

SW8G SWITCH

User's Guide

Revised January 5, 2024

Firmware Version 1.4

FCC Statement

This device complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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Version 1.4

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RoHS

The SW8G is available in RoHS versions.



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Chapter 1

Introduction

This chapter provides an overview of the SW8G switch's features and capabilities.

Congratulations on the purchase of your new SW8G Ethernet switch.

The SW8G is an easily configured 8-port 10/100/1000Base-T Ethernet switch card designed for use in Loop Telecom AM3440 and O9500 chassis.

The SW8G switch features include auto MDI/MDI-X, auto speed sense, support for 802.1Q VLAN, SNMP V2c and V3, port mirroring, port activity counters and optional user access controls. In addition, switch firmware can be updated via web browser or serial port.

When used in its simplest mode, there is minimal configuration required. The switch is easily configured using any web browser connection via an Ethernet port or front panel USB-C dedicated management port.

SW8G Ethernet Switch Applications

The SW8G can be used to expand access to an existing local LAN or in an 8-port standalone network. VLAN port IDs and VLAN port groups can be used to optionally route LAN traffic.

Other Features

Multi-port

The SW8G switch provides 8 10/100/1000Base-T Ethernet ports with auto MDI/MDI-X sensing, auto speed sensing and auto half/full duplex sensing. The switch has a non-blocking wire-speed switching engine using a 4096 entry forwarding table and 256K byte frame buffer.

Management Port

Front panel USB-C serial management port configured for 57,600 bps, 8N1. Telnet management via port 8000 is also an option.

Web Browser Management

The internal management web server IP address can be fixed (default) or set via DHCP. Web and telnet access can be determined by name and password or IP address.

VLAN

The SW8G optionally supports 802.1Q VLAN for up to 128 VLAN groups and 4096 VLAN IDs. Configuration is via web browser or serial port management.

Firmware Updates

Firmware upgrades may be installed using any web browser through an Ethernet port or using the USB-C serial management port.

On-board Tools

The switch includes diagnostic tools such as port status, including up/down and speed, port activity counters and port mirroring. A ping tool is available on the serial management port.

The SW8G has a front panel green status LED and reset push-button switch.

Package Contents

You should find the following items packaged with your SW8G switch:

- SW8G 10/100/1000Base-T switch card
- USB 2.0 Type-A to Type-C cable.
- The SW8G Quick Start Guide.

If any of the above are missing, contact your dealer immediately.

Software Requirements

The switch supports IP and associated protocols such as UDP, ICMP, DHCP, multi-cast, and any protocol built upon IP or TCP/IP. The initial IP address may be entered using any terminal or terminal emulation software on a PC.

Any standard web browser may be used for configuration once the switch is configured with a valid IP address appropriate for your network. The default IP address for the SW8G management port is 192.168.0.1.

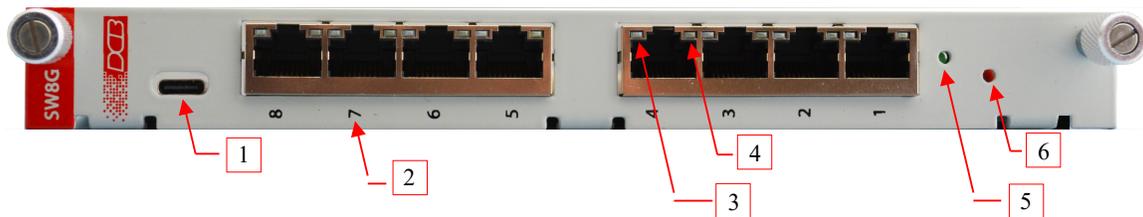
SW8G Switch Card

Introduction

The SW8G Ethernet switch has 8 10/100/1000Base-T ports.

Front Panel

The SW8G front panel is shown below.



SW8G Front Panel

1 USB-C	Management port 57,600 bps 8N1
2 Port	Switch port number
3 GREEN LED	1000Base-T active port
4 YELLOW LED	100Base-T active port
5 GREEN LED	Power ON indicator
6 RESET	Reset push-button switch

Chapter 2

Installation

This Chapter details the LAN installation process for the SW8G Ethernet Switch.

Overview

The SW8G is configured using a web browser directed to its IP address. If the default address of 192.168.0.1 is appropriate for your network, then connect the SW8G to the network, direct your web browser to the switch's IP address and continue with configuration. If this address is not appropriate for your network, the switch's IP address must be configured using the serial port terminal method below.

Quick Start

Quick start instructions are below. Installation is an easy process, but you must have a thorough understanding of IP networking, sub-netting, and routing.

Installation and Quick Start

1. Configure the SW8G's IP address

SW8G IP address configuration requires several steps. **If the SW8G's default address (192.168.0.1) is appropriate for your network, skip to "Step 2, Connect to SW8G Home Page".**

- a) Connect a USB cable between the SW8G USB-C port to an appropriate PC USB-A port. The SW8G will enumerate as a PC COM port. Start a PC serial port terminal program configured for 57,600 bps, 8 data bits, no parity bit and 1 stop bit. To set a fixed IP address, continue with step 1(b). To enable DHCP, skip to step 1(c).
- b) Upon starting the terminal server program, wait for the welcome banner. At the cmd> command prompt, use the setip <ip_address> command to set the SW8G IP address to an available address on the local LAN. Skip to Step 2.

```
SW8G Switch V1.4
-----
Type "help" for commands

cmd> setip 192.168.10.123
IP address is now 192.168.10.123
```

- c) Upon starting the terminal server program, wait for the welcome banner. At the `cmd>` command prompt, use the `dhcp on` command to enable DHCP on the local LAN.

```
SW8G Switch V1.4
-----
Type "help" for commands

cmd> dhcp on
DHCP is now ON (ENABLED)
```

- d) Use the *netinfo* command to see the SW8G IP address assignment. Continue with Step 2, using the IP address shown in the netinfo summary.

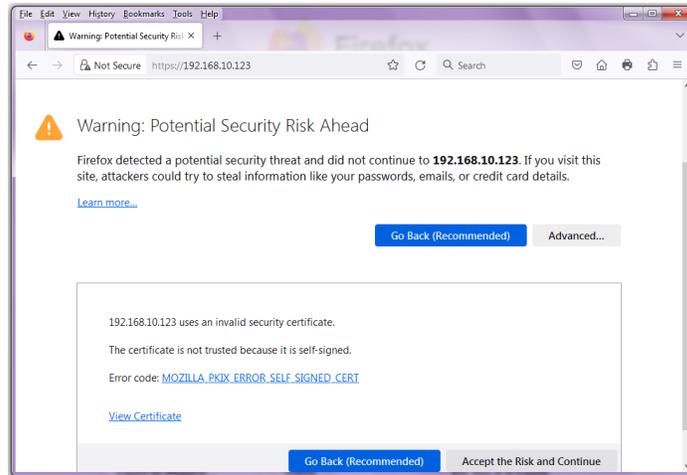
```
cmd> netinfo

Netinfo Summary
-----
IP Address: 192.168.10.113
Mask: 255.255.255.0
Gateway: 192.168.10.1
Primary DNS: 192.168.10.1
Secondary DNS: 192.168.10.1
MAC Address: 00:09:aa:a0:00:0c
HTTP Port: 443
Telnet Port:8000
DHCP is ENABLED
Link is UP
```

