

24+2 Gigabit SNMP Switch with Integrated Router



networks@work

USER'S MANUAL



COMPEX MANAGED SWITCH SERIES

SGX3226

SGX3226

SGX3226

SGX3226

SGX3226

Manual number : U-0334-V1.1C

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

Declaration of Conformity

Compex, Inc. declares the following:

Product Name: SGX3226 Compex 24 Port 10/100 Mbps plus 2 Port Gigabit Copper SNMP Managed Switch

Model No.: SGX3226 conforms to the following Product Standards:

Radiated Emission Standards: EN55022A, FCC Part 15 Class A; Conducted Emission Standards: EN60555Pt2 conducted emission; EN55022A conducted emission, LVD 60950 standard, FCC Part 15 Class A; Immunity Standards: IEC 801-2; IEC 801-3; IEC 801-4; Low Voltage Directive: EN60950

Therefore, this product is in conformity with the following regional standards: FCC Class A - following the provisions of FCC Part 15 directive; CE Mark - following the provisions of the EC directive.

This Class A digital apparatus complies with Canadian ICES-003.

17th April, 2002



Shi Jia Xiang
R & D Manager

Technical Support Information

The warranty information and the registration form are found in the Quick Install Guide.

For technical support, you may contact COMPEX or its subsidiaries. For your convenience, you may also seek technical assistance from the local distributor, or from the authorized dealer/reseller that you have purchased this product from. For technical support by email, write to support@compex.com.sg.

Refer to the table below for the nearest Technical Support Centers:

Technical Support Centers	
Contact the technical support center that services your location.	
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✉ Write	Compex, Inc. 4051 E. La Palma, Unit A Anaheim, CA 92807, USA
☎ Call	Tel: +1 (714) 630-7302 (8 a.m.-5 p.m. Pacific time)
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	BBS: +1 (714) 630-2570 (24-hour access)
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☎ Fax	Tel: (65) 6286-2086 (Ext.199 Technical Support)
	Fax: (65) 6283-8337
	BBS: (65) 6282-8854 (24-hour access)
<i>Internet access/ Website:</i>	E-mail: support@compex.com.sg FTP site: ftp.compex.com.sg http://www.cpx.com or http://www.compex.com.sg

About This Document

The product described in this document, Compex Managed Switch Series, SGX3226 is a licensed product of Compex Systems Pte Ltd. This document contains instructions for installing, configuring and using of SGX3226. It also gives an overview of the key applications and the networking concepts with respect to the product.

This documentation is for both Network Administrators and the end user who possesses some basic knowledge and expertise in the networking structure and protocols.

It makes a few assumptions that the host computer has already been installed with TCP/IP and already up & running and accessing the Internet. Procedures for Windows 95/98/ 2000/NT operating systems are included in this document. However, for other operating system, you may need to refer to your operating system's documentation for networking.

How to Use This Document

The document is written in such a way that you as a user will find it convenient to find specific information pertaining to the product. It comprises of chapters that explain in details on the installation and configuration of SGX3226.

Firmware

This manual is written based on Firmware version 1.10.

Conventions

In this document, special conventions are used to help and present the information clearly. The Compex 24 Port 10/100 Mbps plus 2 Gigabit Port Copper SNMP Managed Switch is often referred to as Compex SGX3226 in this document. Below is a list of conventions used throughout.



NOTE

This section will consist of important features or instructions



CAUTION

This section concerns risk of injury, system damage or loss of data



WARNING

This section concerns risk of severe injury

Menu Commands, Button/Dialog Buttons,
Product Indicators

Will appear as follows in **Bold**
E.g. Reboot System and Save
E.g. MODEM 1 port or STATUS LED indicator

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Chapter 1 Product Overview

Chapter 1 Product Overview

1.1 Overview

Compex Managed Switch Series Compex SGX3226 is a 24-port 10/100 Mbps Fast Ethernet SNMP Managed Switch with Integrated Router, which comes with 2 expansion slots to support 1000 Base-T Gigabit Copper Modules for uplink connection.

All 24 auto-sensing ports, which have the abilities to support full and half duplex transmission, are on independent switching segment.

Compex SGX3226 is specially designed to support Broadband Internet sharing. Up to 4 ports may be connected to external Cable/ADSL modem, delivering combined aggregated bandwidth to the Internet while providing fail-over redundant link.

