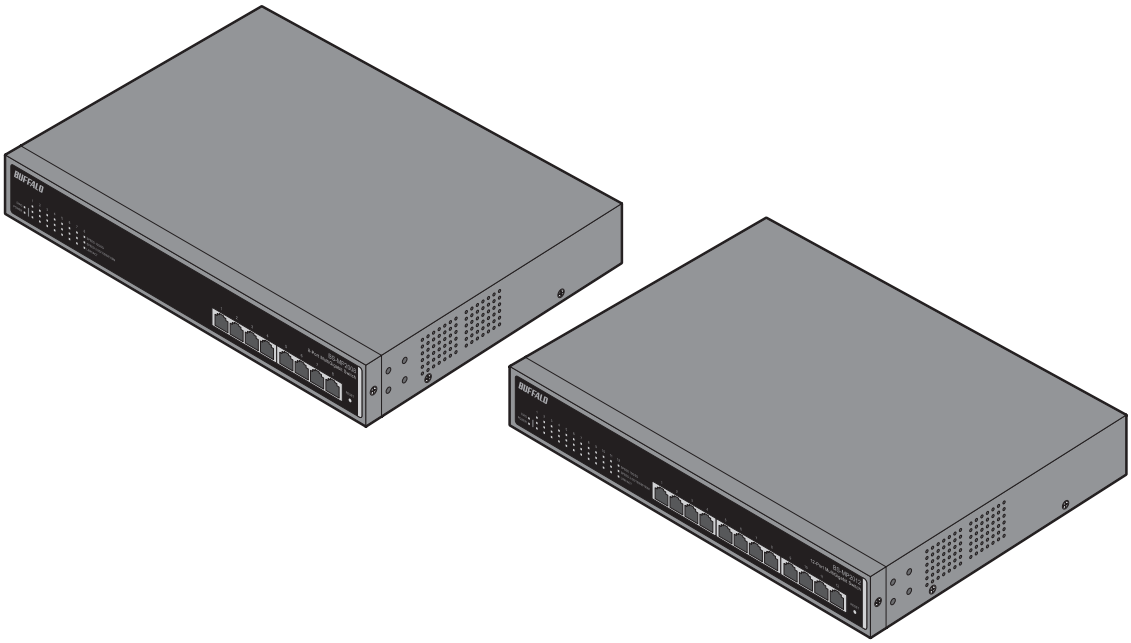
BUFFALO™

Layer 2 MultiGigabit Switch
BS-MP20 Series

User Manual



Americas: www.buffaloamericas.com
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Contents

Chapter 1 Initial Settings

Product Requirements

Compatible Devices and Browsers

Compatible Devices to Connect to BS-MP

10GBASE-T/5GBASE-T/2.5GBASE-T/1000BASE-T/100BASE-TX compatible devices (Computer, NAS, switches)

Compatible Browsers to Enter Settings

Microsoft Edge
Internet Explorer 8/9/10/11
Mozilla Firefox
Google Chrome
Refer to our website to check the latest information on compatible browser versions.

Install Business Switch Configuration Tool

Install "Business Switch Configuration Tool" before you perform the following procedure. (Compatible with Windows only.)

Note: You can download the latest version of Business Switch Configuration Tool from the URLs below:
BS-MP2008 http://d.buffalo.jp/bs-mp2008/
BS-MP2012 http://d.buffalo.jp/bs-mp2012/

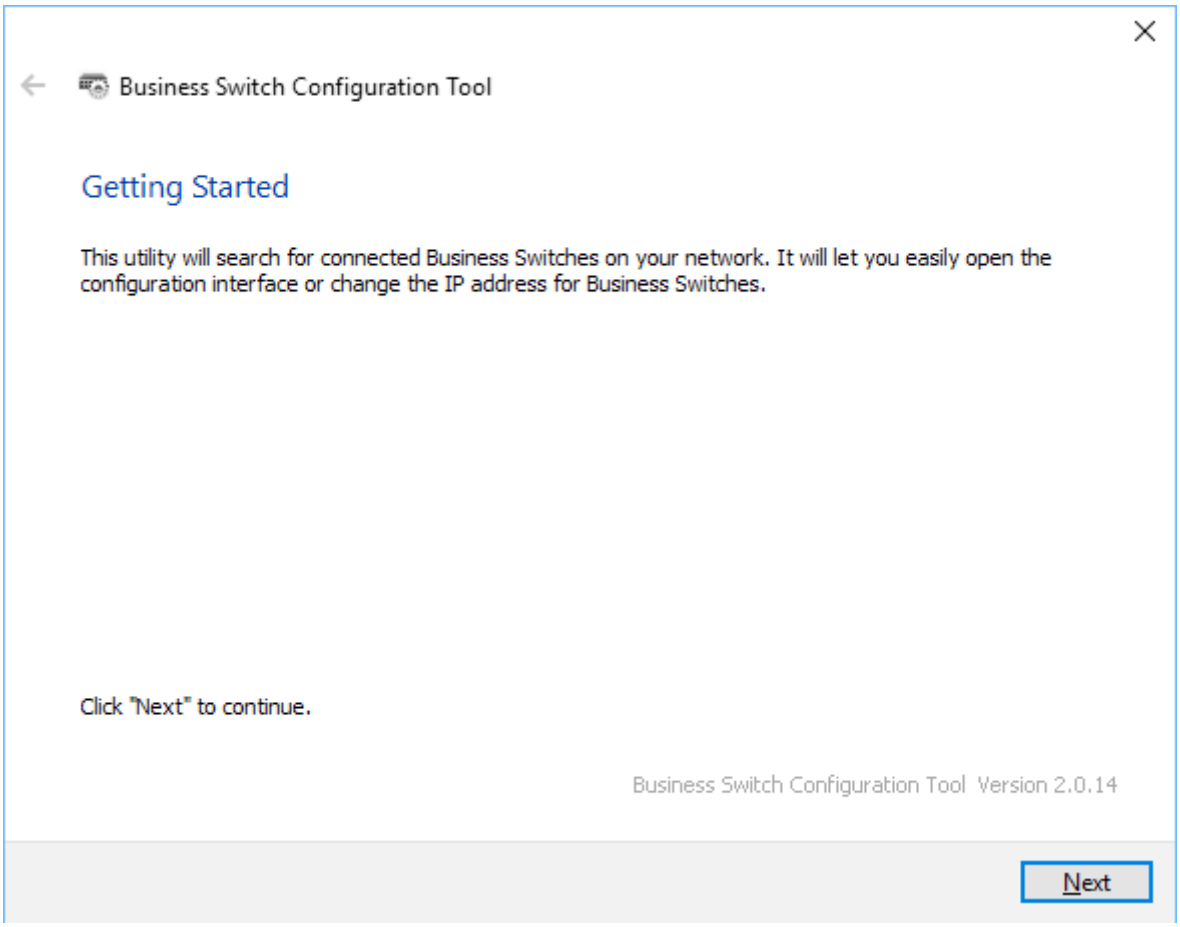
Change Switch's IP Address

To enter Settings, the switch's web user interface, the switch's IP address should belong to the same segment as your computer's IP address.

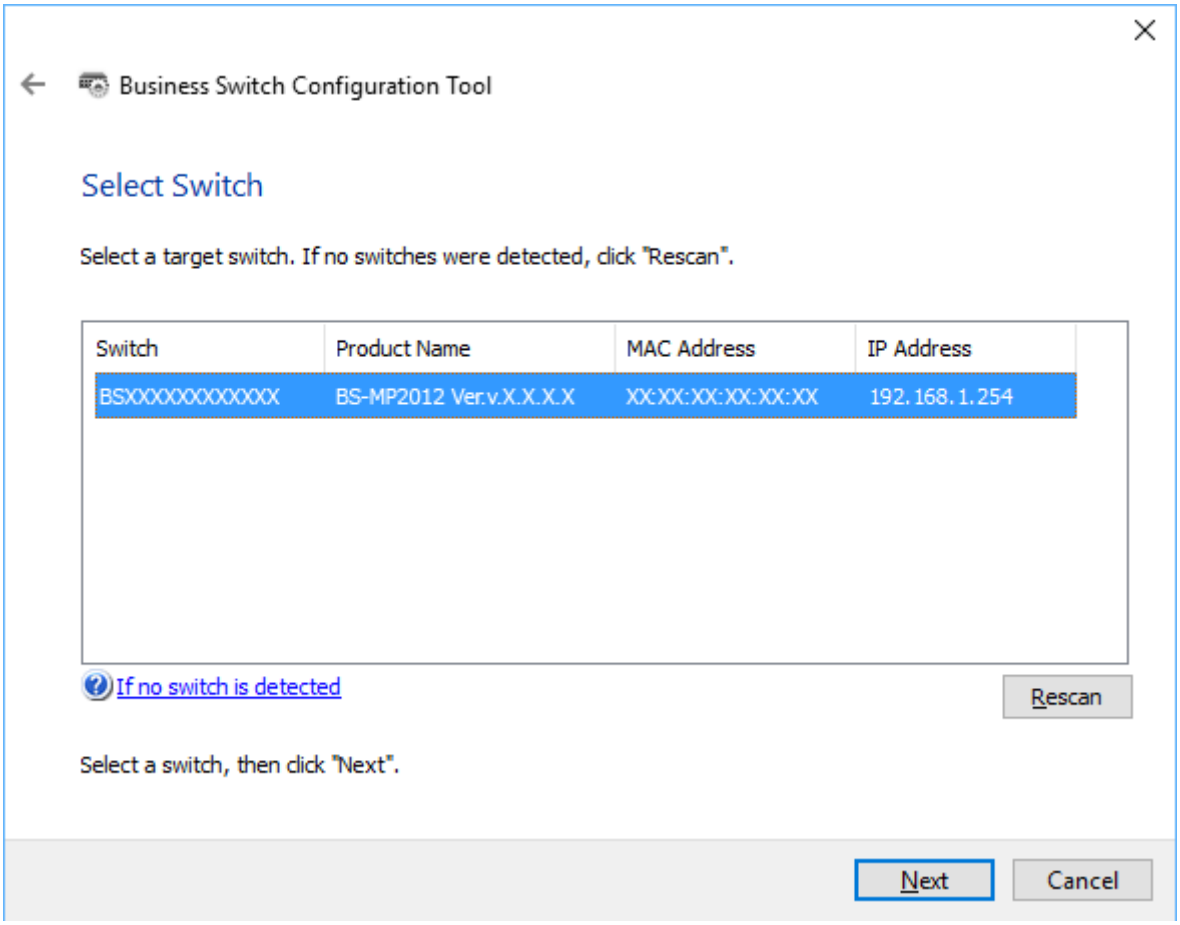
1 Connect the switch to your computer and your network with an Ethernet cable (sold separately). Confirm that link/act LED of the connected port is on.

2 Double-click the "Business Switch Configuration Tool" icon to open Business Switch Configuration Tool.

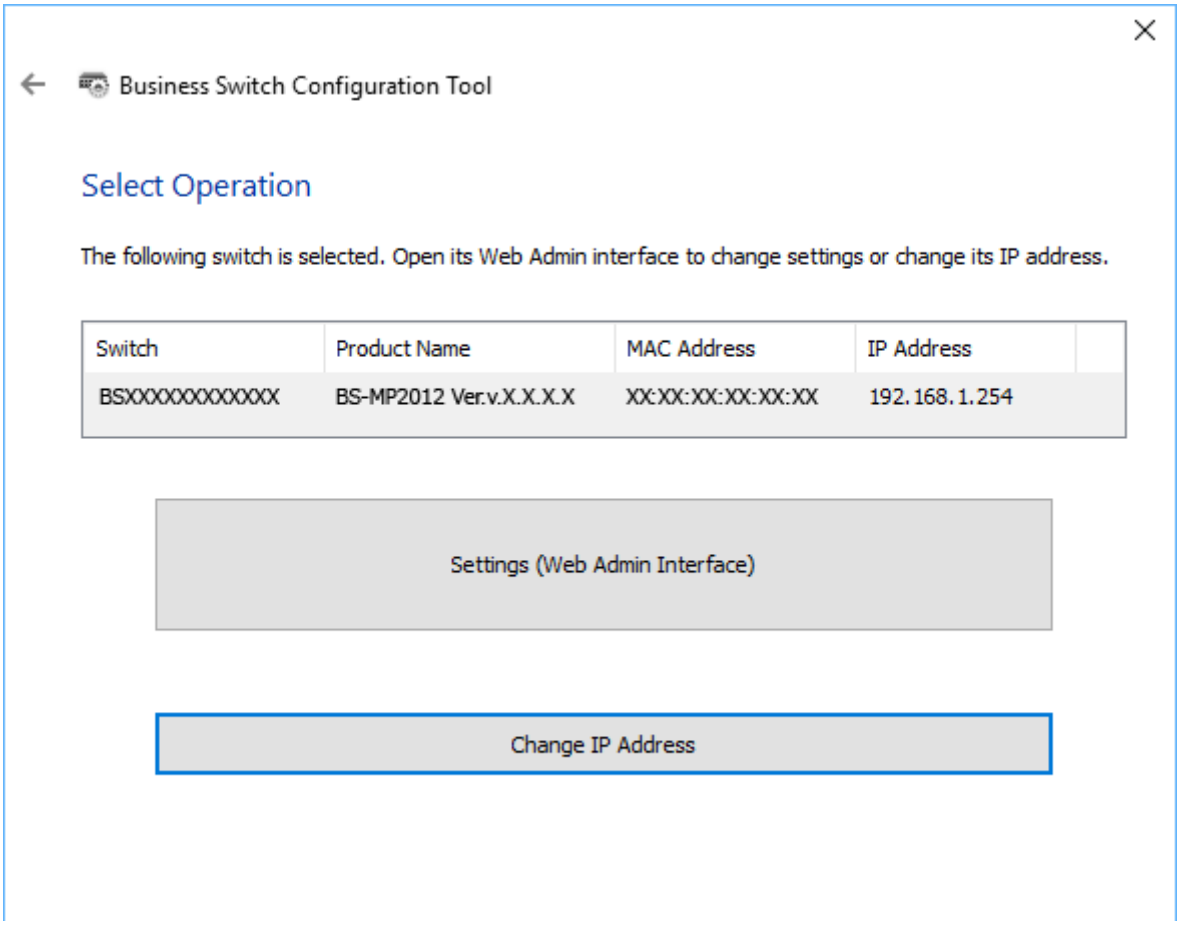
3 Click *Next* to start searching for the switch.