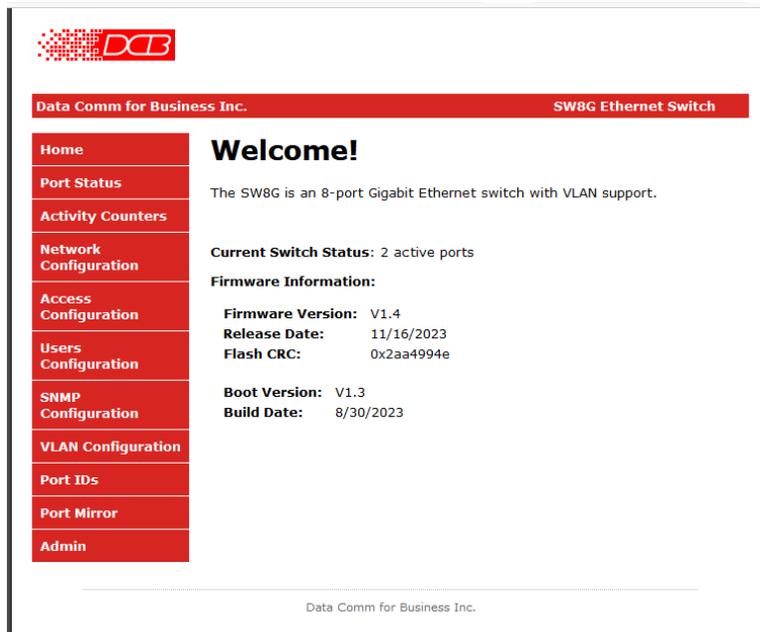
2. Connect to SW8G Home Page

Connect a 10/100/1000Base-T Ethernet cable to any LAN port on the SW8G and connect your web browser to <https://192.168.0.1>. Please replace the IP address with the address assigned to the SW8G in the previous step. You must connect with **https://<IP_address>**, not http. If your web browser does not see the switch, verify that you do not have a proxy server configured in the browser. If so, properly configure the browser to bypass the proxy server for this URL.

Note that you might need to click the *Accept the Risk and Continue* option to access the SW8G home page.



The SW8G home page has tabs to complete initial device configuration.



3. Complete Network Configuration

The Network Configuration tab is used to complete network setup. See the user guide for detailed descriptions of all configuration options. If DHCP is enabled, these settings, except for Host Name and IP Address, will already have been filled in for your local LAN.

DCB

Data Comm for Business Inc. SW8G Ethernet Switch

Home
Port Status
Activity Counters
Network Configuration
Access Configuration
Users Configuration
SNMP Configuration
VLAN Configuration
Port IDs
Port Mirror
Admin

Network Interface Configuration

This page allows the configuration of the board's network settings.

CAUTION: Incorrect settings may cause the SW8G to lose network connectivity. See the user's manual for recovery options.

Enter the new settings for the network interface below:

Host Name:
IP Address:
Gateway:
Subnet Mask:
Primary DNS:
Secondary DNS:
 Enable DHCP
MAC Address:

Data Comm for Business Inc.

After you finish network configuration, click the *Restart Interface* button to activate the new configuration.

Field Edits

Entries are always tested for valid values. However, there are many “valid” values that are not appropriate for any given configuration. So, “appropriateness” isn’t tested. For example, an IP address of 300.400.500.256 will not be accepted, but the field will accept an IP address that is not appropriate for *your* installation.

Chapter 3

Configuration

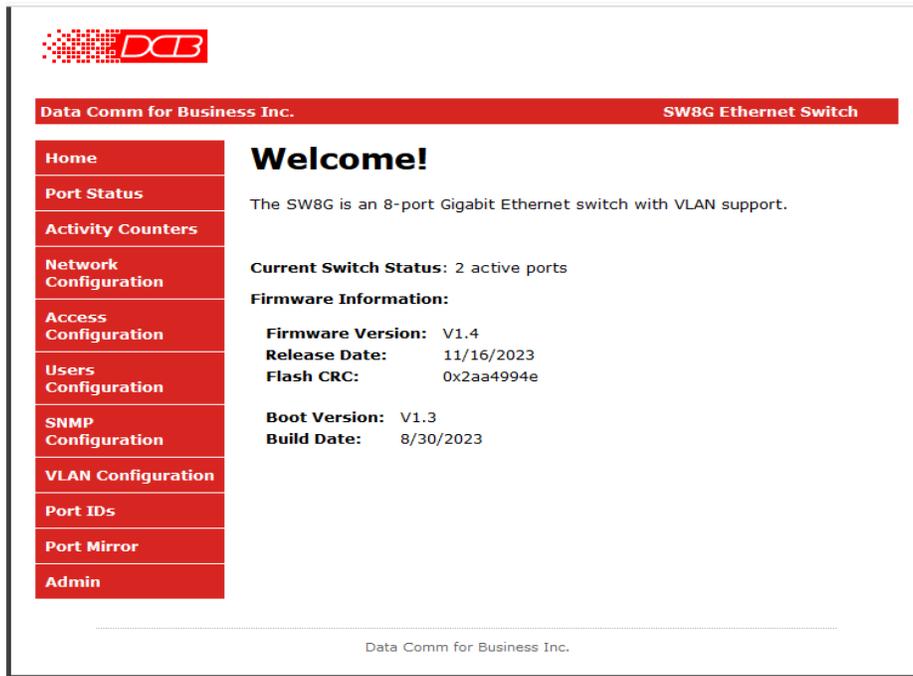
This Chapter describes configuration pages for the SW8G Ethernet switch.

Overview

The SW8G switch is configured using forms displayed on a web browser. In this chapter, we illustrate all entry forms and describe their use.

All configuration screens are accessed from the main index screen shown below. Some options have multiple configuration pages.

Note that the **Home** page displays the current firmware and boot loader version information along with the number of currently active LAN ports.



From the left hand menu, click on a keyword to open the corresponding setup screen.

This chapter discusses the configuration menu options. **Port Status**, **Activity Counters** and **Port Mirror** are discussed in Chapter 4, Switch Status.

Network Configuration

The Network Configuration page is used to set the LAN interface IP configuration for the SW8G web, telnet and SNMP functions. The MAC address is factory set and cannot be changed.

The screenshot shows the 'Network Interface Configuration' page for a SW8G Ethernet Switch. The page has a red header with the DCB logo and the text 'Data Comm for Business Inc.' and 'SW8G Ethernet Switch'. A sidebar on the left contains navigation links: Home, Port Status, Activity Counters, Network Configuration, Access Configuration, Users Configuration, SNMP Configuration, VLAN Configuration, Port IDs, Port Mirror, and Admin. The main content area is titled 'Network Interface Configuration' and includes a caution message: 'CAUTION: Incorrect settings may cause the SW8G to lose network connectivity. See the user's manual for recovery options.' Below this, it says 'Enter the new settings for the network interface below:'. The form contains the following fields: Host Name (SW8G), IP Address (192.168.10.30), Gateway (192.168.10.1), Subnet Mask (255.255.255.0), Primary DNS (192.168.10.1), Secondary DNS (0.0.0.0), and a checkbox for 'Enable DHCP'. The MAC Address is 00:09:aa:a0:00:0c. A 'Restart Interface' button is located at the bottom of the form. The footer of the page reads 'Data Comm for Business Inc.'

