



Layer 2 10 Gigabit Switch  
BS-XP20 Series

# User Manual

***Americas: [www.buffaloamericas.com](http://www.buffaloamericas.com)***  
***Europe: [www.buffalo-technology.com](http://www.buffalo-technology.com)***

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# Chapter 1 Initial Settings

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## Product Requirements

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### Compatible Devices and Browsers

#### Compatible Devices to Connect to BS-XP

10GBASE-T/1000BASE-T/100BASE-TX compatible devices (PCs, Mac, 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.

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## Install Business Switch Configuration Tool

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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-XP2008 <http://d.buffalo.jp/bs-xp2008/>

BS-XP2012 <http://d.buffalo.jp/bs-xp2012/>

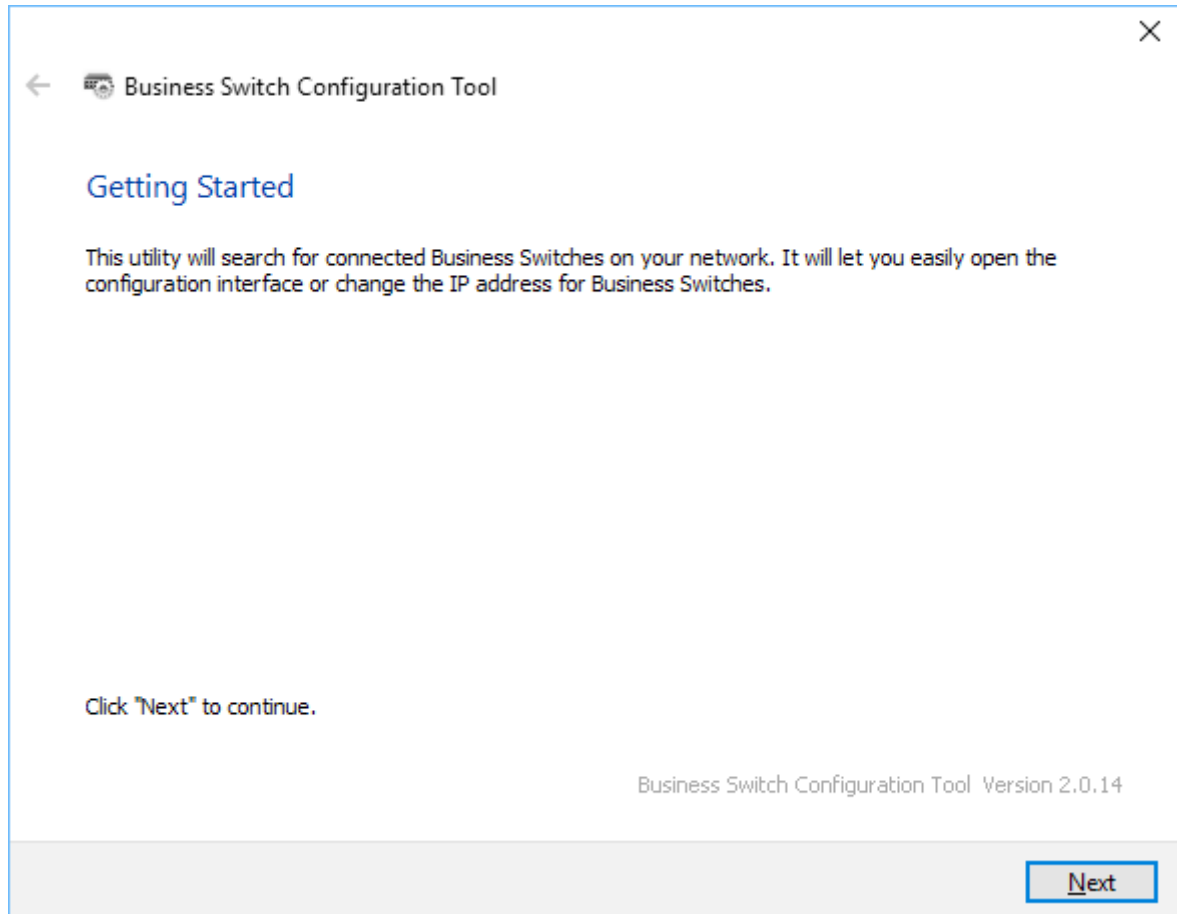
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## Change Switch's IP Address

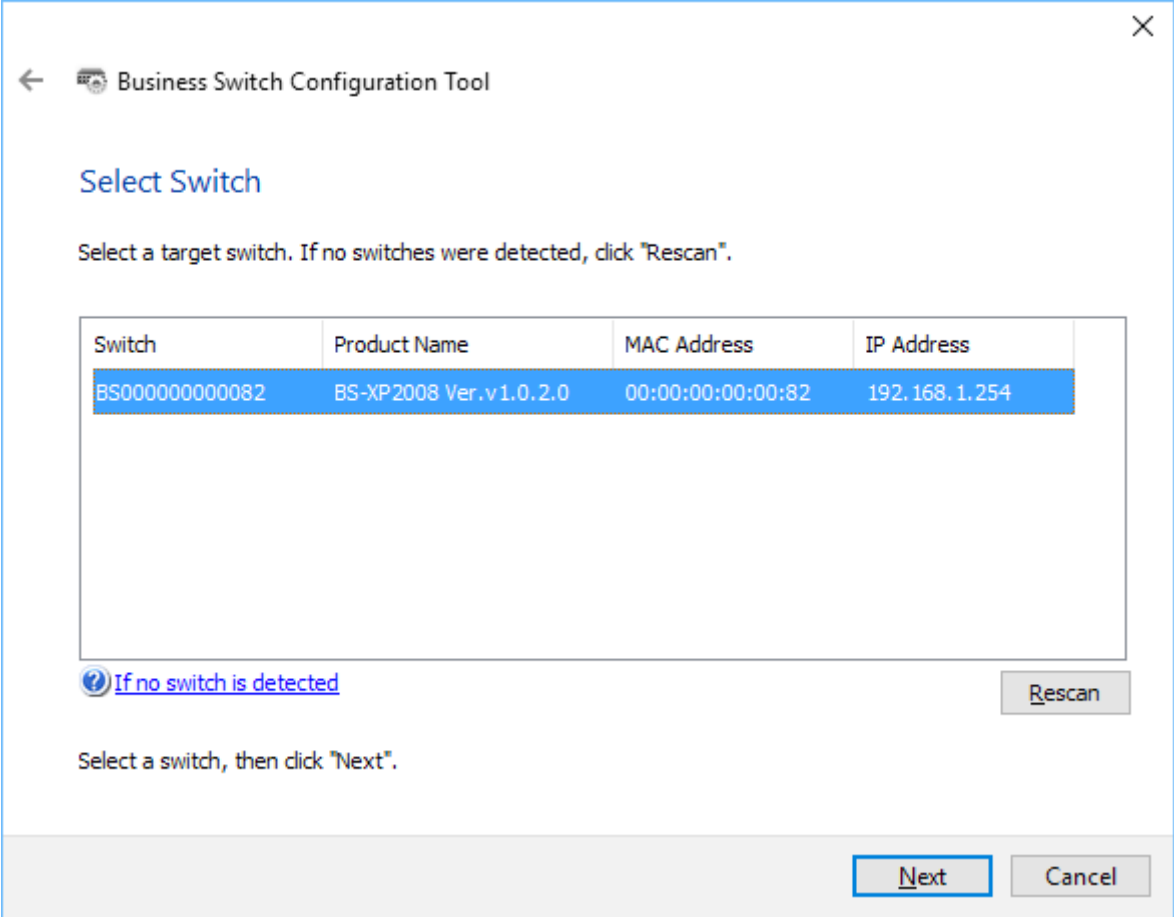
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To enter Settings, the switch's web user interface, the switch's IP address should belong to the same segment as your PC's IP address.

- 1** Connect the switch to your PC 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*.