In summary, Compex SGX3226 should perform whenever the demands, bandwidth, reliability and security are required.

1.2 Features and Benefits

Compex SGX3226 is specially designed for building switched network system for large enterprise and medium to small size workgroup. More enhanced features are introduced to Compex SGX3226, making it a perfectly high-performance backbone switch for today's corporate network.

1.2.1 Fast Ethernet Switching

Compex SGX3226 comes with 24 10/100 Mbps Fast Ethernet auto-sensing ports supporting full and half duplex transmission on its 12 Gbps switching bus.

1.2.2 SNMP Management Functions

Compex SGX3226 has been designed with SNMP management functions, which has the capability to support 4 groups of RMONS: Ethernet Statistic, History, Alarm and Event.

1.2.3 Aggregated Router Capability

Compex SGX3226 also has the ability to support Broadband Internet sharing. Up to 4 ports may be connected to external Cable/ADSL modems, delivering combined aggregated bandwidth to the Internet while providing fail-over redundant link.

Chapter 1 Product Overview

1.2.4 Port Trunking

Up to 4 ports may be defined for Port Trunking, delivering up to 800 Mbps cascading bandwidth between two switches.

1.2.5 VLAN support and tagging

Compex SGX3226 can support up to 30 port-based VLANs and static configuration of 802.1Q VLAN tagging. It allows network administrator to separate the network into a few segments by defining which port belong to which VLAN segment. This can effectively control broadcast and multi-cast packet flooding the network. This not only improves the network performance, but also provides security between workgroups.

1.2.6 Optional Modules

Compex SGX3226 is designed with 2 expansion slots to support 3 types of optional modules, 1000 Base-T Gigabit Fiber module, 1000 Base-SX Gigabit Fiber module and 100 Base-SC Fast Ethernet Fiber module.

1.2.7 Management Interface and capabilities

Compex SGX3226 allows you to manage the switch through common management software. Web based management is also provided so that you do not need to have expensive management software in order to manage your Ethernet switch. You can use any popular Web browser software to browse the HTTP server inside Compex SGX3226. From the Web page; you can do any configuration and statistic inquiry on the switch. FreedomView Pro SNMP agent is also bundle together in the package.

Through the management interface, you can also change the transmission mode of all ports on Compex SGX3226 switch. This means that you can change the operating mode of any port to 10 Base-T half duplex, 10 Base-T full duplex, 100 Base-TX half duplex, 100 Base-TX full duplex or N-way Auto-negotiation at any time. It also means that you can change the transmission mode through the Web browser interface, SNMP, console port or even Telnet interface.

1.2.8 Group VLAN Registration Protocol (GVRP)

Allows automatic learning of VLANs which eliminates manual configuration of VLANs.

1.2.9 Redundant Power Supply

RPS is constructed to prevent Compex SGX3226 from power-down if the primary power supply is malfunctioned.

1.2.10 Spanning Tree Protocol

Provides redundant links while preventing network loops.

Chapter 1 Product Overview

1.3 Applications

Compex SGX3226 may be used in the backbone with ADSL broadband connection as the access to the Internet, as shown in Figure 1.3-1. Virtual LAN may be defined on Compex SGX3226 to logically segment your LAN into multiple broadcast domains with workgroup classifications.

