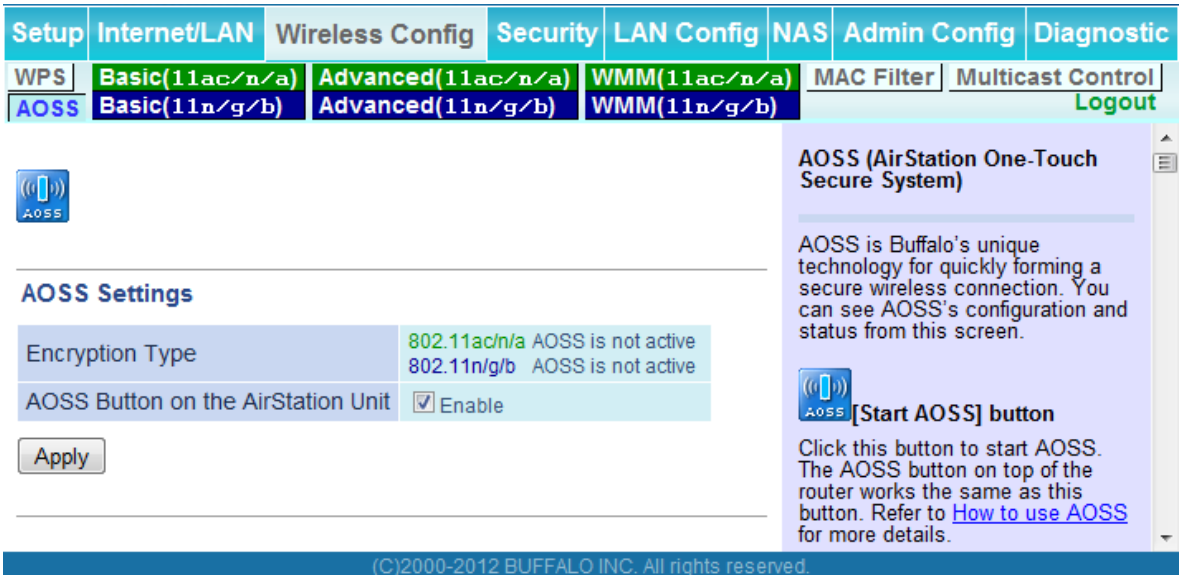
Multicast Control

Configure restrictions on unnecessary multicast packets sent to the wireless LAN port.

Parameter	Meaning
Snooping	If enabled, snooping supervises multicast administrative packets such as IGMP and restricts unnecessary multicast transfers to wired or wireless ports.
Multicast Aging Time	Set the time to hold the data from multicast snooping in the range of 1 to 3600 (seconds). Enter a value bigger than the IGMP/MLD query interval.

AOSS

AOSS Status and Settings.



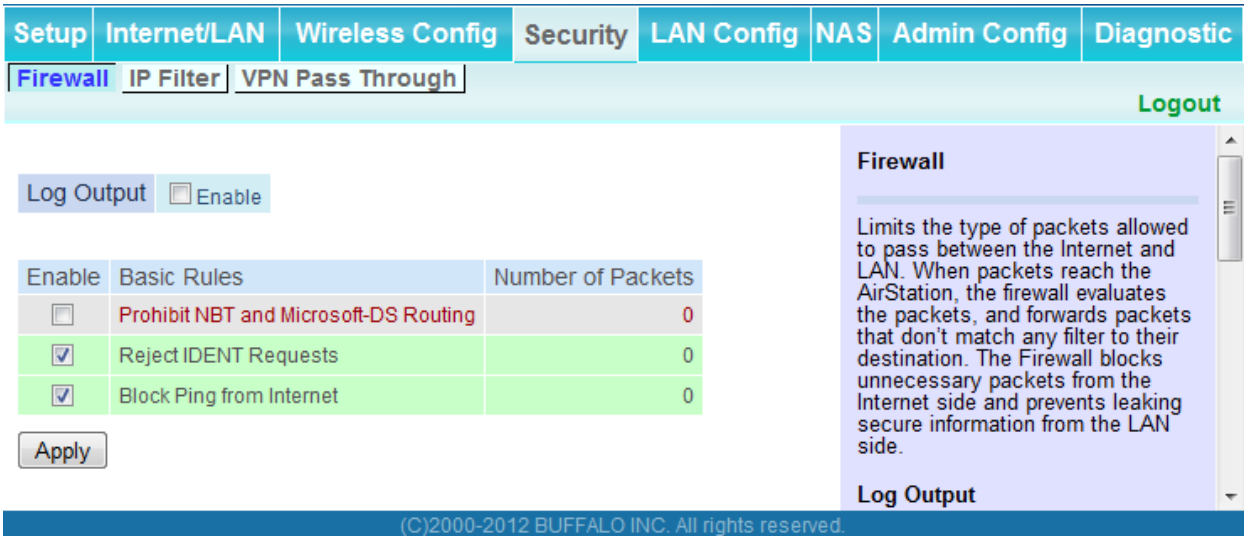
Parameter	Meaning
	Initiates AOSS automatic wireless configuration. Click this, then press or click the AOSS button on your AOSS-compatible wireless client. Repeat for additional AOSS clients.
	Click this button to disconnect AOSS connections. Note: If AOSS connections are disconnected, the SSID and encryption keys will be restored to their last settings from before AOSS was used.
Encryption type	Display AOSS's Security Level status.
AOSS Button on the AirStation Unit	Uncheck to disable the physical AOSS button on the AirStation.
Current Encryption Information (AOSS connection only)	Displays the encryption type, SSID, and encryption key configured by AOSS.
[Random]	Click to enter random values for SSID, encryption key, and other settings.
[KEY base]	Click to return the SSID, encryption key, and other wireless settings to the values on the case sticker.
[Reset]	Click to return the SSID, encryption key, and other wireless settings to their previous values.

Parameter	Meaning
AOSS Client Information	Displays AOSS clients connected to the AirStation and information of the devices which are wirelessly communicated.
AOSS Ethernet Converter Information Only displayed if there are AOSS Connections	Displays information about Ethernet converters connected to the AirStation via AOSS.

Security (Router Mode only)

Firewall (Router Mode only)

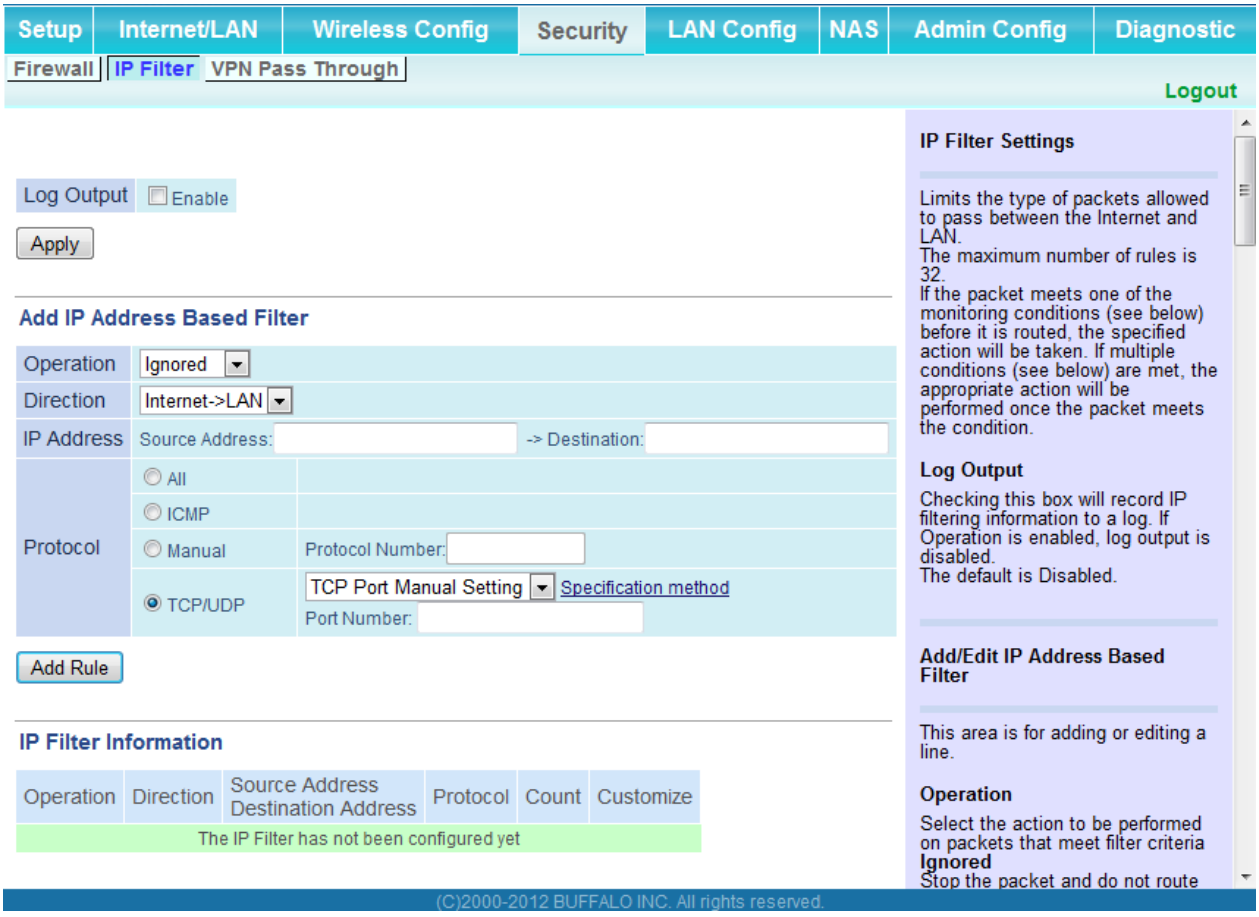
Configure the AirStation's firewall.



Parameter	Meaning
Log Output	Enable to output a log of firewall activity.
Basic Rules	Enable to use any of the quick filters. Preconfigured quick filters include: **Prohibit NBT and Microsoft-DS Routing** Enabling this blocks communication using these protocols from the WAN side to the LAN side or from the LAN side to the Internet. You can configure this with PPPoE if you select [Use PPPoE Client] or [Use IP Unnumbered] in Method of Acquiring IP address (page 24), or if Easy Setup identified a PPPoE connection during setup. **Reject IDENT Requests** Enabling this option will answer IDENT requests from the Internet side with corresponding rejection packets. Enable this option if you experienced slow transfer speeds for network applications such as mail, ftp or web browsing. If you have configured transfer of IDENT requests to the LAN side computer in the address translation settings (DMZ or TCP port 113), then that setting has higher priority, and overrides this setting. **Block Ping from Internet** If this is enabled, the AirStation will not respond to pings from the Internet side. You can configure this with PPPoE if you select [Use PPPoE Client] or [Use IP Unnumbered] in Method of Acquiring IP address (page 24), or if Easy Setup identified a PPPoE connection during setup.

IP Filter (Router Mode only)

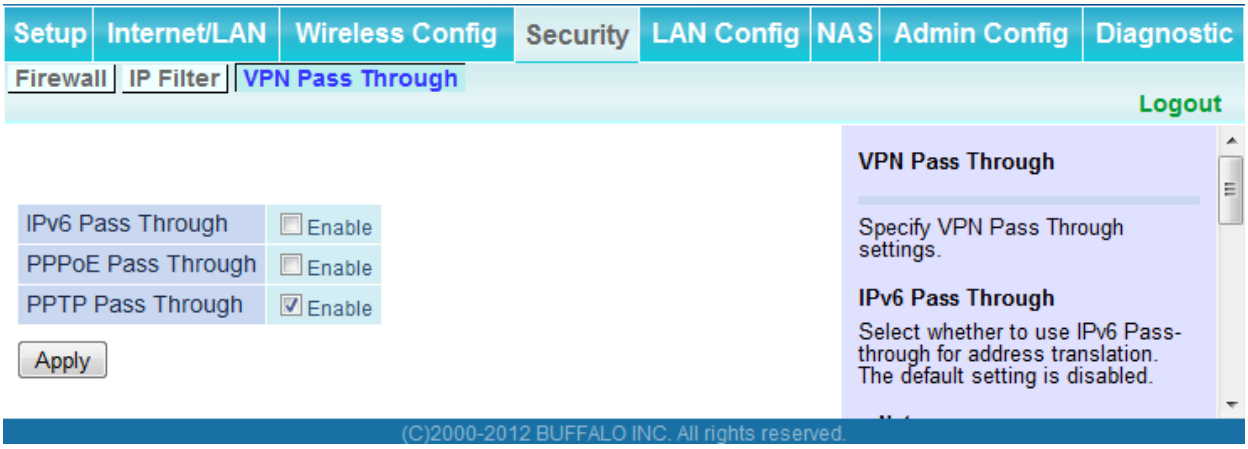
Edit IP filters.



Parameter	Meaning
Log Output	If enabled, IP filter activity is saved to a log.
Operation	Specify how to process target packets.
Direction	Specify the transmission direction of target packets.
IP Address	Specify the sender's IP address and receiver's IP address of the target packets.
Protocol	Select a protocol for target transmission packet.
IP Filter Information	Display the list of IP filters which have been registered.

VPN Passthrough (Router Mode only)

Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough.

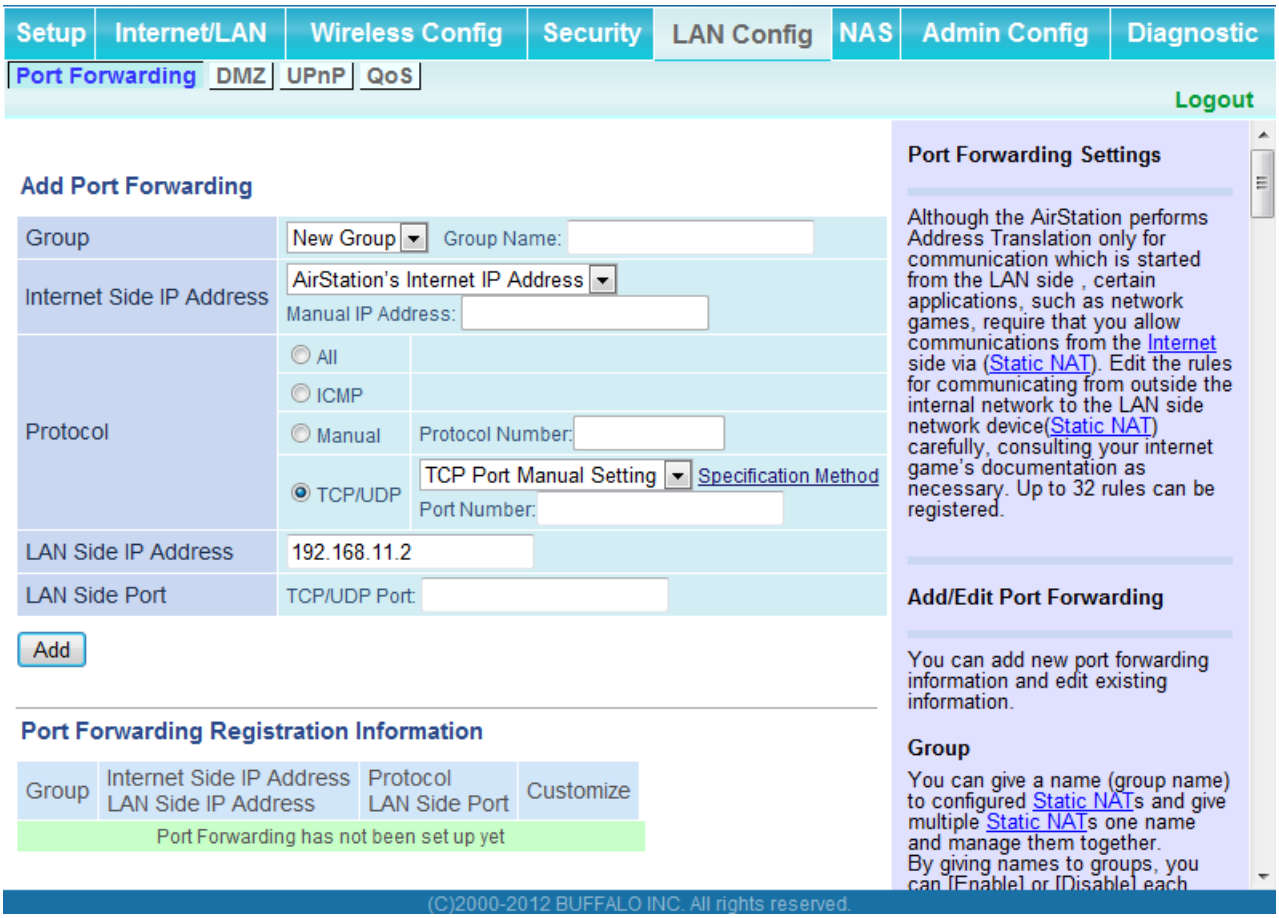


Parameter	Meaning
IPv6 Passthrough	Enable to use IPv6 Passthrough for address translation.
PPPoE Passthrough	Enable to use PPPoE bridging. PPPoE bridging lets you automatically obtain an IP address from your provider for your LAN-side computer using the PPPoE protocol because PPPoE packets can pass between the Internet and LAN.
PPTP Passthrough	Enable to use PPTP passthrough for address translation.

LAN Config

Port Forwarding (Router Mode only)

Configure port translation.

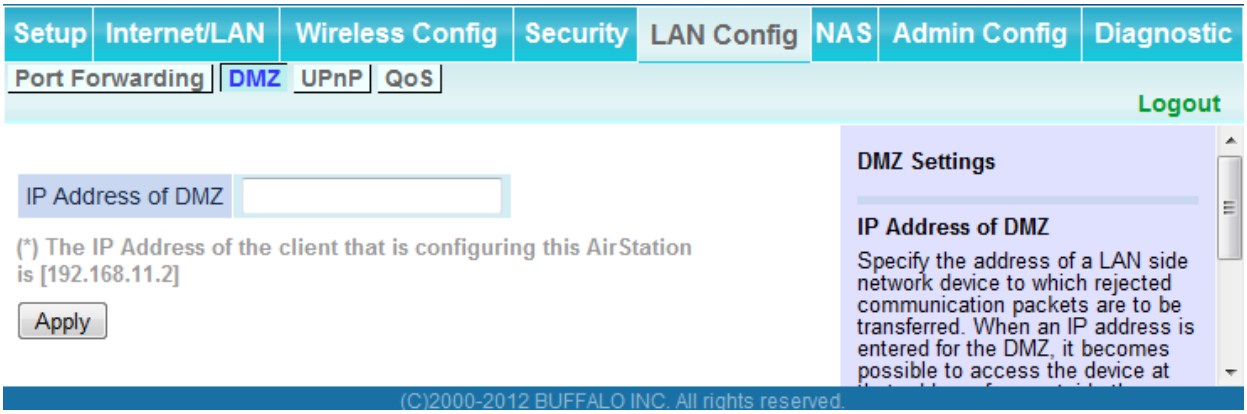


Parameter	Meaning
Group	Specify a group name for a new rule to belong to. Select [New Group] and enter the new group name in the Group Name field to create a new group. A group name can include up to 16 alphanumeric characters.
Internet Side IP Address	Enter the Internet side IP address (before translation) for the port translation table entry.
Protocol	Select the Internet side protocol (before translation) for the port translation table entry.

Parameter	Meaning
LAN Side IP Address	Enter the LAN side IP address (after translation) for the port translation table entry.
LAN Side Port	Select the LAN side (after translation) port number (1 - 65535) for the port translation table entry.
Port Forwarding Registration Information	Shows current entries in the port translation table.

DMZ (Router Mode only)

Configure a destination to transfer communication packets without a LAN side destination to.



Parameter	Meaning
IP Address of DMZ	Enter the IP address of the destination to which packets which are not routed by a port translation table are forwarded. Note: RIP protocol packets (UDP port number 520) will not be forwarded.