The screenshot shows a window titled "Business Switch Configuration Tool" with a close button (X) in the top right corner. Below the title bar, there is a back arrow and the text "Business Switch Configuration Tool". The main heading is "Select Switch". Below this, a message states: "Select a target switch. If no switches were detected, click 'Rescan'". A table with four columns is displayed: "Switch", "Product Name", "MAC Address", and "IP Address". The first row of the table is highlighted in blue and contains the following data: "BS000000000082", "BS-XP2008 Ver.v1.0.2.0", "00:00:00:00:00:82", and "192.168.1.254". Below the table, there is a link that says "If no switch is detected" with a question mark icon. To the right of this link is a "Rescan" button. At the bottom of the window, there are two buttons: "Next" and "Cancel".

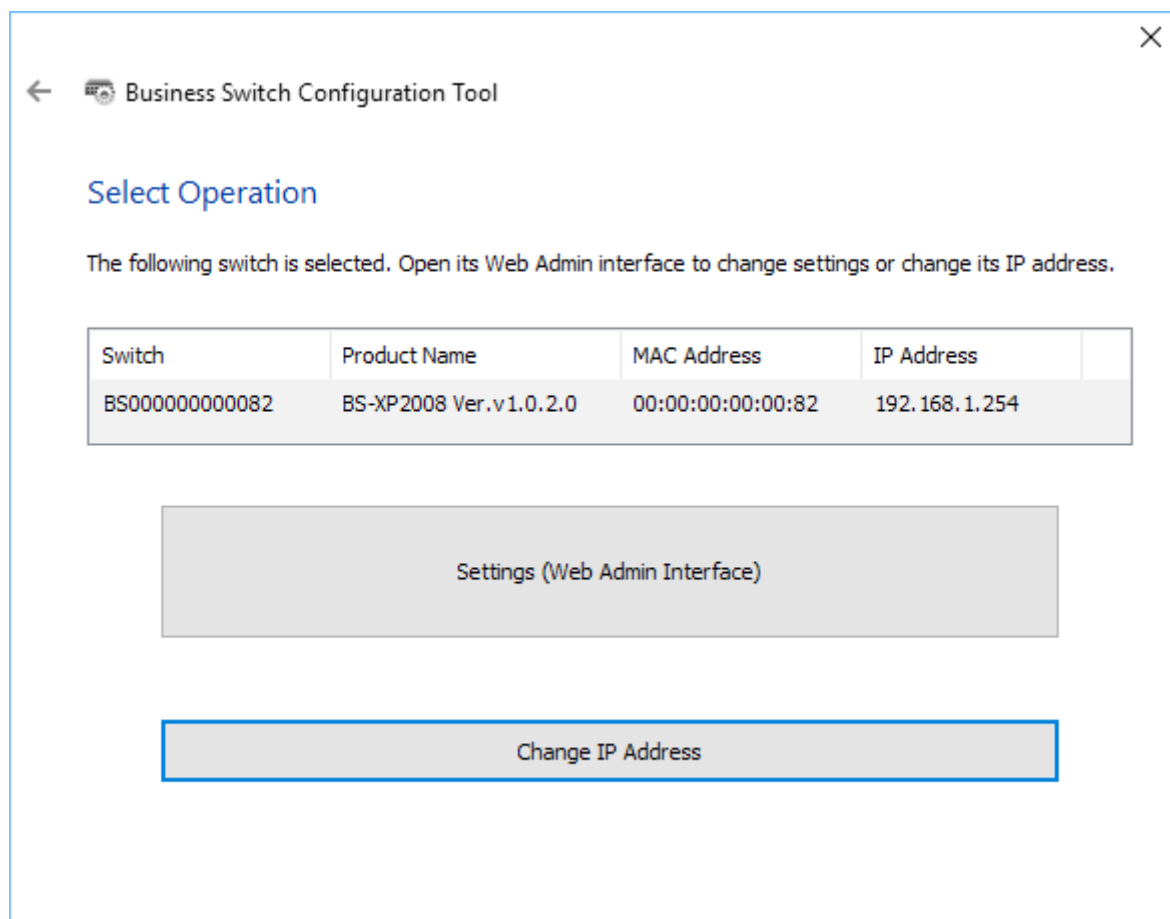
| Switch         | Product Name           | MAC Address       | IP Address    |
|----------------|------------------------|-------------------|---------------|
| BS000000000082 | BS-XP2008 Ver.v1.0.2.0 | 00:00:00:00:00:82 | 192.168.1.254 |

[If no switch is detected](#) Rescan

Select a switch, then click "Next".

Next Cancel

## 5 Click *Change IP Address*.



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

  Business Switch Configuration Tool 

### IP Address

Enter an IP address for the switch manually, or have it assigned by the DHCP server.

☐ Get IP address from DHCP

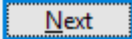
☒ Use the following IP address

IP Address   [Configuration](#)

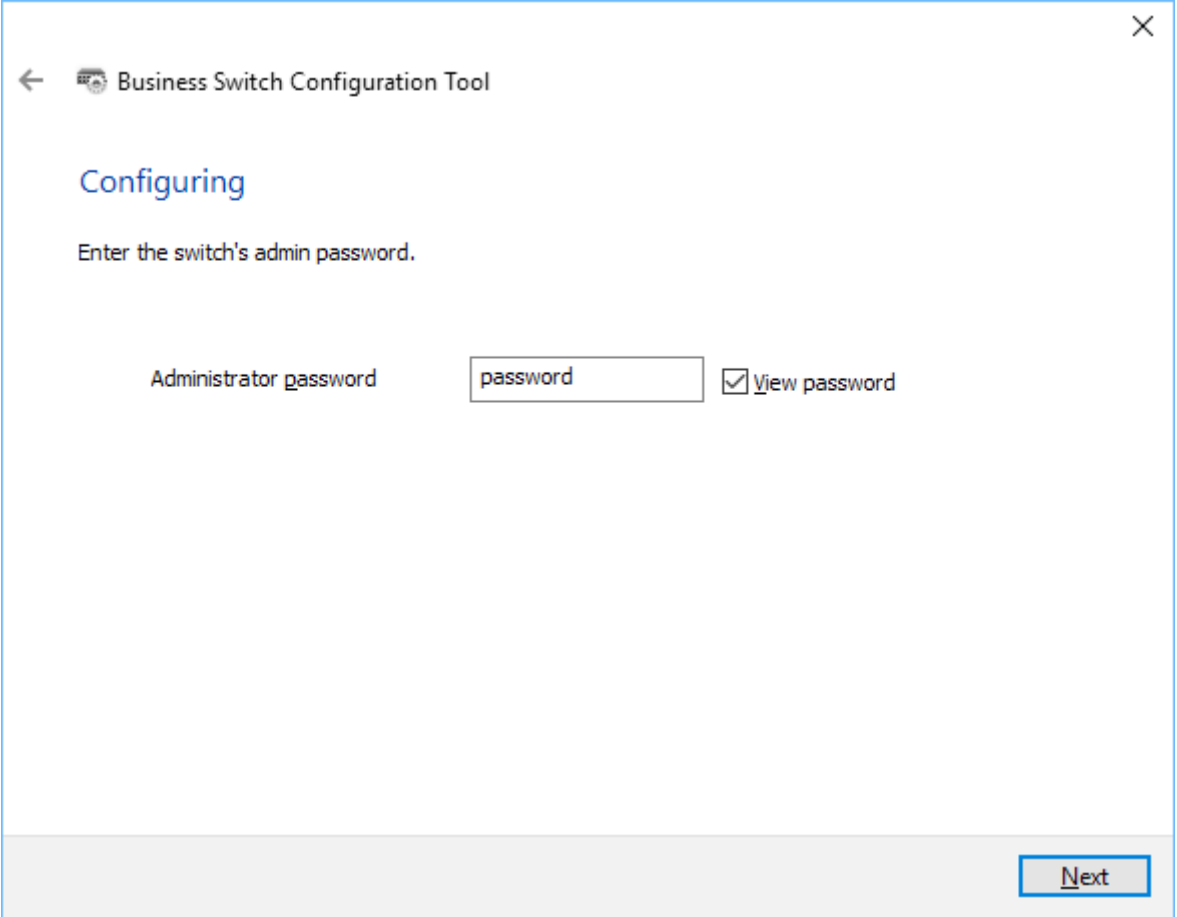
Subnet Mask  

This computer's IP address:  
168.1.100 / 255.255.255.0 : Ethernet (Intel(R) 82579V Gigabit Network Connection)

Click "Next" to continue.