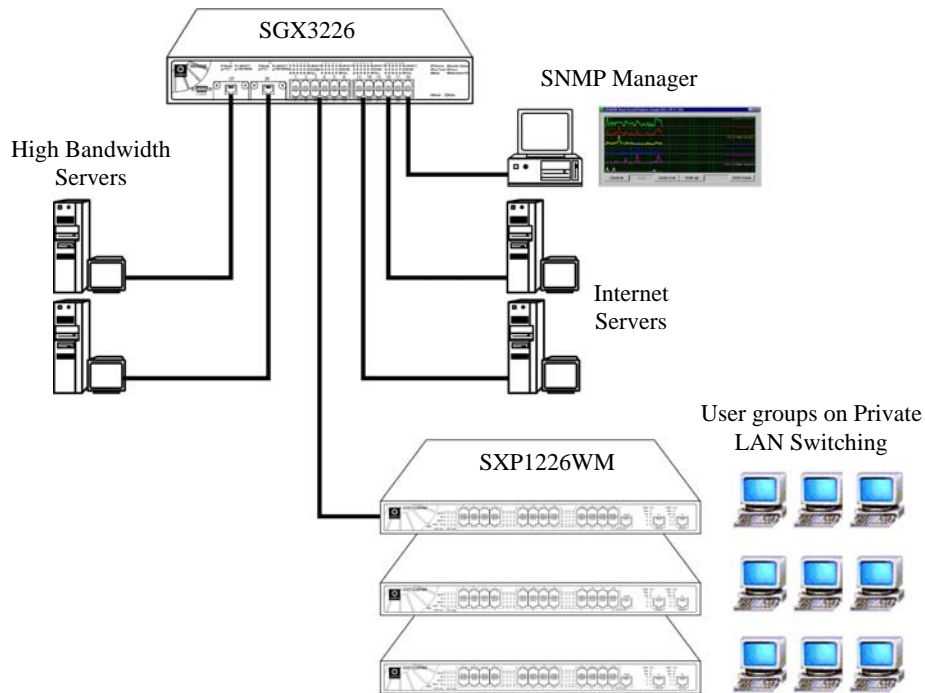
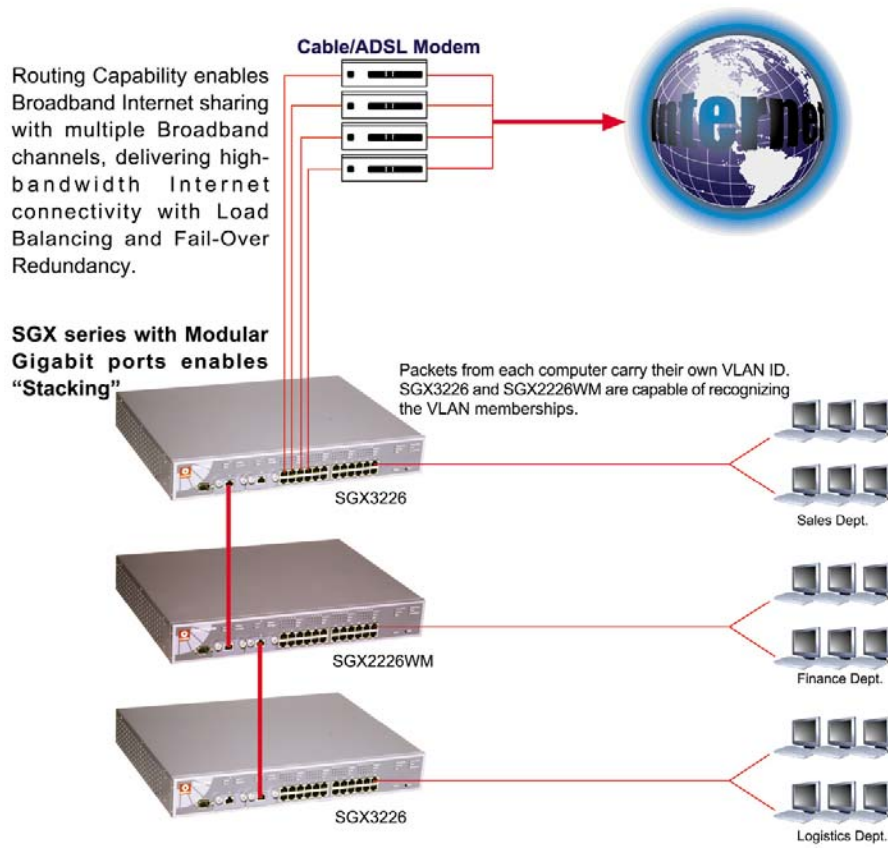


Figure 1.3-1 Compex SGX3226 in the backbone

Chapter 1 Product Overview



Chapter 1 Product Overview

Optional modules may be installed on CompeX SGX3226 to support inter-building connectivity using fiber optical cables, as shown in Figure 1.3-2.