Fields

- Host Name
This field is the Host Name for the SW8G controller.
- IP Address
The SW8G controller IP address must be appropriate for the local LAN.
- Gateway
The local LAN gateway IP address.
- Subnet Mask
The local LAN subnet mask, typically 255.255.255.0
- Primary DNS
The IP address of the local LAN primary DNS
- Secondary DNS
The IP address of the secondary DNS, if needed.
- Enable DHCP
Click this check box to enable DHCP to assign the IP, gateway, and DNS addresses.

Notes

- After all changes are complete, click the **Restart Interface** button to active the changes.

Access Configuration

The **Access Configuration** page is used to optionally limit LAN access to specific IP addresses and enable specific SW8G servers. When one or more IP address is defined, only those IP addresses are allowed access to the SW8G controller.

The check box options enable access to the internal server functions. Note that disabling the Web Server will immediately block further access to the web pages.

The screenshot displays the 'Access Configuration' page of a SW8G Ethernet Switch. The page header includes the DCB logo and the text 'Data Comm for Business Inc.' and 'SW8G Ethernet Switch'. A navigation menu on the left lists various configuration options, with 'Access Configuration' highlighted. The main content area is titled 'Access Configuration' and contains the following elements:

- A section titled 'Allow access from these IP addresses:' with four input fields labeled 'IP Address [1]', 'IP Address [2]', 'IP Address [3]', and 'IP Address [4]'.
- Four checked checkboxes: 'Enable Web Server', 'Enable Telnet Server', 'Enable SNMPv2c Server', and 'Enable SNMPv3 Server'.
- A 'Save Access' button.

The footer of the page displays 'Data Comm for Business Inc.'

Fields

- IP Address [1..4]
Up to 4 separate IP addresses can be allowed access to the SW8G servers. If no IP addresses are entered, the remote IP of an incoming connection request is not checked.
- Enable Web Server, Enable Telnet Server, enable SNMPv2c Server, enable SNMPv3 Server
When checked, access to the corresponding SW8G server is allowed.

Notes

After this page is modified, click the **Save Access** button to save the changes. To discard all recent changes, simply leave this page by clicking the **Home** menu option.

User Configuration

The User Configuration page is used to add specific Admin and User names and passwords. When one or more username is programmed, some configuration web pages and telnet access will require a valid username and password combination.

Note that if any IP address is saved on the **Access Configuration** page, the IP address match test is performed before username and password verification.

The screenshot displays the 'User Configuration' interface. At the top left is the DCB logo. Below it, a red header bar contains 'Data Comm for Business Inc.' and 'SW8G Ethernet Switch'. A left-hand navigation menu lists various configuration options, with 'Users Configuration' highlighted. The main area is titled 'User Configuration' and includes the instruction: 'Configure user names and passwords. Maximum length is 16 characters.' The form contains three sets of input fields: 'Admin User:' and 'Password:', 'User 1:' and 'Password:', and 'User 2:' and 'Password:'. A 'Save Users' button is located at the bottom of the form area. The footer of the page reads 'Data Comm for Business Inc.'

Fields

- Admin User and Password
When an Admin user name is stored, those credentials are required to modify SW8G configuration.
- User [1..2] and Password
When a user name is stored, a valid user name and password are required for access to the SW8G controller. With user access, SW8G configuration pages can be viewed but not modified.

Notes

After this page is modified, click the *Save Users* button to save the changes. To discard all recent changes, simply leave this page by clicking the **Home** menu option.

SNMPv2c Configuration

The screenshot shows a web interface for configuring SNMPv2c. At the top left is the DCB logo. Below it is a red navigation bar with 'Data Comm for Business Inc.' on the left and 'SW8G Ethernet Switch' on the right. A left sidebar contains three red buttons: 'SNMPv2c Configuration' (selected), 'SNMPv3 Configuration', and 'Home'. The main content area is titled 'SNMPv2c Community Configuration' and has a sub-header 'Read/Write Community String configuration for SNMPv2c Agent.' Below this is a form with the following fields and values: Contact: supervisor; Device Name: SW8G; Location: head office; Read Community: public; Write Community: private. Below the form, it says 'SNMPv2c server: ENABLED' with a note '(See Access Configuration for enable/disable)'. A 'Save Config' button is at the bottom of the form. The footer of the page is 'Data Comm for Business Inc.'

Fields

- Contact
Supervisor name field.
- Device Name
SW8G network host name.
- Location
Switch location.
- Contact
Supervisor name field.
- Read Community
SNMPv2c Read Community ID.
- Write Community
SNMPv2c Write Community ID.

Notes

After this page is modified, click the **Save Config** button to save the changes. To discard all recent changes, simply leave this page by clicking the **Home** menu option.

You must use the Access Configuration page to enable and disable SNMPv2c.

The SNMP Configuration page opens with the SNMP v2c settings. Click the SNMPv3 menu option to set the SNMPv3 configuration. Contact, Device Name and Location are common to SNMPv2c and SNMPv3.

SNMPv3 Configuration

The screenshot shows a web interface for configuring SNMPv3. At the top left is the DCB logo. Below it, a red bar contains 'Data Comm for Business Inc.' and 'SW8G Ethernet Switch'. A sidebar on the left has three red buttons: 'SNMPv2c Configuration', 'SNMPv3 Configuration' (selected), and 'Home'. The main content area is titled 'SNMPv3 Configuration' and contains the text 'Configuration for SNMPv3 Agent.' Below this is a form with the following fields:

- Contact:** supervisor
- Device Name:** SW8G
- Location:** head office
- User Name:** usmadmin
- Security Level:** Authentication, Privacy (dropdown)
- Auth Protocol:** MD5 (dropdown)
- Auth Password:** auth12345
- Privacy Protocol:** AES128 (dropdown)
- Privacy Password:** priv12345

Below the form, it states 'SNMPv3 server: ENABLED' with a note '(See Access Configuration for enable/disable)'. A 'Save Config' button is at the bottom of the form. At the very bottom of the page, 'Data Comm for Business Inc.' is printed.

Fields

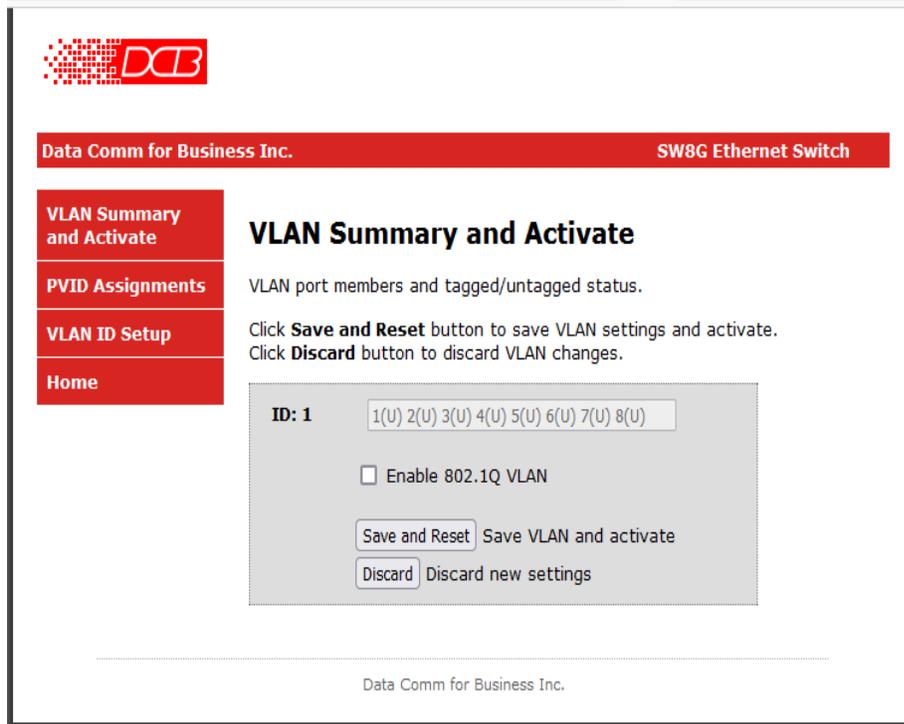
- Contact, Device Name, Location
These are information settings common to SNMPv2c and SNMPv3.
- User Name
SNMPv3 user access name.
- Security Level
Authentication options: Authentication+Privacy (default), Authentication+No Privacy or No Authentication+No Privacy.
- Auth Protocol
Authentication Protocol options: MD5 (default), SHA or NONE.
- Auth Password
SNMPv3 authentication password.
- Privacy Protocol
Privacy Protocol options: AES128 (default), DES or NONE.
- Privacy Password
SNMPv3 privacy password.