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



Business Switch Configuration Tool

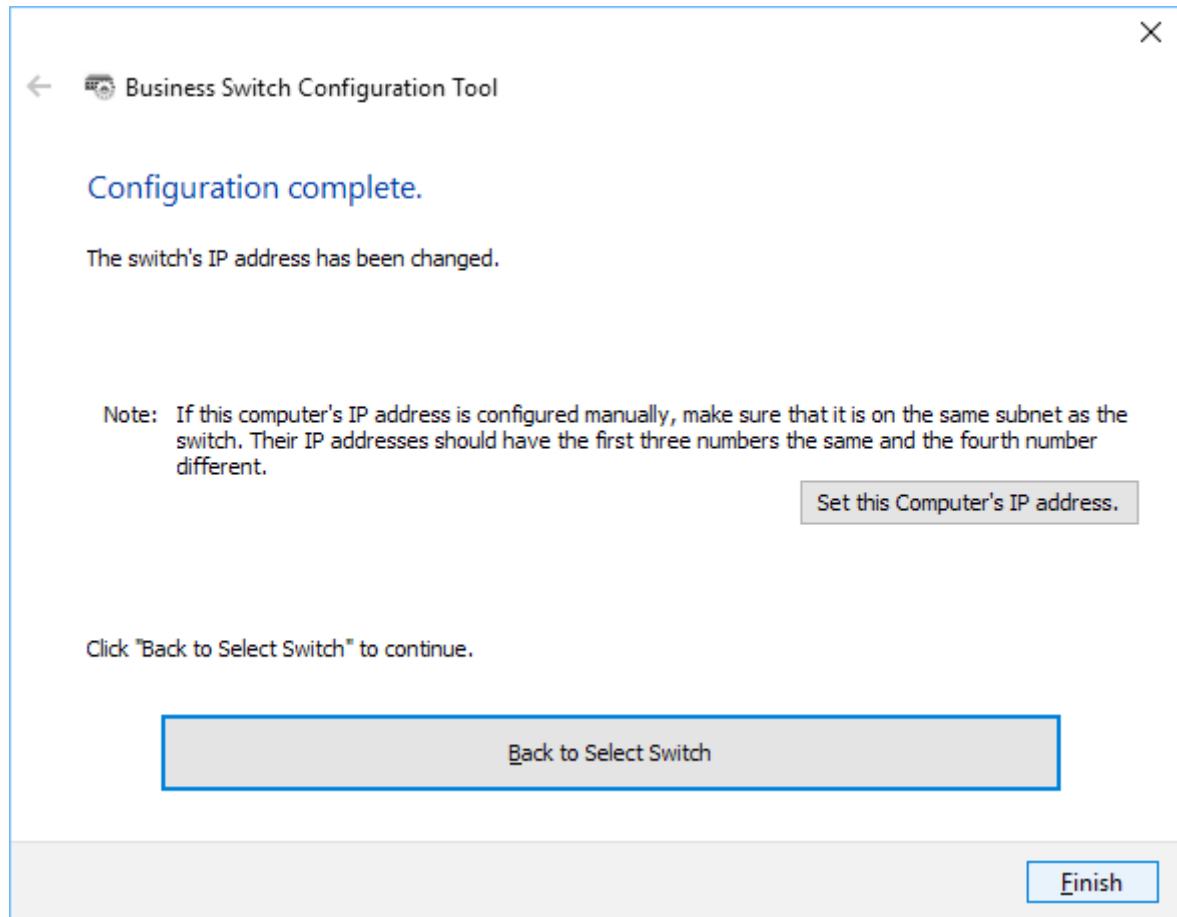
### Configuring

Enter the switch's admin password.