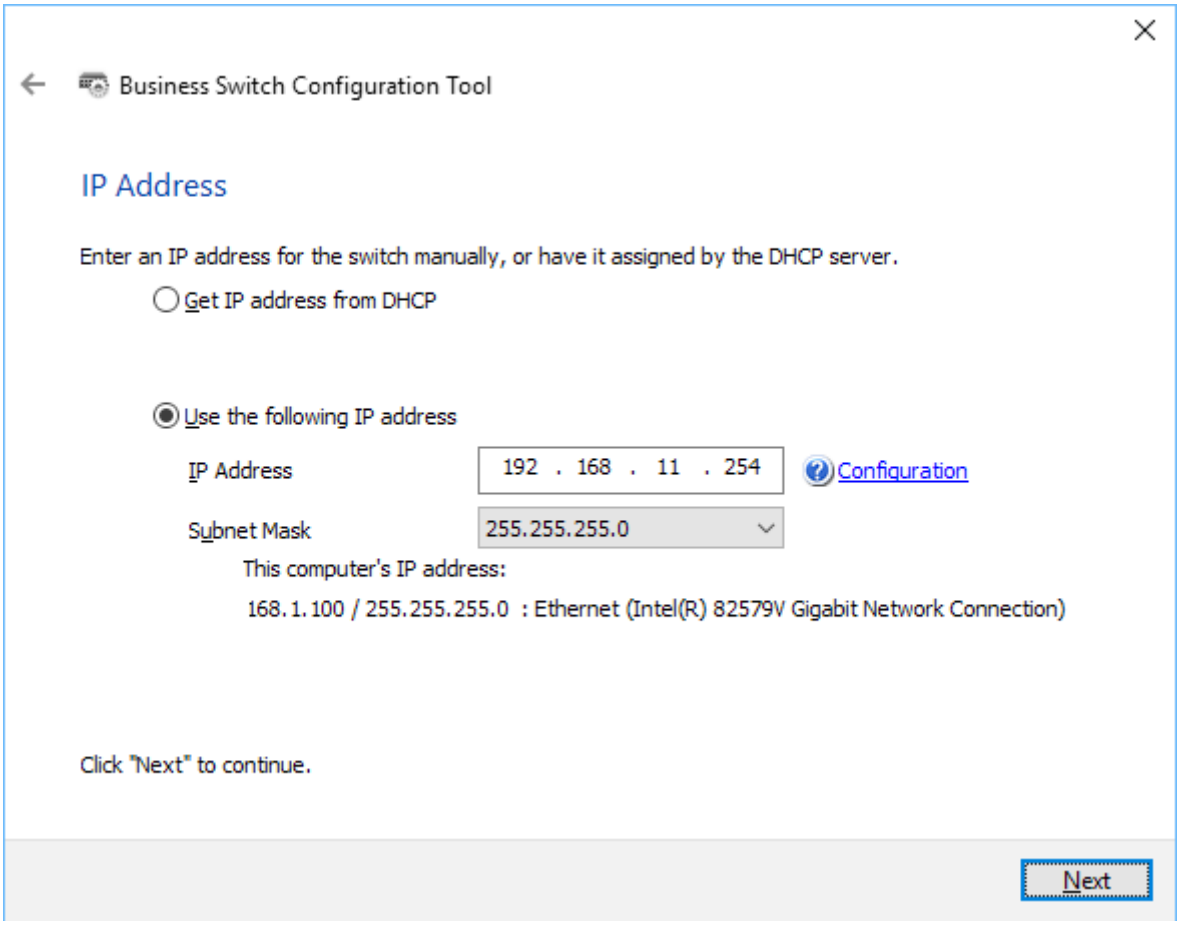
4 Select the switch and click *Next*.



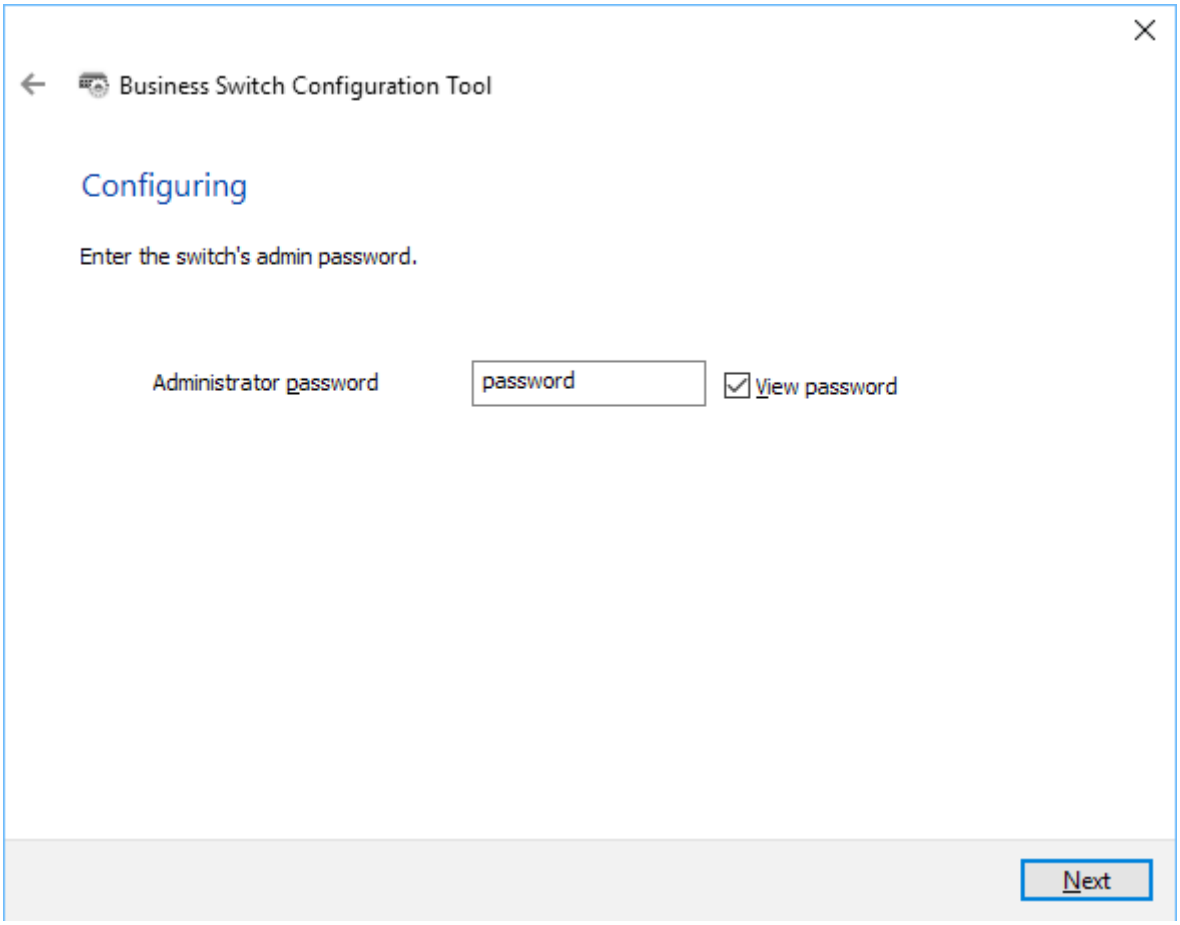
5 Click *Change IP Address*.



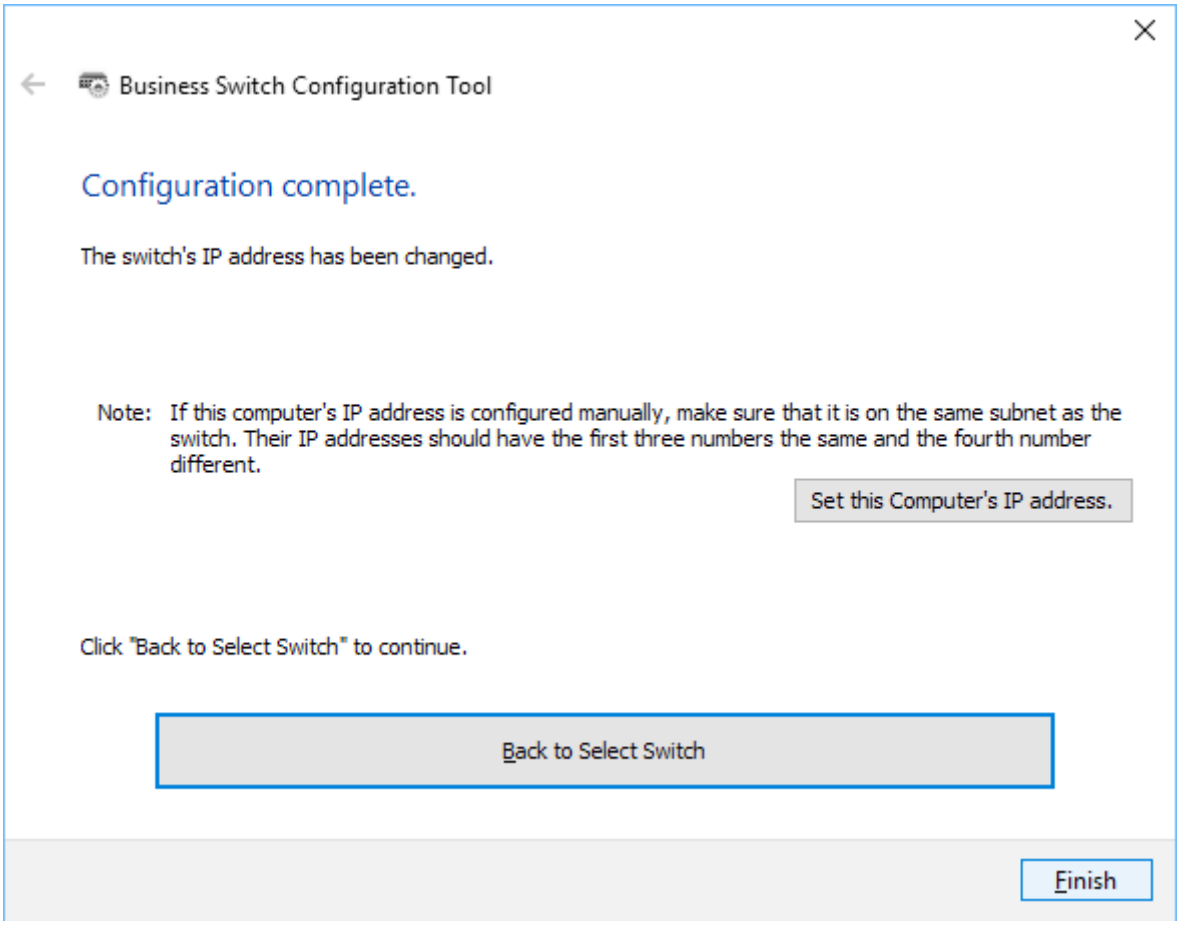
6 Configure the switch's IP address to match the segment of the IP address of your computer and click *Next*.