Notes

After this page is modified, click the **Save Config** button to save the changes. To discard all recent changes, simply leave this page by clicking the **Home** menu option.

You must use the Access Configuration page to enable and disable SNMPv3.

VLAN Configuration



Notes

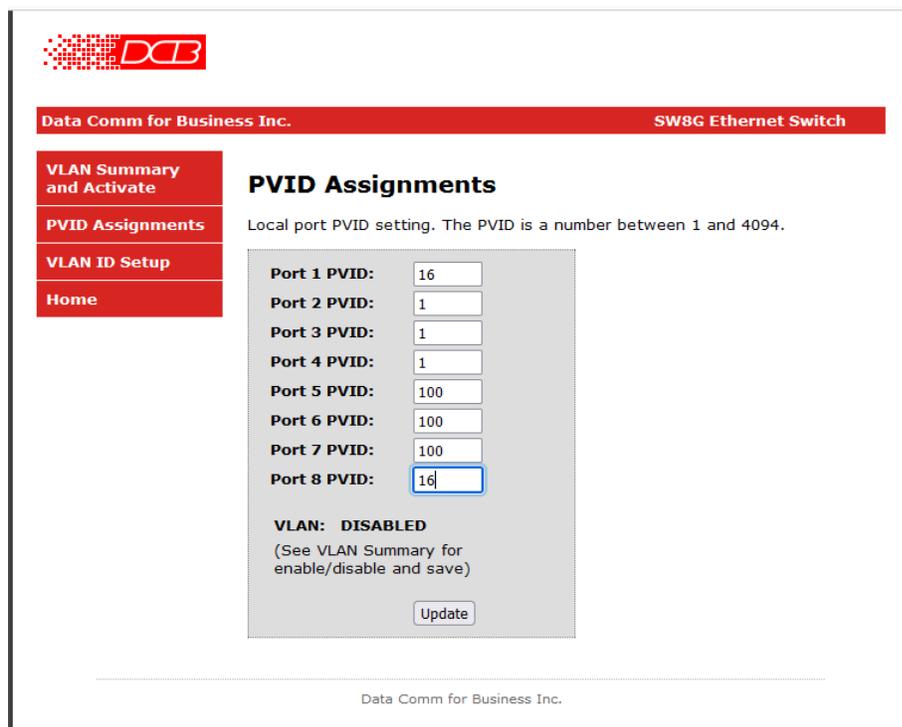
The VLAN Summary and Activate page displays the current VLAN group assignments, and the VLAN enable check box.

The left hand menu PVID and VLAN group ID pages are used to configure the VLAN.

After all modifications are entered, use the **Save and Reset** click button to activate the VLAN.

Clicking Discard will return the VLAN configuration to the previously saved settings.

PVID Assignments



DCB

Data Comm for Business Inc. SW8G Ethernet Switch

VLAN Summary and Activate
PVID Assignments
 VLAN ID Setup
 Home

PVID Assignments

Local port PVID setting. The PVID is a number between 1 and 4094.

Port 1 PVID:
 Port 2 PVID:
 Port 3 PVID:
 Port 4 PVID:
 Port 5 PVID:
 Port 6 PVID:
 Port 7 PVID:
 Port 8 PVID:

VLAN: DISABLED
 (See VLAN Summary for enable/disable and save)

Data Comm for Business Inc.

This figure illustrates a typical port PVID assignment summary. In this example, ports 1 and 8 are assigned PVID #16, port 2 to 4 are assigned PVID #1 and ports 5 to 7 are assigned PVID #100.

Fields

- Port [1..8] PVID
 Enter the PVID assigned to each port. The PVID is a VLAN group number between 1 and 4094. The same VLAN group can be assigned to more than one port.

Notes

VLAN configuration can be confusing. It sometimes helps to draw a diagram of the network with VLAN group IDs included before modifying PVID or VLAN group assignments.

The PVIDs are only activated when **Enable 802.1Q VLAN** is enabled on the VLAN summary page.

When all PVID changes are completed, click the *Update* button to save the changes. Be sure to return to the VLAN Summary and Activate page to activate the new VLAN setup using the *Save and Reset* button.

VLAN ID Setup

The screenshot shows the 'VLAN ID Setup' page for 'Data Comm for Business Inc.' on a 'SW8G Ethernet Switch'. A sidebar on the left contains navigation links: 'VLAN Summary and Activate', 'PVID Assignments', 'VLAN ID Setup', and 'Home'. The main content area is titled 'VLAN ID Setup' and includes the instruction: 'Enter a VLAN ID number then set port membership and tagged/untagged status.' The configuration form shows 'VLAN ID: 16' in a text box, followed by the message '[New VLAN ID 16 created]'. Below this, eight ports are listed with drop-down menus for their status: Port 1 (Tagged), Port 2 (blank), Port 3 (blank), Port 4 (blank), Port 5 (blank), Port 6 (blank), Port 7 (blank), and Port 8 (Tagged). The VLAN status is 'DISABLED' with a note '(See VLAN Summary for enable/disable and VLAN save)'. At the bottom of the form are three buttons: 'Update' (Update this VLAN ID), 'Add' (Add new VLAN ID number), and 'Delete' (Delete this VLAN ID). The footer of the page reads 'Data Comm for Business Inc.'

This figure illustrates a typical VLAN ID setup summary. In this example, ports 1 and 8 are assigned as tagged members of VLAN ID #16.

Fields

- **VLAN ID**
Enter a active VLAN ID number in this box, and the ports assigned to this VLAN group are displayed. Use the corresponding port number to change the port assignment.
- **Port [1..8]**
The current status for the VLAN group is displayed. For each port, the drop-down menu port is assigned to this VLAN group as Tagged, Untagged or Blank [NONE].

Notes

VLAN configuration can be confusing. It sometimes helps to draw a diagram of the network with VLAN group IDs included before modifying PVID or VLAN group assignments.