Administrator password  ☒ View password

Next

**8** Click *Finish*.

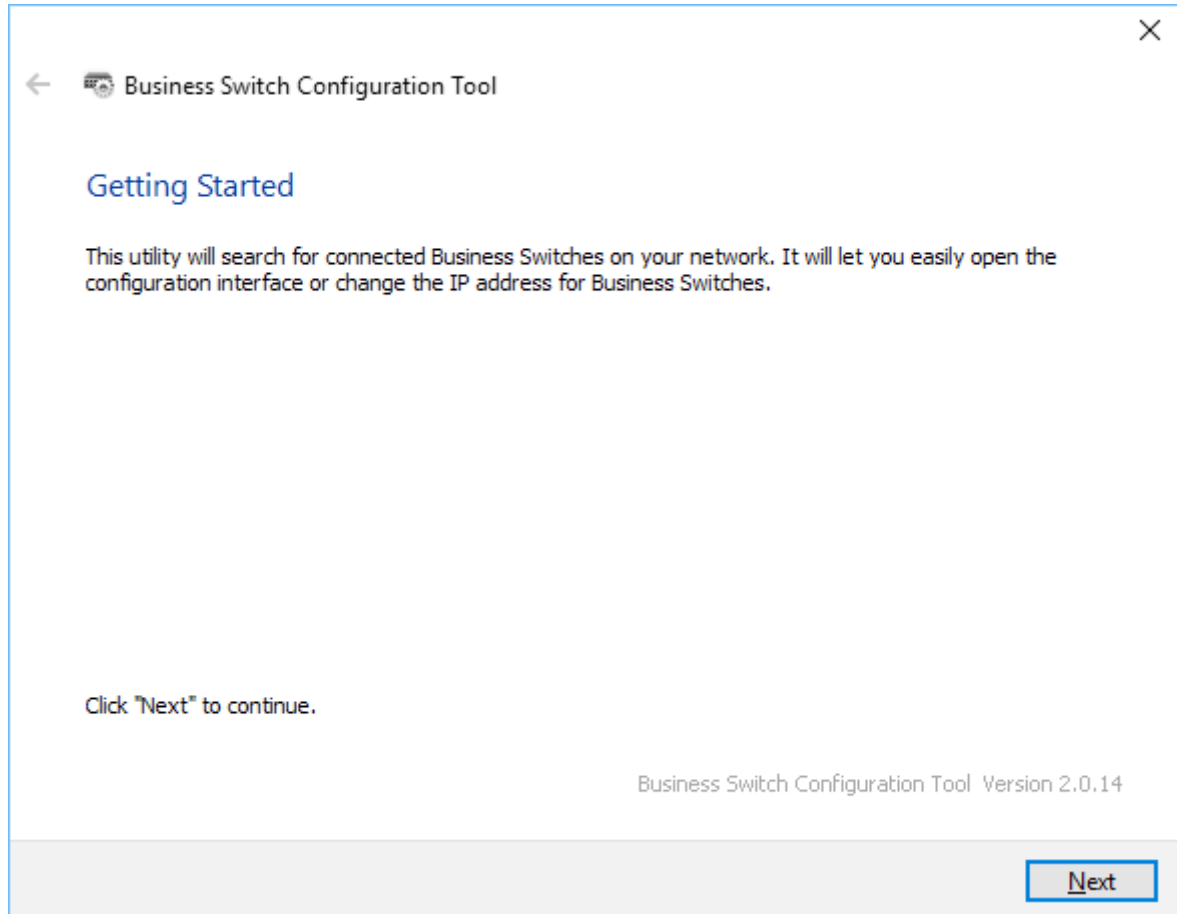


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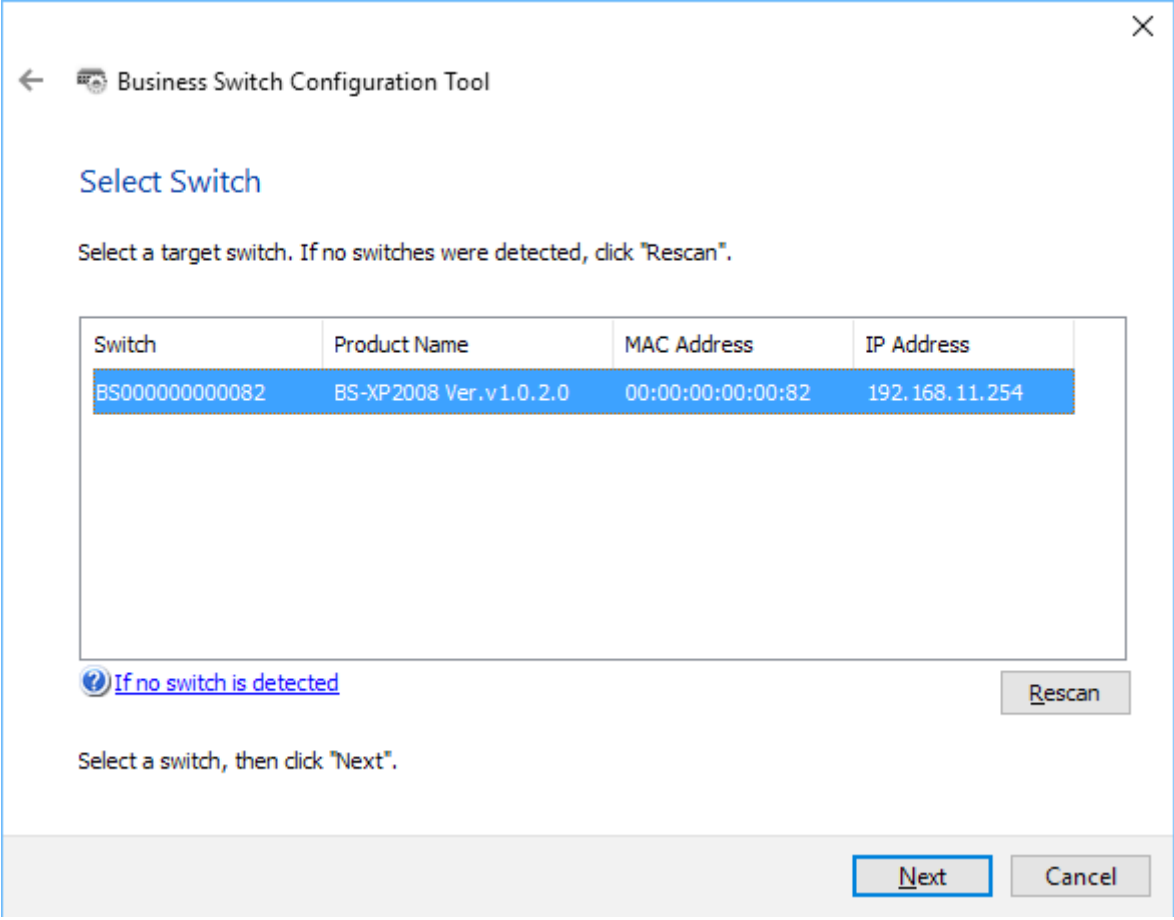
## Open Settings

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- 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*.



The screenshot shows a window titled "Business Switch Configuration Tool" with a close button (X) in the top right corner. Below the title bar, there is a back arrow and the title "Business Switch Configuration Tool". The main heading is "Select Switch". Below this, a text instruction reads: "Select a target switch. If no switches were detected, click 'Rescan'". A table with four columns is displayed: "Switch", "Product Name", "MAC Address", and "IP Address". The first row of the table is highlighted in blue and contains the values: "BS0000000000082", "BS-XP2008 Ver. v1.0.2.0", "00:00:00:00:00:82", and "192.168.11.254". Below the table, there is a link with a question mark icon that says "If no switch is detected". To the right of this link is a "Rescan" button. At the bottom of the window, there are two buttons: "Next" and "Cancel".

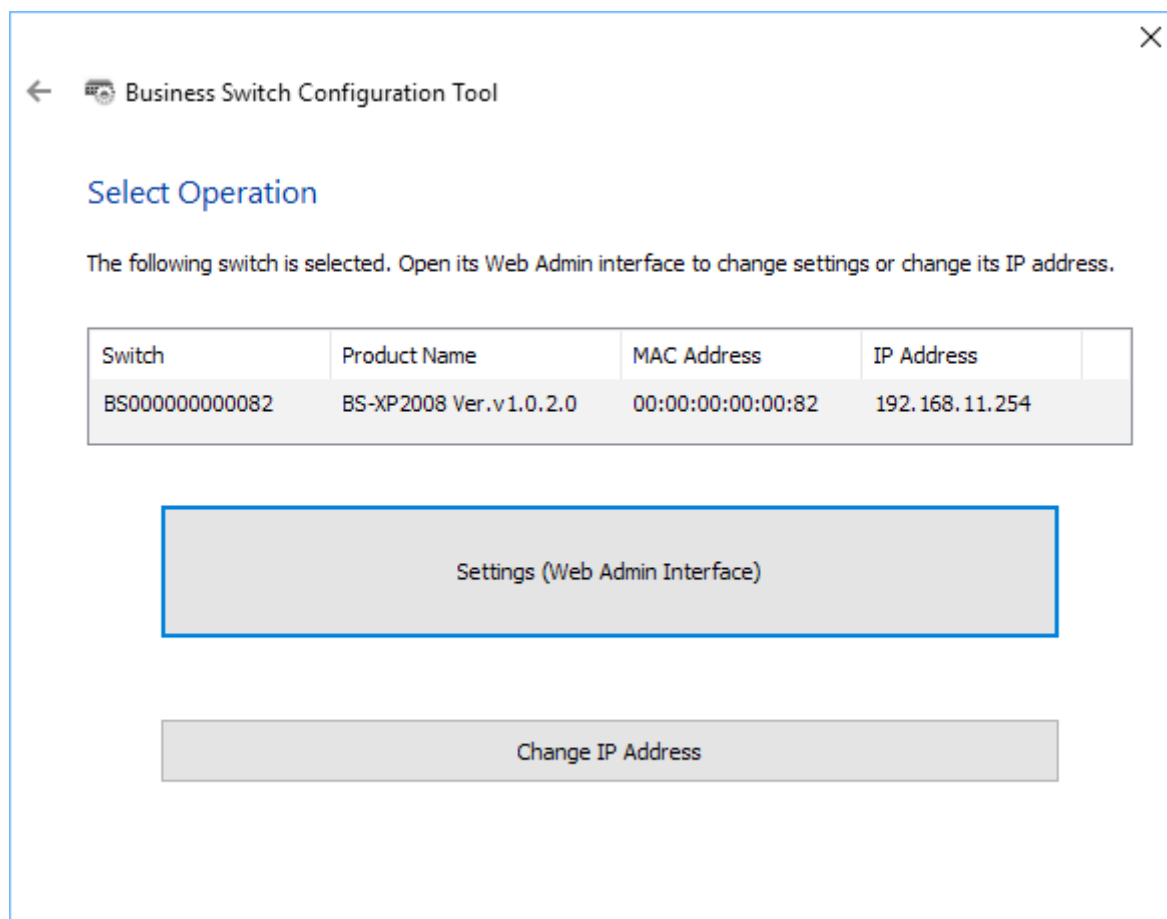
| Switch          | Product Name            | MAC Address       | IP Address     |
|-----------------|-------------------------|-------------------|----------------|
| BS0000000000082 | BS-XP2008 Ver. v1.0.2.0 | 00:00:00:00:00:82 | 192.168.11.254 |

[? If no switch is detected](#) Rescan

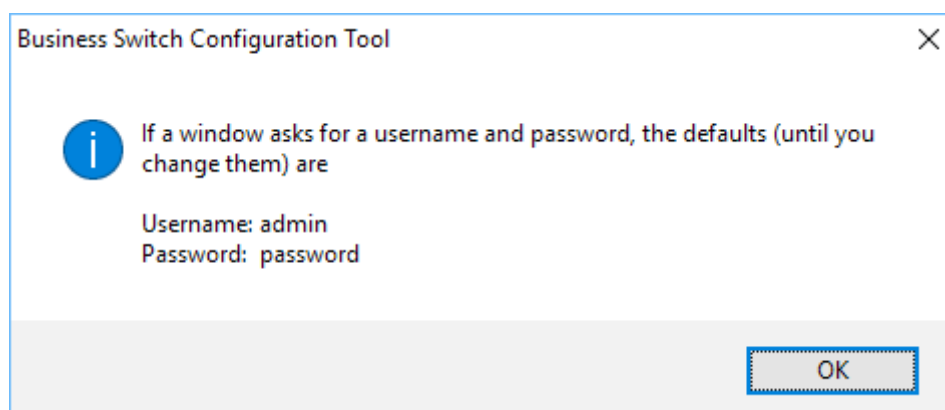
Select a switch, then click "Next".