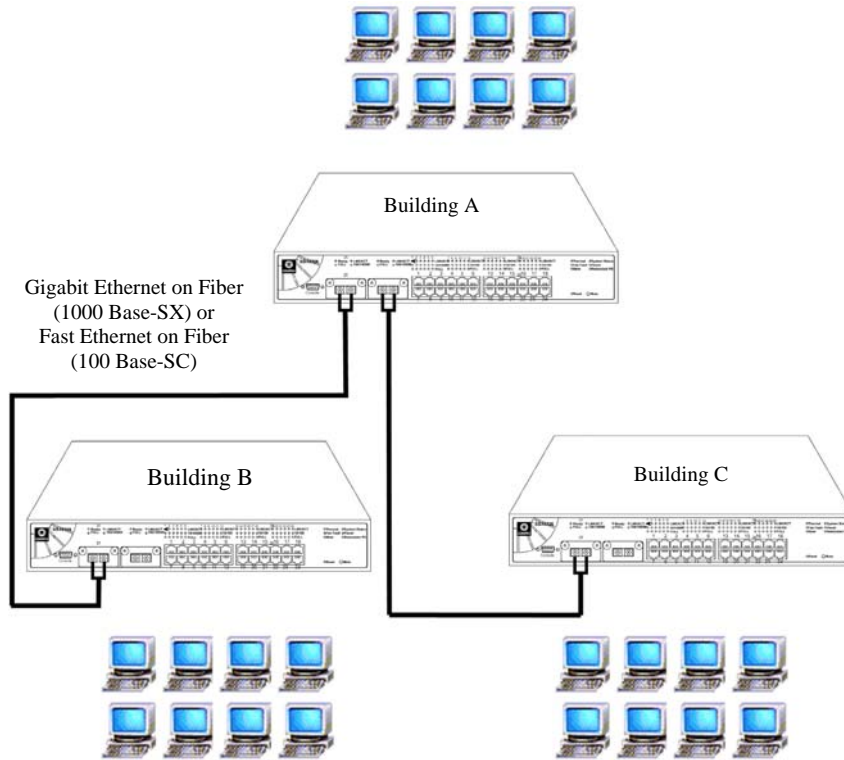


Figure 1.3-2 CompeX SGX3226 installed with optional fiber optic module

Chapter 1 Product Overview

1.4 Panel Views

1.4.1 Top View

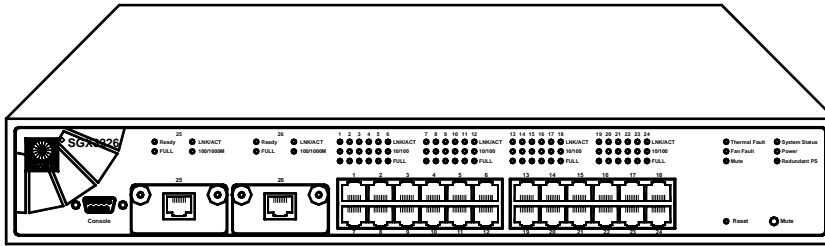


Figure 1.4-1 Top view of Complx SGX3226

1.4.2 Front View

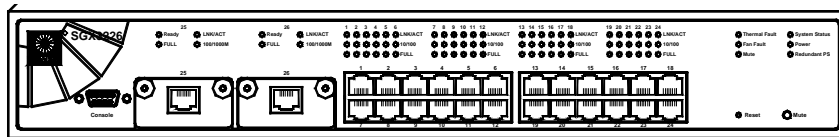


Figure 1.4-2 Front view of Complx SGX3226

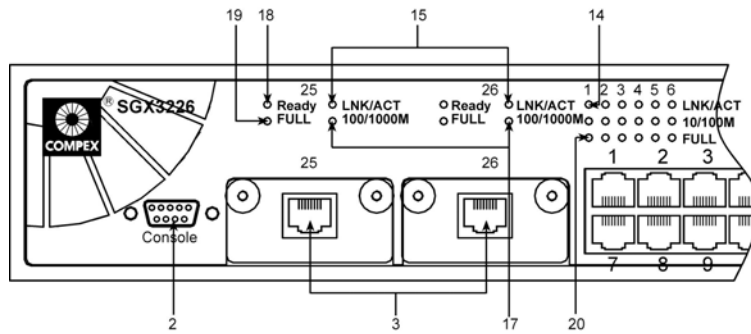


Figure 1.4-3 Front View of Complx SGX3226 (Section #1)