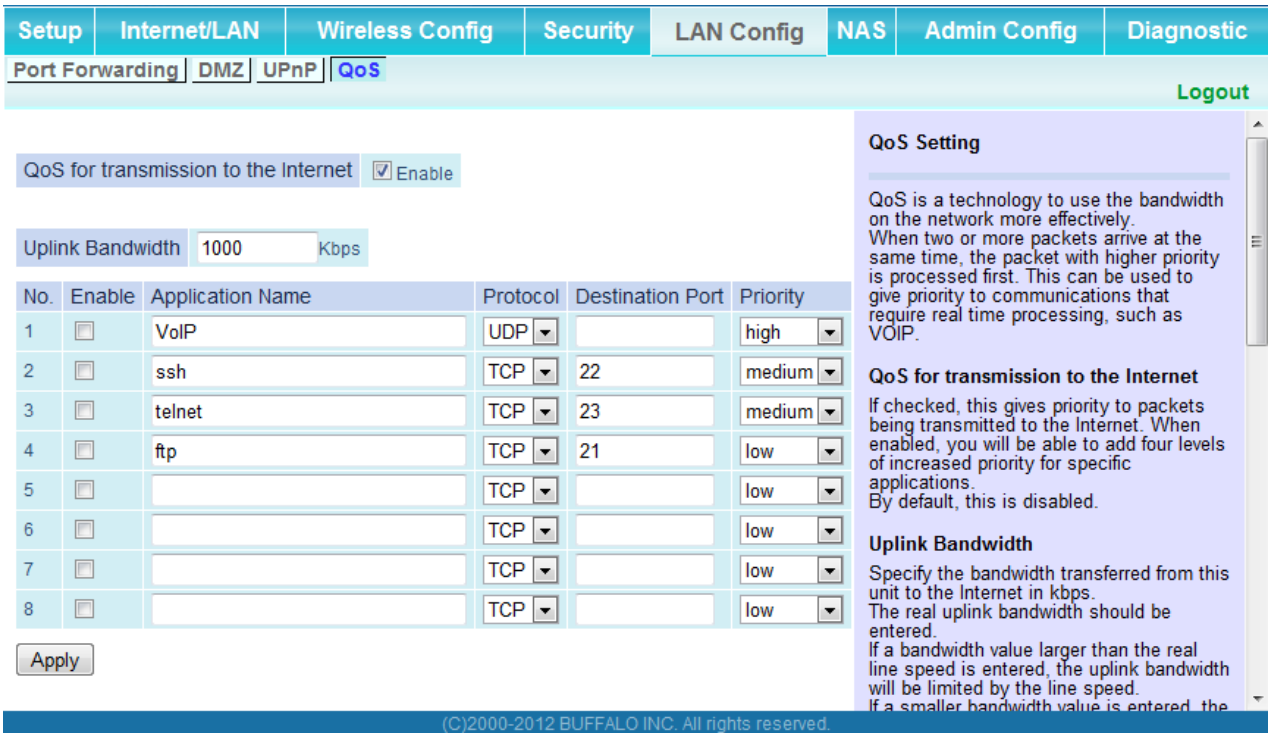
UPnP (Router Mode only)

Configure UPnP (Universal Plug and Play).

Parameter	Meaning
UPnP	Enable or disable Universal Plug and Play (UPnP) functionality.

QoS (Router Mode only)

Configure the priority of packets sent to the Internet.



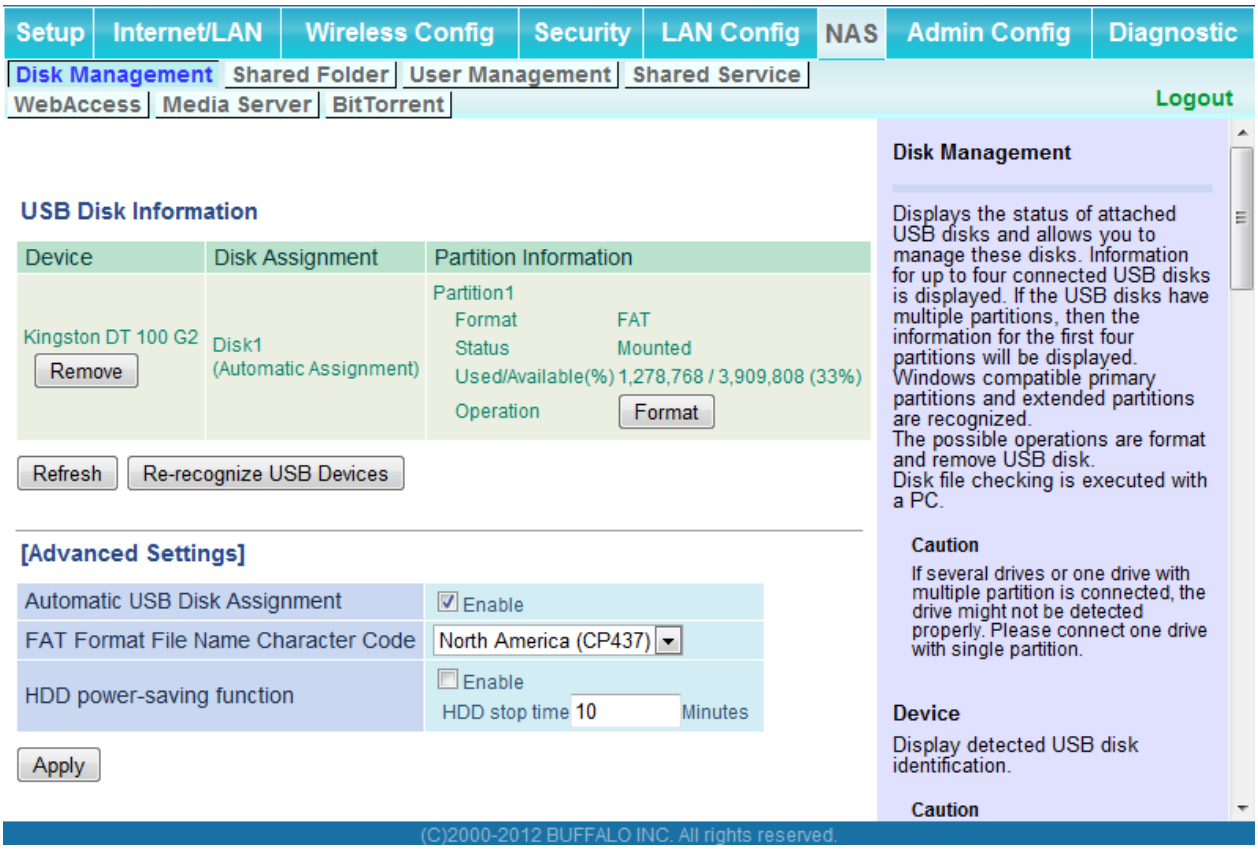
Parameter	Meaning
QoS for transmission to the Internet	Determine whether or not to prioritize packets sent to the Internet. Check this box to enable QoS.
Upload bandwidth	Specify the upstream bandwidth in kbps from the AirStation to the internet side. Set the actual value for the upstream bandwidth.
Enable	Enable or disable this entry.
application name	Enter an application name. Names may use up to 32 alphanumerical characters, double or single tick marks ("'), quotation marks (”), and semicolons (;).
protocol	Select either TCP or UDP.
destination Port	Specify a destination port from 1 - 65535. If this field is empty, a random port is selected.

Parameter	Meaning
priority	Select high, medium or low. If packets do not qualify for classification as a type on the list, then their priority is treated as a level between medium and low.

NAS

Disk management

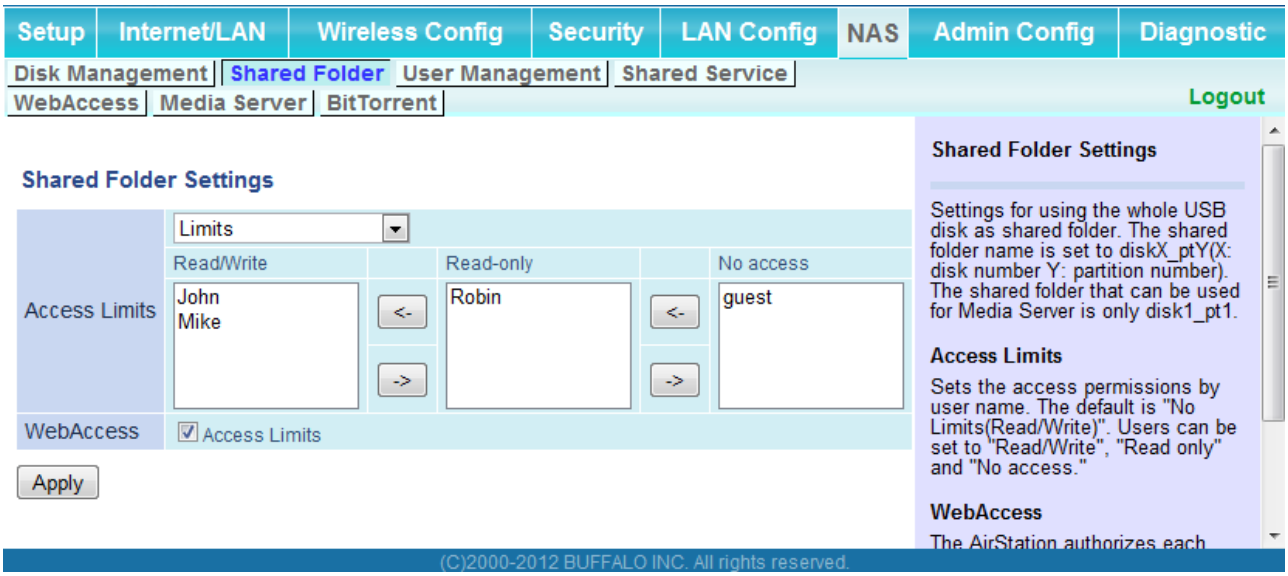
View the status of and configure attached USB disks.



Parameter	Meaning
Device	Displays information for attached USB disks. Disks are removed when [Remove] in the Device column is clicked.
Disk Assignment	A disk number will be automatically assigned to the disk or you can choose a number. Select a disk number, or select [Do not assign], then click [Apply].
Partition Information	Displays the partition information for the selected USB disk. Click [Format] to format the disk. Note: formatting a disk will erase all information on it.
Re-recognize USB devices	Click this to re-scan for connected USB disks.
Automatic USB Disk Assignment	Check [Enable] to automatically select an attached USB hard disk. The entire drive will be used as the shared folder. To configure your disk and share manually, uncheck [Enable].
FAT format file name character code	Select the character code for filenames in FAT formatted partitions.
HDD power-saving function	Click [Enable] to enable power saving mode.
HDD stop time	Powers down the drive after this duration of time.

Shared Folder

Configure a USB disk for use with shared folders.



Parameter	Meaning
Shared Folder Name*	Enter a name for the shared folder. Up to 18 alphanumeric characters, spaces, hyphens (-), and underscores (_) may be used.
Shared Folder Description*	Enter a description of the shared folder (optional). Up to 75 alphanumeric characters, spaces, hyphens (-), and underscores (_) may be used.
Disk Partition Area*	Displays the partition area, format type, and the capacity of the USB disk.
Disclosed to*	Check the functionality that you want to support. Win/Mac OS (Samba NAS), Web Access, Media Server, and/or BitTorrent may be checked. Only one folder may be chosen for either Media Server or BitTorrent functionality.
Access Limits	If access limits are enabled, use the arrows to move highlighted users between the columns for [Read/Write], [Read-only], or [No access] privileges.

Parameter	Meaning
Web Access	You may also select to enforce access limits on users accessing through Web Access by checking the Access Limits checkbox. Users will have the same access levels as assigned above. If Access Limits is not checked, then all users accessing the shared folder via Web Access will have [Read only] access..
Shared Folder Registration Information*	Displays information about the shared folder.

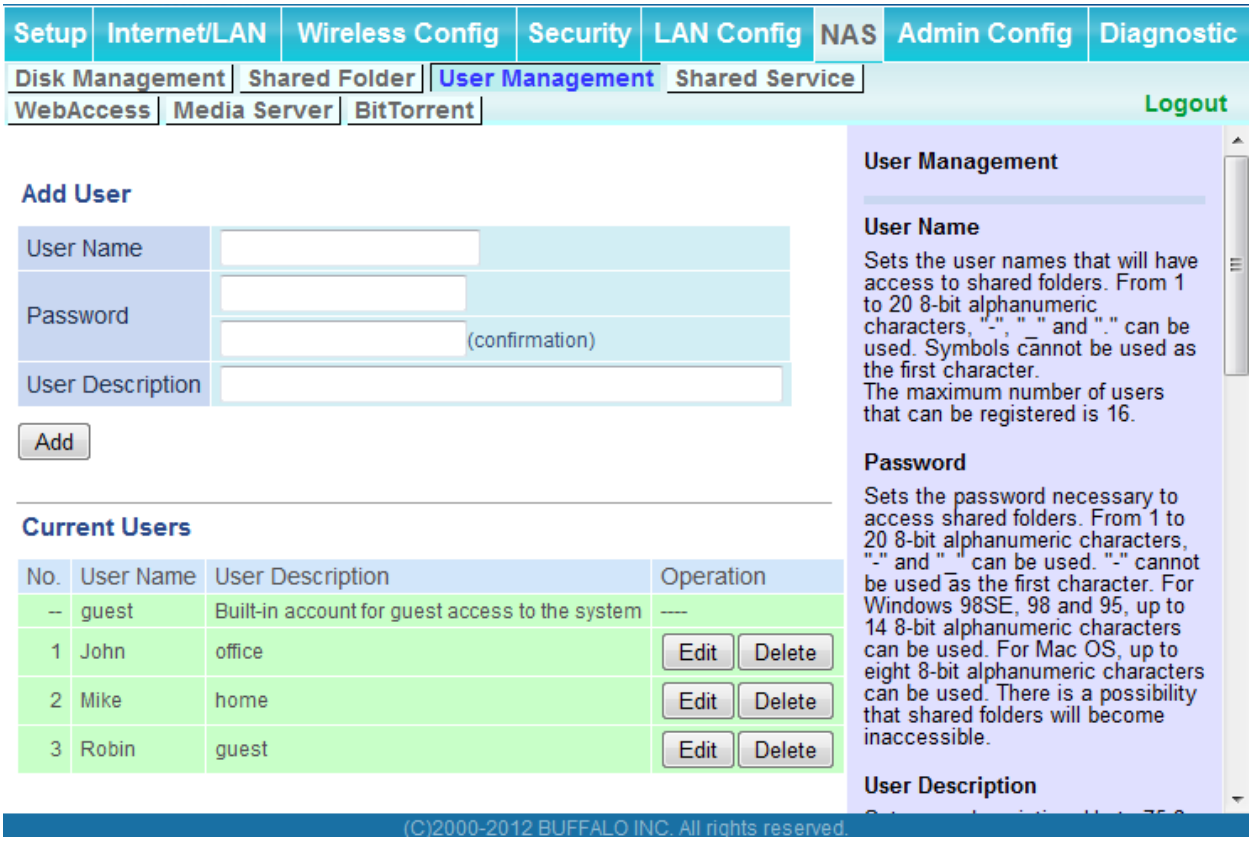
* This is not displayed when Automatic USB Disk Assignment (page 56) is used:

The following shared folder settings are used when Disk Management is activated:

- All folders: Access limits in effect.
- Shared Folder/ Web Access: All folders are shared.
- Media Server/BitTorrent: The first folder is shared.

User Management

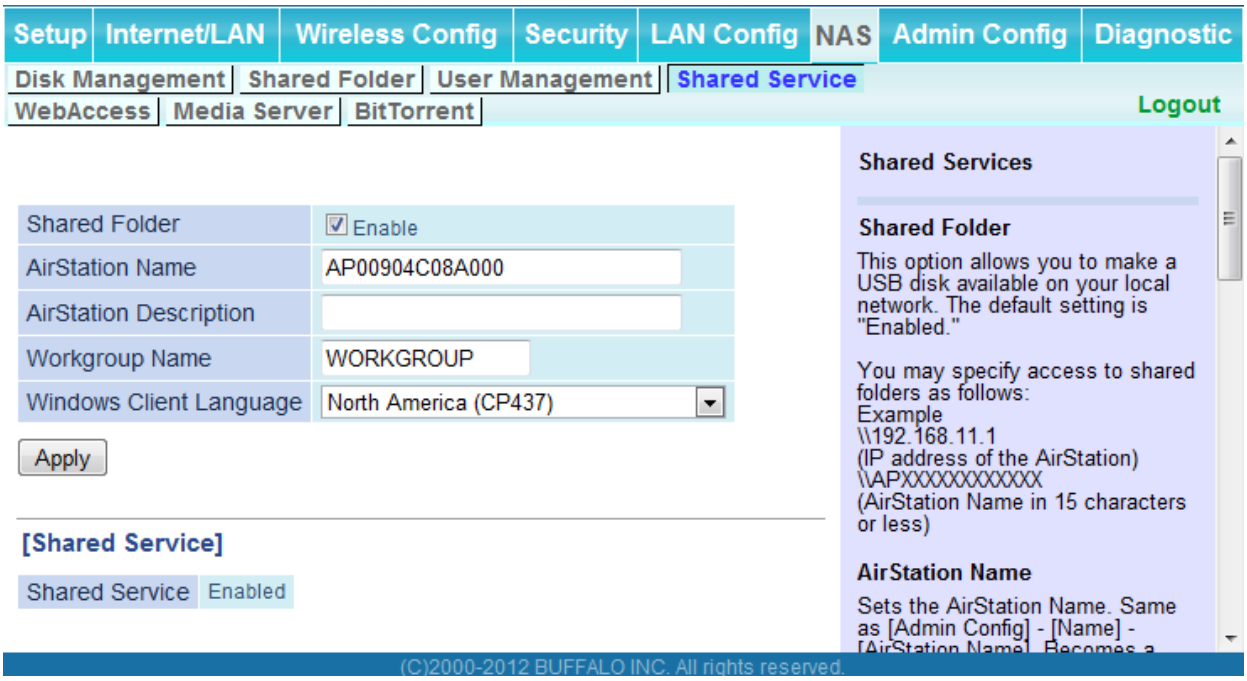
This screen lets you add users to the access list with the ability to access shared folders.



Parameter	Meaning
Username	Enter the name of a user to be given access to the shared folder. Up to 20 alphanumeric characters, space, hyphens (-), and underscores (_) may be used for each user. Up to 16 users may be entered.
Password	Enter the user's password. Use of the same password that they use to log into their computer is recommended. Up to 20 alphanumeric characters, spaces, hyphens (-), and underscores (_) may be used. For Windows 98SE/98/95 users, up to 14 alphanumeric characters may be used. Mac OS users may use up to 8 alphanumeric characters. If you enter a longer password than your users can use, then they will not be able to access the share.
User Description	Describe the user (optional). Up to 75 alphanumeric characters, spaces, hyphens (-), and underscores (_) may be used.
Current Users	Lists current users, including "guest". Guest is a built-in account that cannot be changed or deleted.