Next Cancel

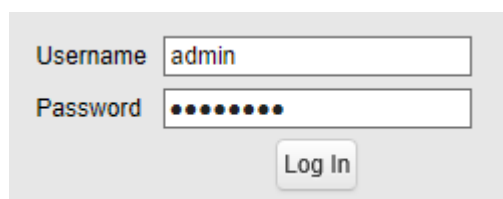
**5** Click *Settings (Web Admin Interface)*.



**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.

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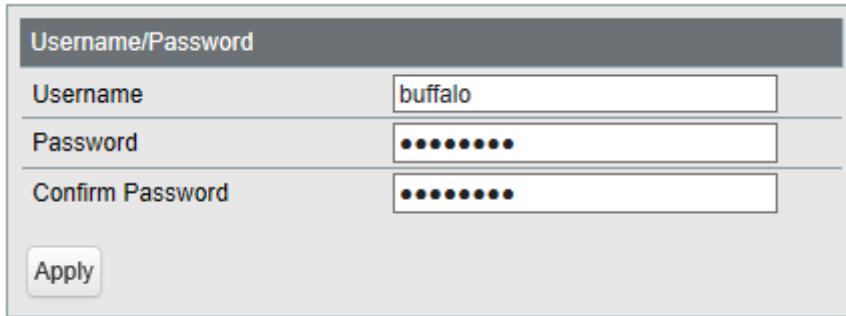
## Change Username and Password

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

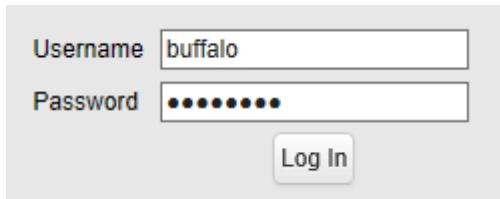
- 1 Open Settings.
- 2 Navigate to *Basic - System Security - Administration Account*.
- 3 Enter your new username and password (also fill the "Confirm Password" field), then click *Apply*.

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



A screenshot of a web interface titled "Username/Password". It contains three input fields: "Username" with the text "buffalo", "Password" with ten black dots, and "Confirm Password" with ten black dots. Below the fields is a button labeled "Apply".

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



A screenshot of a login form. It has two input fields: "Username" with the text "buffalo" and "Password" with ten black dots. Below the fields is a button labeled "Log In".

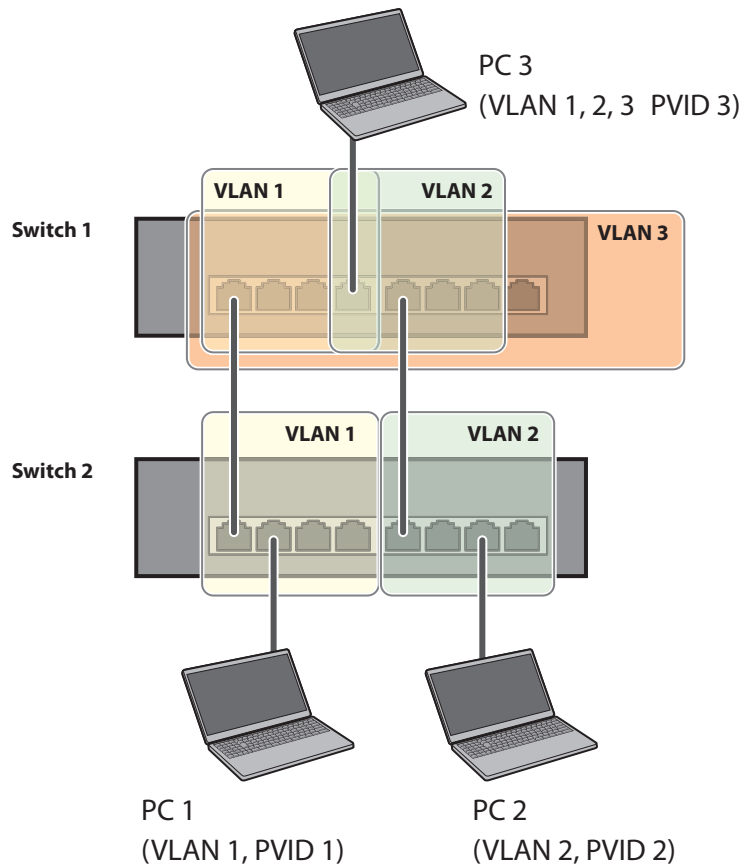
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# MAC Address Learning

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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

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

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## System Information

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Displays the switch's information.

| System Information               |                               |
|----------------------------------|-------------------------------|
| Product Name                     | BUFFALO BS-XP2008             |
| Switch Name                      | BS000000000082                |
| Location                         | Not defined                   |
| System Contact                   | Not defined                   |
| MAC Address                      | 00:00:00:00:00:82             |
| IPv4 Address                     |                               |
| 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                       |
| Version                          |                               |
| Firmware Version                 | V1.0.2.0/Aug 22 2016 17:08:03 |
| Boot Code Version                | V0.0.0.3/Apr 27 2016 18:38:52 |
| Hardware Version                 | Version/14                    |

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

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## System

---

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

| System Configuration |                                             |                                                          |
|----------------------|---------------------------------------------|----------------------------------------------------------|
| Switch Name          | <input type="text" value="BS000000000082"/> | (Up to 50 alphanumeric characters, "-", "_")             |
| Location             | <input type="text" value="Not defined"/>    | (Up to 50 alphanumeric characters, "-", "_", and spaces) |
| Contact              | <input type="text" value="Not defined"/>    | (Up to 50 alphanumeric characters, "-", "_", and spaces) |

|                    |                                                                                                                                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Switch Name</b> | Enter the switch's name. You may enter up to 50 alphanumeric characters, hyphens, and underscores.                             |
| <b>Location</b>    | Enter the location of the switch. You may enter up to 50 alphanumeric characters, hyphens, underscores, and spaces.            |
| <b>Contact</b>     | Enter the contact information of the switch. You may enter up to 50 alphanumeric characters, hyphens, underscores, and spaces. |

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## System IP Settings

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

| Method of Acquiring IPv4 Address |                     |
|----------------------------------|---------------------|
| Method of Acquiring IPv4 Address | Static IP Address ▾ |
| IPv4 Address Settings            |                     |
| IPv4 Address                     | 192.168.1.254       |
| Subnet Mask                      | 255.255.255.0       |
| Default Gateway                  | 0.0.0.0             |

Apply

|                                         |                                                                                                                                                                                                                            |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Method of Acquiring IPv4 Address</b> | <p>Select a method of obtaining the switch's IP address.</p> <p><b>Obtain from DHCP Server</b><br/>Obtain the switch's IP address from DHCP server.</p> <p><b>Static IP Address</b><br/>Enter the IP address manually.</p> |
| <b>IPv4 Address</b>                     | Enter the switch's IPv4 address if you select <i>Static IP Address</i> as the connection method.                                                                                                                           |
| <b>Subnet Mask</b>                      | Enter the switch's subnet mask if you select <i>Static IP Address</i> as the connection method.                                                                                                                            |
| <b>Default Gateway</b>                  | Enter the switch's default gateway if you select <i>Static IP Address</i> as the connection method.                                                                                                                        |

# VLAN

## VLAN Settings

Confirm VLAN status and configure new VLAN.