7 If the password input screen is displayed, enter "password" and click *Next*.



8 Click *Finish*.

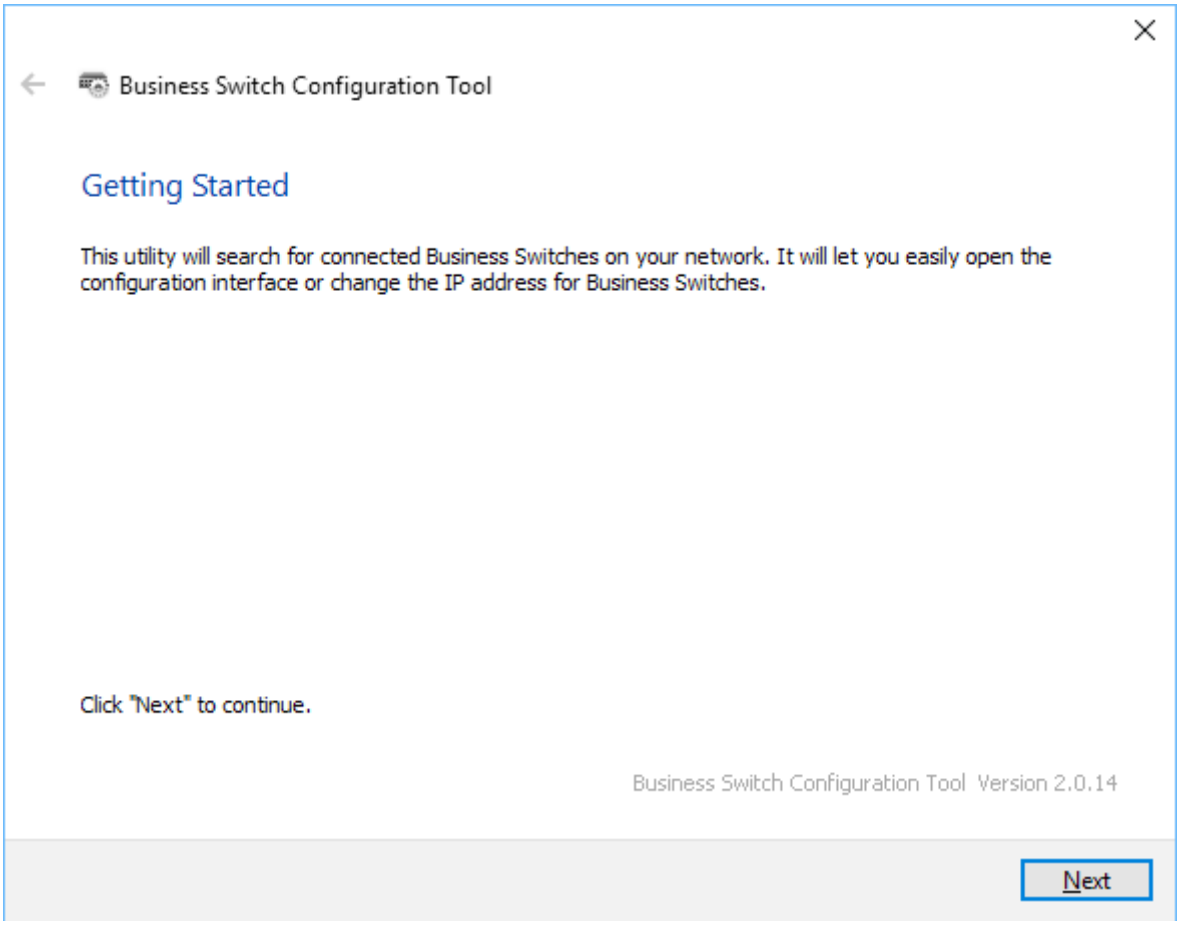


Open Settings

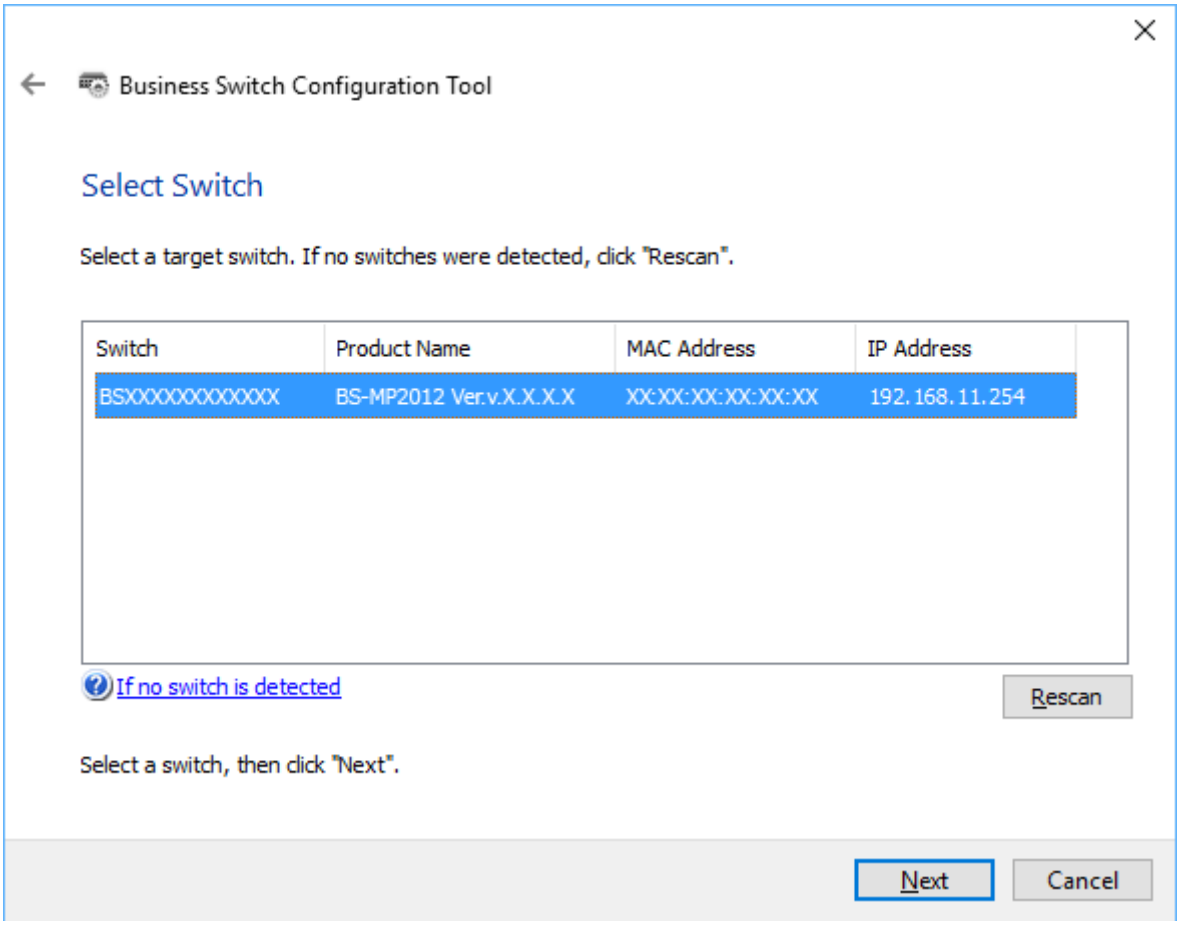
1 Configure the switch's IP address, referring to the "Change Switch's IP Address" section above.

2 Double-click the "Business Switch Configuration Tool" icon to open Business Switch Configuration Tool.

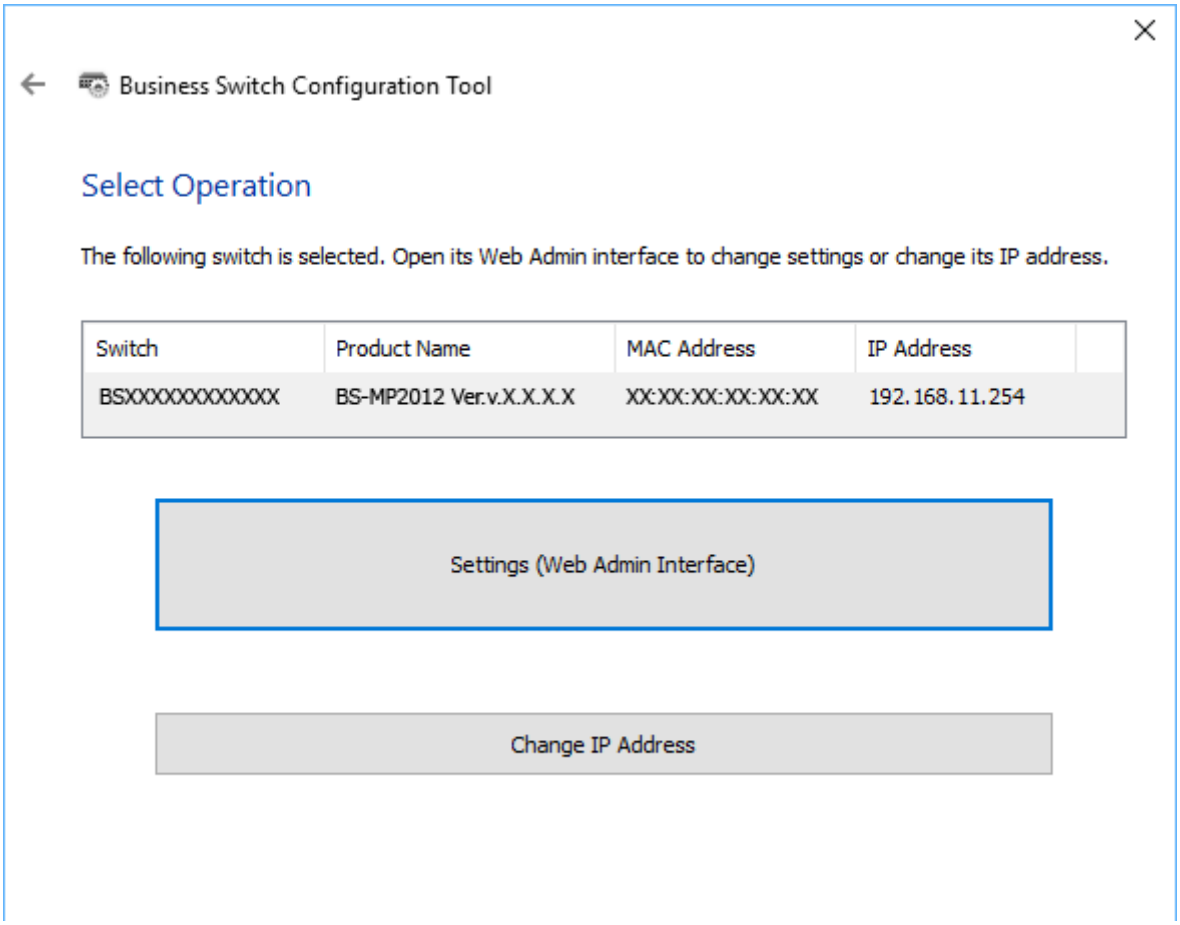
3 Click *Next* to start searching for the switch.



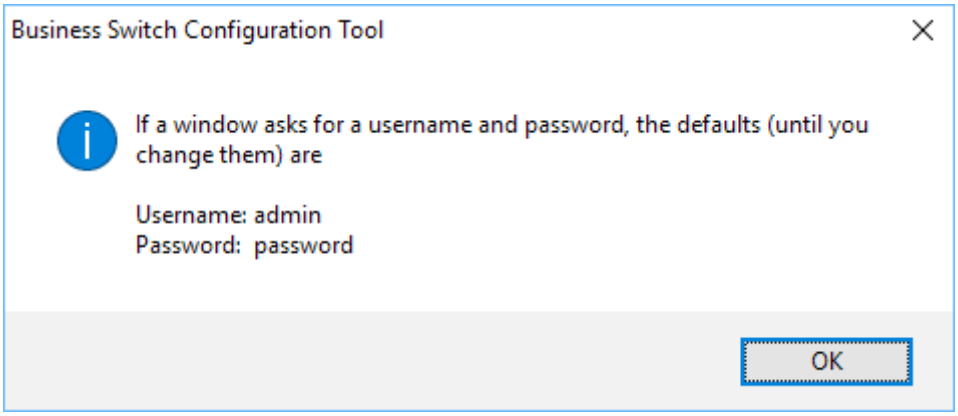
4 Select the switch and click *Next*.



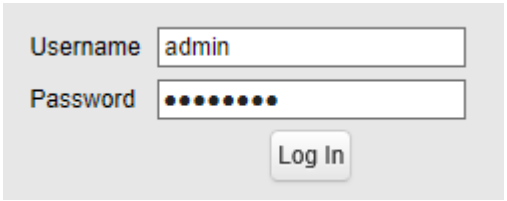
5 Click *Settings (Web Admin Interface)*.



6 Click *OK*.



7 A web browser is launched and the login screen is displayed. Enter "admin" as the username and "password" as the password, then click *Log In*.



Note: There is a message window, "The switch's configuration interface is now open in a browser window." under the browser window. Click *Complete* to close the window.

Change Username and Password

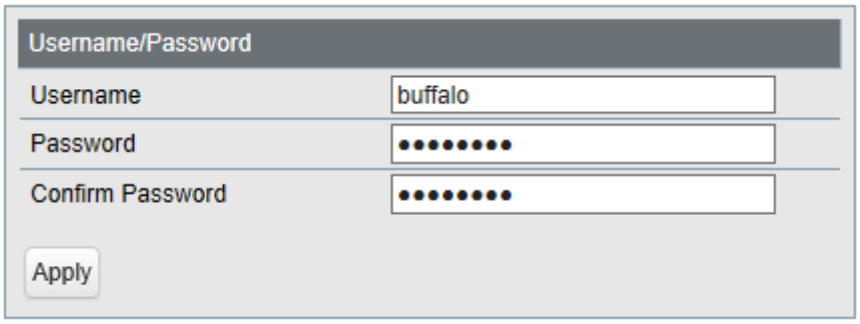
To change the default username and password from "admin" and "password", refer to the following procedure.

1 Open Settings.

2 Navigate to *Basic - System Security - Administration Account*.

3 Enter your new username and password (also fill the "Confirm Password" field), then click *Apply*.

Note: You may enter up to 8 alphanumeric characters, hyphens (-), and underscores (_) for the new username and password.

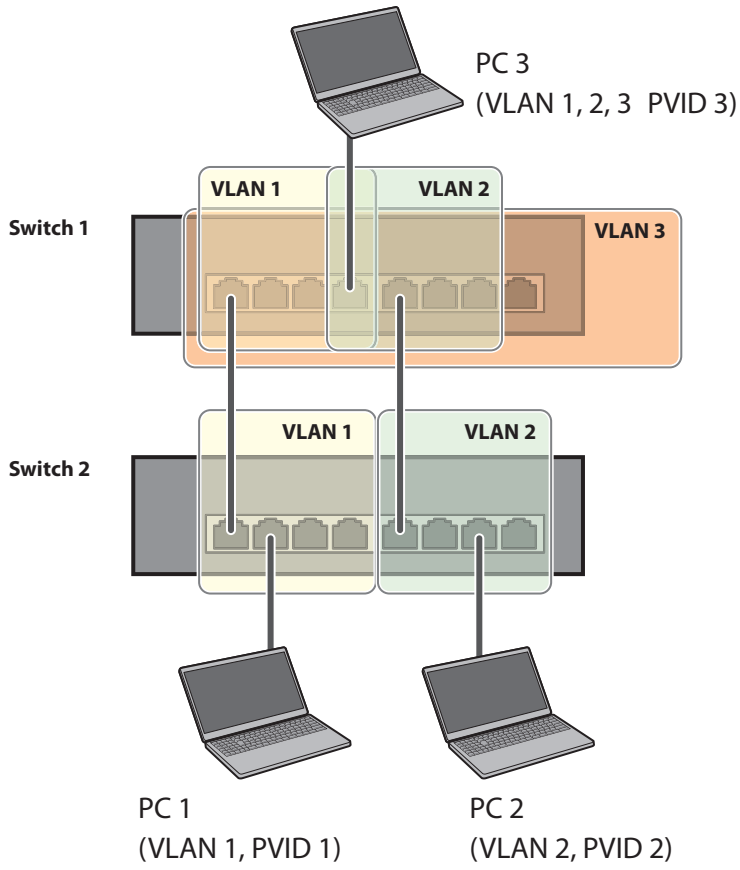


4 Enter the new username and password, then click *Log In*.

MAC Address Learning

This switch uses SVL (Shared VLAN Learning) to learn MAC addresses. SVL is a method that retains a shared MAC address table for the entire switch. It differs from IVL, which retains a MAC address table for each VLAN. Be sure you understand how SVL works before you create a VLAN with the switch.

Differences between Operation of SVL and IVL



SVL

When PC 1 and PC 3 communicate, PC 3 is learned by port 1 on switch 2 so PC 2 and PC 3 cannot communicate.

IVL

When PC 1 and PC 3 communicate, PC 3 is learned by both VLAN 1 and VLAN 2 so PC 2 and PC 3 can communicate. However, frames sent from PC 3 to PC 1 are also delivered to PC 2.