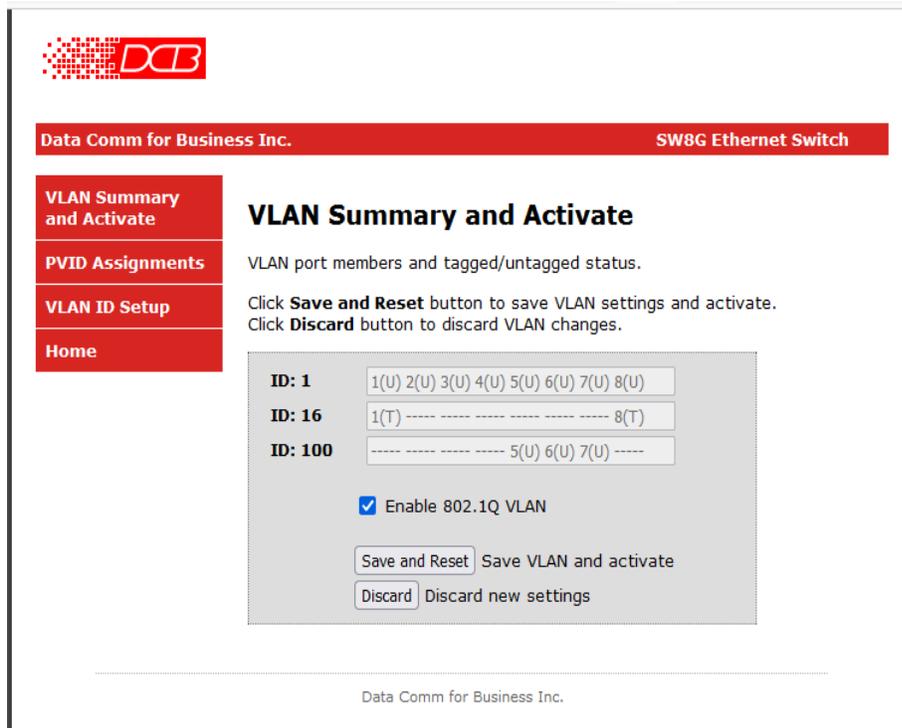
Use the Update click button to update the port assignments for this VLAN ID group.

Use the Add button to add a new VLAN ID number. The number must be in the range 1 to 4094.

Use the Delete button to remove a VLAN ID and release the ports.

When all VLAN ID changes are completed, click the **Update** button to save the changes. Be sure to return to the VLAN Summary and Activate page to activate the new VLAN setup using the **Save and Reset** button.

VLAN Summary and Activate



This figure illustrates a typical VLAN configuration summary. In this example, three VLAN IDs 1, 16 and 100 are defined. VLAN #1 includes all 8 ports as untagged members. VLAN #16 includes ports 1 and 8 as tagged members. VLAN #100 includes ports 5, 6 and 7 as untagged members. This page cannot be edited directly, you must use the PVID and VLAN ID pages to make necessary changes.

Fields

- ID: [1..4094]
This line displays the ports assigned to this VLAN group. Each port is either (T)agged, (U)ntagged or blank meaning it is not a member of this VLAN ID group.

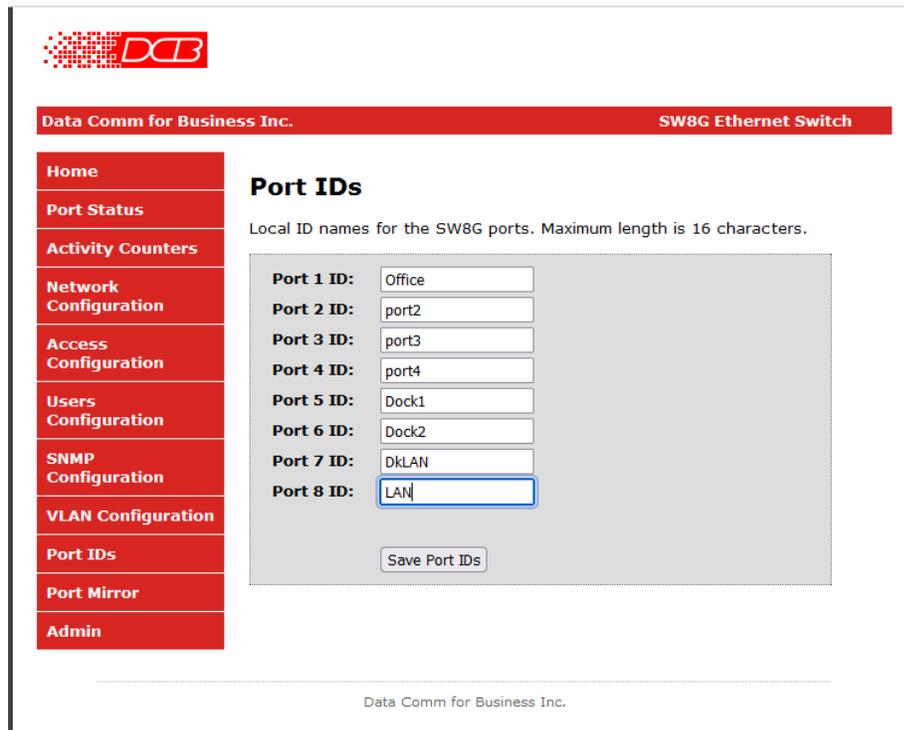
Notes

VLAN configuration can be confusing. It sometimes helps to draw a diagram of the network with VLAN group IDs included before modifying PVID or VLAN group assignments.

The **Enable 802.1Q VLAN** option box must be checked to activate the VLAN configuration.

When the VLAN is fully configured, click the **Save and Reset** button to save the VLAN settings and activate the new configuration by rebooting the SW8G.

Port IDs



The screenshot displays the 'Port IDs' configuration page for a SW8G Ethernet Switch. The page features a navigation menu on the left with the following items: Home, Port Status, Activity Counters, Network Configuration, Access Configuration, Users Configuration, SNMP Configuration, VLAN Configuration, Port IDs, Port Mirror, and Admin. The main content area is titled 'Port IDs' and includes the following text: 'Local ID names for the SW8G ports. Maximum length is 16 characters.' Below this text is a form with eight input fields, each labeled 'Port X ID:' where X is the port number. The current values in the fields are: Port 1 ID: Office, Port 2 ID: port2, Port 3 ID: port3, Port 4 ID: port4, Port 5 ID: Dock1, Port 6 ID: Dock2, Port 7 ID: DKLAN, and Port 8 ID: LAN. A 'Save Port IDs' button is located below the input fields. The footer of the page reads 'Data Comm for Business Inc.'

This figure displays a typical Port ID page. Each port can be labeled to identify, for example, what device is attached to this port. The port IDs are included on the Port Status Port Activity pages.