Chapter 1 Product Overview

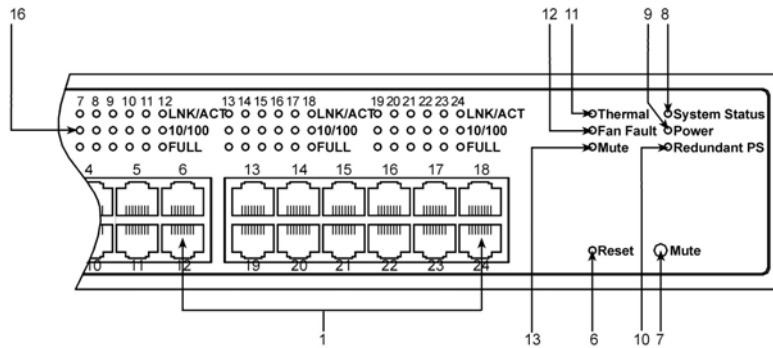


Figure 1.4-4 Front View of Complex SGX3226 (Section #2)

1.4.3 Back View

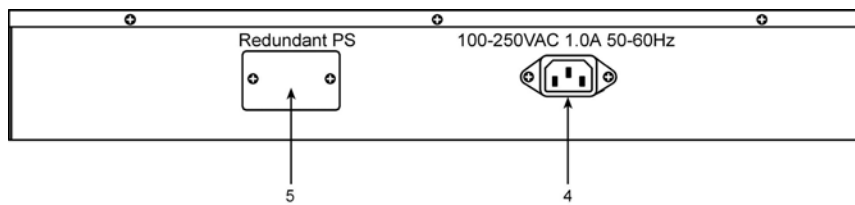


Figure 1.4-5 Back View of Complex SGX3226

Chapter 1 Product Overview

1.5 Panel Description

	Features	Status and Indication		
1.	24 RJ45 10/100 Mbps Ports	Use UTP/STP network cables to connect <ul style="list-style-type: none"> • 10 Base-T • 100 Base-TX • 100 Base-SC All ports will detect and automatically switch to uplink mode when connected to a switch/hub		
2.	Console Port	A serial 9 pin (DB9) socket is connected to PC COM Port for monitoring the switch		
3.	2 Open Expansion Module Slots	<ul style="list-style-type: none"> • Comes with 1000 Base-T module • Option for 1000 Base-SX and 100 SC modules 		
4.	Primary Power Socket	Flexible power input (range 100 V-250 V AC)		
5.	Redundant Power Socket	Additional Power Socket (Optional). With this RPS, Compex SGX3226 still able to operate even Primary Power Supply is down.		
6.	Reset Button	By pushing the reset button once, <ul style="list-style-type: none"> • The switch will clear all previous temporary error • P.O.S.T. will activate self-diagnostic program to check any error. • Switch would be re-configured with settings stored in non-volatile flash memory. 		
7.	Mute Button	To toggle the On or Off Switch of the Alarm Buzzer		
8.	System Status LEDs	Green	Steady	Normal Operation
		Red	Steady	POST is running Self-diagnostic after reset or power up

Chapter 1 Product Overview

	Features	Status and Indication		
9.	Power LED	Green	Steady	Power supply is working in normal condition.
		Red	Steady	Power supply is faulty. Power supply fault occurs.
10.	Redundant PS LED	Green	Steady	Primary Power Supply Fault occurred. RPS is operating.
			Off	RPS is in standby mode or is not available.
11.	Thermal Fault LED	Red	Steady	Temperature inside the chassis is too high for normal operation. Thermal fault occurs.
			Off	In normal condition.
12.	Fan Fault LED	Red	Steady	Ventilation Fans have problems. Thermal fault may result if condition persists.
			Off	Ventilation Fans are operating in good condition.
13.	Mute LED	Green	Steady	The alarm buzzer is turned off.
			Off	The alarm buzzer is turned on.
14.	LNK/ACT LEDs (Port #1 to Port #24)	Green	Steady	In good link connection.
			Blinks	The LAN connection has activities going on.
15.	LNK/ACT LEDs (Port #25 &Port #26)	Green	Steady	In good link connection.
			Blinks	The LAN connection has activities going on.