Chapter 2 Settings

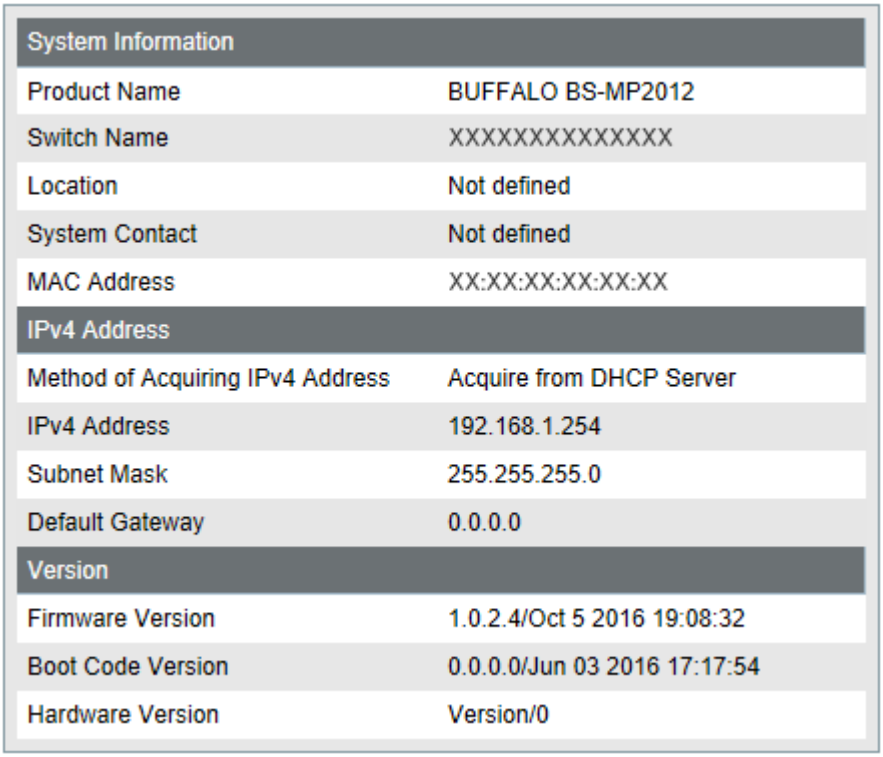
Refer to the "Open Settings" section in chapter 1 to access Settings.

Menu

System Information		Displays the switch's information.
Basic		
System		Configure the switch's name, location, and contact.
System IP Settings		Configure the switch's IPv4 address, subnet mask, and default gateway.
VLAN	**VLAN Settings**	Confirm VLAN status and create new VLAN. This switch's IP address can also be configured on this page.
	VLAN Ports	Configure PVID (Port VLAN ID).
MAC Addresses	**Static MAC Filtering**	Configure static MAC address-based filtering.
Port Settings	**Status**	Displays port status.
	Speed/Mode Settings	Configure transmission rate and flow control for each port.
System Security	**Administration Account**	Configure administration username and password.
Advanced		
QoS	**QoS Settings**	Configure QoS priority.
	QoS Mapping	Configure QoS mapping for each priority.
	VoIP Auto Priority	Configure priority for SIP, H.323, SCCP.
Security	**Auto DoS Attack Prevention**	Configure to drop specified packets.
Port Trunking		Configure port trunking.
Traffic Control		Configure traffic storm control.
Mirroring		Configure to monitoring traffic.
IGMP	**Status**	Displays IGMP status.
	IGMP Settings	Configure IGMP snooping.
	IGMP Querier	Configure IGMP querier.
	IGMP Router Port	Specify ports to connect to multicast routers.
Loop Prevention		Configure loop prevention settings.
Management		
Update Firmware		Update firmware from a local file.
Back Up and Restore		Save settings to a file or restore settings from a file.
Reboot		Reboot the switch.
Initialize		Initialize the switch.
Statistics		Displays the switch's statistics.
Network Diagnostics		Execute communication test to the specified IP address.

System Information

Displays the switch's information.

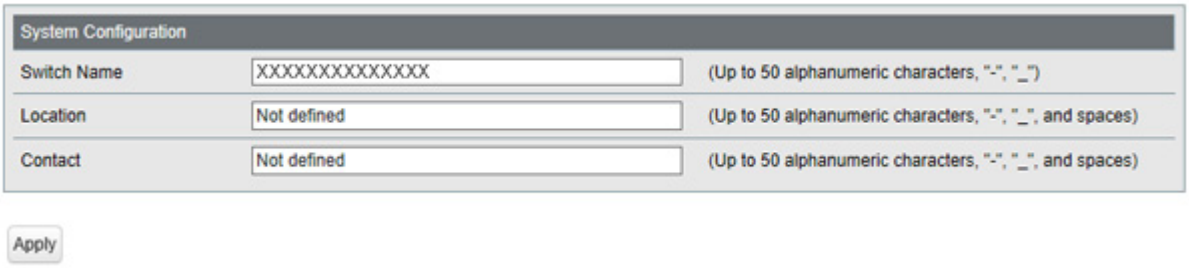


System Information	
Product Name	BUFFALO BS-MP2012
Switch Name	XXXXXXXXXXXXX
Location	Not defined
System Contact	Not defined
MAC Address	XX:XX:XX:XX:XX:XX
IPv4 Address	
Method of Acquiring IPv4 Address	Acquire from DHCP Server
IPv4 Address	192.168.1.254
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Version	
Firmware Version	1.0.2.4/Oct 5 2016 19:08:32
Boot Code Version	0.0.0.0/Jun 03 2016 17:17:54
Hardware Version	Version/0

System Information	Displays system information such as the switch name, and MAC address.
IPv4 Address	Displays information such as the switch's IPv4 address, subnet mask, and default gateway.
Version	Displays the switch's firmware, boot code, and hardware versions.

System

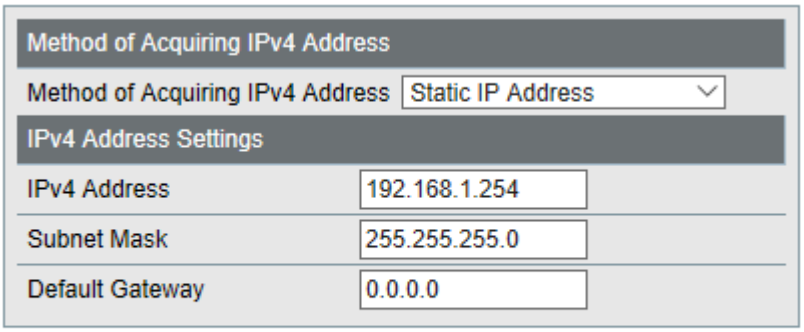
Configure the switch's name, location, and contact.



Switch Name	Enter the switch's name. You may enter up to 50 alphanumeric characters, hyphens (-), and underscores (_).
Location	Enter the location of the switch. You may enter up to 50 alphanumeric characters,hyphens (-), underscores (_), and spaces.
Contact	Enter the contact information of the switch. You may enter up to 50 alphanumeric characters, hyphens (-), underscores (_), and spaces.

System IP Settings

Configure the switch's IPv4 address, subnet mask, and default gateway.

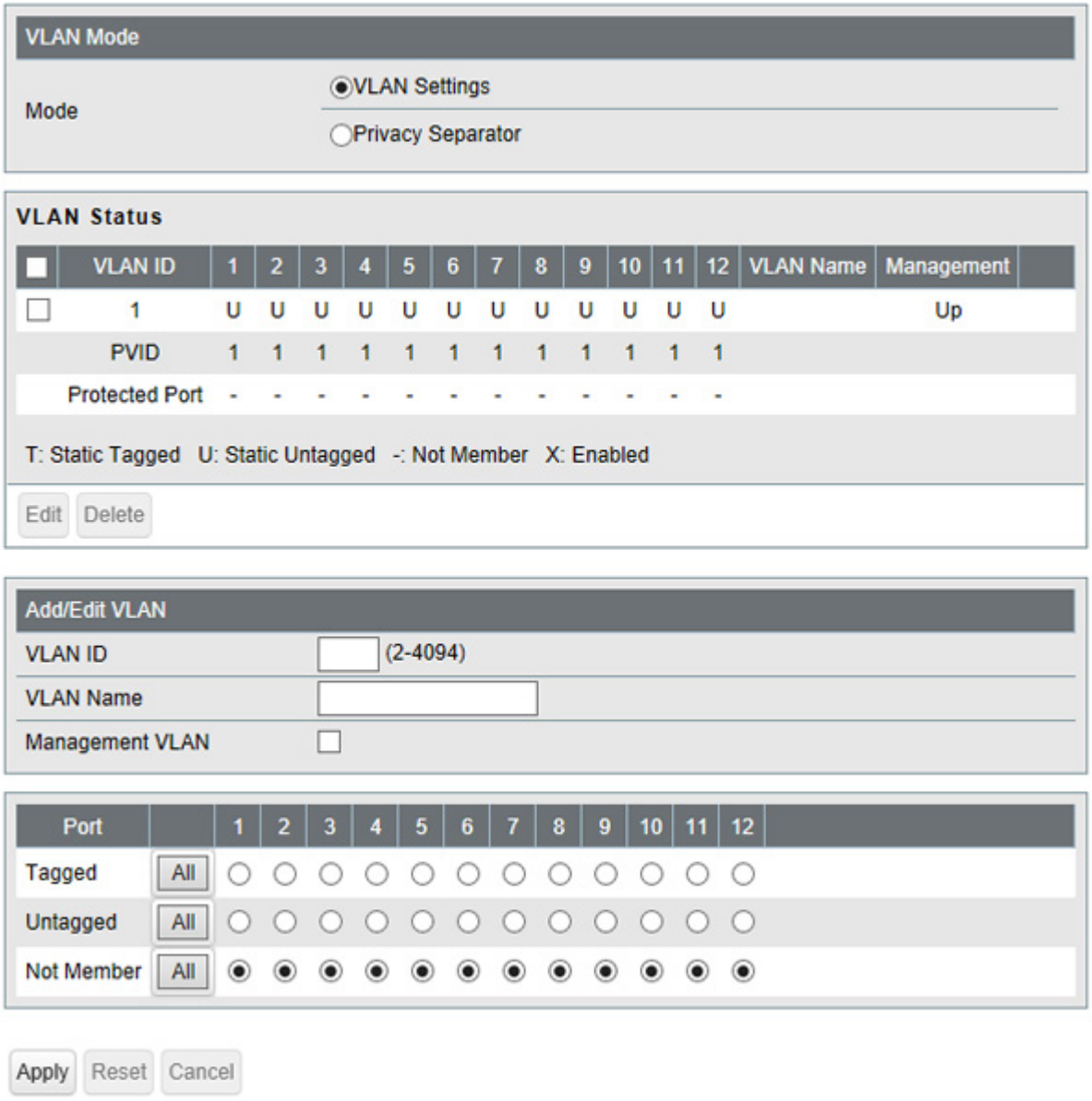


Method of Acquiring IPv4 Address	Select a method of obtaining the switch's IPv4 address. **Obtain from DHCP Server** Obtain the switch's IPv4 address from DHCP server. **Static IP Address** Enter the IP address manually.
IPv4 Address	Enter the switch's IPv4 address if you select *Static IP Address* as the connection method.
Subnet Mask	Enter the switch's subnet mask if you select *Static IP Address* as the connection method.
Default Gateway	Enter the switch's default gateway if you select *Static IP Address* as the connection method.

VLAN

VLAN Settings

Confirm VLAN status and configure new VLAN.



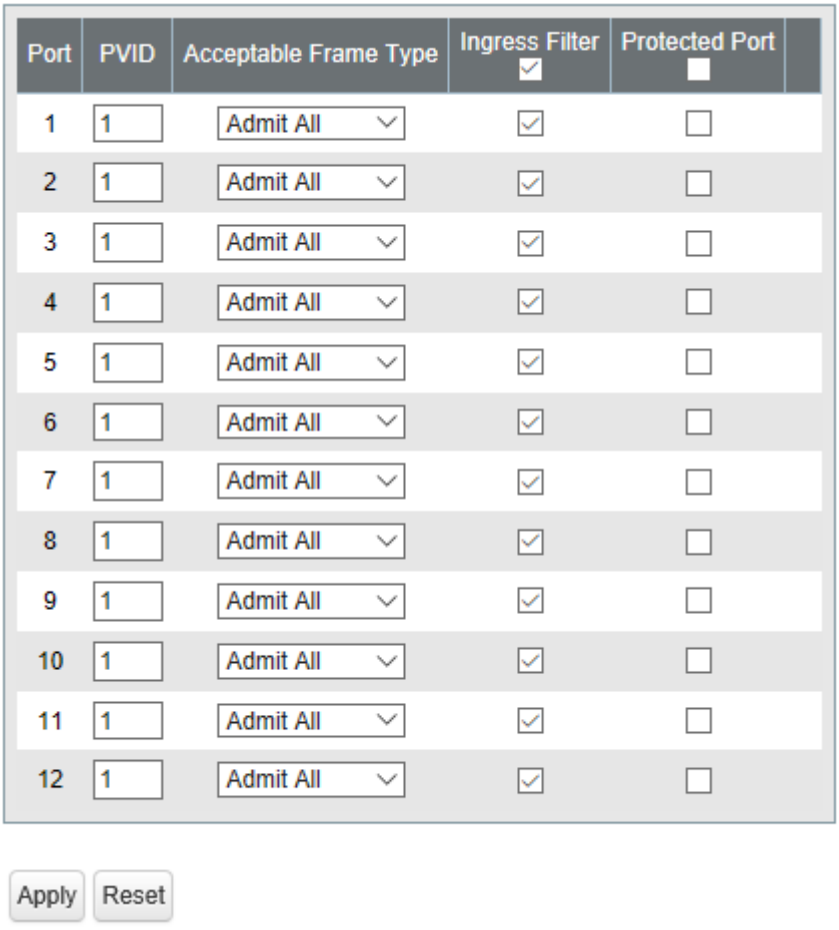
Mode	Select a VLAN mode from "VLAN Settings" or "Privacy Separator". Privacy separator is a mode that enables communication to the router from a port but blocks communication between ports. **Note:** VLAN and privacy separator cannot be used at the same time.
VLAN Status	Displays current VLAN and PVID (Port VLAN ID) status. Click *Edit* to edit the VLAN selected. Click *Delete* to delete the VLAN selected. VLAN 1 cannot be deleted.
VLAN ID	Specify VLAN ID from 2-4094.
VLAN Name	Enter the VLAN name. You may enter up to 17 alphanumeric characters, hyphens (-), and underscores (_).
Management VLAN	Check it if the VLAN is a management VLAN. Only devices which belong to the management VLAN can open Settings.
Tagged	Select when you assign the port to tag member.

Untagged	Select when you assign the port to untag member.
Not Member	Select when you do not assign the port to any member.
Reset	Click to reset the changes to the previous settings.
Uplink	Appears when "Privacy Separator" is selected. A router should be connected to the uplink port to connect to the Internet. Uplink ports can communicate with all downlink ports. Specify at least 1 port to an uplink port.
Downlink	Appears when "Privacy Separator" is selected. Downlink ports are the ones which each device connected to. Downlink ports can communicate with uplink ports, but cannot communicate with each downlink port.