Shared Service

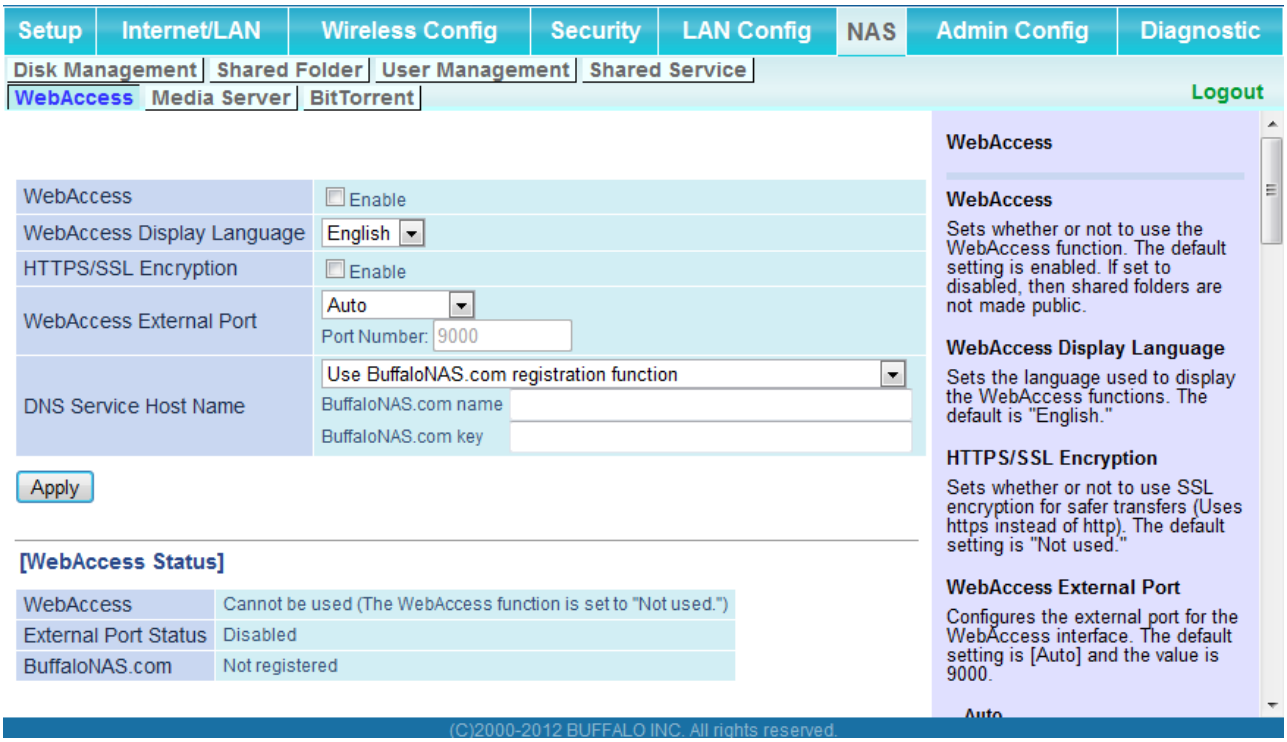
Assign AirStation and workgroup names to access shared folders.



Parameter	Meaning
Shared Folder	Enable to make a USB disk available on your local network.
AirStation name	Rename your AirStation if desired. Up to 15 alphanumeric characters, space, and hyphens (-), may be used. The AirStation name is also used as the hostname that will be used with the shared service. The shared service may not be available if you use over 15 alphanumeric characters in your AirStation's name.
AirStation Description	Describe the AirStation (optional). Up to 48 alphanumeric characters, space, hyphens (-), and underscores (_) may be used.
Workgroup name	Enter your workgroup name. Up to 15 alphanumeric characters, space, hyphens (-), underscores (_), and periods (.) may be used.
Windows Client Language	Select the language to be used by the Windows client.
Shared Service	Displays the status of the USB disk that is used with the shared service.

Web Access

The screen to configure Web Access.

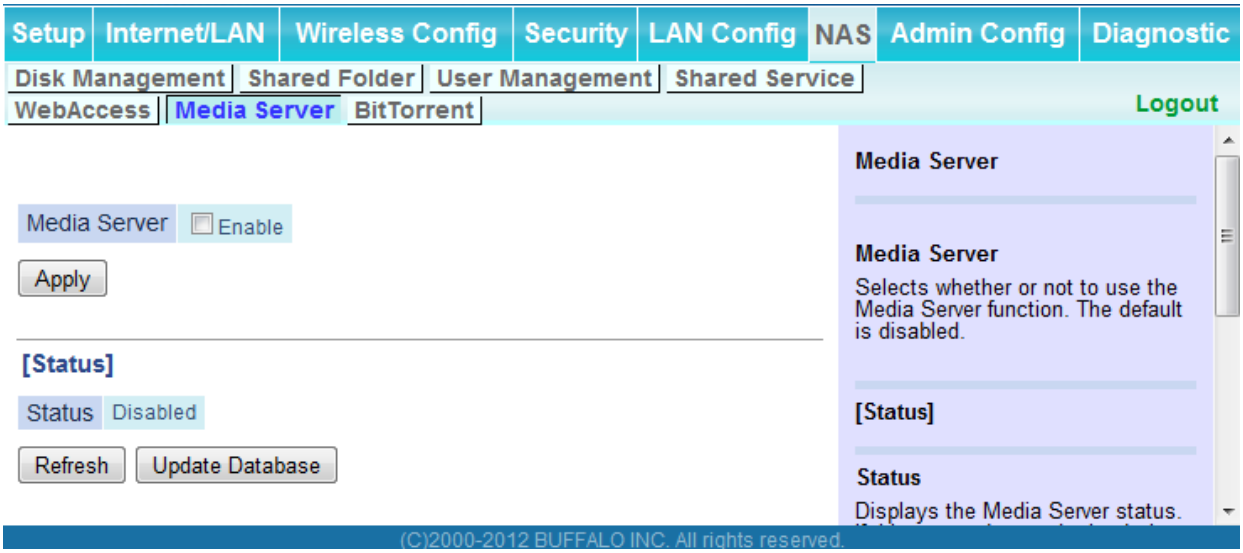


Parameter	Meaning
Web Access	Check [Enable] to use Web Access.
Web Access Display Language	Set the language to be used with Web Access.
HTTPS/SSL Encryption	Check [Enable] to use SSL encryption for protected data transfer.
Web Access External Port	Automatically sets the external port used for Web access. To select the port manually, select [Manual].

Parameter	Meaning
DNS Service Hostname	Sets the DNS Service Hostname when the Web access function is activated. Select [Use BuffaloNAS.com registration function] to use the Web access function easily. You'll have to configure a [BuffaloNAS.com name] and [BuffaloNAS.com key] to use BuffaloNAS.com. 3 - 0 alphanumeric characters, spaces, hyphens (-), underscores (_) and period (.), may be used in the BuffaloNAS.com name. 3 - 20 alphanumeric characters, spaces, hyphens (-), underscores (_) and period (.), may be used in the BuffaloNAS.com key. Note: The registered name is deleted from the server if the AirStation is disconnected from power, even for a moment.
Web Access	Displays the status of web access.
External Port Status	Displays the status of the external port.
BuffaloNAS.com	Displays the status of BuffaloNAS.com.

Media Server

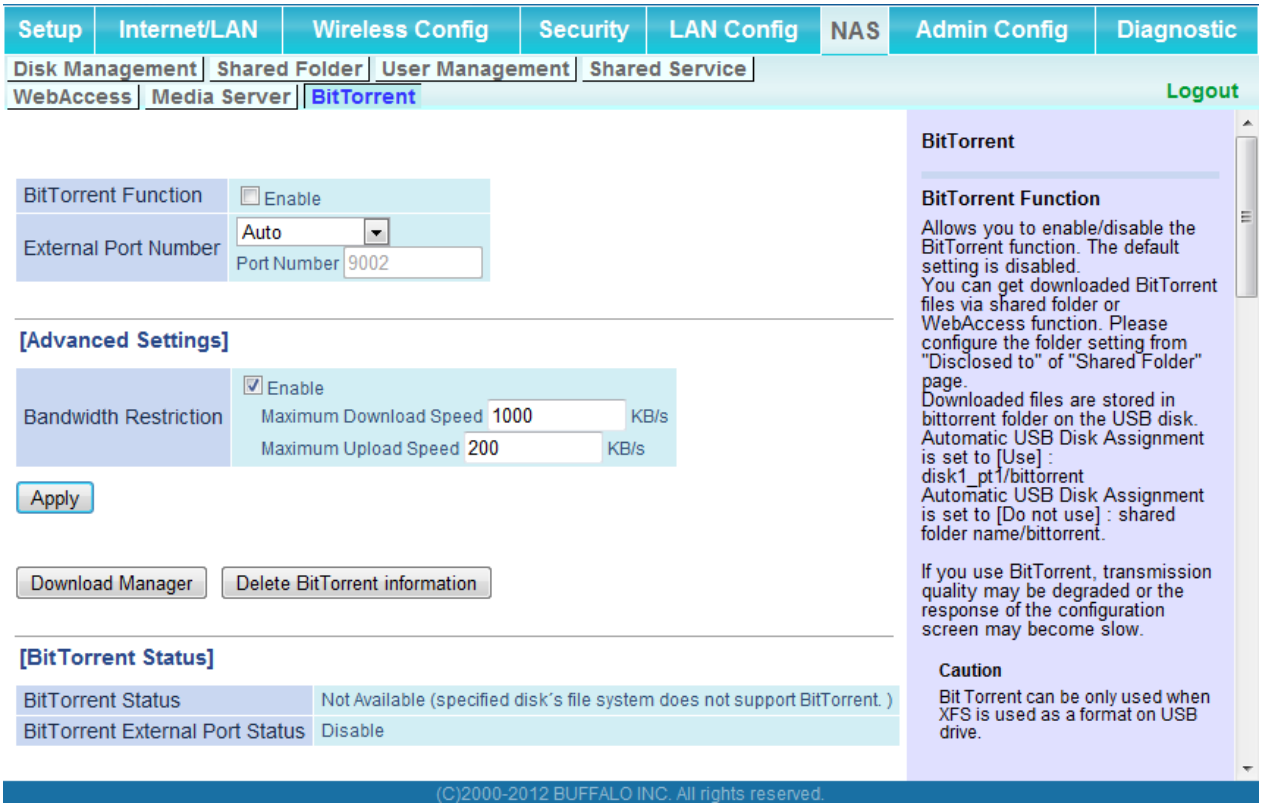
Media Server settings.



Parameter	Meaning
Media Server	Enable to use the media server.
Status	Displays the status of the media server.

BitTorrent

Configure the BitTorrent client.



Parameter	Meaning
BitTorrent Function	Enable to use the BitTorrent client. If the BitTorrent client is enabled, overall communication performance may decrease and settings screens may respond slower. If that happens, reformat the USB disk with XFS. That may help performance.
External Port Number	Select an external port number.

Parameter	Meaning
Bandwidth Restriction	Set a bandwidth limit for BitTorrent.
[Download Manager]	Displays the BitTorrent download manager screen. Add a torrent, then click [Add] to download the file(s).
[Delete BitTorrent information]	Deletes all files, including the torrent files and files which are currently downloading. Downloaded files are not deleted.
BitTorrent Status	Displays the status of the BitTorrent client.
BitTorrent External Port Status	Display the external port status of the BitTorrent client.

You can download the latest Windows BitTorrent client from www.bittorrent.com.

Admin Config

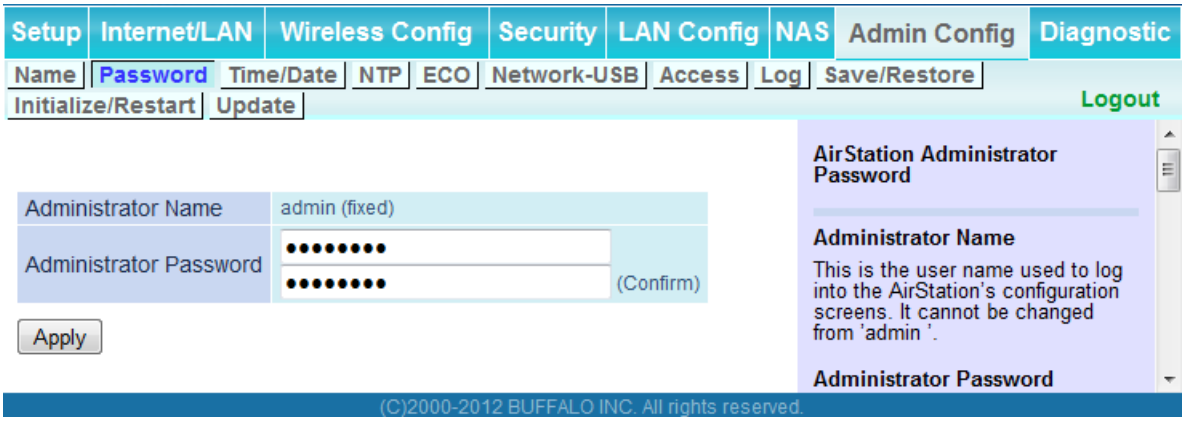
Name

Configure basic AirStation settings.

Parameter	Meaning
AirStation Name	Enter a name for the AirStation. Names may include up to 64 alphanumeric characters and hyphens (-).
List Network Services	Enable or disable this to display the computers and devices on your network with their supported services.

Password

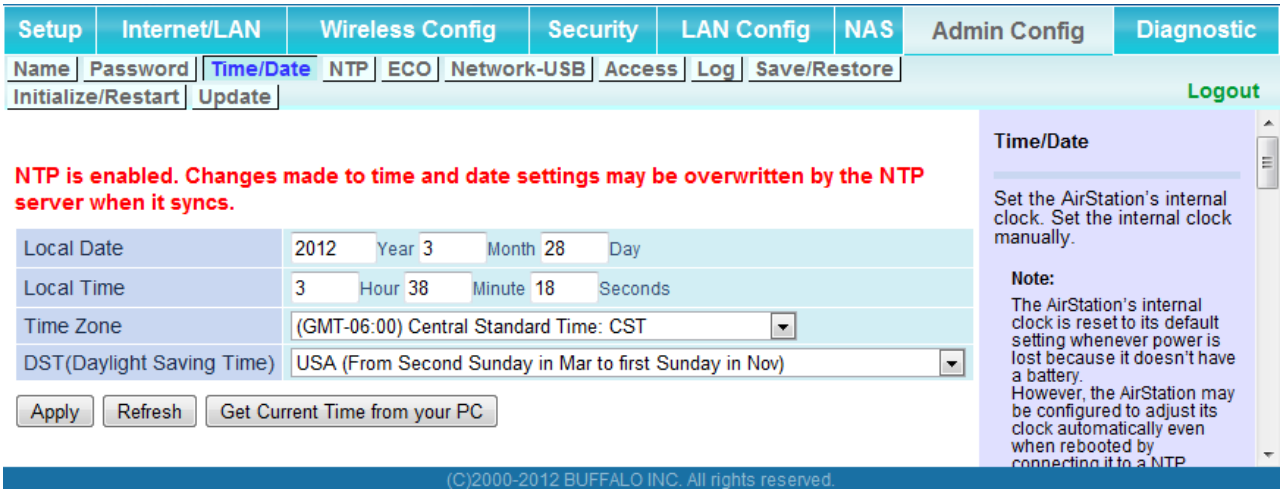
Configure the password to log in to the AirStation's configuration screen.



Parameter	Meaning
Administrator Name	The name of the Administrator account is "admin".
Administrator Password	The Administrator password may contain up to 8 alphanumeric characters and underscores (_).

Time/Date

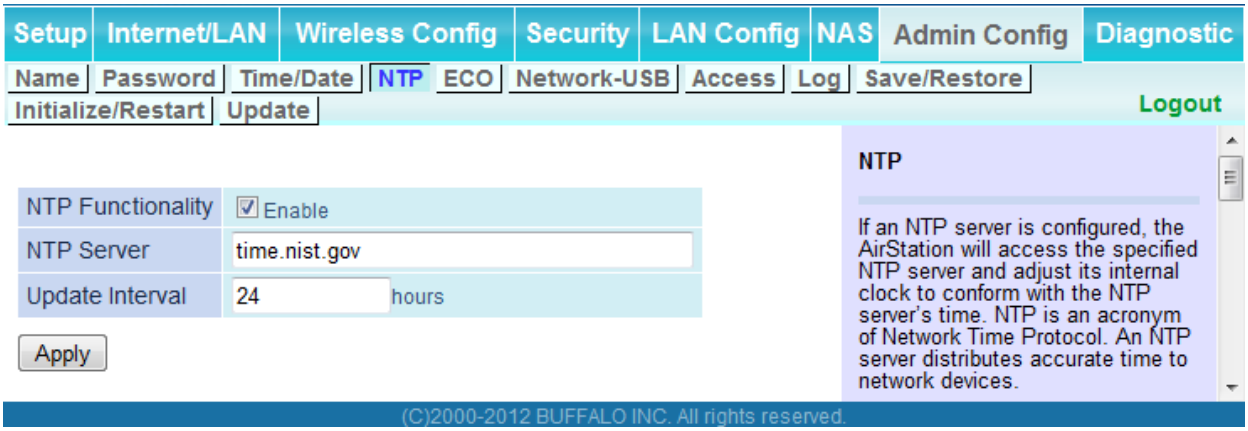
Configure the AirStation's internal clock.



Parameter	Meaning
Local Date	You may manually set the date of the AirStation's internal clock.
Local Time	You may manually set the time of the AirStation's internal clock.
Time Zone	Specify the time zone (offset of Greenwich Mean Time) of the AirStation's internal clock.
DST (Daylight Saving Time)	You may configure the AirStation to automatically use DST (Daylight Saving Time). If selected, the AirStation will automatically adjust the time at the beginning and end of DST.

NTP

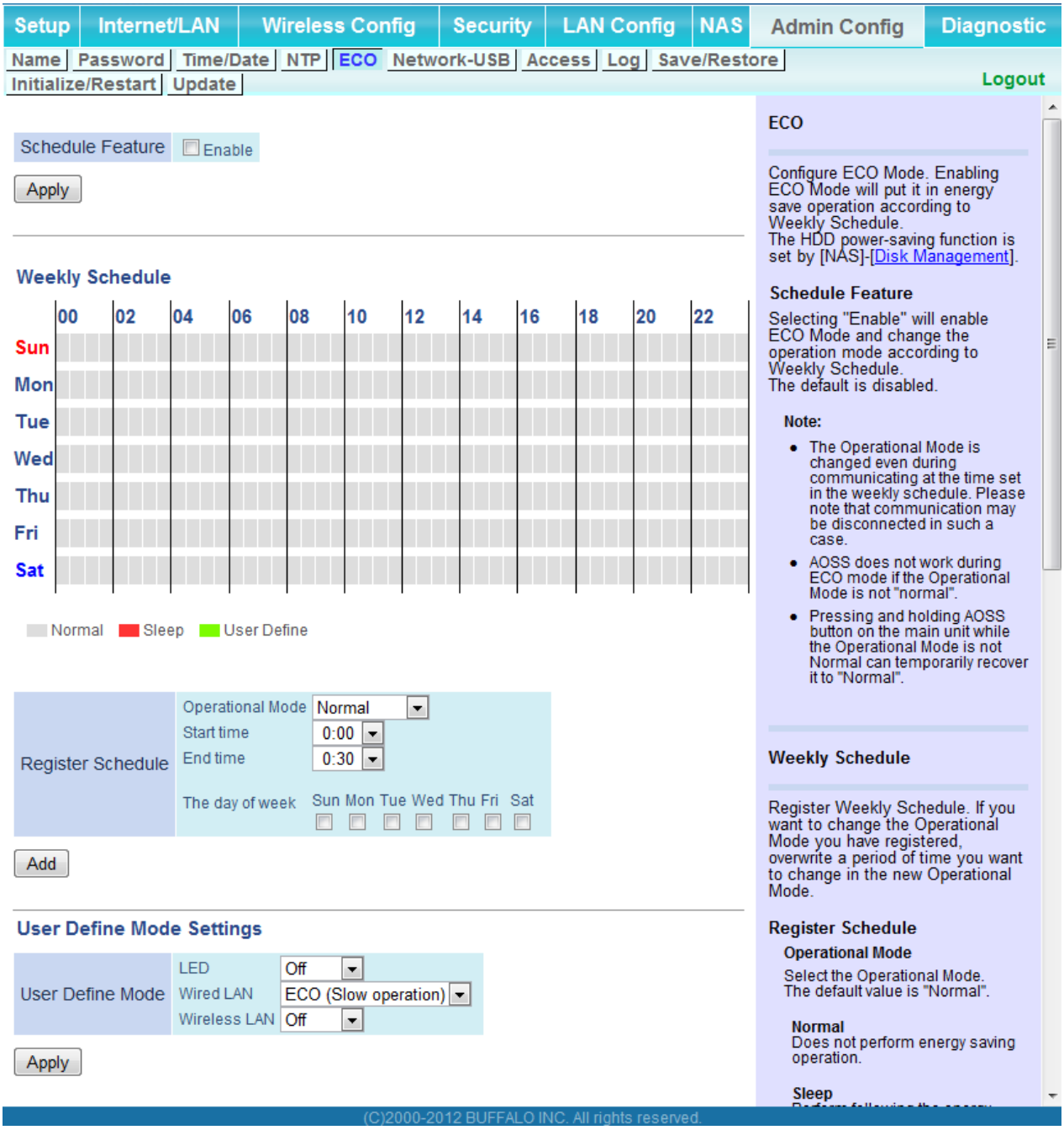
Configure an NTP server to automatically synchronize the AirStation's internal clock.