Chapter 1 Product Overview

	Features	Status and Indication		
16.	10/100M (Port #1 to Port #24)	Green	Steady	The respective LAN connection is at 100 Mbps.
			Off	The respective LAN connection is at 10 Mbps.
17.	100/1000M (Port #25 &Port #26)	Green	Steady	The respective LAN connection is at 1000 Mbps.
			Off	The respective LAN connection is at 100 Mbps.
18.	Ready LED (Port #25 &Port #26)	Green	Steady	Valid Expansion Module is detected.
			Off	Blinks
19.	Full Duplex LEDs (Port #25 &Port #26)	Green	Steady	Full Duplex Mode.
			Off	Half Duplex Mode.
20.	Full Duplex LEDs (Port #1 to Port #24)	Green	Steady	Full Duplex Mode.
			Off	Half Duplex Mode.

Chapter 1 Product Overview

1.6 Technical Specifications

•	Industry Standards	Complies with <ul style="list-style-type: none"> • IEEE 802.1d: Spanning Tree Protocol • IEEE 802.1Q: Tagged VLAN • IEEE 802.3: 10 Base-T • IEEE 802.3u: 100 Base-TX • IEEE 802.3ab: 1000 Base-T • IEEE 802.3ad: Link Aggregation • IEEE 802.3z: 1000 Base-SX • IEEE 802.3x: Flow Control
•	Certificate Standards	<ul style="list-style-type: none"> • FCC Class A • CE Mark • C-Tick • UL
•	Interface	<ul style="list-style-type: none"> • 24 RJ45 UTP 10/100 Mbps ports • 2 expandable slots with two 1000 Mbps Modules installed • 1 RS232 serial interface
•	SNMP Management (4 groups of RMON)	<ul style="list-style-type: none"> • Group 1-Ethernet Statistic • Group 2-History • Group 3-alarm • Group 9-events
•	Virtual LAN	<ul style="list-style-type: none"> • Port-based VLAN • Tagged VLAN
•	Spanning Tree Protocol	Yes
•	Flash ROM	2 M bits
•	Port Mirroring	Yes
•	Management Interface	<ul style="list-style-type: none"> • Web-based Interface • RS232 or Telnet Console
•	Port Trunking	Up to 4 ports/trunk

Chapter 1 Product Overview

•	Switching Method	Store-and-Forward	
•	LED Indicators	<ul style="list-style-type: none"> • System Status • Power • Link/Activity • Redundant Power Supply • Thermal and Fan Fault • Mute • Speed (10/100/1000 Mbps) • Duplex status • Ready 	
•	Operation Mode	<ul style="list-style-type: none"> • N-Way Auto-negotiation • Force Mode 	
•	Transmission Mode	<ul style="list-style-type: none"> • Full Duplex • Half Duplex 	
•	Optional Modules	<ul style="list-style-type: none"> • 100 Base-SC module • 1000 Base-SX module 	
•	Power Supply	Internal power supply is provided with voltage ratings of 100 V AC to 250 V AC, 50~60 Hz Power consumption is 40 W maximum.	
•	Environment Requirements	Operating Temperature: Storage Temperature: Operating Humidity: Storage Humidity:	0°C to 40°C -20°C to 70°C 10% to 80% RH 5% to 90% RH RH=Relative Humidity
•	MAC Address Table	4 K	
•	Switching Buffer	24 Mbytes	
•	Back Plane Capacity	12 Gbps	
•	Physical Dimension	440 mm x 330 mm x 66 mm (L x D x H)	

Chapter 2 Getting Started

Chapter 2 Getting Started

This chapter outlines the basic requirement needs before you begin any installation and configuration on Compex SGX3226.

2.1 Packaging Content

Thank you for purchasing the Compex Managed Switch Series Compex SGX3226. You will find the following items in the package:

- ◆ 1 x Compex SGX3226 unit
- ◆ 1 x Power Cord
- ◆ 2 x brackets
- ◆ 6 x screws
- ◆ 1 x RS232 crossover cable
- ◆ 4 x rubber feet
- ◆ 1 x Quick Install Guide with Warranty Card
- ◆ 1 x CD-ROM (Web browser, Acrobat Reader, User's Manual, FreedomView Pro SNMP Manager Software, Npfind Utility Software)

2.2 Setup Considerations

Prepare checklist before you start:

- ◆ Check your Local Area Network configurations. Check if it is Dynamic or Static IP addressing.
- ◆ Check the TCP/IP protocols and IP address settings of the PCs/Clients or Ethernet Switch in your LAN.
- ◆ At least one dial-up account from Internet Service Provider (ISP).
- ◆ RJ45 telephone cable connected to the external modem.