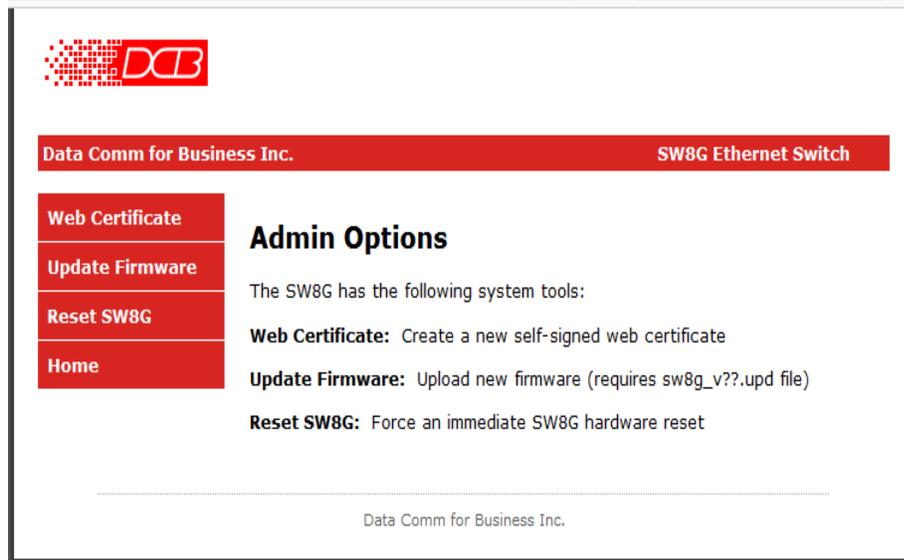
Fields

- Port [1..8] ID
The text box displays the currently assigned label assigned to this port. These names can be edited.

Notes

When all of the Port ID labels are correct, click the **Save Port IDs** button to save the updated labels. To discard the changes and restore the previously saved labels, click the **Home** option in the left hand menu to leave this page.

Admin

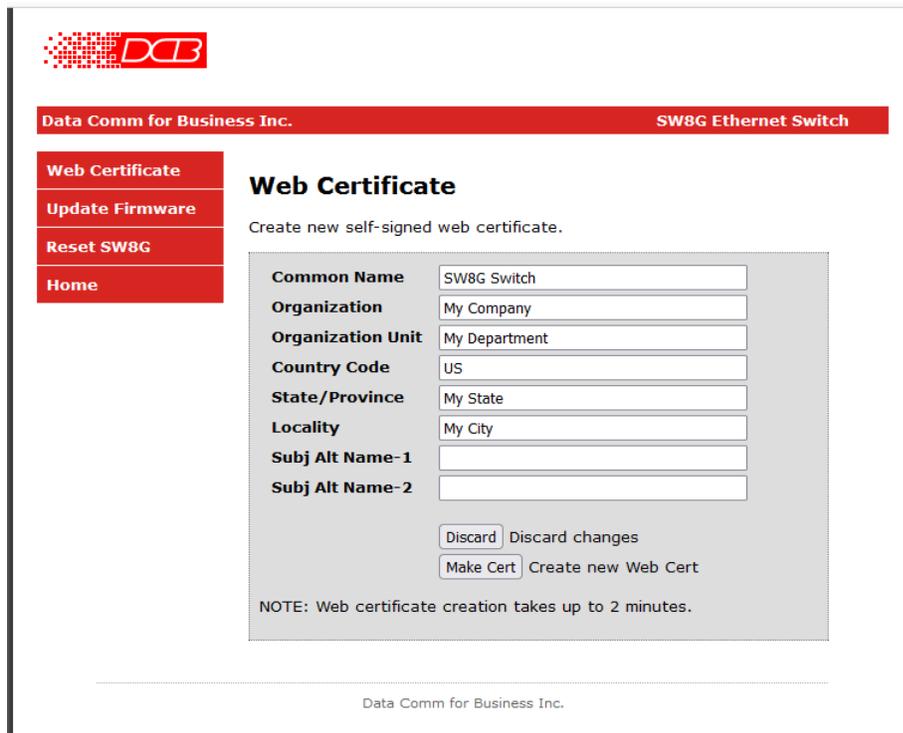


This page presents options meant to be used by experienced Admin users only.

Functions

- **Web Certificate**
Create a new self-signed web browser certificate for the SW8G.
- **Update Firmware**
To update the firmware, you must have an authorized upgrade file.
- **Reset SW8G**
This menu option will force the SW8G to reboot.

Web Certificate



Data Comm for Business Inc. **SW8G Ethernet Switch**

Web Certificate

Update Firmware

Reset SW8G

Home

Web Certificate

Create new self-signed web certificate.

Common Name	SW8G Switch
Organization	My Company
Organization Unit	My Department
Country Code	US
State/Province	My State
Locality	My City
Subj Alt Name-1	
Subj Alt Name-2	

Discard changes
 Create new Web Cert

NOTE: Web certificate creation takes up to 2 minutes.

Data Comm for Business Inc.

This page is used to create a self-signed web browser certificate for the SW8G. Company specific information should be entered on this page before creating a new certificate.

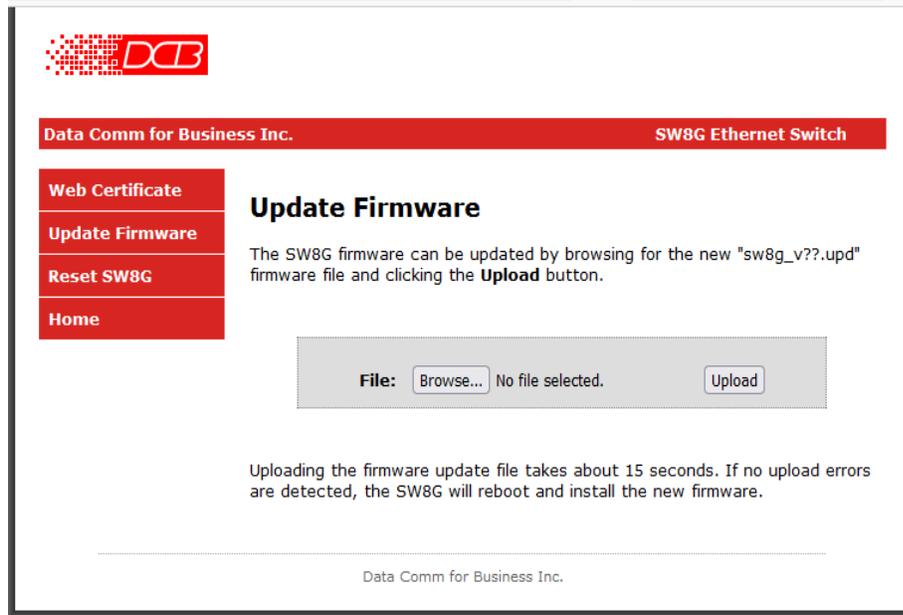
Fields

- All text boxes
Enter the appropriate information for your company.
- The **Make Cert** button will create a new self-signed certificate for https web access.

Notes

Click the **Make Cert** button to create a new self-signed web certificate. The creation process will require about 2 minutes, and the SW8G will reboot. Note that you once again might need to click the **Accept the Risk and Continue** option to access the SW8G home page with your web browser.