Parameter	Meaning
NTP Functionality	Enable to use an NTP server. The default is Enabled.
NTP Server	Enter the name of the NTP server as a hostname, hostname with domain name, or IP address. Up to 255 alphanumeric characters, hyphens (-), and underscores (_) may be used. The default is "time.nist.gov".
Update Interval	How often will the AirStation check the NTP server for the correct time? Intervals of 1 - 24 hours may be set. The default is 24 hours.

ECO

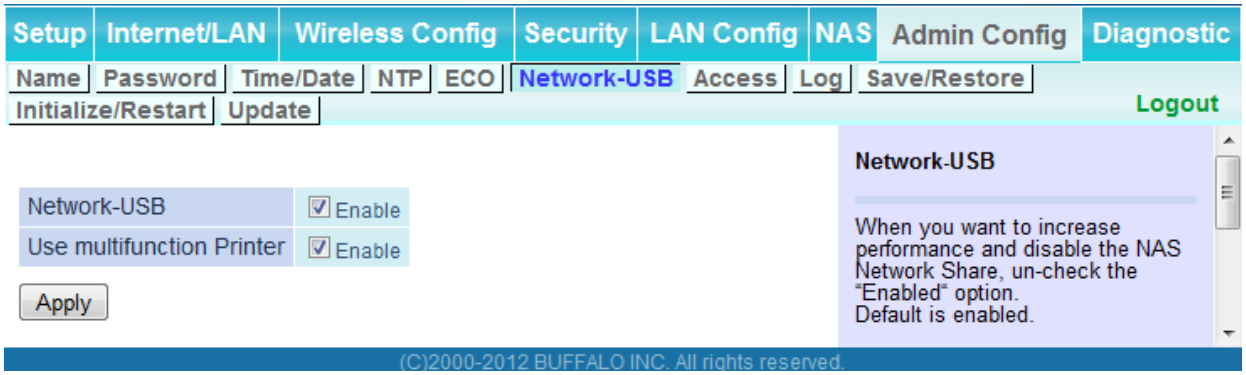
Configure Eco mode from this screen.



Parameter	Meaning
Schedule feature	Enable to schedule Eco Mode. If Eco mode is enabled, AOSS will function only when the AirStation is in Normal operating mode.
Weekly schedule	Graphically displays the configured schedule.
Register schedule	Configure operational mode for time periods in the weekly schedule. If User Defined mode is chosen, configure it below.
User Defined Mode	Individual power saving elements may be configured for User Defined mode.

Network-USB

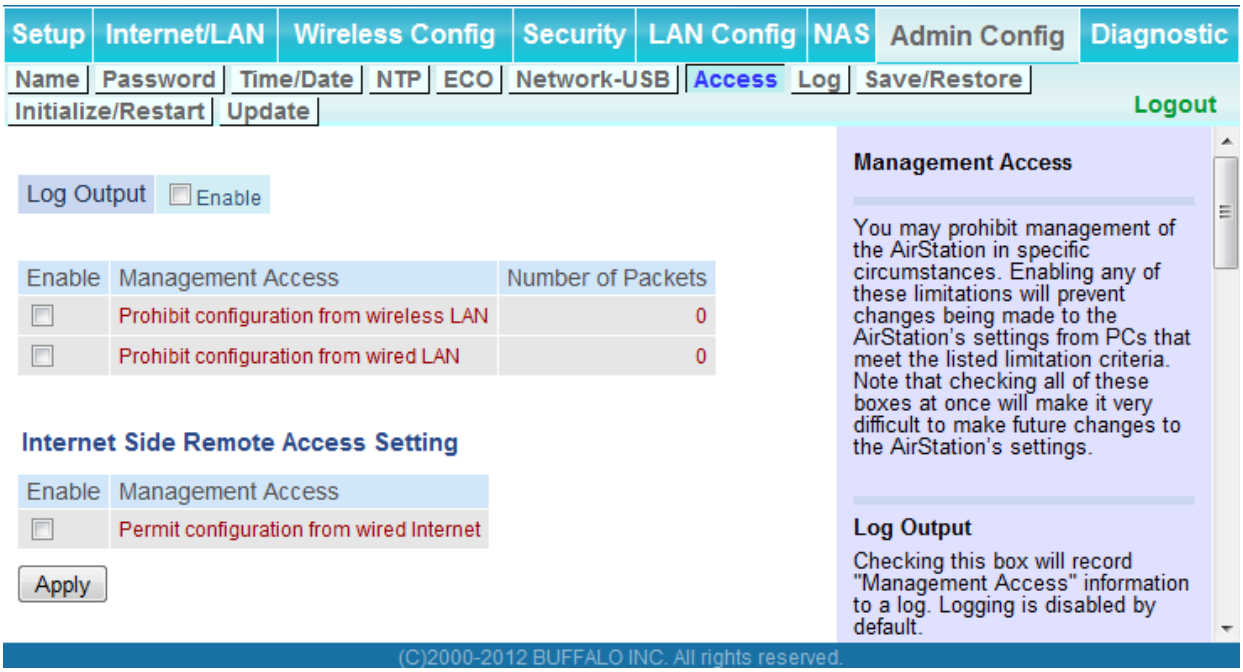
Configure Network-USB from this screen.



Parameter	Meaning
Network-USB	Network-USB allows sharing USB devices connected to the AirStation from multiple computers on a wired or wireless LAN. Disable to reduce the impact on the NAS and other functions, improve performance, or for security reasons.
Use multifunction Printer	This uses a multifunction printer supporting mass storage classes as a printer. Disable if using as a NAS instead.

Access

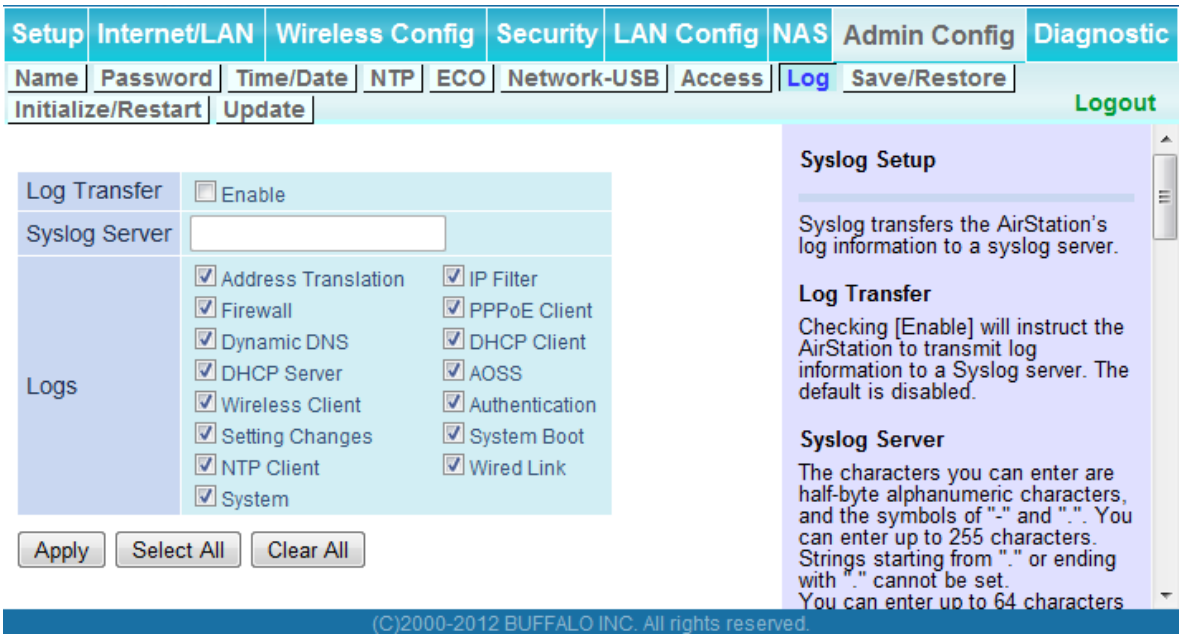
Restrict access to the AirStation's configuration interface.



Parameter	Meaning
Log Output	Enabling outputs a log of changes to access settings.
Prohibit configuration from wireless LAN	If enabled, prevents access to configuration interface from wirelessly connected devices (only wired devices may configure).
Prohibit configuration from wired LAN	If enabled, prevents access to configuration interface from wired devices (only wirelessly connected devices may configure).
Permit configuration from wired Internet	If enabled, allows access to configuration interface from network devices on the WAN (Internet) side.
Permitted IP address	Displayed only if Internet side configuration is enabled. Enter the IP address of a device that is permitted to configure the AirStation remotely from the WAN (Internet) side.
Permitted Port	Displayed only if Internet side configuration is enabled. Set a port number (1 - 65535) to configure the AirStation from the WAN (Internet) side.

Log

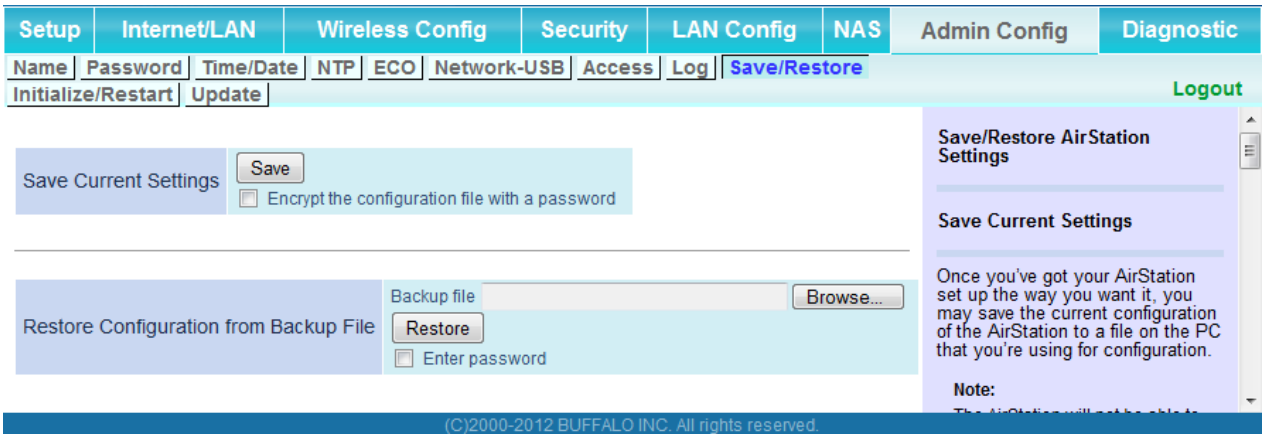
Transfer the AirStation's logs to a syslog server.



Parameter	Meaning
Log Transfer	Enable to send logs to a syslog server.
Syslog Server	Identify the syslog server by hostname, hostname with domain name, or IP address. You may enter up to 255 alphanumeric characters, hyphens (-), and underscores (_).
Logs	Choose which logs will be transferred to the syslog server.

Save/Restore

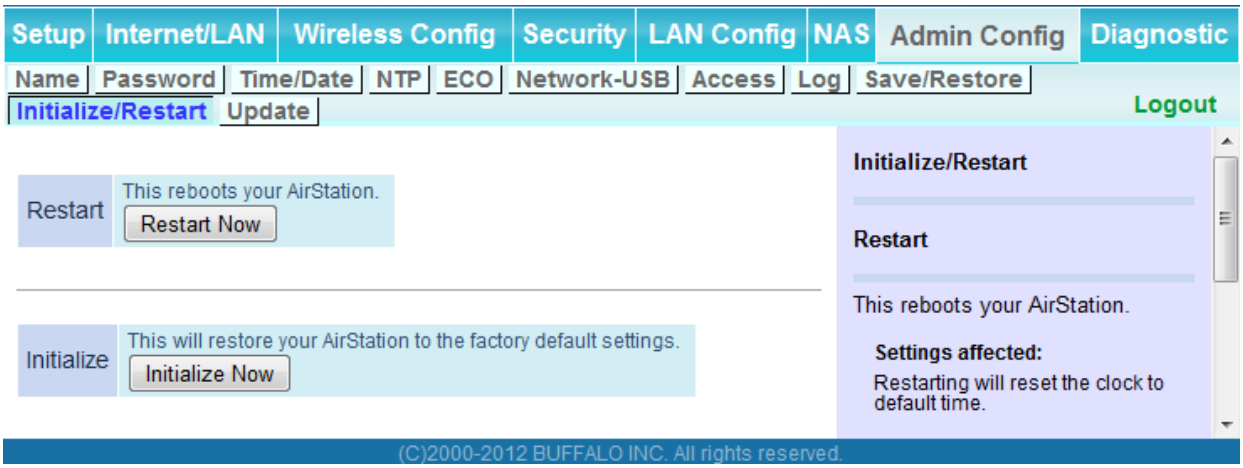
Save AirStation settings as a file and restore from them later.



Parameter	Meaning
Save current settings	Clicking [Save] will save the current configuration of the AirStation to a file. If the [Encrypt the configuration file with a password] option is checked, then the configuration file will be password protected with the current administrator password.
Restore Configuration from Backup File	Restore the configuration of the AirStation from a saved configuration file by clicking the [Browse...] button, navigating to the configuration file, and then clicking [Restore]. If the configuration file was password protected, then put a check next to [To restore from the file you need the password], enter the password, and click [Open].

Initialize/Restart

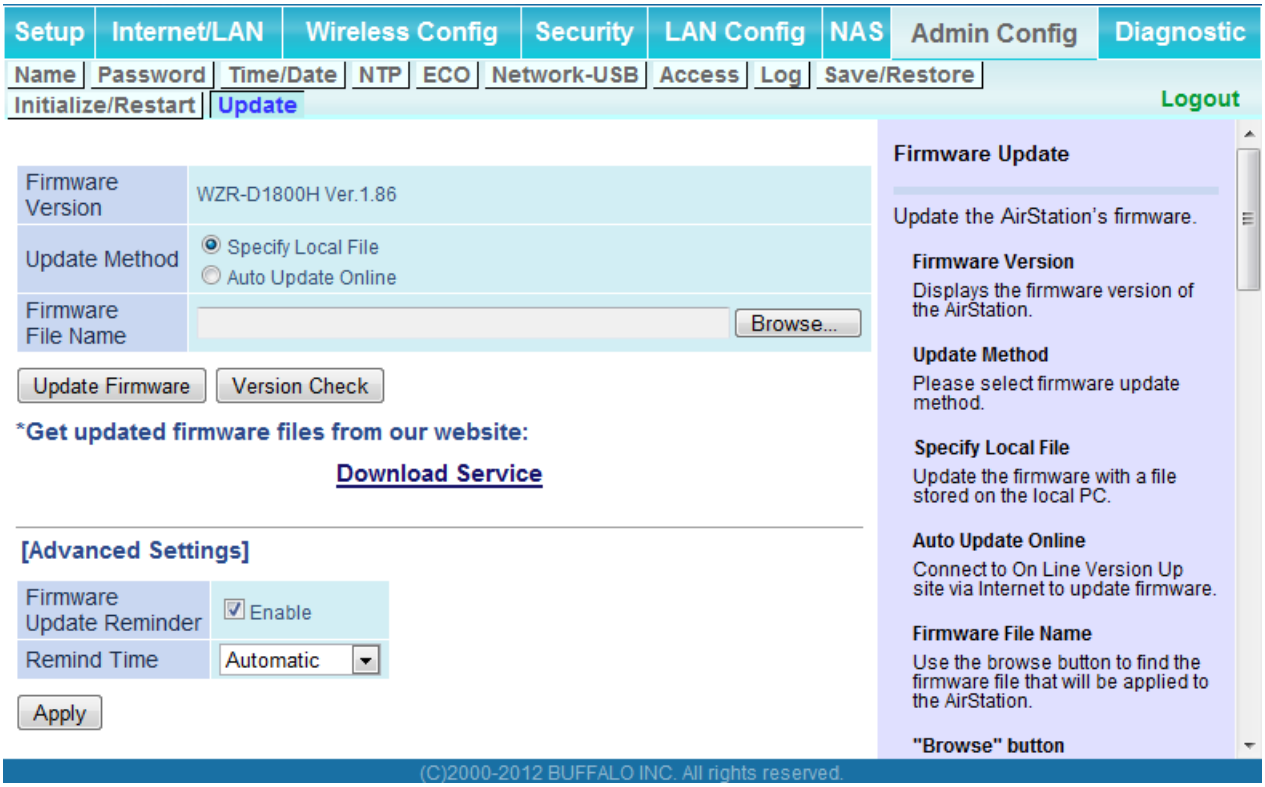
Initialize or restart the AirStation.



Parameter	Meaning
Restart	Click [Restart Now] to restart the AirStation.
Initialize	Click [Initialize Now] to initialize and restart the AirStation.

Update

Update the AirStation's firmware.



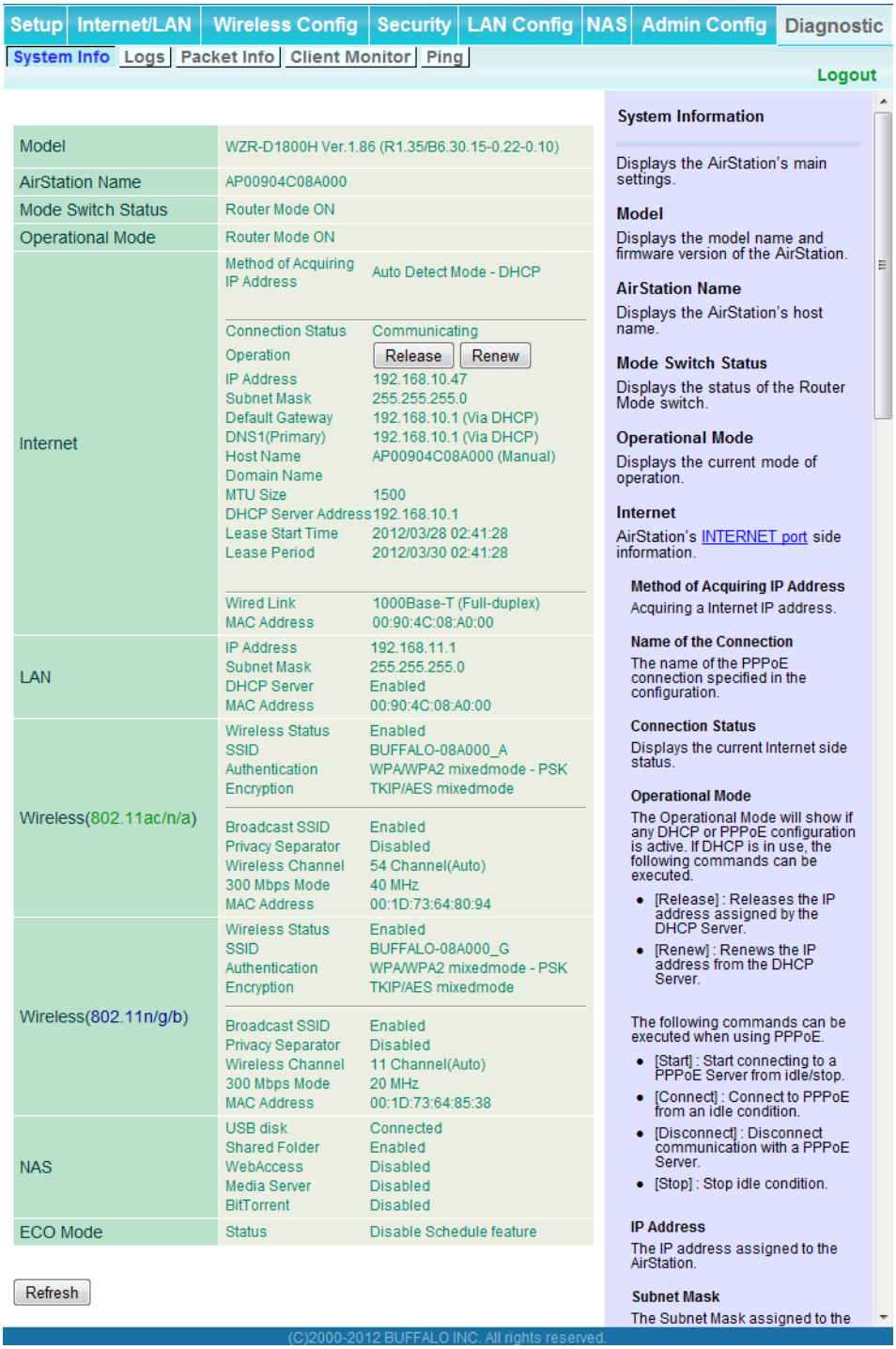
Parameter	Meaning
Firmware Version	Displays the current firmware version of the AirStation.
Update Method	**Specify Local File** Updates from a firmware file stored on your computer. **Automatic Update Online** Automatically updates to the latest firmware available.
Firmware File Name	Click [Browse...] to navigate to the firmware file on your computer if [Specify Local File] was selected. You don't need to specify the firmware location if you're using [Automatic Update]. Click [Update Firmware] to update the firmware.