Note: In privacy separator mode, only the device connected to an uplink port can open Settings. If you configure the port that your computer is connected as a downlink port, you cannot open Settings any more.

VLAN Ports

Configure PVID (Port VLAN ID).



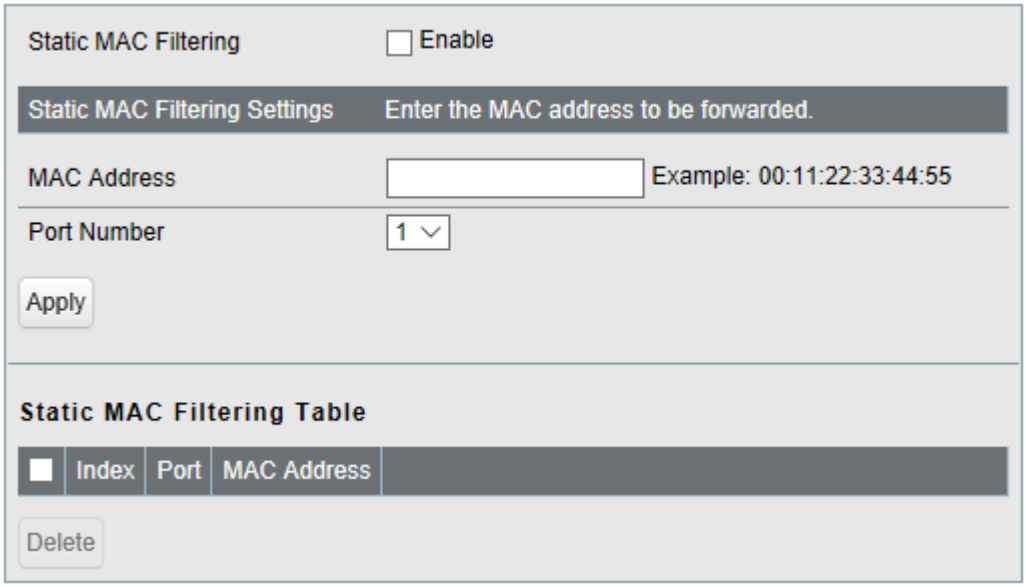
PVID	Specify the port VLAN ID. The received untagged frames will be recognized as the specified VLAN ID. (1-4094)
Acceptable Frame Type	**Admit All** Receive both untagged and tagged frames. **Tagged Only** Receive tagged frames only and drop untagged frames.

Ingress Filter	**Enable** Drop frames if the received frame's VLAN ID is not a member of incoming port's VLAN. **Disable** All tagged and untagged frames will be received.
Protected Port	"Protected Port" enabled ports cannot communicate with each other.

MAC Addresses

Static MAC Filtering

Configure the filtering of MAC addresses that are registered manually. Only the frames with a registered MAC address as a source MAC address can pass through the ports that the MAC address is registered to.



Static MAC Filtering	Check "Enable" to enable static MAC filtering.
MAC Address	Enter the MAC address you want to filter. (Example: 00:11:22:aa:bb:cc) Up to 8 addresses can be registered per port.
Port Number	Select a port to apply the static MAC filter.
Static MAC Filtering Table	Displays the registered MAC addresses and port numbers.

Note: This function is not compatible with multicast MAC addresses, VRRP MAC addresses (00:00:5E:00:01:XX), or broadcast MAC addresses.

Port Settings

Status

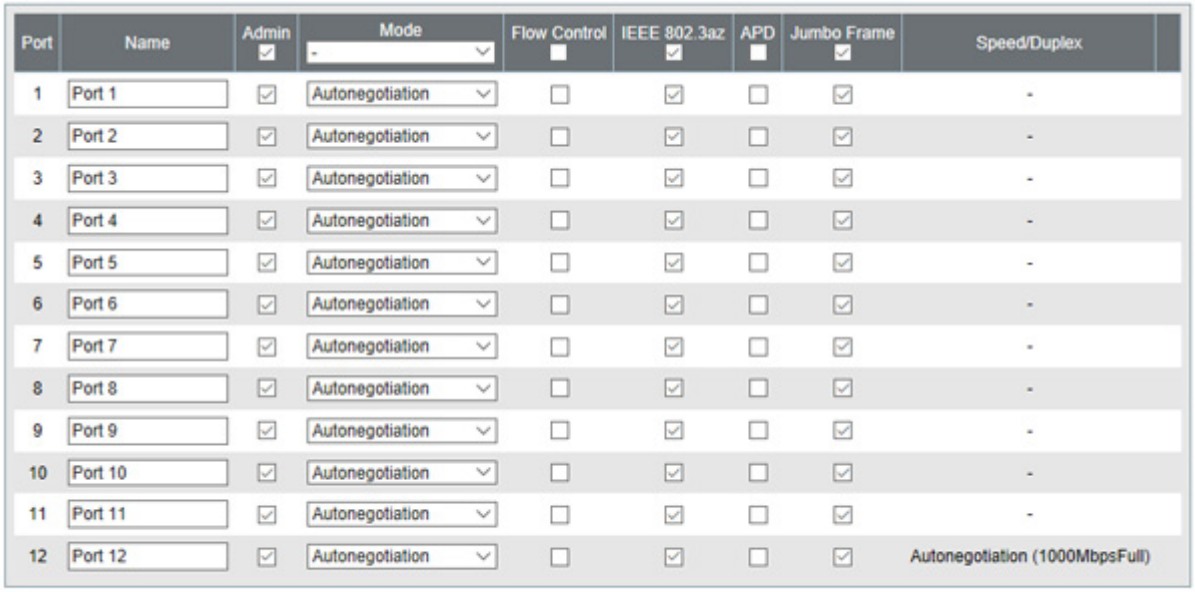
Displays the port status.

Port	Name	Admin	Link Status	Autonegotiation	Speed/Duplex	Flow Control	IEEE 802.3az	APD	Jumbo Frame
1	Port 1	On	Down	On	10GbpsFull	Off	On	Off	On
2	Port 2	On	Down	On	10GbpsFull	Off	On	Off	On
3	Port 3	On	Down	On	10GbpsFull	Off	On	Off	On
4	Port 4	On	Down	On	10GbpsFull	Off	On	Off	On
5	Port 5	On	Down	On	10GbpsFull	Off	On	Off	On
6	Port 6	On	Down	On	10GbpsFull	Off	On	Off	On
7	Port 7	On	Down	On	10GbpsFull	Off	On	Off	On
8	Port 8	On	Down	On	10GbpsFull	Off	On	Off	On
9	Port 9	On	Down	On	10GbpsFull	Off	On	Off	On
10	Port 10	On	Down	On	10GbpsFull	Off	On	Off	On
11	Port 11	On	Down	On	10GbpsFull	Off	On	Off	On
12	Port 12	On	Up	On	1000MbpsFull	Off	On	Off	On

Name	Displays the port name.
Admin	Displays whether the port is enabled (on) or disabled (off).
Link Status	Displays whether the link is up or down.
Autonegotiation	Displays whether the autonegotiation is enabled (on) or disabled (off).
Speed/Duplex	Displays the speed and duplex status.
Flow Control	Displays whether the flow control is enabled (on) or disabled (off).
IEEE 802.3az	Displays whether IEEE 802.3az is enabled (on) or disabled (off).
APD	Displays whether APD is enabled (on) or disabled (off).
Jumbo Frame	Displays whether jumbo frame is enabled (on) or disabled (off). **Note:** Jumbo frames of up to 9216 frames (including header 14 bytes + FCS 4 bytes) can be forwarded.

Speed/Mode Settings

Configure ports settings such as the transmission rate or flow control.



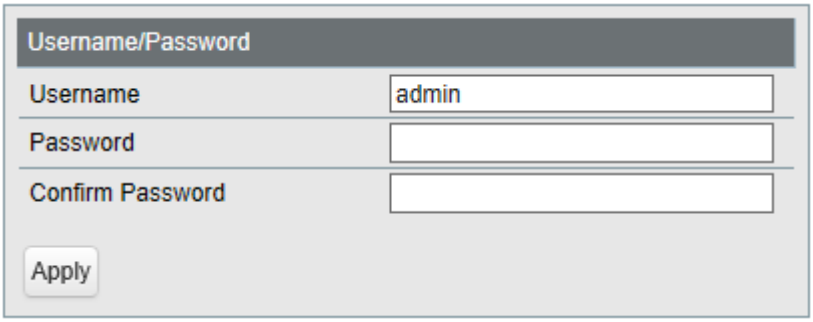
Name	Enter the port name. You may enter up to 15 alphanumeric characters, hyphens (-), underscores (_), and spaces.
Admin	Check to enable the port.
Mode	Select the transmission rate and duplex from below. **Autonegotiation** The transmission rate (max 10 Gbps) and duplex status will be configured automatically depending on the connected device. Select this during normal operation. **100M bps Full** The transmission rate will be fixed at 100 Mbps. And the duplex status will be fixed at full. **Autonegotiation (5G)** The transmission rate (max 5 Gbps) and duplex status will be configured automatically depending on the connected device. Select this if the switch cannot communicate with the connected device when "Autonegotiation" is selected. **Autonegotiation (2.5G)** The transmission rate (max 2.5 Gbps) and duplex status will be configured automatically depending on the connected device. Select this if the switch cannot communicate with the connected device when "Autonegotiation" or "Autonegotiation (5G)" is selected.
Flow Control	Check to enable flow control.
IEEE 802.3az	Check to enable IEEE802.3az.
APD	Check to enable APD (auto power down). If enabled, power consumption of link down ports can be reduced.
Jumbo Frame	Check to enable jumbo frame settings.
Speed/Duplex	Displays the current transmission rate and duplex.

Note: While Mode is set to "100M bps Full", "Autonegotiation (5G)" or "Autonegotiation (2.5G)", both IEEE 802.3az and APD will be disabled.

System Security

Administration Account

Configure the username and password.

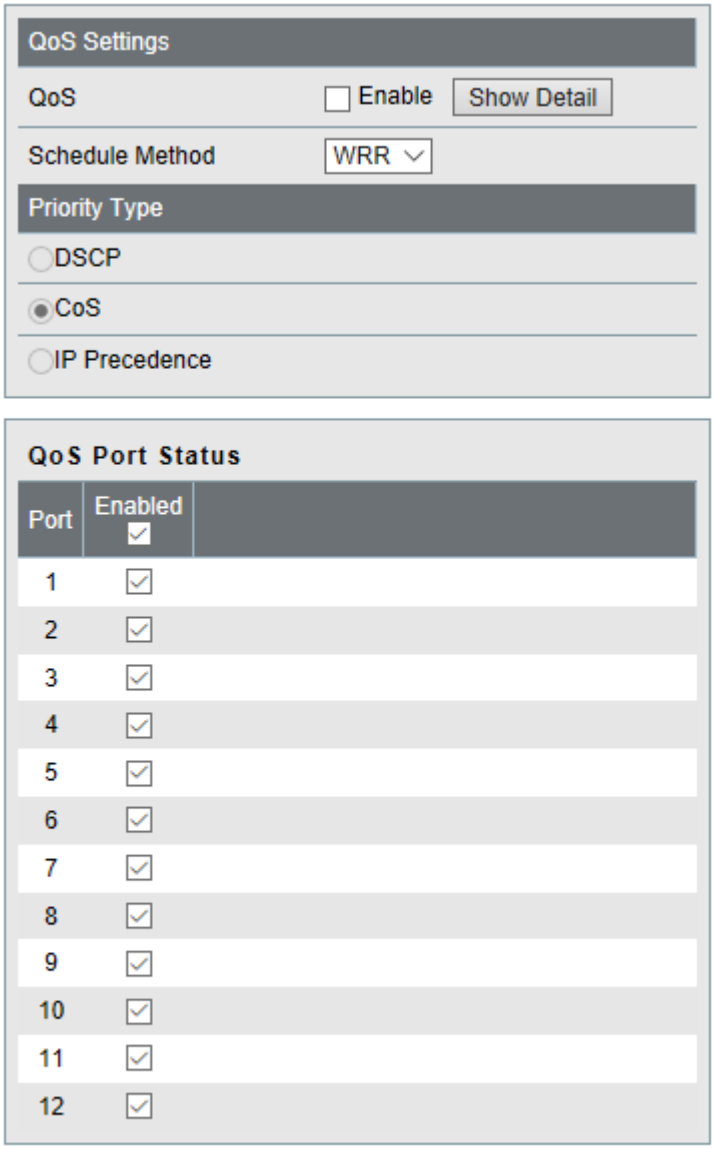


Username	Enter the new username. You may enter up to 8 alphanumeric characters, hyphens (-), and underscores (_).
Password	Enter the new password. You may enter up to 8 alphanumeric characters, hyphens (-), and underscores (_).
Confirm Password	Enter the new password again.

QoS

QoS Settings

Configure the priority.

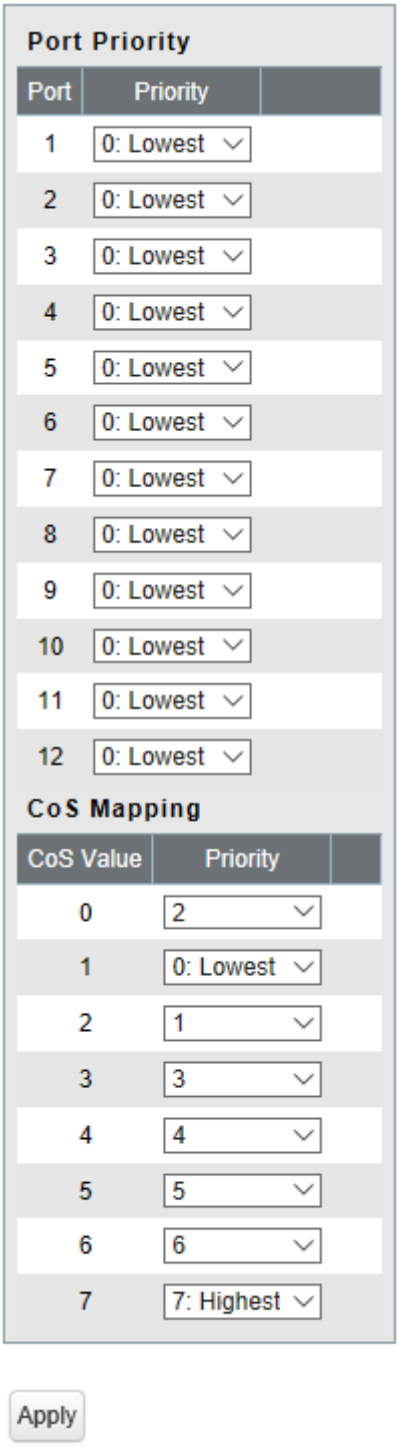


QoS	Check to enable QoS. Click *Show Detail* to enable/disable QoS for each port.