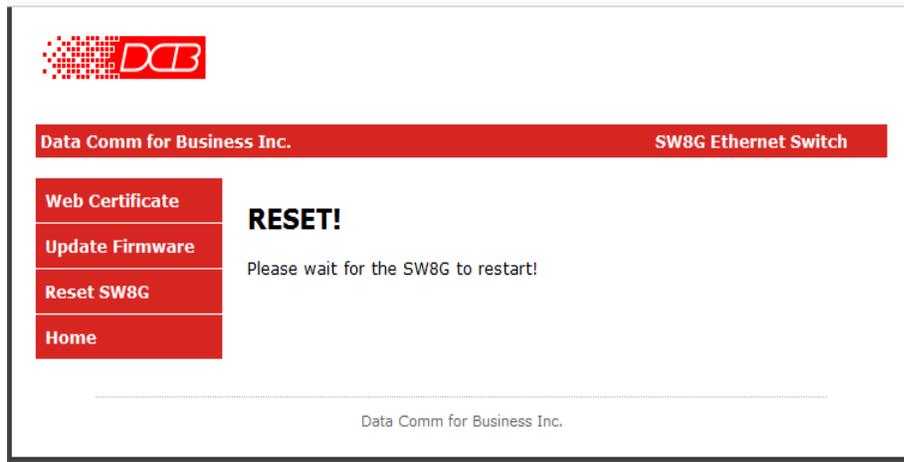
Update Firmware



The screenshot displays the web interface for a DCB SW8G Ethernet Switch. At the top left is the DCB logo. Below it, a red header bar contains "Data Comm for Business Inc." on the left and "SW8G Ethernet Switch" on the right. A left-hand navigation menu has four red buttons: "Web Certificate", "Update Firmware" (which is highlighted), "Reset SW8G", and "Home". The main content area is titled "Update Firmware" and contains the following text: "The SW8G firmware can be updated by browsing for the new 'sw8g_v???.upd' firmware file and clicking the **Upload** button." Below this text is a file upload area with a "File:" label, a "Browse..." button, the text "No file selected.", and an "Upload" button. Further down, a paragraph states: "Uploading the firmware update file takes about 15 seconds. If no upload errors are detected, the SW8G will reboot and install the new firmware." At the bottom of the page, there is a footer line with "Data Comm for Business Inc." centered.

An SW8G firmware update should only be attempted after receiving detailed instructions from DCB. Contact DCB technical support for further information.

Reset SW8G



This menu option will immediately force the SW8G to reboot. During normal operation, the SW8G should not require a reset.

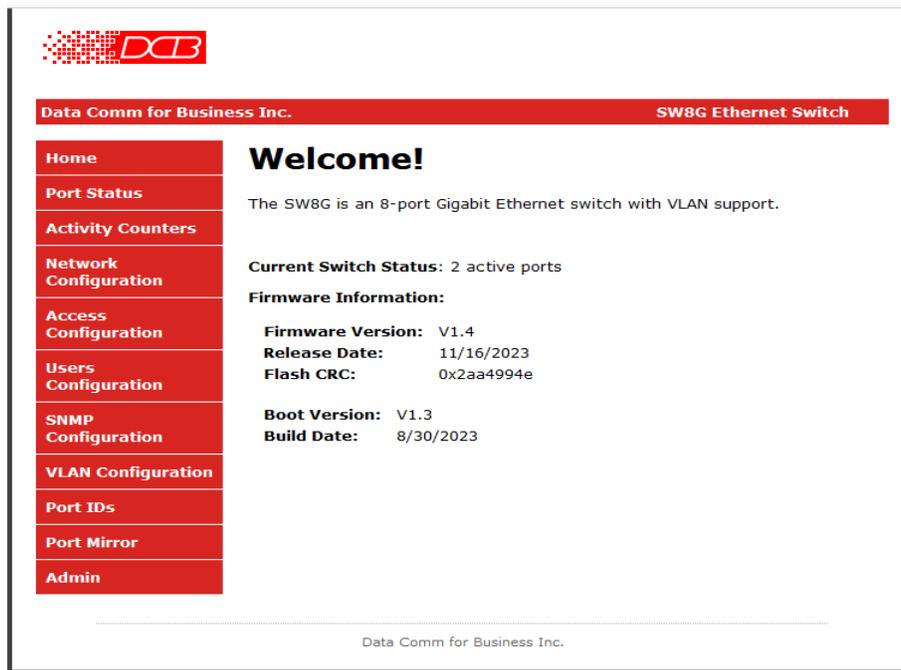
Chapter 4

Port Tools

This Chapter describes tools to monitor SW8G Ethernet switch status.

Overview

The SW8G switch has some status monitoring tools that are accessed from the **Home** page.



Menu Options

- Port Status
Show the current port link status for all ports.
- Activity Counters
Show packet TX, RX and error counts for all ports..
- Port Mirror
Optionally send TX and RX packets to a monitor port.

Port Status

The screenshot displays the 'Port Link Status' page of a DCB SW8G Ethernet Switch. The page features a navigation menu on the left with options: Home, Port Status, Activity Counters, Network Configuration, Access Configuration, Users Configuration, SNMP Configuration, VLAN Configuration, Port IDs, Port Mirror, and Admin. The main content area shows a table with the following data:

Port	Link Speed	FDX/HDX	Port ID
1	IDLE		port1
2	1000BASE-T	FDX	port2
3	IDLE		port3
4	IDLE		port4
5	IDLE		port5
6	IDLE		port6
7	100BASE-T	FDX	port7
8	IDLE		port8

At the bottom of the page, the text 'Data Comm for Business Inc.' is displayed.

The **Port Status** page shows the link status for all 8 ports. When a port is active, the link speed and full/half duplex status is displayed. Note that the Port ID label in the right hand column is user programmed on the **Port IDs** setup page. The factory default labels are shown in this example.

Activity Counters

The screenshot displays the DCB (Data Comm for Business Inc.) web interface for a SW8G Ethernet Switch. The page is titled "Port Activity Counts" and features a navigation menu on the left with options like Home, Port Status, Activity Counters, Network Configuration, Access Configuration, Users Configuration, SNMP Configuration, VLAN Configuration, Port IDs, Port Mirror, and Admin. The main content area contains a table with the following data:

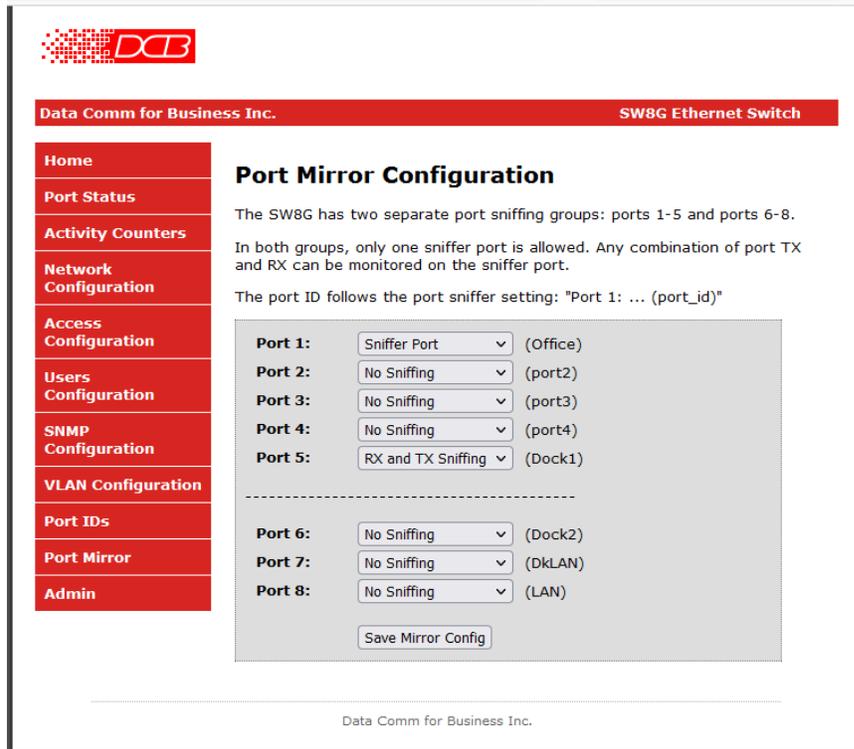
Port	TX Packets	RX Packets	RX Errors	Link	Port ID
1	0	0	0	--	port1
2	355	543	0	UP	port2
3	0	0	0	--	port3
4	0	0	0	--	port4
5	0	0	0	--	port5
6	0	0	0	--	port6
7	295	0	0	UP	port7
8	0	0	0	--	port8

Below the table is a "Clear Counts" button. The footer of the page reads "Data Comm for Business Inc."