**VLAN Mode**

Mode

☒ VLAN Settings

☐ Privacy Separator

**VLAN Status**

| <input type="checkbox"/> | VLAN ID        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | VLAN Name | Management |
|--------------------------|----------------|---|---|---|---|---|---|---|---|-----------|------------|
| <input type="checkbox"/> | 1              | U | U | U | U | U | U | U | U |           | Up         |
|                          | PVID           | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |           |            |
|                          | Protected Port | - | - | - | - | - | - | - | - |           |            |

T: Static Tagged U: Static Untagged -: Not Member X: Enabled

Edit

Delete

**Add/Edit VLAN**

VLAN ID(2-4094)

VLAN Name

Management VLAN

☐

| Port       |                | 1                                | 2                                | 3                                | 4                                | 5                                | 6                                | 7                                | 8                                |
|------------|----------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Tagged     | <div>All</div> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            |
| Untagged   | <div>All</div> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            |
| Not Member | <div>All</div> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> |

Apply

Reset

Cancel

|                        |                                                                                                                                                                                                                                                                      |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mode</b>            | 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.<br><b>Note:</b> VLAN and privacy separator cannot be used at the same time. |
| <b>VLAN Status</b>     | Displays current VLAN and PVID (Port VLAN ID) status. Click <i>Edit</i> to edit the VLAN selected. Click <i>Delete</i> to delete the VLAN selected. VLAN 1 cannot be deleted.                                                                                        |
| <b>VLAN ID</b>         | Specify VLAN ID from 2-4094.                                                                                                                                                                                                                                         |
| <b>VLAN Name</b>       | Enter the VLAN name. You may enter up to 17 alphanumeric characters, hyphens, and underscores.                                                                                                                                                                       |
| <b>Management VLAN</b> | Check it if the VLAN is a management VLAN. Only devices which belong to the management VLAN can open Settings.                                                                                                                                                       |

|                   |                                                                                                                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tagged</b>     | Select when you assign the port to tag member.                                                                                                                                                                                |
| <b>Untagged</b>   | Select when you assign the port to untag member.                                                                                                                                                                              |
| <b>Not Member</b> | Select when you do not assign the port to any member.                                                                                                                                                                         |
| <b>Reset</b>      | Click to reset the changes to the previous settings.                                                                                                                                                                          |
| <b>Uplink</b>     | Appears when "Privacy Separator" is selected.<br>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. |
| <b>Downlink</b>   | Appears when "Privacy Separator" is selected.<br>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 PC is connected as a downlink port, you cannot open Settings any more.

## VLAN Ports

Configure PVID (Port VLAN ID).

| Port | PVID | Acceptable Frame Type | Ingress Filter<br>☑ | Protected Port<br>☐ |
|------|------|-----------------------|---------------------|---------------------|
| 1    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 2    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 3    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 4    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 5    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 6    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 7    | 1    | Admit All ▾           | ☑                   | ☐                   |
| 8    | 1    | Admit All ▾           | ☑                   | ☐                   |

Apply

Reset

|                              |                                                                                                                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PVID</b>                  | Specify the port VLAN ID. The received untagged frames will be recognized as the specified VLAN ID. (1-4094)                                                                             |
| <b>Acceptable Frame Type</b> | <p><b>Admit All</b><br/>Receive both untagged and tagged frames.</p> <p><b>Tagged Only</b><br/>Receive tagged frames only and drop untagged frames.</p>                                  |
| <b>Ingress Filter</b>        | <p><b>Enable</b><br/>Drop frames if the received frame's VLAN ID is not a member of incoming port's VLAN.</p> <p><b>Disable</b><br/>All tagged and untagged frames will be received.</p> |

|                       |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| <b>Protected Port</b> | "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

☐ Enable

Static MAC Filtering Settings

Enter the MAC address to be forwarded.

MAC Address

Example: 00:11:22:33:44:55

Port Number

Apply

Static MAC Filtering Table

| <input type="checkbox"/> | Index | Port | MAC Address |
|--------------------------|-------|------|-------------|
| Delete                   |       |      |             |

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

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## Port Settings

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### 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    | Up          | On              | 1000MbpsFull | 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          |

|                        |                                                                                                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>            | Displays the port name.                                                                                                                                                       |
| <b>Admin</b>           | Displays whether the port is enabled (on) or disabled (off).                                                                                                                  |
| <b>Link Status</b>     | Displays whether the link is up or down.                                                                                                                                      |
| <b>Autonegotiation</b> | Displays whether the autonegotiation is enabled (on) or disabled (off).                                                                                                       |
| <b>Speed/Duplex</b>    | Displays the speed and duplex status.                                                                                                                                         |
| <b>Flow Control</b>    | Displays whether the flow control is enabled (on) or disabled (off).                                                                                                          |
| <b>IEEE 802.3az</b>    | Displays whether IEEE 802.3az is enabled (on) or disabled (off).                                                                                                              |
| <b>APD</b>             | Displays whether APD is enabled (on) or disabled (off).                                                                                                                       |
| <b>Jumbo Frame</b>     | Displays whether jumbo frame is enabled (on) or disabled (off).<br><b>Note:</b> 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.

| Port | Name   | Admin                               | Mode            | Flow Control             | IEEE 802.3az                        | APD                      | Jumbo Frame                         | Speed/Duplex                   |
|------|--------|-------------------------------------|-----------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------------|
| 1    | Port 1 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Autonegotiation (1000MbpsFull) |
| 2    | Port 2 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |
| 3    | Port 3 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |
| 4    | Port 4 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |
| 5    | Port 5 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |
| 6    | Port 6 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |
| 7    | Port 7 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |
| 8    | Port 8 | <input checked="" type="checkbox"/> | Autonegotiation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -                              |

Apply

|                     |                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------|
| <b>Name</b>         | Enter the port name. You may enter up to 15 alphanumeric characters, hyphens, underscores, and spaces.  |
| <b>Admin</b>        | Check to enable the port.                                                                               |
| <b>Mode</b>         | Select the transmission rate and duplex.                                                                |
| <b>Flow Control</b> | Check to enable flow control.                                                                           |
| <b>IEEE 802.3az</b> | Check to enable IEEE802.3az.                                                                            |
| <b>APD</b>          | Check to enable APD (auto power down). If enabled, power consumption of link down ports can be reduced. |
| <b>Jumbo Frame</b>  | Check to enable jumbo frame settings.                                                                   |
| <b>Speed/Duplex</b> | Displays the current transmission rate and duplex.                                                      |

---

## System Security

---

### Administration Account

---

Configure the username and password.

| Username/Password                    |                                    |
|--------------------------------------|------------------------------------|
| Username                             | <input type="text" value="admin"/> |
| Password                             | <input type="password"/>           |
| Confirm Password                     | <input type="password"/>           |
| <input type="button" value="Apply"/> |                                    |

|                         |                                                                                                  |
|-------------------------|--------------------------------------------------------------------------------------------------|
| <b>Username</b>         | Enter the new username. You may enter up to 8 alphanumeric characters, hyphens, and underscores. |
| <b>Password</b>         | Enter the new password. You may enter up to 8 alphanumeric characters, hyphens, and underscores. |
| <b>Confirm Password</b> | Enter the new password again.                                                                    |

# QoS

## QoS Settings

Configure the priority.