Schedule Method	Configure the queue scheduling type. **Strict** Execute the queue scheduling based on strict priority. High-prioritized queues are always forwarded strictly; low-prioritized queue will never be forwarded if any data remains in the high-prioritized queue. **WRR** Execute the queue scheduling based on WRR (Weighted Round Robin). This will forward queues in order of a round robin; even lower priority queues will be forwarded at a constant rate. The priority can be specified from 0 (lowest) to 7 (highest). **Note:** Packets without VLAN tag will belong to the lowest priority queue.
Priority Type	Select a priority parameter from DSCP, CoS, and IP precedence.

QoS Mapping

Configure port-based priority for DSCP, CoS, and IP precedence.

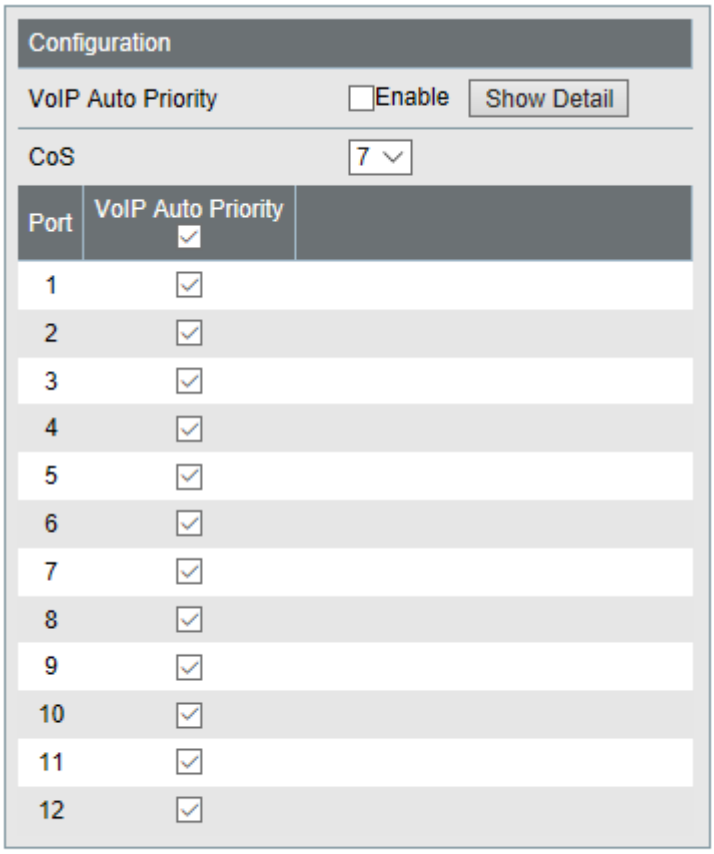


Port Priority	Configure the priority of each port.
DSCP Mapping	Configure the DSCP priority value from 0-63.
CoS Mapping	Configure the CoS priority value from 0-7.
IP Precedence Mapping	Configure the IP precedence priority value from 0-7.
Priority	Configure the priority from 0-7.

Note: DSCP mapping, CoS mapping, and IP precedence mapping is displayed when each type is selected.

VoIP Auto Priority

Configure the priority of SIP, H.323, SCCP.

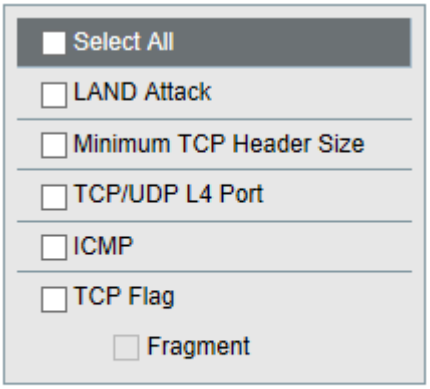


VoIP Auto Priority	Check to enable VoIP auto priority. Click *Show Detail* to enable or disable this functionality for each port.
CoS	Applied to the VoIP packets of SIP, H.323, SCCP only. If QoS is enabled, it is handled in accordance with CoS priority.

Security

Auto DoS Attack Prevention

Configure packets to be dropped.

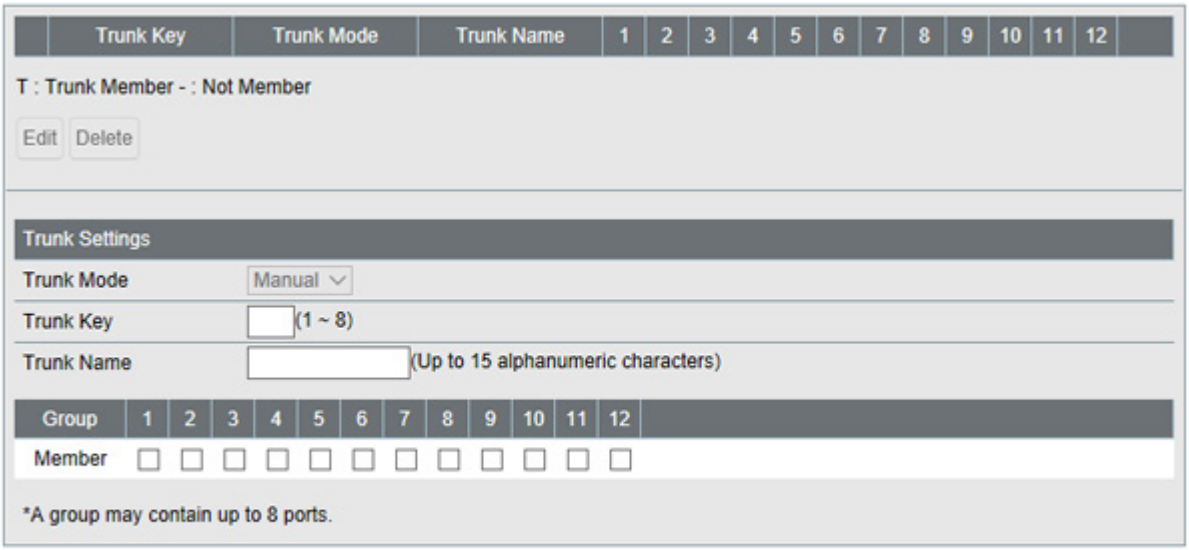


Apply

LAND Attack	If enabled, the packets whose source IP address and destination IP address are the same will be dropped.
Minimum TCP Header Size	If enabled, the packets whose TCP header size is less than 20 bytes will be dropped.
TCP/UDP L4 Port	If enabled, the packets whose source port number and destination port number are the same will be dropped. Disable when using SNTP.
ICMP	If enabled, the ICMP packets whose ICMP header+data is more than 512 bytes.
TCP Flag	If enabled, the illegal TCP flagged packets will be dropped. This will not be applied to the fragment packets.
Fragment	If checked, the configuration of *TCP Flag* will be applied also to the fragment packets.

Port Trunking

Configure port trunking settings.



Apply

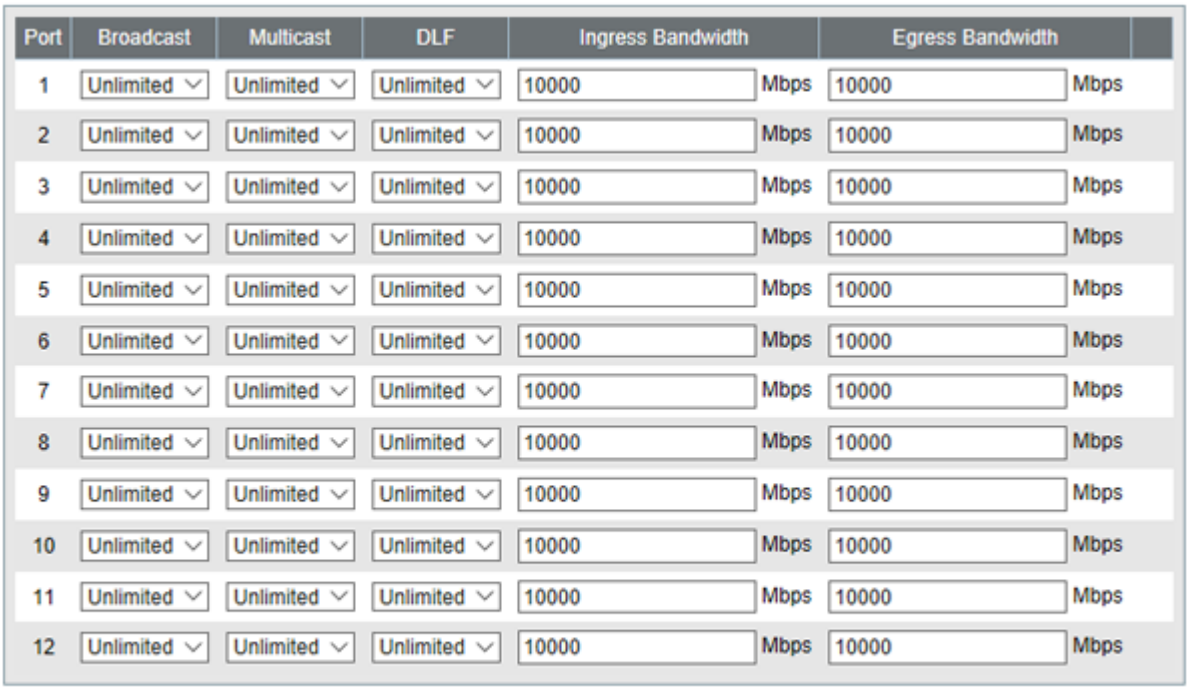
Trunk Mode	Select a trunk mode.
Trunk Key	Enter the key to identify the trunk group.
Trunk Name	Enter the trunk name.
Member	Select ports to join the trunk member.

Notes:

- Up to 8 groups can be created in total, and up to 8 ports can be set to a group.
- The ports in the same trunk group should belong to the same VLAN.

Traffic Control

Configure storm settings. If each packet exceeds the threshold configured on this page, exceeded packets will be dropped.



Port	Broadcast	Multicast	DLF	Ingress Bandwidth	Egress Bandwidth
1	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
2	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
3	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
4	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
5	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
6	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
7	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
8	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
9	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
10	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
11	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps
12	Unlimited	Unlimited	Unlimited	10000 Mbps	10000 Mbps

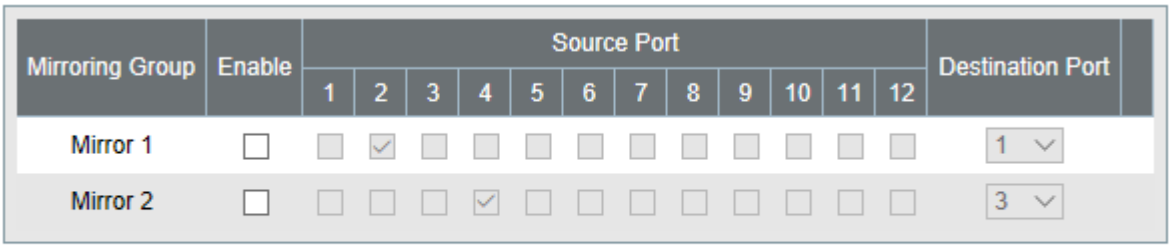
Apply

Broadcast	Select a rate to allow passing broadcasts.
Multicast	Select a rate to allow passing multicasts.
DLF	Select a rate to allow passing DLF (destination lookup failure) unicasts.
Ingress Bandwidth	Limits the bandwidth of ingress (input to the switch) speed as the configured value.
Egress Bandwidth	Limits the bandwidth of egress (output from the switch) speed as the configured value.

Note: If the rate is configured based on broadcasts, multicasts, or DLF unicasts that sometimes cannot pass due to the difference in traffic, configure the minimum rate of frames for normal use.

Mirroring

Configure to monitor the traffic (copy the contents of communication from source to destination).

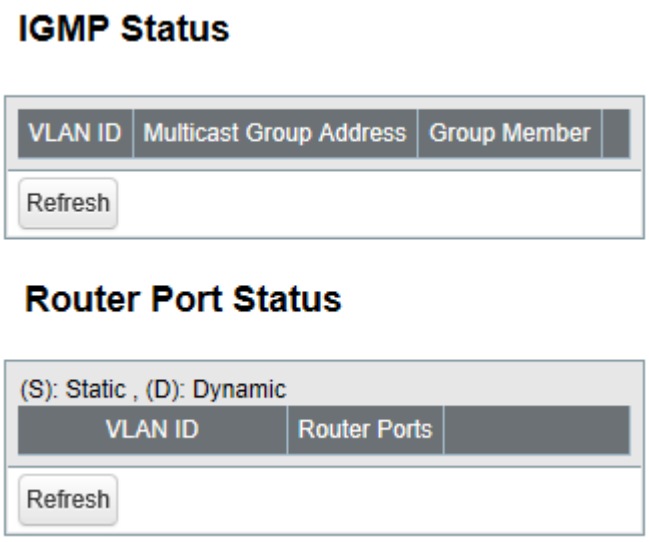


Enable	Check to enable mirroring.
Source Port	Select ports to be monitored.
Destination Port	Select ports to monitor the traffic.

IGMP

Status

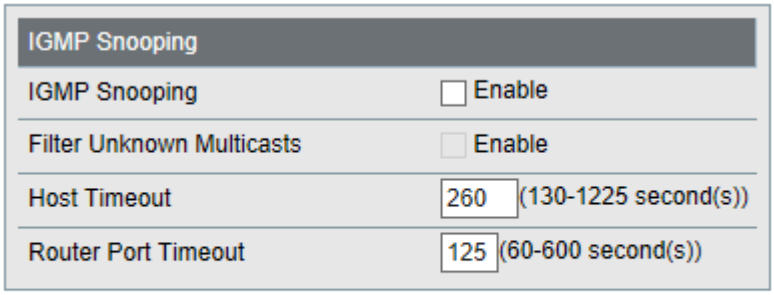
Displays the IGMP status.



IGMP Status	Displays the multicast address table.
Router Port Status	Displays the port connected to the multicast router (server).