The **Activity Counters** page shows the total number of TX and RX packets for each switch port. These counters are 32-bits wide and will rollover to 0 after the maximum count is reached.

The **Clear Counts** button will reset all activity counters.

Port Mirror



This port mirror example uses the port IDs programmed earlier in the Port IDs section.

Fields

- Port [1..8]
Set the monitor option for each port: No sniffing, sniffer port, RX or TX sniffing, RX and TX sniffing.

Notes

Only one sniffer port can be defined in the upper group, ports 1 to 5, and lower group, ports 6 to 8. However, any combination of TX and RX sniffing on the other ports in the same group can be mirrored on the sniffer port.

When modifications to the Port Mirror Configuration page are complete, use the *Save Mirror Config* button to activate the port mirror setup.

Port mirroring is cleared when the SW8G is reset.

Chapter 5

Serial Management Port

This Chapter describes the SW8G switch serial management port.

Overview

The SW8G installation chapter describes using the serial management port to program the controller's IP address. In fact, all of the web browser based configuration and status information is available via the USB-C serial port or telnet to port 8000.

Using a PC terminal application program configured for 57,600 bps 8N1, the SW8G returns the following welcome banner. Entering the **help** command displays the top level command summary.

```
SW8G Switch V1.4
-----
Type "help" for commands

cmd> help

Help Command Groups
-----
netcfg: network config commands
access: access config commands
user: user config commands
snmp2: SNMPv2 commands
snmp3: SNMPv3 commands
vlan: VLAN commands
cert: Cert commands

System Commands
-----
help: help [command_group] (Example: help netcfg)
counts: counts [clear] to show activity or clear
version: show firmware versions
reset: reboot SW8G
!default: restore all default settings

cmd> _
```

Adding an argument to the help command will display the commands in that group. For instance, typing **help netcfg** shows the network configuration commands.

```
SW8G Switch V1.4
-----
Type "help" for commands

cmd> help netcfg

Netcfg Commands
-----
netinfo: Show network configuration
dhcp: Set DHCP ON/OFF
setip: Set IP address and mask
setgw: Set gateway address
setdns: Set primary DNS address
setdns2: Set secondary DNS address
ping: Ping an IP address
export: Export current config
import: Import config

cmd> _
```

Entering one of these set commands will show the current setting and provide the command usage. Adding an argument to the command will change the setting.

```
cmd> setip

IP address: 192.168.10.30
IP mask: 255.255.255.0

Usage: setip <ip_address> [mask]
Example 1: setip 192.168.0.95
Example 2: setip 192.168.0.95 255.255.255.0

cmd> setip 192.168.10.123
IP address is now 192.168.10.123

cmd> _
```

All of the management port commands work in a similar fashion. The command without an argument returns the current setting and with an argument the current setting is changed.

Detailed descriptions of the management port commands are beyond the scope of this user's guide. For more information about serial and telnet port management, contact DCB.

Chapter 6

Troubleshooting

This chapter outlines some problems that may occur during installation or operation and some possible solutions to them.

If you follow the suggested troubleshooting steps and the SW8G still does not function properly, please contact your dealer for further advice.

Hardware Problems

Before anything else, check that all cables are wired correctly and properly connected.

P: All the LEDs are off.

S: Make certain the SW8G card is fully seated and the captive screw fasteners are snug.

P: When using 10/100/1000Base-T cabling, the device does not work.

S: Check the port link status LEDs to verify that the device is detected. If LEDs are off, try reseating the LAN cable or using a different cable.

Can't Connect via the LAN

P: Can't connect with a Web Browser.

S: Check the following:

- Is a proper IP address configured in the switch and PC?
- “Ping” the switch to see if it responds. From the Windows command prompt or “Run” dialog box, use the command:

```
ping IP_Address
```

Where `IP_Address` is the IP Address of the SW8G (e.g. `ping 192.168.0.1`). If it does not respond, then check all LAN connections. If the LAN connection are OK, the problem is in the LAN addresses or routing. **The most common problem cause is incorrect IP address configurations. Make sure the workstation and SW8G have compatible IP addresses.**

- Run the “ipconfig” command on the PC to confirm the PC’s IP address. Sometimes Windows will not accept a statically configured address and will instead, substitute it with a plug-and-play IP address. A cause for this situation is when two interfaces on the PC have overlapping networks. For example, when a wireless interface configured in the same subnet range as an Ethernet interface.

Other Problems

P: Can't run the initial configuration program using a serial cable connection.

S: Check that:

- The communication parameters are set properly (57,600 bps 8N1)
- Press the front panel reset push-button switch with an open paper clip.
- Is the SW8G front panel status LED green? If not, is the board fully seated in the chassis?
- Has the correct COM port been selected? The SW8G utilizes an internal USB serial port adapter. When the USB cable is connected, the PC should detect a USB Serial port and automatically add the device. Check the PC's Device Manager and verify that a COM port has been added and that the device is working properly. If it is unclear which COM port corresponds to the SW8G, remove the USB cable. While watching the Device Manager "Ports (COM & LPT)" section, reinstall the USB cable. The new COM should appear in the list. Double-click on the new COM port to verify the status.
- Does the terminal emulation program support high numbered COM ports? Some terminal emulators only support COM1 through COM4. Try a different terminal emulator, such as TeraTerm or PuTTY.

Checking Switch Operation

Once the switch is installed on your network, you can verify proper operation by testing its functionality. Attempt to send packets through it, to confirm it is working correctly. The procedure is as follows.

From a PC on the network, ping or connect to a device connected to a port on the switch. If this test succeeds, then two-way operation is confirmed.

If a PC on one switch port can communicate with a PC or server on another port, the switch configuration is likely correct and other possible network problems should be investigated.

Appendix A

Specifications

SW8G Switch Specifications

General

- 8 ports, 10/100/1000Base-T auto-sensing
- Non-blocking full duplex operation
- Wire speed transmit and receive
- Supports 802.1Q VLAN for 128 active groups
- Supports 802.3x flow control
- Supports full and half duplex
- Supports MDI/MDI-X auto-crossover
- 4096 entry forwarding table
- 256K bytes SRAM for frame buffering
- Supports SNMP V2c and V3
- Supports port monitoring
- Management via browser or serial port

Front Panel Indicators and Push-Button

- Link, Speed and Activity for each port
- Green status LED
- Recessed Push-button RESET switch

Management and Firmware Update

- Web browser using https: to port 443
- Telenet to port 8000
- USB-C serial port, 57,600 bps, 8N1
- Optional Admin and User logins
- Unique self-signed web certificate
- Save and restore SW8G configuration settings

Physical/Electrical

- Power requirements: supplied by the Loop O9500 and AM3440A, B or C chassis
- Less than 8 watts
- One pound

Environmental

Operating temperature: -40 to +75C, non-condensing humidity.



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