Parameter	Meaning
Firmware Update Reminder	This sets whether the Firmware Update Reminder function is used. When enabled, if new firmware is found, notification is sent to the Configuration Interface.
Remind time	This sets the interval for checking whether a new firmware version has been released.

Diagnostic

System Info

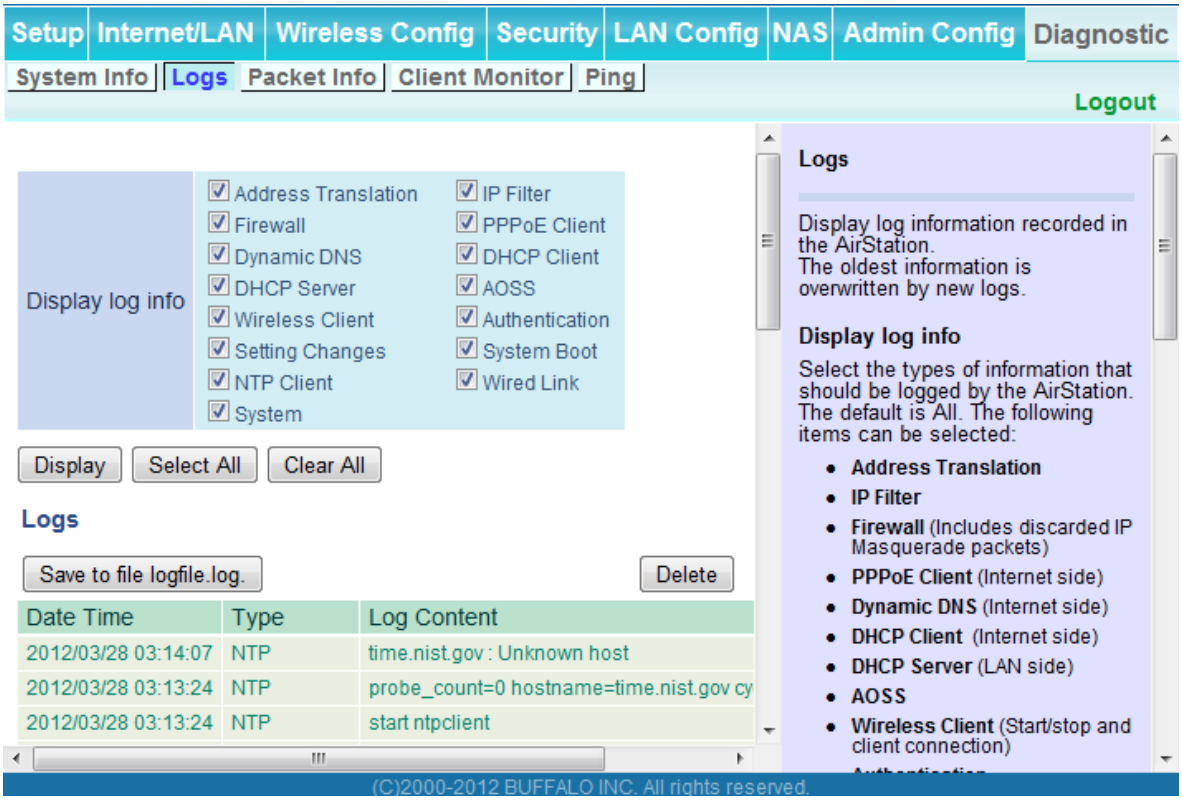
View system information for the AirStation.



Parameter	Meaning
Model	Displays the product name of the AirStation and the firmware version.
AirStation Name	Displays the name of the AirStation.
Mode Switch Status	Displays the status of the AirStation's mode switch.
Operational Mode	Displays the AirStation's current operational mode.
Internet	Displays information about the Internet port.
LAN	Displays information about the LAN port.
Wireless	Displays the wireless status.
NAS	Displays information about the USB disk.
ECO Mode	This indicates the operating status of ECO Mode.

Logs

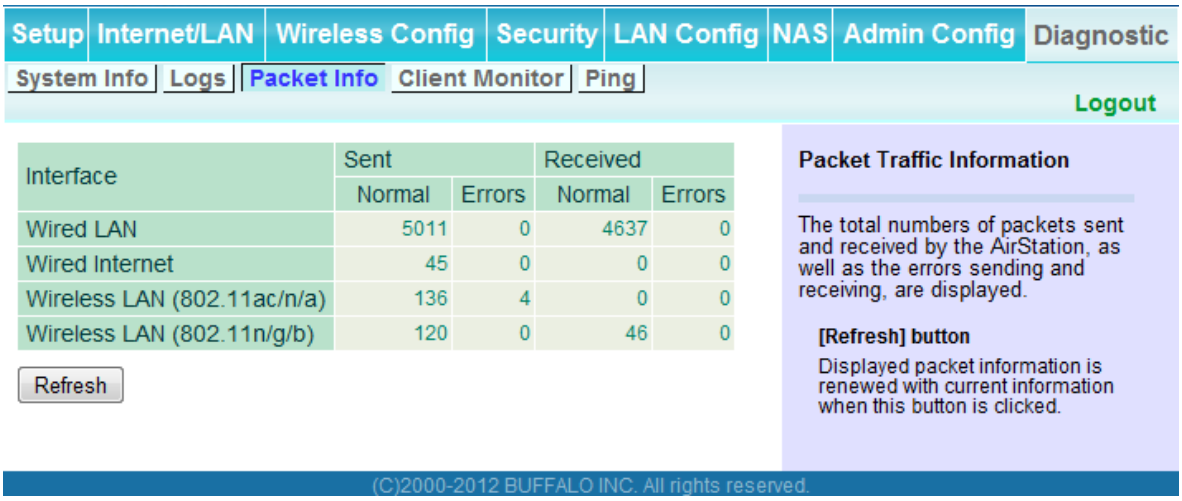
The AirStation's logs are recorded here.



Parameter	Meaning
Display log info	Choose the types of logs to display.
Logs	Displays the log information recorded in the AirStation.

Packet Info

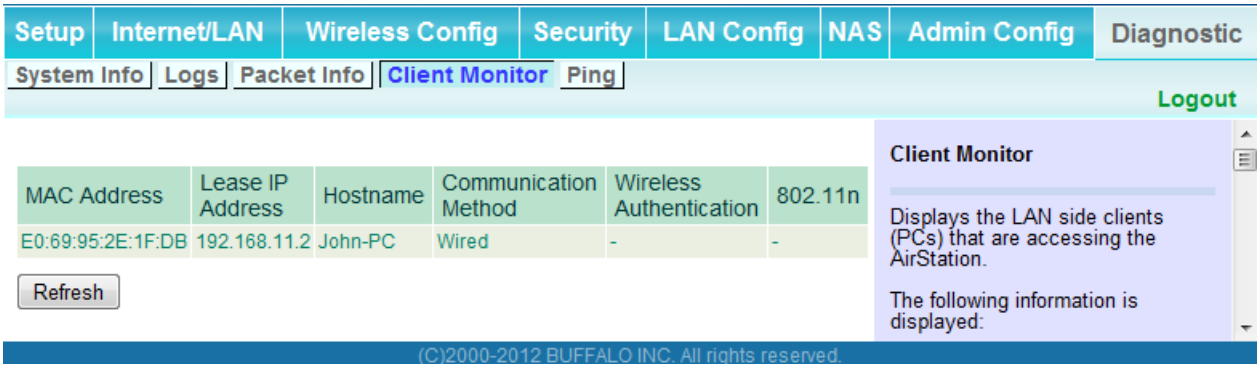
View packet transfer information.



Parameter	Meaning
Sent	Displays the number of packets sent to the WAN, the LAN, and the wireless LAN.
Received	Displays the number of packets received from the WAN, the LAN, and the wireless LAN.

Client Monitor

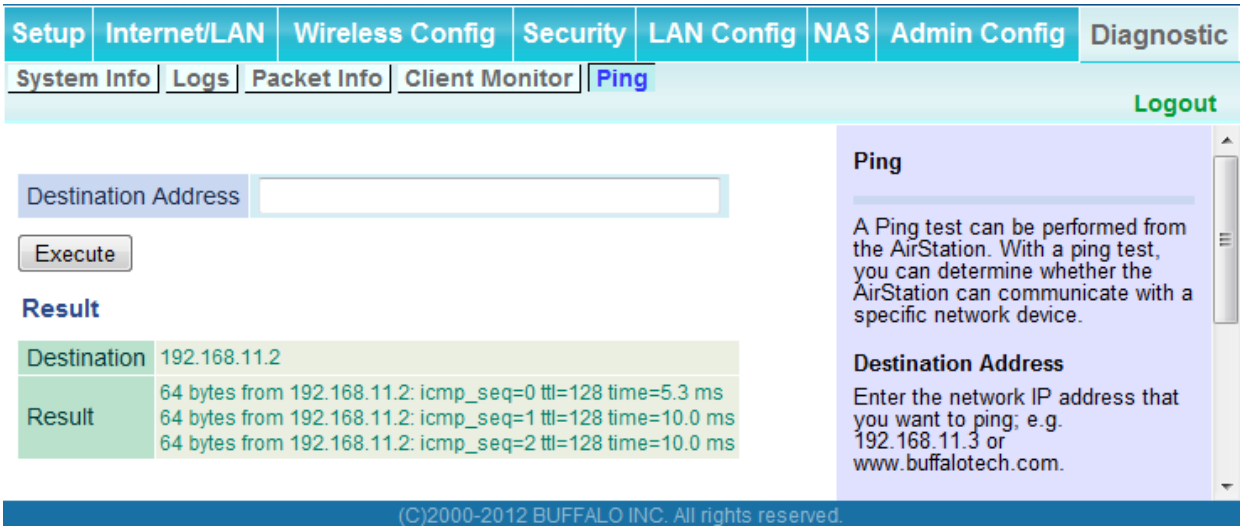
This screen shows devices that are connected to the AirStation.



Parameter	Meaning
Client Monitor	Displays information (MAC address, lease IP address, hostname, communication method, wireless authentication and 802.11n) for devices that are connected to the AirStation.

Ping

A ping test checks whether the AirStation can communicate with a specific network device.



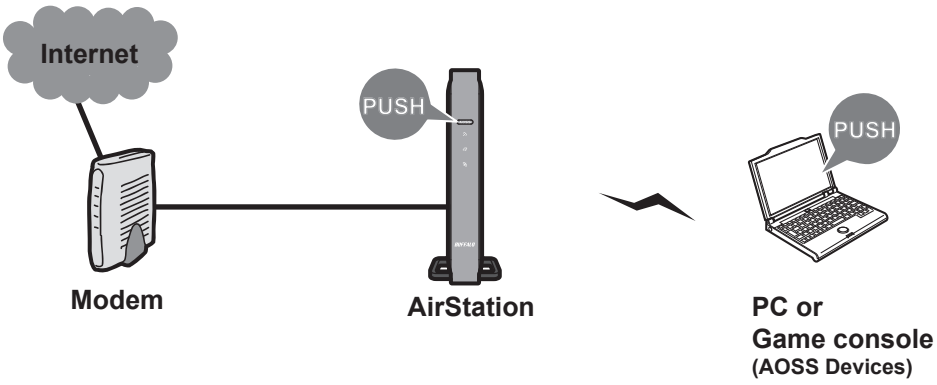
Parameter	Meaning
Destination Address	Enter the IP address or hostname of the device that you are testing communication with, then click [Execute]. The result will be displayed below.

Chapter 4 - Connect to a Wireless Network

Automatic Secure Setup (AOSS / WPS)

AOSS and WPS are systems that enable you to automatically configure wireless LAN settings. Just pressing the buttons will connect wireless devices and complete security settings. Use them to automatically connect wireless devices, computers, or game machines which support AOSS or WPS.

AOSS (AirStation One-Touch Secure System) is technology developed by Buffalo Technology. WPS was created by the Wi-Fi Alliance.



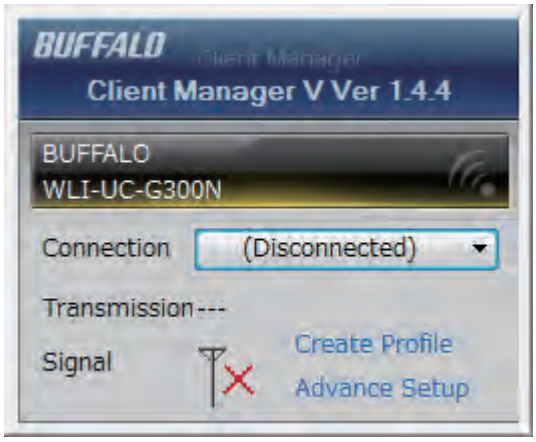
- Before using AOSS or WPS to connect the Buffalo wireless client to the computer, download Client Manager or AOSS Assistant from the Buffalo website and install it.
- Buffalo's Client Manager software can be used with the wireless LAN devices built into your computer. However, it is not guaranteed to work with all wireless LAN devices available.

Windows 7/Vista (Client Manager V)

If you are using Windows 7 or Vista, use the Client Manager V to connect wirelessly with AOSS or WPS.

1 Click [Start] > [All Programs] > [BUFFALO] > [AirStation Utility] > [Client Manager V].

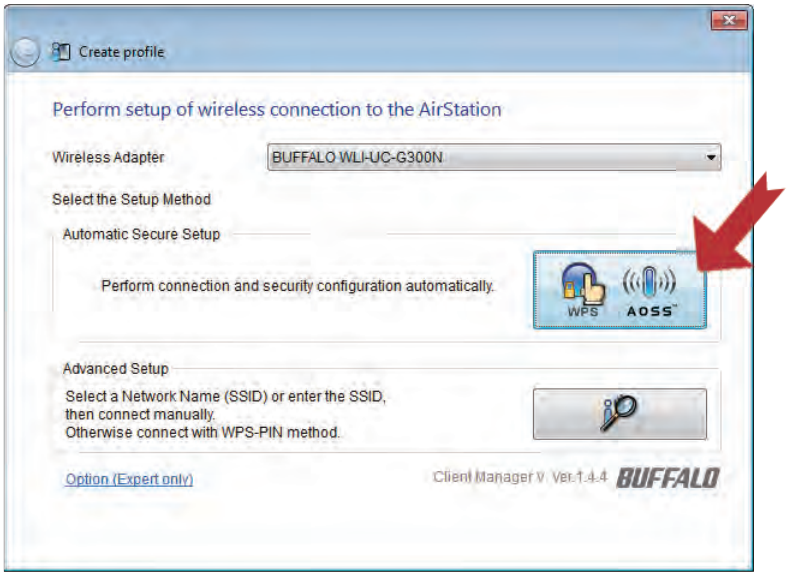
2



Click [Create Profile].

3 If the User Account Control screen opens, click [Yes] or [Continue].

4



Click the [WPS AOSS] button.

Follow any instructions displayed on the screen. When the Wireless LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Windows XP (Client Manager 3)

If you are using Windows XP, use Client Manager 3 to connect wirelessly with AOSS or WPS.

1 Right-click on the icon in the system tray and select [Profile].

2

Click the [WPS AOSS] button.

It will take several seconds for your wireless connection to be configured. When the Wireless LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

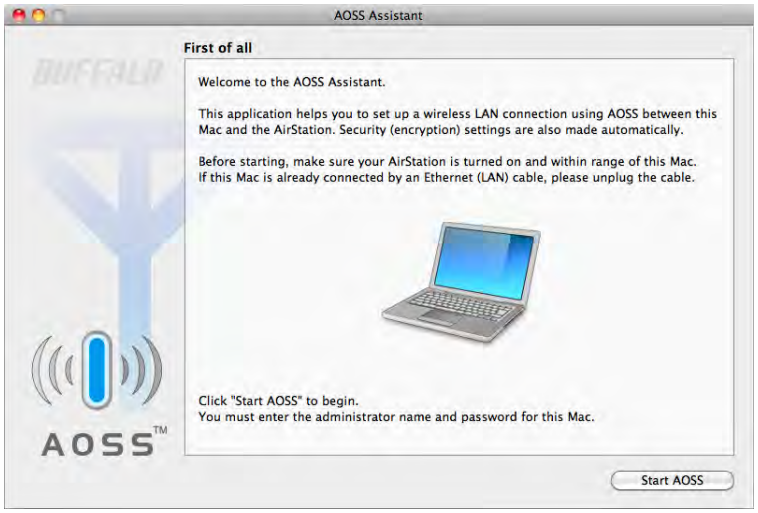
Mac OS X (AOSS Assistant)

If you are using Mac OS X 10.7 / 10.6 / 10.5 / 10.4, use the AOSS Assistant to connect wirelessly with AOSS.

1 Run the AOSS Assistant program that was downloaded from the Buffalo web site.

2 The software license screen is displayed. Click [Agree] to proceed.

3



Click [Start AOSS].

4

Enter the Mac's username and password and click [OK].

It will take several seconds for your wireless connection to be configured. When the Wireless LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Other Devices (e.g. Game Console)

If you are using a game machine which supports AOSS or WPS, refer to that device's manual to initiate AOSS or WPS. When instructed, hold down the AOSS button on the AirStation for 1 second.

When the Wireless LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Manual Setup

You can also connect to the AirStation without installing Client Manager V or Client Manager 3 by using the utility built-in to operating system. The procedure varies depending on which version of operating system you are using.

Windows 7 (WLAN AutoConfig)

With Windows 7, use WLAN AutoConfig to connect to the AirStation.

1 Click on the network  icon in the system tray.

2

Select the target AirStation and click [Connect]. If you will be connecting to this device in the future, checking [Connect automatically] is recommended.

3 

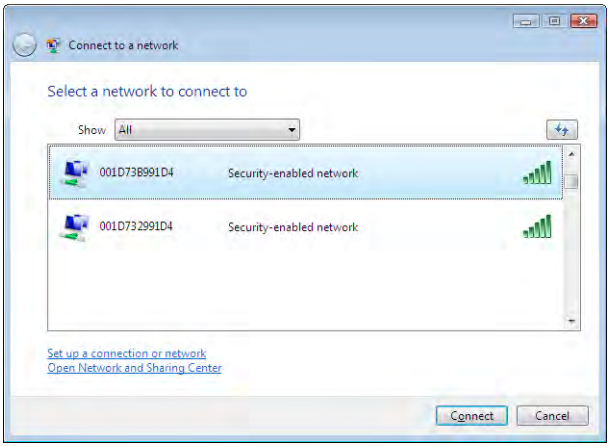
Enter the encryption key and click [OK].

Windows Vista (WLAN AutoConfig)

With Vista, use WLAN AutoConfig to connect to the AirStation.