IGMP Settings

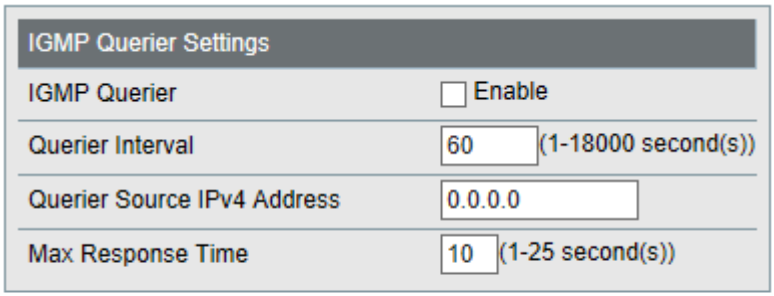
Configure IGMP snooping. This product is compatible with IGMP snooping v1, v2, and v3.



IGMP Snooping	Check to enable IGMP snooping. If enabled, you can prevent the flooding of multicast packets except for the port connected to the host which joins the multicast group. **Note:** The addresses in the range of 224.0.0.1-224.0.0.255 will be excepted from IGMP snooping.
Filter Unknown Multicasts	If checked, the packets of the multicast that is not learned will be discarded except for 224.0.0.1-224.0.0.255.
Host Timeout	Enter the host timeout period for receiving multicast.
Router Port Timeout	Enter the timeout length for the multicast router (server).

IGMP Querier

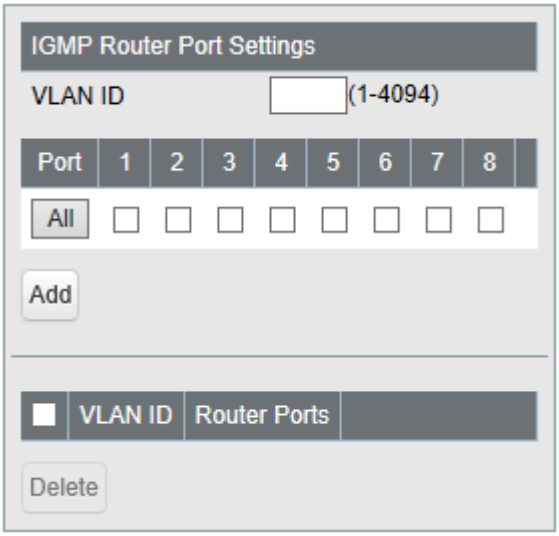
If IGMP querier is enabled, IGMP snooping can be enabled even if no multicast router is connected.



IGMP Querier	Check to enable IGMP querier. IGMP queries will be forwarded from each VLAN.
Querier Interval	Configure the transmit interval for the querier that confirms the existence of multicast group's member.
Querier Source IPv4 Address	Enter the source IPv4 address of the querier.
Max Response Time	Configure the time between transmitting the querier and response from the member. If the member responds to the querier by this time, the querier determines that the member is connected.

IGMP Router Port

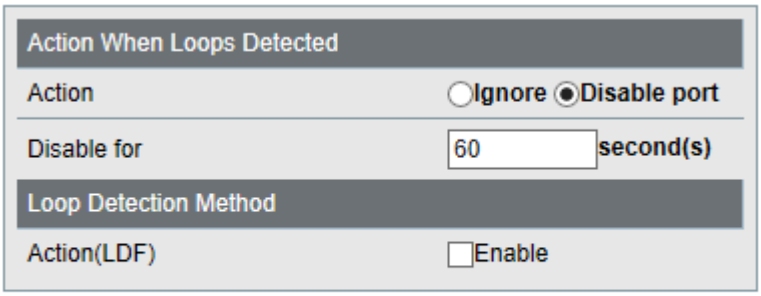
Specify the port connected to the multicast router (server) for each VLAN.



IGMP Router Port Settings	Enter the VLAN ID and specify the port connected to the multicast router (server), then click *Add*.

Loop Prevention

Configure loop prevention functionality.



Apply

Action	Configure the switch's action when a loop is detected. **Ignore** When a loop is detected, the switch will do nothing to the port; the diag LED and loop-detected port's LED will blink for the time configured in the *Disable for* section. If a loop is detected again, it will continue to blink until the loop is resolved. **Disable port** The switch will disable the loop-detected port for the amount of time configured in the *Disable for* section. At the same time, the diag LED and loop-detected port's LED will blink for the time configured in the *Disable for* section. If a loop is detected again after the time configured in the *Disable for* section has passed, the switch will disable the loop-detected port until the loop is resolved.
Disable for	Configure the period to disable the loop-detected port when *Disable port* is selected as the action.
Action (LDF)	Check to enable LDF loop detection method. The switch will transmit the LDF packet once per 2 seconds. If the transmitted LDF packet is received, this will assume that a loop is occurring. **Note:** The following are the LDF packet's source MAC addresses. BS-MP2008: 343DC4370000 (fixed value) BS-MP2012: 343DC4380000 (fixed value)

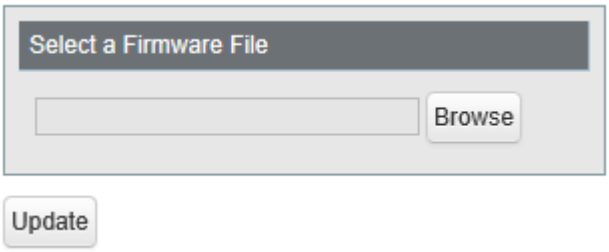
Update Firmware

Update firmware with the local firmware file.

Click *Browse* and select the firmware image to update, then click *Update*.

Notes:

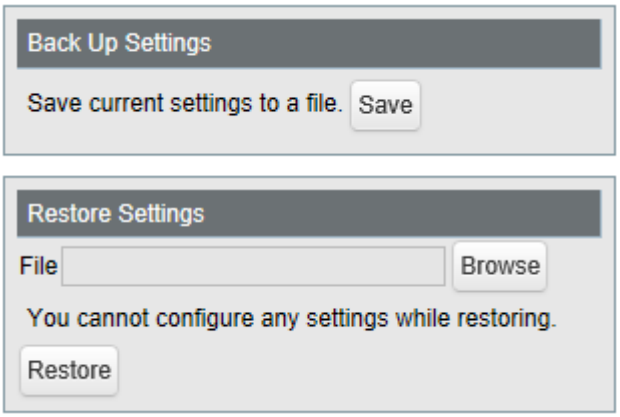
- Do not turn off the switch or close the browser while updating.
- To finish the update, reboot the switch when prompted.
- Firmware cannot be updated when jumbo frame is enabled on your computer. To update firmware, disable Jumbo Frame. Refer to your computer's manual to change jumbo frame settings.



File Image	Select a file image to update.

Back Up and Restore

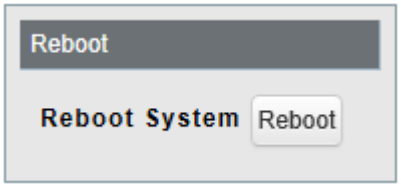
Save or restore the switch's settings.



Back Up Settings	Click *Save* to save current settings to a file.
Restore Settings	Click *Browse* to select a settings file and click *Restore* to start restoring. **Note:** To finish restoring, reboot the switch.

Reboot

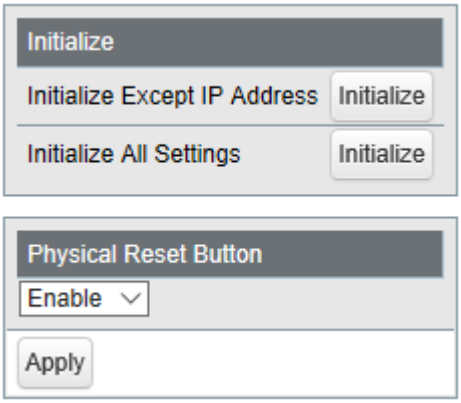
Reboot the switch.



Reboot System	Click *Reboot* to reboot the switch.

Initialize

Restore the switch settings to the factory default.



Initialize Except IP Address	Click *Initialize* to initialize all settings except the switch's IPv4 address.
Initialize All Settings	Click *Initialize* to initialize all switch settings.
Physical Reset Button	Enable or disable the reset button on the switch.

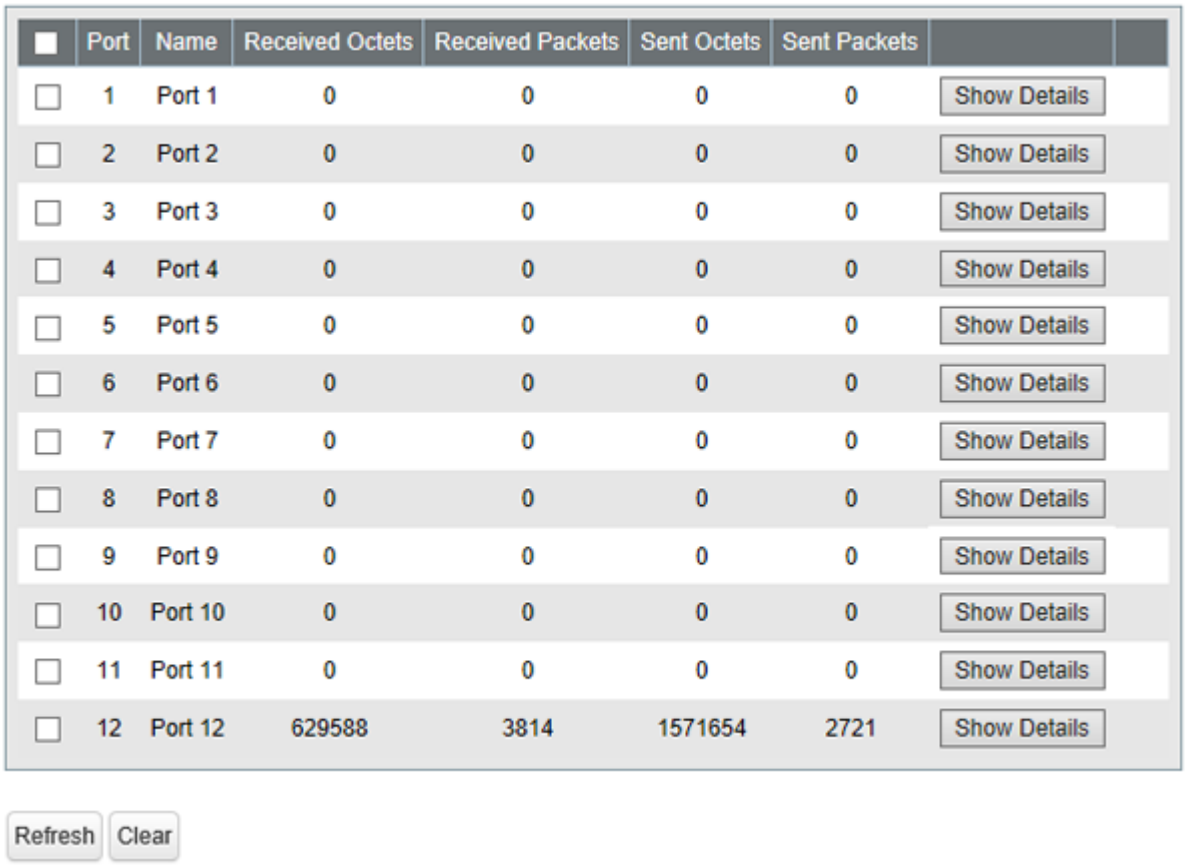
Notes:

- If the physical reset button is enabled, the switch can be initialized by pressing and holding the button for 3 seconds until the diag LED turns red.
- If the physical reset button is disabled and you forgot the username or password for Settings, contact our technical support.

Statistics

Displays the switch's statistics.

Note: Each maximum value is 4,294,967,295. If this is reached or exceeded, the value will reset to 0. Rebooting the switch will also reset the value to 0.



Port	Name	Received Octets	Received Packets	Sent Octets	Sent Packets	
1	Port 1	0	0	0	0	Show Details
2	Port 2	0	0	0	0	Show Details
3	Port 3	0	0	0	0	Show Details
4	Port 4	0	0	0	0	Show Details
5	Port 5	0	0	0	0	Show Details
6	Port 6	0	0	0	0	Show Details
7	Port 7	0	0	0	0	Show Details
8	Port 8	0	0	0	0	Show Details
9	Port 9	0	0	0	0	Show Details
10	Port 10	0	0	0	0	Show Details
11	Port 11	0	0	0	0	Show Details
12	Port 12	629588	3814	1571654	2721	Show Details

Refresh Clear

Name	Displays the port name.
Received Octets	Displays the number of total received octets.
Received Packets	Displays the number of total received packets.
Sent Octets	Displays the number of total sent octets.
Sent Packets	Displays the number of total sent packets.
Show Details	Click to display the detailed information.

The following items appear when *Show Detail* is clicked.

Received Octets	Displays the number of total received octets.
Received Unicast Packets	Displays the number of received unicast packets.
Received Multicast Packets	Displays the number of received multicast packets.
Received Broadcast Packets	Displays the number of received broadcast packets.
Discarded Received Packets	Displays the number of packets that the switch received but did not forwarded to any port.
Received Packet Error	Displays the number of packets that was discarded because of FCS error.
Sent Octets	Displays the number of total sent octets.
Sent Unicast Packets	Displays the number of sent unicast packets.
Sent Multicast Packets	Displays the number of sent multicast packets.

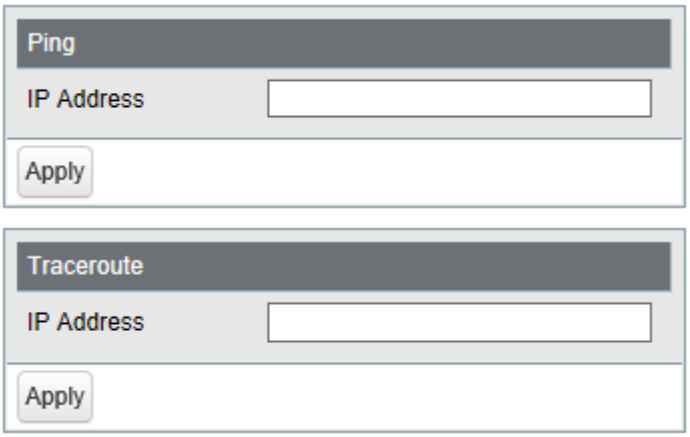
Sent Broadcast Packets	Displays the number of sent broadcast packets.
Discarded Sent Packets	Displays the number of packets that could not be sent.