QoS Settings

QoS

☐ Enable

Show Detail

Schedule Method

WRR ▾

Priority Type

☐ DSCP

☒ CoS

☐ IP Precedence

QoS Port Status

| Port | Enabled                             |
|------|-------------------------------------|
| 1    | <input checked="" type="checkbox"/> |
| 2    | <input checked="" type="checkbox"/> |
| 3    | <input checked="" type="checkbox"/> |
| 4    | <input checked="" type="checkbox"/> |
| 5    | <input checked="" type="checkbox"/> |
| 6    | <input checked="" type="checkbox"/> |
| 7    | <input checked="" type="checkbox"/> |
| 8    | <input checked="" type="checkbox"/> |

Apply

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>QoS</b>             | Check to enable QoS. Click <i>Show Detail</i> to enable/disable QoS for each port.<br>Configure the queue scheduling type.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Schedule Method</b> | <b>Strict</b><br>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.<br><b>WRR</b><br>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).<br><b>Note:</b> Packets without VLAN tag will belong to the lowest priority queue. |
| <b>Priority Type</b>   | Select a priority parameter from DSCP, CoS, and IP precedence.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## QoS Mapping

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

**Port Priority**

| Port | Priority  |
|------|-----------|
| 1    | 0: Lowest |
| 2    | 0: Lowest |
| 3    | 0: Lowest |
| 4    | 0: Lowest |
| 5    | 0: Lowest |
| 6    | 0: Lowest |
| 7    | 0: Lowest |
| 8    | 0: Lowest |

**CoS Mapping**

| CoS Value | Priority   |
|-----------|------------|
| 0         | 2          |
| 1         | 0: Lowest  |
| 2         | 1          |
| 3         | 3          |
| 4         | 4          |
| 5         | 5          |
| 6         | 6          |
| 7         | 7: Highest |

Apply

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

Configuration

VoIP Auto Priority

☐ Enable

Show Detail

CoS

7 ▾

| Port | VoIP Auto Priority                  |  |
|------|-------------------------------------|--|
| 1    | <input checked="" type="checkbox"/> |  |
| 2    | <input checked="" type="checkbox"/> |  |
| 3    | <input checked="" type="checkbox"/> |  |
| 4    | <input checked="" type="checkbox"/> |  |
| 5    | <input checked="" type="checkbox"/> |  |
| 6    | <input checked="" type="checkbox"/> |  |
| 7    | <input checked="" type="checkbox"/> |  |
| 8    | <input checked="" type="checkbox"/> |  |

Apply

|                    |                                                                                                                         |
|--------------------|-------------------------------------------------------------------------------------------------------------------------|
| VoIP Auto Priority | Check to enable VoIP auto priority. Click <i>Show Detail</i> 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.

☐ Select All

☐ LAND Attack

☐ Minimum TCP Header Size

☐ TCP/UDP L4 Port

☐ ICMP

☐ TCP Flag

☐ Fragment

Apply

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

# Port Trunking

Configure port trunking settings.

| Trunk Key                                                                 | Trunk Mode               | Trunk Name                                              | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7 | 8 |
|---------------------------------------------------------------------------|--------------------------|---------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|---|
| T : Trunk Member - : Not Member                                           |                          |                                                         |                          |                          |                          |                          |                          |                          |   |   |
| <input type="button" value="Edit"/> <input type="button" value="Delete"/> |                          |                                                         |                          |                          |                          |                          |                          |                          |   |   |
| <b>Trunk Settings</b>                                                     |                          |                                                         |                          |                          |                          |                          |                          |                          |   |   |
| Trunk Mode                                                                |                          | <input type="text" value="Manual"/>                     |                          |                          |                          |                          |                          |                          |   |   |
| Trunk Key                                                                 |                          | <input type="text"/> (1 ~ 8)                            |                          |                          |                          |                          |                          |                          |   |   |
| Trunk Name                                                                |                          | <input type="text"/> (Up to 15 alphanumeric characters) |                          |                          |                          |                          |                          |                          |   |   |
| Group                                                                     | 1                        | 2                                                       | 3                        | 4                        | 5                        | 6                        | 7                        | 8                        |   |   |
| Member                                                                    | <input type="checkbox"/> | <input type="checkbox"/>                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   |
| *A group may contain up to 8 ports.                                       |                          |                                                         |                          |                          |                          |                          |                          |                          |   |   |

|            |                                            |
|------------|--------------------------------------------|
| 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       |

Apply

|                          |                                                                                        |
|--------------------------|----------------------------------------------------------------------------------------|
| <b>Broadcast</b>         | Select a rate to allow passing broadcasts.                                             |
| <b>Multicast</b>         | Select a rate to allow passing multicasts.                                             |
| <b>DLF</b>               | Select a rate to allow passing DLF (destination lookup failure) unicasts.              |
| <b>Ingress Bandwidth</b> | Limits the bandwidth of ingress (input to the switch) speed as the configured value.   |
| <b>Egress Bandwidth</b>  | 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).

| Mirroring Group | Enable                   | Source Port              |                                     |                          |                                     |                          |                          |                          |                          | Destination Port |
|-----------------|--------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
|                 |                          | 1                        | 2                                   | 3                        | 4                                   | 5                        | 6                        | 7                        | 8                        |                  |
| Mirror 1        | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1 ▾              |
| Mirror 2        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3 ▾              |

Apply

|                         |                                      |
|-------------------------|--------------------------------------|
| <b>Enable</b>           | Check to enable mirroring.           |
| <b>Source Port</b>      | Select ports to be monitored.        |
| <b>Destination Port</b> | Select ports to monitor the traffic. |

---

## IGMP

---

### Status

---

Displays the IGMP status.

#### IGMP Status

| VLAN ID | Multicast Group Address | Group Member |
|---------|-------------------------|--------------|
| Refresh |                         |              |

#### Router Port Status

| (S): Static , (D): Dynamic |              |  |
|----------------------------|--------------|--|
| VLAN ID                    | Router Ports |  |
| Refresh                    |              |  |

|                           |                                                               |
|---------------------------|---------------------------------------------------------------|
| <b>IGMP Status</b>        | Displays the multicast address table.                         |
| <b>Router Port Status</b> | 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             |                                                       |
|---------------------------|-------------------------------------------------------|
| IGMP Snooping             | <input type="checkbox"/> Enable                       |
| Filter Unknown Multicasts | <input type="checkbox"/> Enable                       |
| Host Timeout              | <input type="text" value="260"/> (130-1225 second(s)) |
| Router Port Timeout       | <input type="text" value="125"/> (60-600 second(s))   |

Apply

|                                  |                                                                                                                                                                                                                                                                                     |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IGMP Snooping</b>             | Check to enable IGMP snooping.<br>If enabled, you can prevent the flooding of multicast packets except for the port connected to the host which joins the multicast group.<br><b>Note:</b> The addresses in the range of 224.0.0.1-224.0.0.255 will be excepted from IGMP snooping. |
| <b>Filter Unknown Multicasts</b> | If checked, the packets of the multicast that is not learned will be discarded except for 224.0.0.1-224.0.0.255.                                                                                                                                                                    |
| <b>Host Timeout</b>              | Enter the host timeout period for receiving multicast.                                                                                                                                                                                                                              |
| <b>Router Port Timeout</b>       | 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 Settings       |                                                     |
|-----------------------------|-----------------------------------------------------|
| IGMP Querier                | <input type="checkbox"/> Enable                     |
| Querier Interval            | <input type="text" value="60"/> (1-18000 second(s)) |
| Querier Source IPv4 Address | <input type="text" value="0.0.0.0"/>                |
| Max Response Time           | <input type="text" value="10"/> (1-25 second(s))    |

Apply

|                                    |                                                                                                                                                                                            |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IGMP Querier</b>                | Check to enable IGMP querier. IGMP queries will be forwarded from each VLAN.                                                                                                               |
| <b>Querier Interval</b>            | Configure the transmit interval for the querier that confirms the existence of multicast group's member.                                                                                   |
| <b>Querier Source IPv4 Address</b> | Enter the source IPv4 address of the querier.                                                                                                                                              |
| <b>Max Response Time</b>           | 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