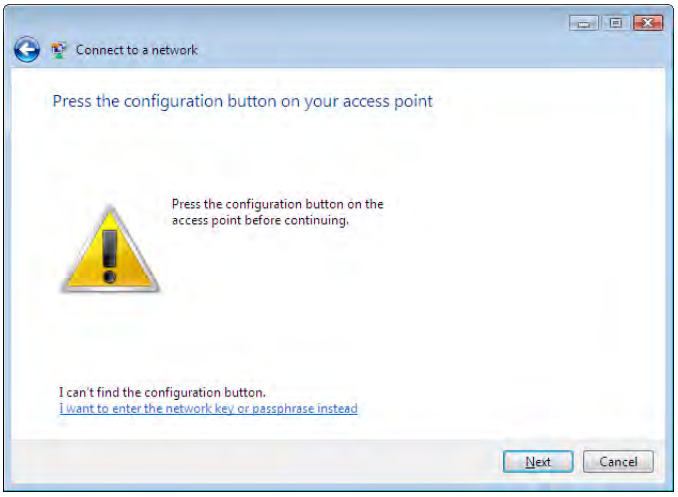
1 Right-click on the wireless network  icon in the system tray.

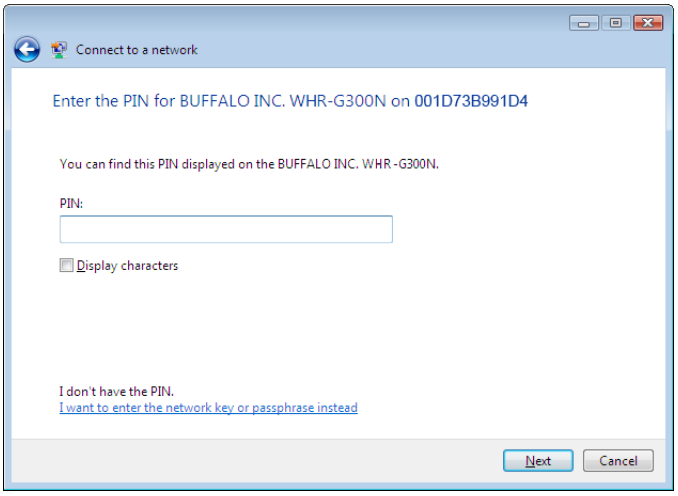
2 Click [Connect to a network].

3 

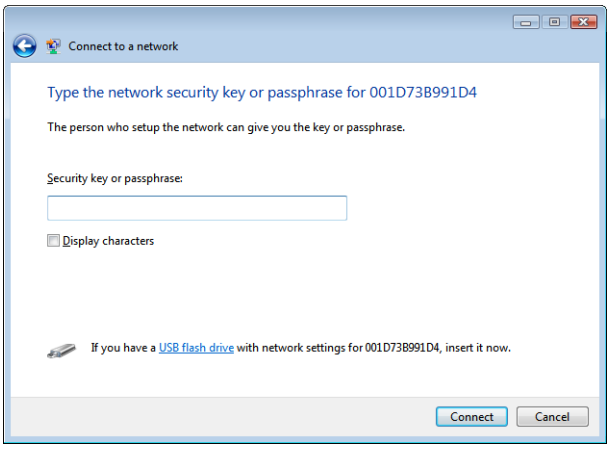
When this screen is displayed, select your network and click [Connect].

If the screen below is displayed, click [I want to enter the network key or passphrase instead]. Otherwise,go to step 4.





4



Enter the encryption key and click [Connect].

Step through the wizard to finish configuration.
If the Set Network Location screen is displayed, select [Home], [Work], or [Public location] depending on where you're using the AirStation.

Windows XP (Wireless Zero Configuration)

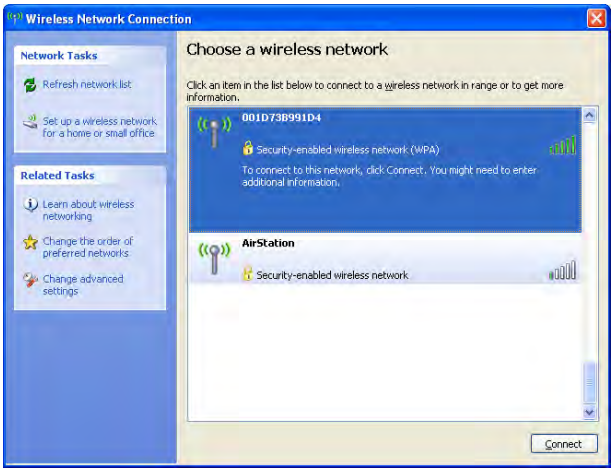
Windows XP includes Wireless Zero Config, a built-in utility to connect to your AirStation.

Note: If Client Manager 3 is installed on your computer, Wireless Zero Config is disabled. Uninstall Client Manager 3 to use Wireless Zero Config, or just use Client Manager 3 to connect to the AirStation.

1 Right-click on the  wireless network icon in the system tray.

2 Click [View Available Wireless Networks].

3



Select the network to connect to and click [Connect].

4

Enter the encryption key (twice) and click [Connect].

It will take several seconds for configuration to complete.

Mac OS X (Wi-Fi)

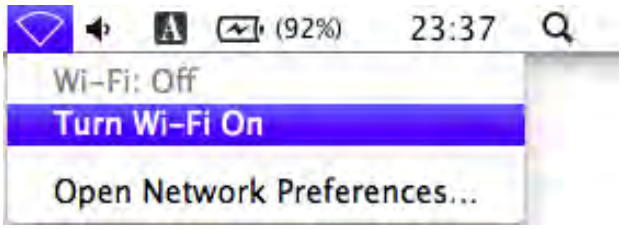
Use Wi-Fi on a Mac to connect to the AirStation.

Note: In Mac OS X 10.6 and earlier, "Wi-Fi" appears as "AirPort".

1

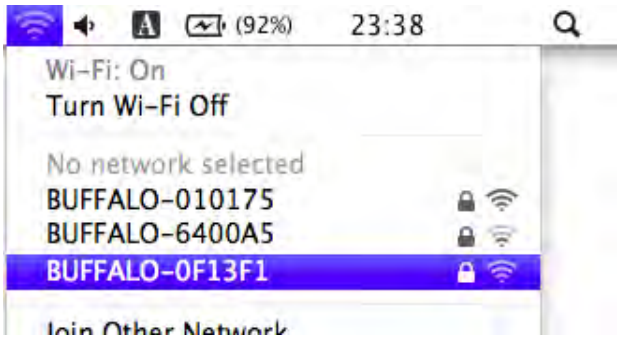
Refer to the setup card at the bottom of the AirStation. Make a note of the SSID and Key printed on the setup card.

2



Click the icon in the top section of the screen and select [Turn Wi-Fi On].

3



Find the SSID from step 1 on the list. Click it to highlight it.

4

Enter the Key from step 1 into the Password entry box, check [Remember this network], and click [OK].

It will take several seconds for configuration to complete.

Chapter 5 - Troubleshooting

Cannot connect to the Internet over wired connection.

- Make sure that your AirStation is plugged in!
- Check that the status LEDs of your AirStation are lit as below:

Internet access	Blue light is on
Buffalo	White light is on
LAN	Green light is on or blinking
Internet	Green light is on or blinking

- Make sure that your computer is configured to "obtain an IP address automatically from DHCP".
- Restart your AirStation.

Cannot access the web-based configuration Interface.

- See chapter 3 for instructions to open the AirStation's configuration interface.
- Enter the correct username and password to log in to the configuration interface. If you are using AirStation with factory default settings, enter "admin" for the username and "password" for the password.
- Verify that your web browser is not set to use proxies.
- Make sure that your computer is configured to "obtain an IP address automatically from DHCP".
- Restart your AirStation.

Cannot connect to the network wirelessly.

- Configure your wireless client with the same SSID, encryption type, and encryption key as set on the AirStation.
  The factory defaults are:
  SSID - BUFFALO-XXXXXX (the last 6 digits of the AirStation's MAC address)
  Encryption Type - WPA/WPA2 mixed mode - PSK, or none.
  Encryption Key - Printed on the Setup card.
  Note: For details, refer to the Setup card.
- Place your AirStation and wireless devices 2 - 10 feet apart.
- Restart your AirStation.

You forgot AirStation's SSID, Encryption Key, or Password.

Hold down the reset button on the base of your AirStation for 3 seconds to initialize its settings. All settings, including your password, SSID, and encryption key will be initialized to their defaults.

Restoring the Default Configuration

With the AirStation powered on, hold down this button for 3 seconds to return it to factory default settings.

TCP/IP Settings (Windows 7)

To configure TCP/IP in Windows 7, follow the procedure below.

1 Click [Start] > [Control Panel] > [Network and Internet].

2 Click [Network and Sharing Center].

3 Click [Change Adapter Settings] on the left side menu.

4 Right-click on [Local Area Connection], then click [Properties].

5 If the User Account Control screen opens, click [Yes] or [Continue].

6 Select [Internet Protocol Version 4 (TCP/IPv4)] then click [Properties].

7 To have DHCP set your IP address settings automatically, check [Obtain an IP address automatically] and [Obtain DNS server address automatically].

To set your IP address settings manually, enter values for each setting. Examples:

If the router's IP address is 192.168.11.1,

IP address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

8 Click [OK].

TCP/IP Settings (Windows Vista)

To configure TCP/IP in Windows Vista, follow the procedure below.

1 Click [Start] > [Settings] > [Control Panel].

2 Click [Network and Sharing Center].

3 Click [Manage network connections] on the left side menu.

4 Right-click on [Local Area Connection], then click [Properties].

5 If the User Account Control screen opens, click [Yes] or [Continue].

6 Select [Internet Protocol Version 4 (TCP/IPv4)], then click [Properties].

7 To have DHCP set your IP address settings automatically, check [Obtain an IP address automatically] and [Obtain DNS server address automatically].

To set your IP address settings manually, enter values for each settings. Example:

If the router's IP address is 192.168.11.1,

IP address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

8 Click [Close].

TCP/IP Settings (Windows XP)

To configure TCP/IP in Windows XP, follow the procedure below.

1 Click [Start] > [Settings] > [Control Panel].

2 Double-click [Network].

3 Right-click on [Local Area Connection], then click [Properties].

4 Select [Internet Protocol (TCP/IP)], then click [Properties].

5 To have DHCP set your IP address settings automatically, check [Obtain an IP address automatically] and [Obtain DNS server address automatically].

To set your IP address settings manually, enter values for each setting. Examples:

If the router's IP address is 192.168.11.1,

IP address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

6 Click [Close].

TCP/IP Settings (Mac OS X)

To configure TCP/IP in Mac OS X, follow the procedure below.

1 Click [Apple menu] > [System Preferences…].

2 Click [Network].

3 Click [Ethernet].

4 To have DHCP set your IP address settings automatically, select [Using DHCP] in the Configure IPv4 field.

To set your IP address settings manually, select [Manually] in the Configure IPv4 field and enter values for each setting. Examples:

If the router's IP address is 192.168.11.1,

IP Address	192.168.11.80
Subnet Mask	255.255.255.0
Router	192.168.11.1
DNS Server	192.168.11.1
Search Domains	blank

5 Click [Apply].

Other Tips

Issue:

I reset my wireless router to factory settings and forgot how to log in to the configuration interface.

Answer:

Open your browser, enter 192.168.11.1 as the browser address, and hit Enter. You will be prompted to log in. Enter "admin" for the username and "password" for the password. Click [OK] to log in. The option to reset your password will be available on the first page.

Issue:

How do I forward ports on my wireless router for my gaming console?

Answer:

Log in to the router. From the home page, go to the Internet Game/ Port Mapping section. Enter the port that needs to be forwarded and the IP address of the gaming console.

Issue:

How do I enable or modify security encryption settings on the wireless router?

Answer:

Go to the Wireless Config tab and then select the Security tab. Buffalo recommends the use of WPA/ WPA2 mixed for wireless encryption. The passphrase/ key should be at least 8 characters in length.

Issue:

How do I change my wireless router's broadcasted network name (SSID)?

Answer:

Log in to the wireless router with your browser. Navigate to Wireless Config - Basic. Find the SSID setting. Select [Use] and enter the new name for your network. Click [Apply]. Once the wireless router has rebooted, you will need reconnect any wireless clients to the AirStation using the new network name. The encryption key will still be the same.

Issue:

What can I do if my wireless connection drops randomly or seems slow?

Answer:

There are many environmental factors that may cause this. First, ensure the issue is not range related by moving the wireless router and the client device closer together. If the connection drops continue, then range is probably not the issue.
Other 2.4 GHz devices such as microwaves, other wireless networks, and 2.4 GHz wireless phones may impact performance. Try a different wireless channel for your wireless router. Log in to the wireless router with your browser. Click on the Wireless Config tab and then the Basic tab. Wireless channels from 1 - 11 may be selected. Try the Auto-Channel option if available. Otherwise, manually select an alternate channel and click [Apply].

Issue:

Though I am able to successfully make a connection with my wireless router, I am unable to access the Internet with my web browser.

Answer:

First, power off the cable or DSL modem, the wireless router, and your computer. Move the router's mode switch to the *on* position. Verify that the modem is connected to the wireless router with an Ethernet cable to the WAN port. Power on the modem and wait one minute. Power on the wireless router and wait another minute. Power on the computer. Open a browser on the computer and navigate to a familiar website to verify whether the Internet connection is functioning normally.
If after these steps, an Internet connection is still unavailable, power off the cable or DSL modem and computer again and directly connect your computer to the cable or DSL modem with a cable between the computer and the port on the modem. Power on the modem and wait one minute. Power on the computer and again check for an Internet connection.
If an Internet connection IS NOT available with a direct connection to the computer, please call the Internet Service Provider who installed the modem.
If an Internet connection IS available with a direct connection to the computer, please call our customer support.

Issue:

Where can I download the latest drivers, firmware, and instructions for my Buffalo wireless products?

Answer:

The latest drivers and firmware are available online at
www.buffalotech.com

Chapter 6 - Default Configuration Settings

Feature	Parameter	Default Setting
Internet (Router mode only)	Method of Acquiring IP Address	Perform Easy Setup (Internet Connection Wizard)
	Default Gateway	none
	DNS Name Server Address	none
	Internet MAC Address	Use Default MAC Address
	MTU Size of Internet Port	1500 Bytes
PPPoE (Router mode only)	Default PPPoE Connection	No Active Session
	IP Unnumbered PPPoE Connection	No Active Session
	PPPoE Connection List	none
	Preferred Connections	none
DDNS (Router mode only)	Dynamic DNS Service	Disabled
	Current Dynamic DNS Information	none
VPN Server (Router mode only)	LAN Side IP Address	192.168.11.1 (255.255.255.0)
	DHCP Server Function	Enabled
	DHCP IP Address Pool	192.168.11.2 for up to 64 Address(es)
	PPTP Server Function	Disabled
	Authorization Type	MS-CHAPv2 (40/128-bit Encryption)
	Server IP Address	Auto
	Client IP Address	Auto
	DNS Server IP Address	LAN IP address of the AirStation
	WINS Server IP Address	none
	MTU/MRU value	1396
	PPTP User List	none

Feature	Parameter	Default Setting
LAN	LAN Side IP Address	Router mode (Router On): 192.168.11.1 (255.255.255.0) Bridge mode (Router Off): 192.168.11.100 (255.255.255.0)
	DHCP Server Function (Router mode only)	Enabled
	DHCP IP Address Pool (Router mode only)	192.168.11.2 for up to 64 Addresses
	LAN Side IP Address (For IP Unnumbered) (Router mode only)	none
	Lease Period (Router mode only)	48 Hours
	Default Gateway (Router mode only)	AirStation's IP Address
	DNS Servers (Router mode only)	AirStation's IP Address
	WINS Server (Router mode only)	Do Not Specify
	Domain Name (Router mode only)	Assigned Domain Name
	Default Gateway (Bridge mode only)	none
	DNS Server Address (Bridge mode only)	none
DHCP Lease (Router mode only)	Current DHCP Client Information	none
NAT (Router mode only)	Address Translation	Enabled
	Log Output of Deleted Packets	Disabled
Route	Routing Information	none

Feature	Parameter	Default Setting
WPS	WPS	Enabled
	External Registrar	Enabled
	AirStation PIN	An 8-digit random value (Printed on the label of the AirStation)
	WPS Security Information	WPS status: configured SSID: BUFFALO-XXXXXX (the last 6 digits of the AirStation's MAC address) Security: WPA/WPA2 mixedmode - PSK TKIP/AES mixedmode or none Encryption key: Either a 13-digit random value or disabled. Printed on the label of the AirStation. Encryption is disabled by default settings on AirStation for Asia Pacific.
Basic	Wireless Radio	Enabled
	SSID	Use AirStation's MAC address
	Wireless Channel	Auto Channel
	High-throughput mode	11ac/n/a Bandwidth: 11ac/n/a 1300 Mbps Mode (80 MHz) Extension Channel: - 11n/g/b Bandwidth: 11n/g/b Normal Mode (20 MHz) Extension Channel: -
	Broadcast SSID	Allow
	Wireless authentication	WPA/WPA2 mixedmode - PSK, or no authentication
	Wireless encryption	TKIP/AES mixedmode, or no encryption
	WPA-PSK (Pre-Shared Key)	A 13-digit random value or disabled (Printed on the setup card. Encryption is disabled in default settings on AirStation for Asia Pacific.)
	Rekey interval	60 minutes
Advanced	BSS Basic Rate Set	11ac/n/a 6, 12, 24 Mbps 11n/g/b 1, 2, 5.5, 11 Mbps
	Multicast Rate	Auto
	802.11n Protection	Disabled
	DTIM Period	1
	Privacy Separator	Disabled
	Output Power	100%

Feature	Parameter	Default Setting		
WMM	WMM-EDCA Parameters (Priority AC_BK (Low))		For AP	For STA
		CWmin	15	15
		CWmax	1023	1023
		AIFSN	7	7
		TXOP Limit	0	0
		Admission Control	-----	Disabled
	WMM-EDCA Parameters (Priority AC_BE (Normal))		For AP	For STA
		CWmin	15	15
		CWmax	63	1023
		AIFSN	3	3
		TXOP Limit	0	0
		Admission Control	-----	Disabled
	WMM-EDCA Parameters (Priority AC_VI (High))		For AP	For STA
		CWmin	7	7
		CWmax	15	15
		AIFSN	1	2
		TXOP Limit	94	94
		Admission Control	-----	Disabled
	WMM-EDCA Parameters (Priority AC_VO (Highest))		For AP	For STA
		CWmin	3	3
		CWmax	7	7
		AIFSN	1	2
		TXOP Limit	47	47
		Admission Control	-----	Disabled
MAC Filter	Enforce MAC Filtering	11ac/n/a Disabled 11n/g/b Disabled		
	Registration List	none		
Multicast control	Snooping	Enabled		
	Multicast Aging Time	300 sec.		
AOSS	Encryption Type	none		
	AOSS Button on the AirStation Unit	Enabled		

Feature	Parameter	Default Setting
Firewall (Router mode only)	Log Output	Disabled
	Basic Rules	Prohibit NBT and Microsoft-DS Routing Disabled Reject IDENT Requests Enabled Block Ping from Internet Enabled
IP Filter (Router mode only)	Log Output	Disabled
	IP Filter Information	none
VPN Pass Through (Router mode only)	IPv6 Pass Through	Disabled
	PPPoE Pass Through	Disabled
	PPTP Pass Through	Enabled
Port Forwarding (Router mode only)	Port Forwarding Registration Information	none
DMZ (Router mode only)	IP Address of DMZ	none
UPnP (Router mode only)	UPnP	Enabled
QoS (Router mode only)	QoS for transmission to the Internet	Disabled
Disk Management	Automatic USB Disk Assignment	Enabled
	FAT format file name character code	North America (CP437)
	HDD power-saving function	Disabled HDD stop time 10 Minutes
Shared Folder	Access Limits	No Limits (Read/Write)
	Web Access	Access Limits
User Management	Current Users	guest
Shared Service	Shared Folder	Enabled
	AirStation Name	AP + AirStation's MAC Address
	AirStation Description	None
	Workgroup Name	WORKGROUP
	Windows Client Language	North America (CP437)
	Shared Service	None