Notes:

- Packets that are designated to the switch (such as ping or http communication for displaying Settings) will be displayed as "Received Unicast Packets" and "Discarded Received Packets".
- The target packets of this page are MAC frames and IPv4 packets.

Network Diagnostics

Execute a communication test to the specified IP address.



Ping	Enter the IPv4 address and click *Apply* to execute a ping test to the destination.
Traceroute	Enter the IPv4 address and click *Apply* to execute a traceroute test to the destination.

Note: To execute a traceroute test, configure the switch's default gateway.

Chapter 3 Troubleshooting

LED Is Not Lit, Abnormal Lighting or Blinking

The power LED is not lit.	• Confirm that the AC adapter or power cable is connected to the inlet.
The diag LED is blinking red.	• If it blinks once per a second, a loop is detected. Check the cabling. • If your switch has fans and its diag LED is blinking fast, a fan error may be occurring. Disconnect the power cable and reconnect it. If the LED keeps blinking, contact our technical support.
The link/act LED is not lit.	• Confirm that the Ethernet cable is connected to both the switch and the device. • Confirm that the switch and the connected device are both powered on. • Confirm that the Ethernet cable type and length is compatible with the switch. • Check the communication standards that the connected device is compatible with in order to check if the device can be used with the switch. • If the connected device's autonegotiation can be enabled manually, enable it. Also, enable the switch's autonegotiation as well.
Cannot initialize with the reset button on the switch.	• Confirm whether the physical reset button is enabled in Settings. • If the physical reset button is disabled and you forgot the username or password of Settings, contact our technical support.

Cannot Access Settings

- Make sure that your computer is connected to the switch.
- Access Settings with the switch's IP address (192.168.1.254 by default).
- Confirm that the username ("admin" by default) and the password ("password" by default) are correct. If you forgot the username or password, initialize the switch. To initialize the switch, press and hold the reset button for 3 seconds until the diag LED turns red.
- If a proxy server is configured for the web browser, disable the proxy server or add the switch's IP address to the proxy server's exception list.
- Confirm that your computer is connected to the port which belongs to the management VLAN.

Forgot the Username or Password

- To initialize the switch, press and hold the reset button for 3 seconds until the diag LED turns red.
- If the physical reset button is disabled and you forgot the username or password for Settings, contact our technical support.

Appendix A Specifications

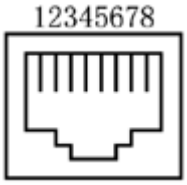
Product Specifications

Refer to the quick setup guide to check the hardware specifications.

Port Specifications

Ethernet port specifications

RJ-45 with 8 pins



100BASE-TX		
Pin Number	Signal Name	Signal Function
1	RD+/TD+	Receive data (+)/Transmit data(+)
2	RD-/TD-	Receive data (-)/Transmit data(-)
3	TD+/RD+	Transmit data (+)/Receive data(+)
4	(Not Use)	Not used
5	(Not Use)	Not used
6	TD-/RD-	Transmit data (-)/Receive data (-)
7	(Not Use)	Not used
8	(Not Use)	Not used
10GBASE-T/5GBASE-T/2.5GBASE-T/1000BASE-T		
Pin Number	Signal Name	Signal Function
1	BI_DA+/BI_DB+	Transmit and receive data A (+)/Transmit and receive data B (+)
2	BI_DA-/BI_DB-	Transmit and receive data A (-)/Transmit and receive data B (-)
3	BI_DB+/BI_DA+	Transmit and receive data B (+)/Transmit and receive data A (+)
4	BI_DC+/BI_DD+	Transmit and receive data C (+)/Transmit and receive data D (+)
5	BI_DC-/BI_DD-	Transmit and receive data C (-)/Transmit and receive data D (-)
6	BI_DB-/BI_DA-	Transmit and receive data B (-)/Transmit and receive data A (-)
7	BI_DD+/BI_DC+	Transmit and receive data D (+)/Transmit and receive data C (+)
8	BI_DD-/BI_DC-	Transmit and receive data D (-)/Transmit and receive data C (-)

Factory Default Settings

System		**Switch Name**	BS + the switch's MAC address
		Location	Not defined
		Contact	Not defined
System IP Settings		**Method of Acquiring IPv4 Address**	Static IP Address
		IPv4 Address	192.168.1.254
		Subnet Mask	255.255.255.0
		Default Gateway	0.0.0.0
VLAN	**VLAN Settings**	**VLAN Mode**	VLAN Settings
		VLAN ID	1
		VLAN Name	None
		Management VLAN	Enabled
		Ports	Untagged
	VLAN Ports	**PVID**	1
		Acceptable Frame Type	Admit All
		Ingress Filter	Enabled
		Protected Port	Disabled
MAC Addresses	**Static MAC Filtering**	**Static MAC Filtering**	Disabled
Port Settings	**Speed/Mode Settings**	**Name**	Port + port number
		Admin	Enabled
		Mode	Autonegotiation
		Flow Control	Disabled
		IEEE 802.3az	Enabled
		APD	Disabled
		Jumbo Frame	Enabled
System Security	**Administration Account**	**Username**	admin
		Password	password
QoS	**QoS Settings**	**QoS**	Disabled
		Schedule Method	WRR
		Priority Type	CoS
	QoS Mapping	**Port Priority**	0
		CoS Mapping	2, 0, 1, 3, 4, 5, 6, 7 in order of CoS value
	VoIP Auto Priority	**VoIP Auto Priority**	Disabled
		CoS	7
Security	**Auto DoS Attack Prevention**	**LAND Attack**	Disabled
		Minimum TCP Header Size	Disabled
		TCP/UDP L4 Port	Disabled
		ICMP	Disabled
		TCP Flag	Disabled
		Fragment	Disabled

Port Trunking		**Trunk Mode**	Manual
		Trunk Key	None
		Trunk Name	None
		Member	None
Traffic Control		**Broadcast**	Unlimited
		Multicast	Unlimited
		DLF	Unlimited
		Ingress Bandwidth	10000 Mbps
		Egress Bandwidth	10000 Mbps
Mirroring		**Enable**	Mirror 1: Disabled Mirror 2: Disabled
		Source Port	Mirror 1: 2 Mirror 2: 4
		Destination Port	Mirror 1: 1 Mirror 2: 3
IGMP	**IGMP Settings**	**IGMP Snooping**	Disabled
		Filter Unknown Multicasts	Disabled
		Host Timeout	260 seconds
		Router Port Timeout	125 seconds
	IGMP Querier	**IGMP Querier**	Disabled
		Querier Interval	60 seconds
		Querier Source IPv4 Address	0.0.0.0
		Max Response Time	10 seconds
	IGMP Router Port	**Router Ports**	None
Loop Prevention		**Action**	Disable port
		Disable for	60 seconds
		Action (LDF)	Disabled
Initialize		**Physical Reset Button**	Enable

Appendix B Regulatory Compliance Information

For Customers in the United States

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Only use the cables and accessories that are included in the package. Don't use other accessories or cables unless specifically instructed to in the documentation.

UL and MET

The socket-outlet shall be installed near the equipment and shall be easily accessible.

Proposition 65

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

For Customers in Europe

CE

CE

Dansk

Dette er et Klasse A-produkt. I et hjemmemiljø kan dette produkt skabe radiointerferens, hvormed det kan være nødvendigt for brugeren at tage passende forholdsregler.
Dette produkt kan forårsage interferens hvis det bruges i beboelsesområder. En sådan anvendelse skal undgås, medmindre brugeren tager specielle foranstaltninger for at reducere elektromagnetiske emissioner for at forhindre interferens med modtagelse af radio- og tv-udsendelser.
Der må kun bruges de kabler og det tilbehør der er inkluderet i pakken. Der må ikke bruges andet tilbehør eller kabler, medmindre det er udtrykkeligt beskrevet i dokumentationen.

Deutsch

Dies ist ein Produkt der Klasse A. In einer häuslichen Umgebung kann dieses Produkt Funkstörungen verursachen. Um diese zu beheben, müssen ggf. entsprechende Maßnahmen ergriffen werden.
Bei einer Nutzung in Wohngebieten können bei diesem Produkt Störungen auftreten. Eine solche Nutzung soll vermieden werden, außer der Nutzer ergreift bestimmte Maßnahmen, um elektromagnetische Strahlung zu reduzieren und Störungen der Radio- und Fernsehübertragung zu vermeiden.
Verwenden Sie ausschließlich die Kabel und Zubehörteile, die im Lieferumfang enthalten sind. Andere Zubehörteile oder Kabel dürfen nur dann verwendet werden, wenn dies in der Dokumentation ausdrücklich vorgeschrieben ist.

English

This is a class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.
This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.
Only use the cables and accessories that are included in the package. Don't use other accessories or cables unless specifically instructed to in the documentation.

Español

Este es un producto de Clase A. En una situación domestica, este producto puede producir interferencias de radio, en ese caso el usuario deberá tomar las medidas adecuadas.
Este producto puede causar interferencias al utilizarlo en áreas residenciales. Debe evitarse utilizarlo así, salvo si el usuario adopta medidas especiales para reducir las emisiones electromagnéticas e impedir que se produzcan interferencias con la recepción de emisiones de radio y televisión.
Utilice únicamente los cables y accesorios incluidos en el paquete. No utilice otros accesorios ni cables a menos que así se indique en la documentación.

Français

Cet appareil est un produit de Classe A. Dans un environnement domestique, ce produit est susceptible de provoquer des interférences radio, auquel cas l'utilisateur peut être mis en demeure de prendre des mesures appropriées.
Utilisé dans un environnement domestique, cet appareil génère des interférences. Ce type d'utilisation est donc à éviter si l'utilisateur n'a pas pris de mesures spécifiques visant à réduire les émissions électromagnétiques pour éviter les interférences avec la réception de programmes de radio et de télévision.
Utilisez uniquement les câbles et accessoires inclus dans ce package. N'utilisez aucun autre accessoire ou câble sauf instruction spécifique de la documentation.

Italiano

Questo è un prodotto di Classe A. In ambienti domestici il prodotto può causare radiointerferenza, nel qual caso potrebbe rendersi necessaria l'adozione di opportune misure.
Questo prodotto può causare interferenze se usato in zone residenziali. Evitare l'uso in queste zone a meno che l'utente non intraprenda azioni specifiche per ridurre le emissioni elettromagnetiche e impedire le interferenze alla ricezione di trasmissioni radio-televisive.
Utilizzare esclusivamente i cavi e gli accessori inclusi nell'imballaggio. Non utilizzare altri accessori o cavi a meno che non sia specificamente indicato nella documentazione.

Nederlands

Dit is een Klasse A product. Dit product kan in een huishoudelijke omgeving radiostoring veroorzaken in welk geval de gebruiker adequate maatregelen dient te nemen.
Dit product kan storing veroorzaken wanneer gebruikt in woongebieden. Dergelijk gebruik dient te worden vermeden tenzij de gebruiker speciale maatregelen treft om de elektro-magnetische uitstraling te beperken zodat storing van de ontvangst van radio- en televisieuitzendingen wordt voorkomen.
Gebruik alleen de kabels en toebehoren die zich in de verpakking bevinden. Gebruik geen ander toebehoren of kabels tenzij dit uitdrukkelijk in de handleiding wordt aangegeven.

Norsk

Dette er et produkt i klasse A. I et hjemmemiljø kan dette produktet forårsake radiointerferens, noe som gjør at brukeren i så fall må foreta passende tiltak.
Dette produktet kan forårsake interferens dersom det brukes i boligområder. Slik bruk må unngås med mindre brukeren tar spesielle tiltak for å redusere elektromagnetisk stråling for å unngå interferens med mottak av radio- og TV-sendinger.
Bruk kun kabler og tilbehør som er inkludert i pakken. Ikke bruk annet tilbehør eller kabler med mindre spesielt instruert til å gjøre det i dokumentasjonen.

Português

Este é um produto de Classe A. Num ambiente doméstico, este produto pode provocar interferências de rádio, pelo que o utilizador poderá ter de tomar medidas adequadas.

Este produto poderá causar interferências se utilizado em áreas residenciais. A utilização deverá ser evitada, salvo se o utilizador tomar medidas especiais para reduzir as emissões electromagnéticas e assim prevenir interferências na recepção de rádio e televisão.
Utilizar apenas cabos e acessórios incluídos na embalagem. Não utilizar outros acessórios ou cabos, salvo se especificamente indicado na documentação.

Suomi

Tämä on luokan A tuote. Tämä tuote voi aiheuttaa radiohäiriöitä kotikäytössä, jolloin käyttäjän on ehkä ryhdyttävä tarvittaviin toimenpiteisiin.
Tämä tuote saattaa aiheuttaa häirintää, jos sitä käytetään asuinalueella. Sellaista käyttöä on vältettävä, ellei ryhdytä erityistoimenpiteisiin sähkömagneettisen säteilyn vähentämiseksi häiriöiden estämiseksi radio- ja televisiolähetyksissä.
Käytä ainoastaan pakkauksen mukana toimitettuja kaapeleita ja varusteita. Älä käytä muita varusteita tai kaapeleita ellei näin ole erityisesti ohjeistettu asiakirjoissa.

Svensk

Detta är en Klass A-produkt. I en hushållsmiljö kan denna produkt orsaka radiostörningar, och användaren kan i så fall begäras att vidta lämpliga åtgärder.
Den här produkten kan oraka störningar om den används i bostadsområden. Sådan användning måste undvikas om inte användaren vidtar speciella åtgärder för att minska elektromagnetiska sändningar för att förhindra störningar i mottagningen av radio- och tv-sändningar.
Använd bara kablar och tillbehör som ingår i förpackningen. Använd inte andra tillbehör eller kablar om du inte får uttryckliga instruktioner om det i dokumentationen.

Türk

Bu, A Sınıfı bir üründür. Evde kullanım sırasında bu ürün radyo girisimine yol açabilir ve bu durumda kullanıcının gerekli önlemleri alması gerekebilir.
Bu ürün yerleşim bölgelerinde kullanılırsa parazite neden olabilir. Kullanıcı radyo ve televizyon yayınlarında paraziti önlemek üzere elektromanyetik salınımları azaltacak özel önlemler almadıkça bu şekilde kullanımdan kaçınılmalıdır.
Yalnızca pakette bulunan kablo ve aksesuarları kullanın. Belgelerde özellikle belirtilmedikçe başka aksesuar ve kablolar kullanmayın.

CB

The socket-outlet shall be installed near the equipment and shall be easily accessible.

Norsk

Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare.
For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.

Svensk

Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrusningen och kabel-TV nätet.