VLAN ID  (1-4094)

| Port | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        | 8                        |
|------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| All  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Add

☐

VLAN ID

Router Ports

Delete

### 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.

Action When Loops Detected

Action ☐ Ignore ☒ Disable port

Disable for  second(s)

Loop Detection Method

Action(LDF) ☐ Enable

Apply

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b>       | <p>Configure the switch's action when a loop is detected.</p> <p><b>Ignore</b><br/>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 <i>Disable for</i> section. If a loop is detected again, it will continue to blink until the loop is resolved.</p> <p><b>Disable port</b><br/>The switch will disable the loop-detected port for the amount of time configured in the <i>Disable for</i> section. At the same time, the diag LED and loop-detected port's LED will blink for the time configured in the <i>Disable for</i> section. If a loop is detected again after the time configured in the <i>Disable for</i> section has passed, the switch will disable the loop-detected port until the loop is resolved.</p> |
| <b>Disable for</b>  | Configure the period to disable the loop-detected port when <i>Disable port</i> is selected as the action.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Action (LDF)</b> | <p>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.</p> <p><b>Note:</b> The following are the LDF packet's source MAC addresses.<br/>BS-XP2012: 8857EE960000 (fixed value)<br/>BS-XP2008: 8857EE950000 (fixed value)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

---

## Update Firmware

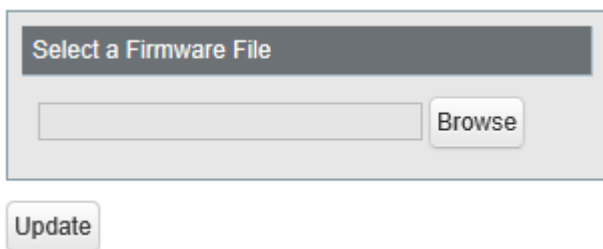
---

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.



|                   |                                |
|-------------------|--------------------------------|
| <b>File Image</b> | Select a file image to update. |
|-------------------|--------------------------------|

---

## Back Up and Restore

---

Save or restore the switch's settings.

The screenshot shows two distinct UI sections. The top section, titled 'Back Up Settings', contains the text 'Save current settings to a file.' followed by a 'Save' button. The bottom section, titled 'Restore Settings', contains a 'File' label next to an empty text input field, followed by a 'Browse' button. Below these is a warning message: 'You cannot configure any settings while restoring.' and a 'Restore' button at the bottom.

|                         |                                                                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Back Up Settings</b> | Click <i>Save</i> to save current settings to a file.                                                                                              |
| <b>Restore Settings</b> | Click <i>Browse</i> to select a settings file and click <i>Restore</i> to start restoring.<br><b>Note:</b> To finish restoring, reboot the switch. |

---

## Reboot

---

Reboot the switch.

The screenshot shows a single UI element consisting of the text 'Reboot System' followed by a 'Reboot' button.

|                      |                                           |
|----------------------|-------------------------------------------|
| <b>Reboot System</b> | Click <i>Reboot</i> to reboot the switch. |
|----------------------|-------------------------------------------|

---

## Initialize

---

Restore the switch settings to the factory default.

Initialize

Initialize Except IP Address

Initialize All Settings

Physical Reset Button

Enable

|                                     |                                                                                      |
|-------------------------------------|--------------------------------------------------------------------------------------|
| <b>Initialize Except IP Address</b> | Click <i>Initialize</i> to initialize all settings except the switch's IPv4 address. |
| <b>Initialize All Settings</b>      | Click <i>Initialize</i> to initialize all switch settings.                           |
| <b>Physical Reset Button</b>        | 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.

| <input type="checkbox"/> | Port | Name   | Received Octets | Received Packets | Sent Octets | Sent Packets |              |
|--------------------------|------|--------|-----------------|------------------|-------------|--------------|--------------|
| <input type="checkbox"/> | 1    | Port 1 | 563240          | 4738             | 1992691     | 3359         | Show Details |
| <input type="checkbox"/> | 2    | Port 2 | 0               | 0                | 0           | 0            | Show Details |
| <input type="checkbox"/> | 3    | Port 3 | 0               | 0                | 0           | 0            | Show Details |
| <input type="checkbox"/> | 4    | Port 4 | 0               | 0                | 0           | 0            | Show Details |
| <input type="checkbox"/> | 5    | Port 5 | 0               | 0                | 0           | 0            | Show Details |
| <input type="checkbox"/> | 6    | Port 6 | 0               | 0                | 0           | 0            | Show Details |
| <input type="checkbox"/> | 7    | Port 7 | 0               | 0                | 0           | 0            | Show Details |
| <input type="checkbox"/> | 8    | Port 8 | 0               | 0                | 0           | 0            | Show Details |

Refresh

Clear

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

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

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

IP Address

Apply

Traceroute

IP Address

Apply

|                   |                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------|
| <b>Ping</b>       | Enter the IPv4 address and click <i>Apply</i> to execute a ping test to the destination.       |
| <b>Traceroute</b> | Enter the IPv4 address and click <i>Apply</i> to execute a traceroute test to the destination. |

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

---

## Cable Diagnostics

---

Click *Test* to check whether there are any issues with the Ethernet cable connected to each port.

To check the cable status correctly, configure the following to this switch and the destination device in advance;

- Autonegotiation: enabled
- IEEE 802.3az (EEE): disabled
- Auto power down (APD): disabled

**Note:** If the destination device is not a BS-XP series switch, the result may not appear correctly.

| Port | Cable Status |
|------|--------------|
| 1    | Open         |
| 2    | Open         |
| 3    | Open         |
| 4    | Open         |
| 5    | Open         |
| 6    | Open         |
| 7    | Open         |
| 8    | Open         |

Test

|                     |                                                                                                                                                                                                                                                                                                                |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cable Status</b> | <p>Displays the status of each Ethernet cable.</p> <p><b>Open</b><br/>Ethernet cable is broken or disconnected.</p> <p><b>OK</b><br/>Ethernet cable is connected without any issues.</p> <p><b>Short</b><br/>Ethernet cable may be shorting out.</p> <p><b>Unknown</b><br/>Cannot verify the cable status.</p> |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Chapter 3 Troubleshooting

## LED Is Not Lit, Abnormal Lighting or Blinking

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The power LED is not lit.                             | <ul style="list-style-type: none"><li>• Confirm that the AC adapter or power cable is connected to the inlet.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| The diag LED is blinking red.                         | <ul style="list-style-type: none"><li>• If it blinks once per a second, a loop is detected. Check the cabling.</li><li>• 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.</li></ul>                                                                                                                                                                                                                                                                          |
| The link/act LED is not lit.                          | <ul style="list-style-type: none"><li>• Confirm that the Ethernet cable is connected to both the switch and the device.</li><li>• Confirm that the switch and the connected device are both powered on.</li><li>• Confirm that the Ethernet cable type and length is compatible with the switch.</li><li>• Check the communication standards that the connected device is compatible with in order to check if the device can be used with the switch.</li><li>• If the connected device's autonegotiation can be enabled manually, enable it. Also, enable the switch's autonegotiation as well.</li></ul> |
| Cannot initialize with the reset button on the switch | <ul style="list-style-type: none"><li>• Confirm whether the physical reset button is enabled in Settings.</li><li>• If the physical reset button is disabled and you forgot the username or password of Settings, contact our technical support.</li></ul>                                                                                                                                                                                                                                                                                                                                                  |

## Cannot Access Settings

- Make sure that your PC 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 PC 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

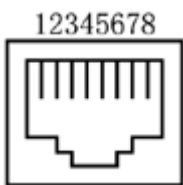
## Product Specifications

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/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<br>Mirror 2: Disabled |
|                  |               | Source Port                 | Mirror 1: 2<br>Mirror 2: 4               |
|                  |               | Destination Port            | Mirror 1: 1<br>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

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## For Customers in the United States

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### 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.

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## For Customers in Europe

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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 orsaka 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 girişimine 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 utrustningen och kabel-TV nätet.