Feature	Parameter	Default Setting
Web Access	Web Access	Disabled
	Web Access Display Language	English
	HTTPS/SSL Encryption	Disabled
	Web Access External Port	Auto (Port Number:9000)
	DNS Service Host Name	Use BuffaloNAS.com registration function
	Web Access status	None
Media Server	Media Server	Disabled
	Status	None
BitTorrent	BitTorrent Function	Disabled
	External Port Number	Auto (Port Number: 9002)
	Bandwidth Restriction	Enabled Maximum Download Speed 1000 KB/s Maximum Upload Speed 200 KB/s
	BitTorrent Status	none
Name	AirStation Name	AP + AirStation's MAC Address
	List Network Services	Enabled
Password	Administrator Name	admin (fixed)
	Administrator Password	password
Time/Date	Local Date	2012 Year 1 Month 1 Day
	Local Time	0 Hour 0 Minute 0 Seconds
	Time Zone	(GMT - 06:00) Central Standard Time: CST
	DST (Daylight Saving Time)	USA (From Second Sunday in Mar to first Sunday in Nov)
NTP	NTP Functionality	Enabled
	NTP Server	time.nist.gov
	Update Interval	24 hours

Feature	Parameter	Default Setting
ECO	Schedule feature	Disabled
	Register schedule	Operational Mode: Normal Start time: 0:00 End time: 0:30 The day of week: none
	User Define Mode	LED: Off Wired LAN: ECO (Slow operation) Wireless LAN: Off
Network-USB	Network-USB	Enabled
	Use multifunction Printer	Enabled
Access	Log Output	Disable
	Limitation Item	Prohibit configuration from wireless LAN Disabled Prohibit configuration from wired LAN Disabled Permit configuration from wired Internet Disabled
Log	Log Transfer	Disabled
	Syslog Server	none
	Logs	Router Mode: Address Translation, IP Filter, Firewall, PPPoE Client, Dynamic DNS, DHCP Client, DHCP Server, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, Wired Link, and System Bridge Mode: IP Filter, DHCP Client, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, Wired Link, and System
Update	Update Method	Specify Local File
	Firmware Update Reminder	Enabled
	Remind Time	Automatic

Chapter 7 - Network-USB Navigator

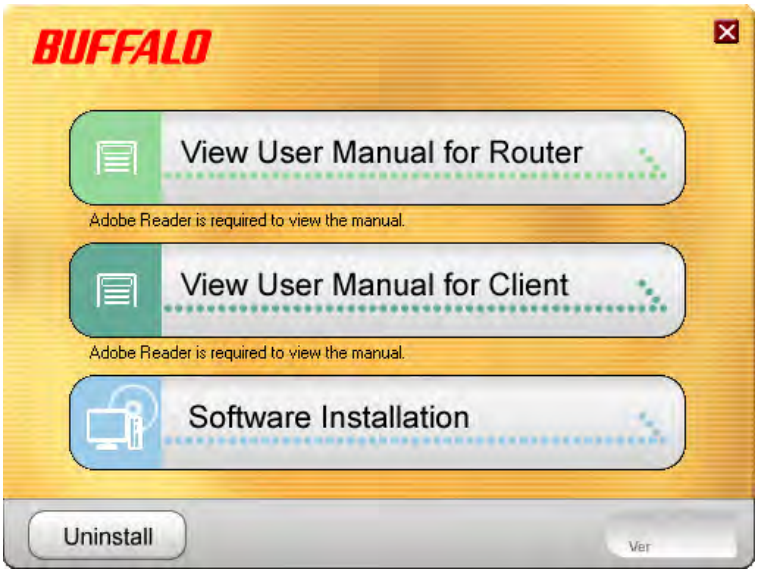
Network-USB Navigator is compatible only with printers and multifunction printers (all-in-one devices with a printer, scanner, and memory card reader). It cannot be used with any other type of USB devices.

Initial Setup for Windows Users

1 Insert the AirNavigator CD into your computer.

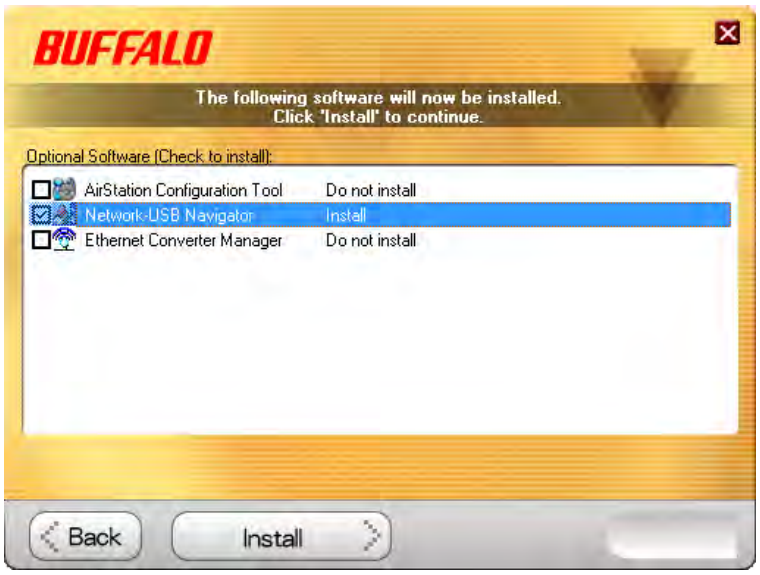
The setup menu will launch automatically. If not, open the CD and click on "Launcher.exe" in the "win" folder.

2



Click [Software installation].

3

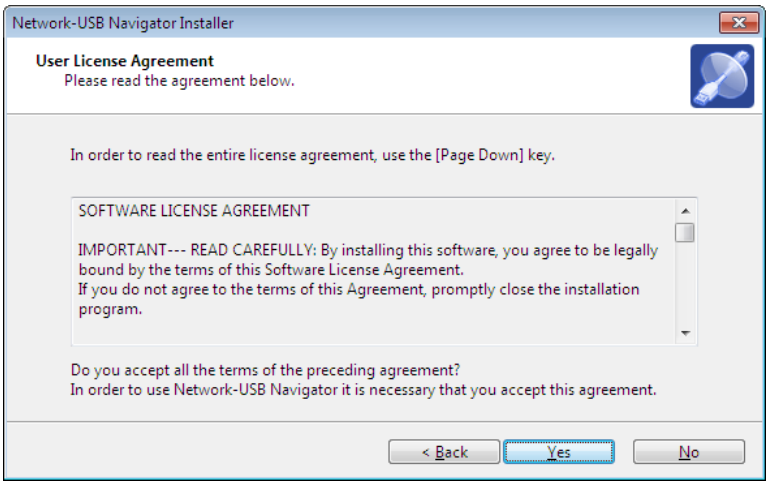


Check the box for "Network-USB Navigator" and click [Install].

4

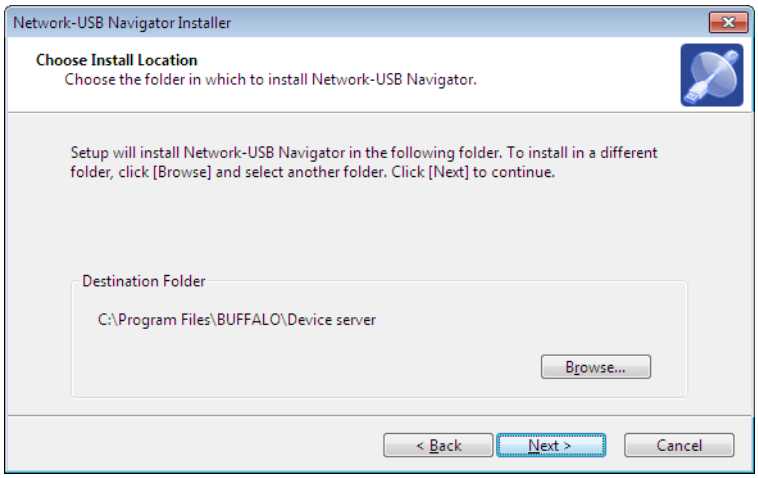
Click [Next].

5



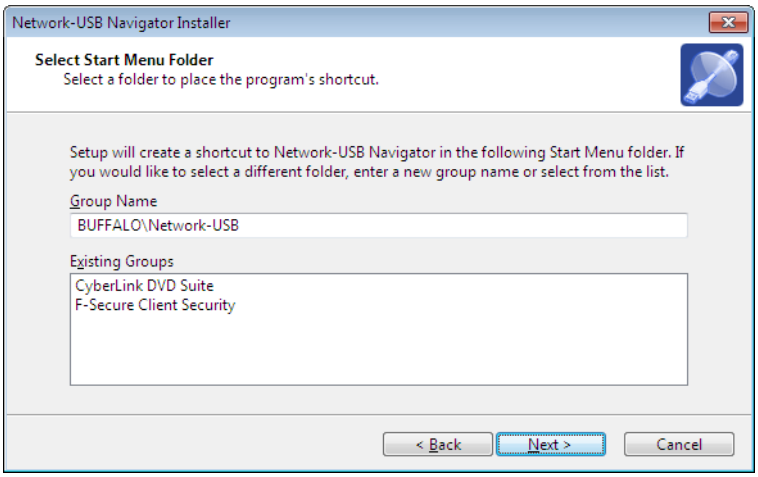
Click [Yes].

6



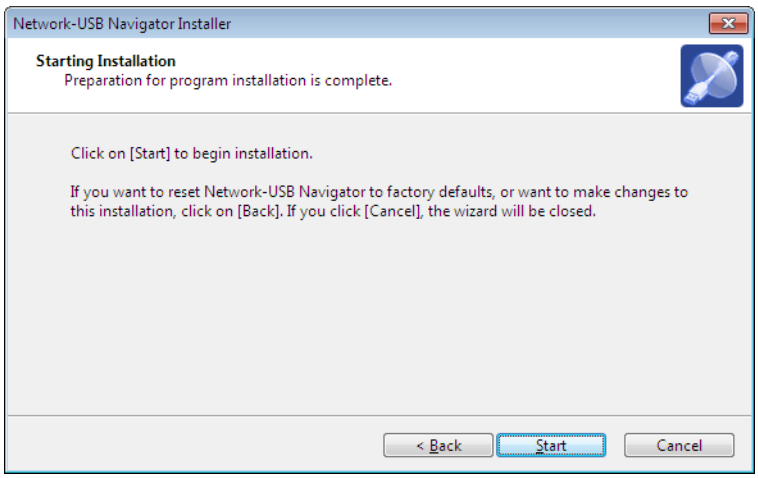
Click [Next].

7



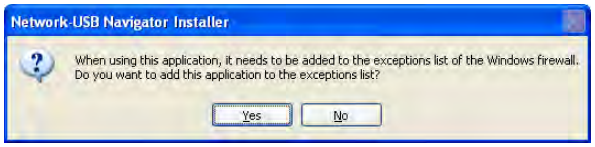
Click [Next].

8



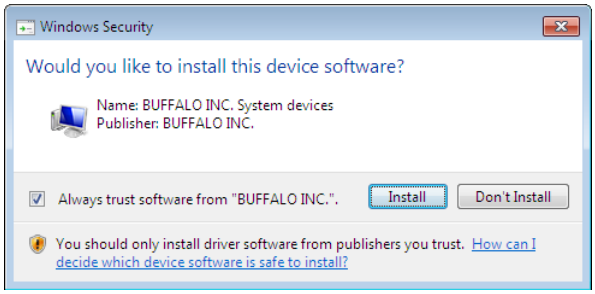
Click [Start].

- Installation on Windows XP (SP2 or later)

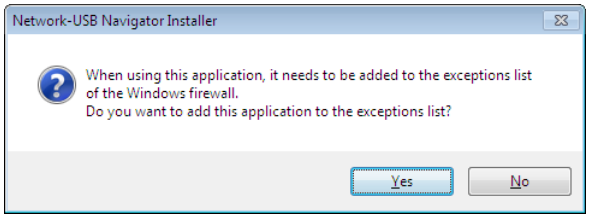


Click [Yes] when this screen is shown.

- Installation on Windows 7/Vista

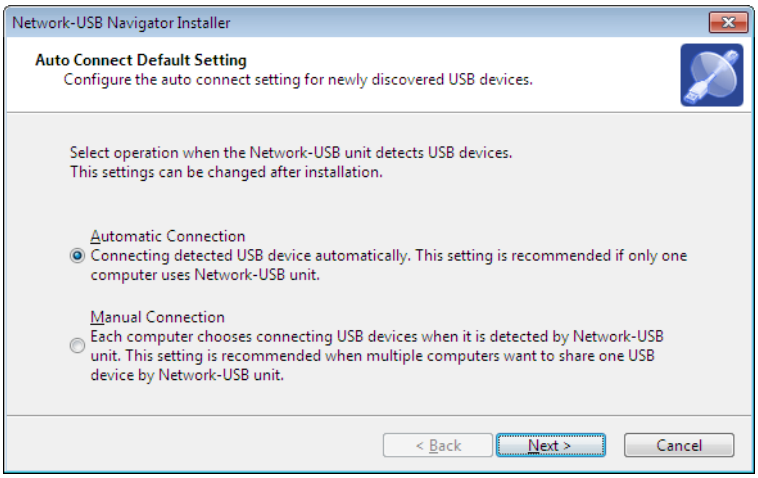


Click [Install] when this screen is shown.



Click [Yes] when this screen is shown.

9



1 You can select the behavior of this product when a USB device is detected. Select the connection behavior suited to your usage environment.

2 Click [Next].

10 Click [Finish] when the "Network-USB Navigator Install is Complete" screen is shown.

Network-USB Navigator installation is complete.

Initial Setup for Mac Users

1 Insert the Air Navigator CD.

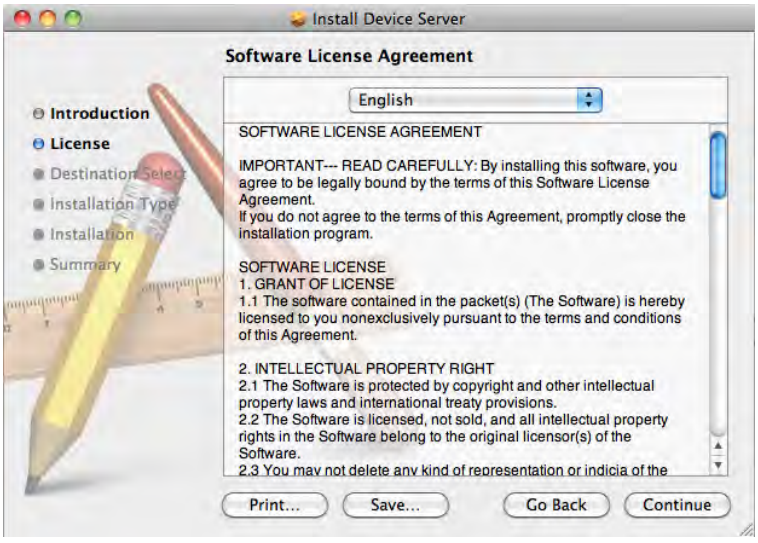
2 From the menu bar, click [Go] > [Computer].

3 Double-click the CD icon, and then double-click [Mac] > [DeviceServer] > [Cosetup].

4

Click [Continue].

5



Click [Continue].

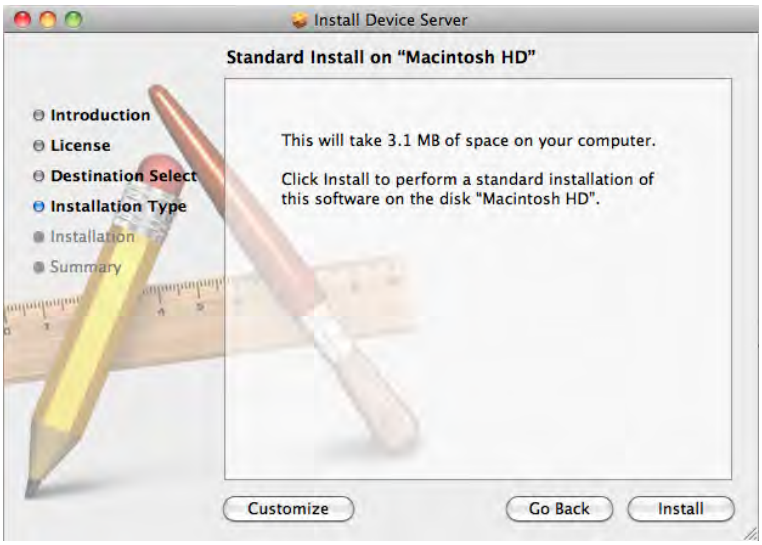
6

Click [Agree].

7

Click [Continue].

8



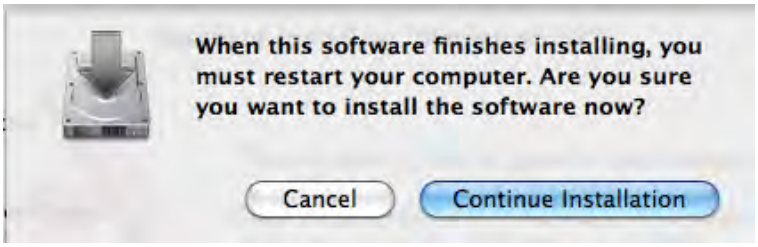
Click [Install].

9

Input your name and password.

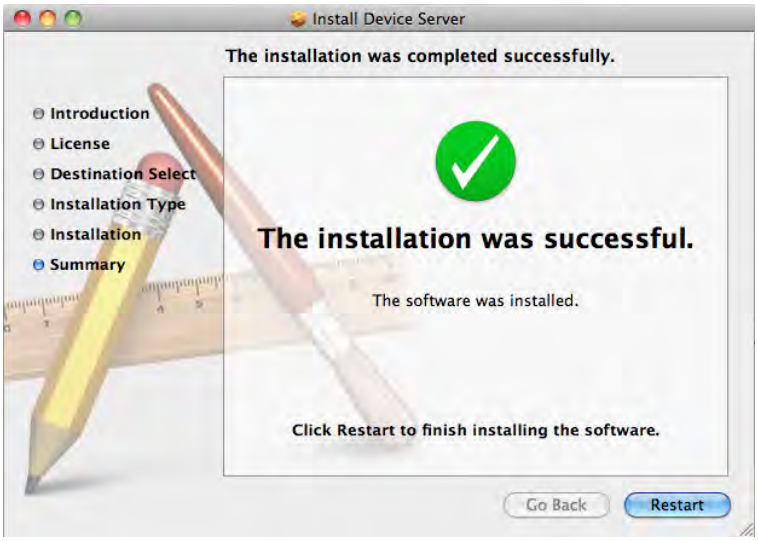
Click [OK].

10



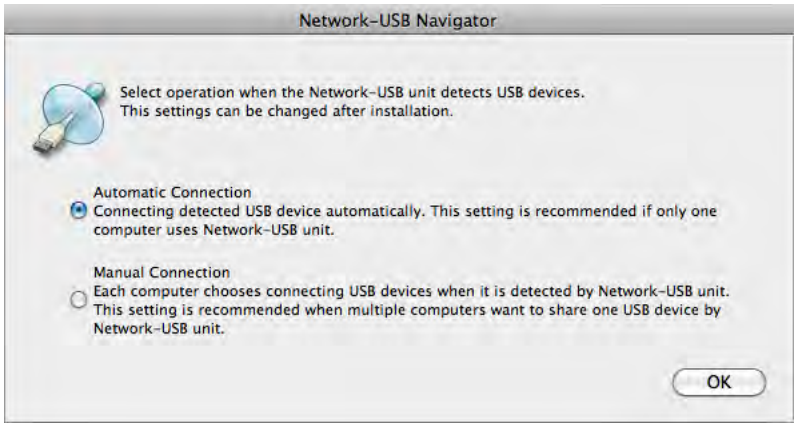
Click [Continue Installation].

11



Click [Restart].

12



1 During the first program launch only, the screen at left will appear before the main program screen is displayed. From here, you can select the behavior of this product when a USB device is detected. Select the connection behavior suited to your usage environment.

2 Click [OK].

Network-USB Navigator installation is complete.

Opening the Network-USB User Manual

1 Launch Network-USB Navigator.

There are two ways to launch the program.

Windows Users

a) Click the task tray icon  .

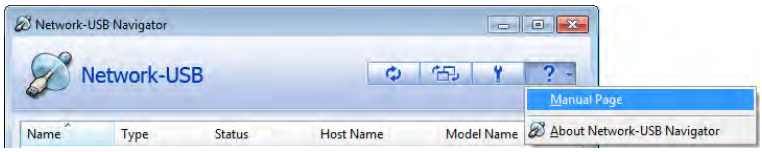
b) From the Start menu, click [(All) Programs]-[BUFFALO]-[Network-USB Navigator]-[Network-USB Navigator].

Macintosh Users

a) Click the Dock icon  .

b) Click [Macintosh HD]-[Applications]-[BUFFALO]-[Device Server]-[Network-USB Navigator].

2



Click , then click [Manual Page].

3 Network-USB User Manual will open.

How to use Network-USB

To configure Network-USB, refer to the "Network-USB User Manual".

Chapter 8 - Checking Wireless Signal Quality

For users of Windows 7, Vista, or Mac OS X (10.4 and later), software supplied with the AirStation can be used to check the quality and strength of the wireless signal.

Windows 7/Vista

Note: · If Client Manager V is not already installed, download it from the Buffalo web site, and install.

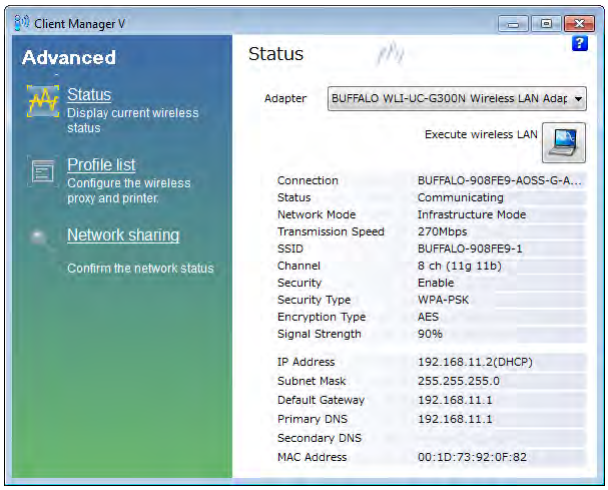
· Client Manager V does not support Windows XP.

1 Click [Start] > [All Programs] > [BUFFALO] > [AirStation Utility] > [Client Manager V].

2

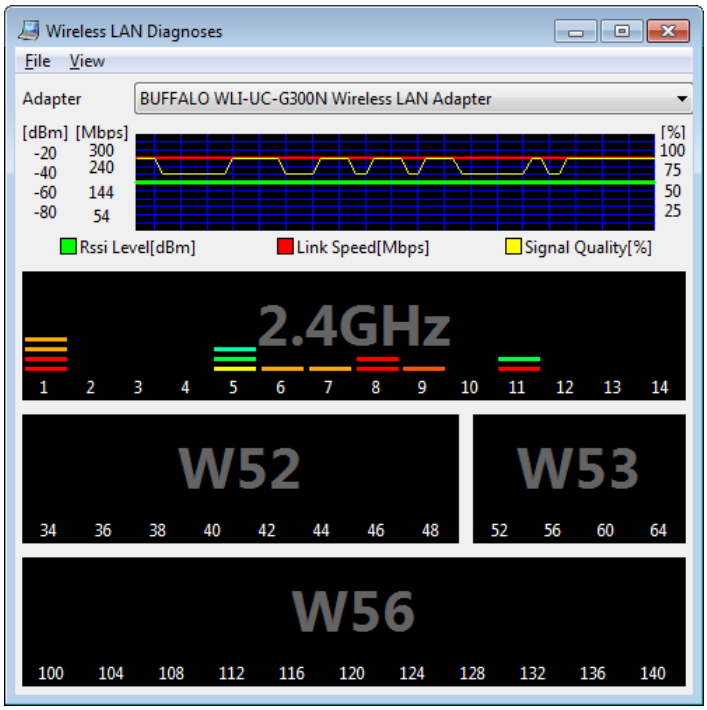
Click [Advanced Setup].

3



When the Client Manager V status screen is displayed, click  .

4



Parameter	Meaning
Connection status	Signal strength (dBm), link speed (Mbps), and signal quality (%) are displayed in one-minute intervals on a real-time graph.
Usage status by channel	The 11b/11g display shows usage in the 2.4 GHz band channels 1 to 11. The 11a display shows usage in the W52, W53, and W56 channels.

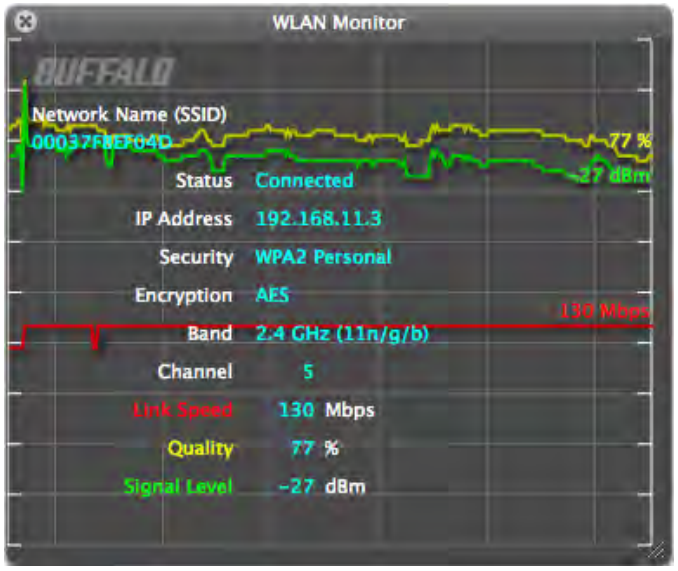
Colors are used to indicate the signal strength of the access point. Colors closer to red indicate an access point with a stronger signal strength, and colors closer to blue indicate an access point with a weaker signal strength.

Mac OS X

1 Run the WLAN Monitor program that was downloaded from the Buffalo web site.

2 The software license screen is displayed when starting for the first time only. Click [Agree] to proceed.

3



Parameter	Meaning
Network name (SSID)	This displays the SSID of the AirStation that is currently connected.
Status	This indicates the current connection status.
IP Address	This indicates the IP address of the current wireless network port (Wi-Fi).
Security	This indicates the authentication method for the current connection target.
Encryption	This displays the encryption type for the current connection target.
Band	This displays the wireless band for the current connection target.
Channel	This displays the wireless channel for the current connection target.
Link Speed (Mbps)	This displays the current link speed.
Quality (%)	This displays the current signal quality.
Signal Level (dBm)	This indicates the strength of the current signal.

Chapter 9 - Shared Folders and the USB Port

There are several restrictions on using the AirStation's USB port:

- When using two-byte characters (such as Japanese), keep folder and file names within 80 characters. You may not be able to copy a folder or a file whose name length is more than 80 characters.
- You cannot set attributes (hidden or read-only) for folders or files on the AirStation.
- When using access restrictions, you can register up to 16 users for the AirStation.
- Please note that you are not allowed to use any of the following words as a user or group name: adm, administrator, all, bin, daemon, disk, ftp, guest, halt, hdusers, kmen, lp, mail, man, news, nobody, nogroup, none, operator, root, shadow, shutdown, sshd, sync, sys, ttyusers, utmp, uucp, www.
- Please note that you are not allowed to use any of the following words as a shared folder name: global, homes, printers, bittorrent, disk1_pt1, disk1_pt2, disk1_pt3, disk1_pt4, disk2_pt1, disk2_pt2, disk2_pt3, disk2_pt4, disk3_pt1, disk3_pt2, disk3_pt3, disk3_pt4, disk4_pt1, disk4_pt2, disk4_pt3, disk4_pt4.
- If shared folder names, work group names, or file names contain any of the following characters, you may not access data or manipulate files on the AirStation properly. In such a case, use a different character.
- If a file created on a Macintosh contains any of the following characters, it will not be displayed correctly under Windows OS. Also, you cannot copy or properly display a file when connecting via SMB from Mac OS X if it contains any of these characters:
  ? [ ] / \ = + < > ; : ", | *
- Cancelling or aborting a file copy may leave the file incomplete, and you may no longer be able to delete the incomplete file. This can also happen during a power outage or if the LAN cable is suddenly disconnected. If it happens, restart the AirStation, delete the file, and try copying the file again.
- Use the same username and password for the AirStation as the user's Windows login. If they are different, the user may not be able to access shared folders with access restrictions on the AirStation.
- Date and time stamps stored on the USB hard drive may be updated by the OS accessing the AirStation. File creation or access dates may not be maintained.

- If you view the size of a hard drives on the browser, it shows a bigger value than when you see it in Windows' drive properties. This is because the browser shows the size of the drive in gigabytes but Windows shows it in gibibytes.
- If you have logged in using a "guest" account from Windows 7, Vista, XP or 2000, access restrictions may not work properly. A (different) guest account already exists on the AirStation.
- If you access a shared folder from a Macintosh computer, additional Mac OS X information files may be automatically generated. Do not delete these files from a Windows computer. Otherwise, you may no longer be able to access folders from a Macintosh.
- Device types that can be connected to the AirStation's USB connector are USB hard drives, USB memory sticks, or USB card readers. Card readers with 5 or more slots are not supported. USB devices such as a digital cameras, CD/DVD drives, USB hubs, mice, or keyboards are not supported.
- Encrypted USB hard drives are not supported.
- Only one single drive may be connected to the AirStation's USB port at a time. Drives manufactured by other companies besides Buffalo Technology are not supported.
- If your hard drive has an auto power mode switch, move the switch to [manual] or [on]. Leaving the switch set to [auto] may result in unpredictable behavior.
- Up to 4 partitions can be recognized on a USB hard drive.
- Available file systems for USB hard drives are FAT12, FAT16, FAT32, and XFS.

Appendix A - Specifications

Wired LAN Interface	
Standard Compliance	IEEE802.3ab (1000BASE-T), IEEE802.3u (100BASE-TX), IEEE802.3 (10BASE-T)
Transmission Rate	10 / 100 / 1000 Mbps
Transmission Encoding	1000BASE-T 4DPAM5, 100BASE-TX 4B5B/MLT-3, 10BASE-T Manchester Cording
Access Method	CSMA/CD
Speed and Flow Control	10 / 100 / 1000 Mbps, Auto Sensing, Auto MDIX
Number of LAN Ports	4
LAN Port Connector	RJ-45
Wireless LAN Interface	
Standard Compliance	IEEE802.11ac (Draft 2.0) /n/a/g/b
Transmission Method	Direct Sequence Spread Spectrum (DSSS), OFDM, MIMO
Frequency Range	Available frequencies depend on the country of purchase. See the next page for details.
Transmission Rate 802.11ac (Draft)	802.11ac (Draft): 20 MHz BW (Long GI) 260, 234, 195, 175.5, 156, 117, 78, 58.5, 39, 19.5 Mbps (3 stream) 156, 130, 117, 104, 78, 52, 39, 26, 13 Mbps (2 stream) 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6.5 Mbps (1 stream) 20 MHz BW (Short GI) 288.9, 260, 216.7, 195, 173.3, 130, 86.7, 65, 43.3, 21.7 Mbps (3 stream) 173.3, 144.4, 130, 115.6, 86.7, 57.8, 43.3, 28.9, 14.4 Mbps (2 stream) 86.7, 72.2, 65, 57.8, 43.3, 28.9, 21.7, 14.4, 7.2 Mbps (1 stream) 40 MHz BW (Long GI) 540, 486, 405, 364.5, 324, 243, 162, 121.5, 81, 40.5 Mbps (3 stream) 360, 324, 270, 243, 216, 162, 108, 81, 54, 27 Mbps (2 stream) 180, 162, 135, 121.5, 108, 81, 54, 40.5, 27, 13.5 Mbps (1 stream) 40 MHz BW (Short GI) 600, 540, 450, 405, 360, 270, 180, 135, 90, 45 Mbps (3 stream) 400, 360, 300, 270, 240, 180, 120, 90, 60, 30 Mbps (2 stream) 200, 180, 150, 135, 120, 90, 60, 45, 30, 15 Mbps (1 stream) 80 MHz BW (Long GI) 1170, 1053, 877.5, 702, 526.5, 351, 263.3, 175.5, 87.8 Mbps (3 stream) 780, 702, 585, 526.5, 468, 351, 234, 175.5, 117, 58.5 Mbps (2 stream) 390, 351, 292.5, 263.3, 234, 175.5, 117, 87.8, 58.5, 29.3 Mbps (1 stream) 80 MHz BW (Short GI) 1300, 1170, 975, 780, 585, 390, 292.5, 195, 97.5 Mbps (3 stream) 866.7, 780, 650, 585, 520, 390, 260, 195, 130, 65 Mbps (2 stream) 433.3, 390, 325, 292.5, 260, 195, 130, 97.5, 65, 32.5 Mbps (1 stream)

Transmission Rate 802.11n/a/b/g	802.11n: 20 MHz BW (Long GI) 195, 175.5, 156, 117, 78, 58.5, 39, 19.5 Mbps (3 stream) 130, 117, 104, 78, 52, 39, 26, 13 Mbps (2 stream) 65, 58.5, 52, 39, 26, 19.5, 13, 6.5 Mbps (1 stream) 20 MHz BW (Short GI) 216.7, 195, 173.3, 130, 86.7, 65, 43.3, 21.7 Mbps (3 stream) 144.4, 130, 115.6, 86.7, 57.8, 43.3, 28.9, 14.4 Mbps (2 stream) 72.2, 65, 57.8, 43.3, 28.9, 21.7, 14.4, 7.2 Mbps (1 stream) 40 MHz BW (Long GI) 405, 364.5, 324, 243, 162, 121.5, 81, 40.5 Mbps (3 stream) 270, 243, 216, 162, 108, 81, 54, 27 Mbps (2 stream) 135, 121.5, 108, 81, 54, 40.5, 27, 13.5 Mbps (1 stream) 40 MHz BW (Short GI) 450, 405, 360, 270, 180, 135, 90, 45 Mbps (3 stream) 300, 270, 240, 180, 120, 90, 60, 30 Mbps (2 stream) 150, 135, 120, 90, 60, 45, 30, 15 Mbps (1 stream) 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11b: 11, 5.5, 2, 1 Mbps
Access Mode	Infrastructure Mode
Security	AOSS, WPA2-PSK (TKIP/AES), WPA/WPA2 mixed PSK, WPA-PSK (TKIP/AES), 64-bit or 128-bit WEP, Mac Address Filter
USB Interface	
Interface	USB 2.0
Connector Type	Type A (plug)
Compliance	5.0 V 500 mA (max 1000 mA)
Other	
Power Supply	External AC 100-240 V Universal, 50/60 Hz
Power Consumption	About 13.2 W (Max)
Dimensions	212.2 x 183.2 x 34 mm (8.4 x 7.2 x 1.3 in.)
Weight	510 g (18 oz.)
Operating Environment	0 - 40° C (32 - 104° F), 20 - 80% (non-condensing)

802.11a Frequency Range	
USA Canada	5180-5240 MHz (Channels 36, 40, 44, 48)

802.11g Frequency Range	
USA Canada	2412-2462 MHz (Channels 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)

Appendix B - Regulatory Compliance Information

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.This device is going to be operated in 5.15~5.25GHz frequency range, it is restricted in indoor environment only.

Important Note - FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Industry Canada statement:
Industrie Canada déclaration:

This Class B digital apparatus complies with Canadian ICES-003.
This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes:
(1) le dispositif ne doit pas produire de brouillage préjudiciable, et
(2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Caution:
Prudence:

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Important Note - Radiation Exposure Statement:
Note Importante - Déclaration d'exposition aux radiations:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This device has been designed to operate with an antenna having a maximum gain of [4.33] dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de dB [4.33]. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peutfonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pourl'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectriqueà l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que lapuissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire àl'établissement d'une communication satisfaisante.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN60950-1: 2006 +A11: 2009
Safety of Information Technology Equipment

EN50385 : (2002-08)
Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public

EN 300 328 V1.7.1: (2006-10)
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

EN 301 893 V1.5.1: (2008-12)
Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

EN 301 489-1 V1.8.1: (2008-04)
Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-17 V2.1.1 (2009-05)
Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility

(EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

CE0700 !

Česky [Czech]
Buffalo Technology Inc. tímto prohlašuje, že tento AirStation WZR-D1800H je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk [Danish]
Undertegnede Buffalo Technology Inc. erklærer herved, at følgende udstyr AirStation WZR-D1800H overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch [German]
Hiermit erklärt Buffalo Technology Inc. dass sich das Gerät AirStation WZR-D1800H in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.

Eesti [Estonian]
Käesolevaga kinnitab Buffalo Technology Inc. seadme AirStation WZR-D1800H vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

English
Hereby, Buffalo Technology Inc. declares that this AirStation WZR-D1800H is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Español [Spanish]
Por medio de la presente Buffalo Technology Inc. declara que el AirStation WZR-D1800H cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Ελληνική [Greek]
ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Buffalo Technology Inc. ΔΗΛΩΝΕΙ ΟΤΙ AirStation WZR-D1800H ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.

Français [French]
Par la présente Buffalo Technology Inc. déclare que l'appareil AirStation WZR-D1800H est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano [Italian]
Con la presente Buffalo Technology Inc. dichiara che questo AirStation WZR-D1800H è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski [Latvian]
Ar šo Buffalo Technology Inc. deklarē, ka AirStation WZR-D1800H atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lietuvių [Lithuanian]
Šiuo Buffalo Technology Inc. deklaruoja, kad šis AirStation WZR-D1800H atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Nederlands [Dutch]
Hierbij verklaart Buffalo Technology Inc. dat het toestel AirStation WZR-D1800H in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Malti [Maltese]
Hawnhekk, Buffalo Technology Inc. , jiddikjara li dan AirStation WZR-D1800H jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

Magyar [Hungarian]
Alulírott, Buffalo Technology Inc. nyilatkozom, hogy a AirStation WZR-D1800H megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.

Polski [Polish]
Niniejszym Buffalo Technology Inc. oświadcza, że AirStation WZR-D1800H jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.

Português [Portuguese]
Buffalo Technology Inc. declara que este AirStation WZR-D1800H está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Slovensko [Slovenian]
Buffalo Technology Inc. izjavlja, da je ta AirStation WZR-D1800H v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

Slovensky [Slovak]
Buffalo Technology Inc. týmto vyhlasuje, že AirStation WZR-D1800H spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi [Finnish]
Buffalo Technology Inc. vakuuttaa täten että AirStation WZR-D1800H tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svensk [Swedish]
Härmed intygar Buffalo Technology Inc. att denna AirStation WZR-D1800H står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Taiwan:

SAR compliance has been established in typical laptop computer(s) with CardBus slot, and product could be used in typical laptop computer with CardBus slot. Other application like handheld PC or similar device has not been verified, may not comply with related RF exposure rules, and such use shall be prohibited.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this manual and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

根據 NCC 低功率電波輻射性電機管制辦法：

第十二條：

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條：

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

해당 무선설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없음

기종별	사 용 자 안 내 문
B 급 기기 (가정용 정보통신기기)	이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며 , 모든 지역에서 사용할 수 있습니다 .

Appendix C - Environmental Information

- The equipment that you have purchased has required the extraction and use of natural resources for its production.
- The equipment may contain hazardous substances that could impact health and the environment.
- In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems.
- The take-back systems will reuse or recycle most of the materials of your end life equipment in a sound way.
- The crossed-out wheeled bin symbol invites you to use those systems.

- If you need more information on collection, reuse, and recycling systems, please contact your local or regional waste administration.

Appendix D - GPL Information

The source code for Buffalo products that use GPL code is available at *http://opensource.buffalo.jp/* .