2.2.1 Software Requirements

- ◆ Windows 95/98/2000/NT/ME
- ◆ Any other TCP/IP-enabled systems like Mac OS and UNIX
- ◆ Hyper Terminal Program
- ◆ Web Browser, such as Microsoft Internet Explorer (4.0 and above) or Netscape Navigator (4.0 and above)
- ◆ FreedomView Pro SNMP Manager Software
- ◆ Npfind utility software

Chapter 2 Getting Started

2.2.2 Hardware Requirements

- ◆ 10/100 Base-T, RS232 crossover cable and Compex SGX3226 unit
- ◆ Ethernet ready Client/PCs (with TCP/IP protocols installed and configured for Internet access)

2.2.3 Modem Requirements

- ◆ One or four ADSL/Cable modem/s

Chapter 3 Hardware Installation

Chapter 3 Hardware Installation

This chapter gives an in-sight on the hardware installation aspect from installing the physical cables to resetting the device.

3.1 Physical Setup for Compex SGX3226

Compex SGX3226 is ideally suitable for office environment usage, which can be either installed on a flat surface (desktop) or mounted on a 19-inch rack. The following steps illustrate how a proper installation has to be done.

3.1.1 Desktop Installation

1. Unpack Compex SGX3226.
2. Remove the backing strip from the 4 rubber feet and attach to the underside of the switch chassis firmly.
3. Place it with a power outlet located nearby. Be sure to set the device with sufficient space for heat ventilation.
4. The surface to place Compex SGX3226 should be clean, smooth, level and sturdy.
5. Ensure there is enough space around the unit to allow attachment of network cables.
6. Connect the power cord to the power socket on the rear panel of Compex SGX3226.

3.1.2 Rack-Mounted Installation

1. Position one bracket to align with the holes on one side of Compex SGX3226 and secure it with the smaller bracket screws (1/8-inch diameter). Then attach the other bracket to another side of it.
2. After attaching both mounting brackets, position the device in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure it to the rack using the rack-mounting screws (5/16 inches diameters) with a screwdriver.
3. Connect the power cord to the power socket on the rear panel of Compex SGX3226.

Chapter 3 Hardware Installation



NOTE

For proper ventilation, do allow about at least 4 inches of clearance on the front and 4 inches on the back of the Switch. This is especially important for enclosed rack installation.

3.1.3 Expansion Module Installation

A series of optional Expansion Modules are available for Compex SGX3226 to enhance the features. As Compex SGX3226 supports the hot plug function, you may install or uninstall the Modules without turning off the Switch.

1. Please note that Compex SGX3226 is shipped with the Gigabit modules.
2. Insert the Module carefully into the Expansion Module Window and push it along the Module rail until it stops. Ensure that there is a secure connection to the PCB Board of Compex SGX3226.
3. The Ready LED of the related port will lights up.
4. Tighten the screws on the module.

To remove Expansion Module,

1. Disconnect any cable from the Module.
2. Unscrew and pull out the Module slowly from the Expansion Module Slot.
3. Slide the Module completely out of the Chassis and cover the Window with the cover plate, screwing back using the original screws.

Chapter 3 Hardware Installation

3.2 Connecting Your modem to Compex SGX3226

Compex SGX3226 allows a maximum of up to two modems connections. Only use those modems as specified in **Section 2.2.3 Modem Requirements on Page 14**.

With Compex SGX3226 and any of the four modems power off, connect one end of the modem cable to any port of Compex SGX3226. The other end of the modem cable is to be connected to your own ADSL/Cable modem. (Set up the modem for dial-up connection. You may need to refer to your respective Modem's manual for installation.)



NOTE

Connect Compex SGX3226 using one modem first. Once you have established an Internet connection, then add the additional modem as and when needed.

3.3 Connecting Your Compex SGX3226 to your Network

You can connect Compex SGX3226 via the RJ-45 port to an external Ethernet Hub/Switch to increase the number of users for Internet access. Using a straight through UTP network cable, connect one end to Compex SGX3226 and the other to the network Switch.

Once all physical connections are established, turn on the power to the modem, Compex SGX3226, PC and the network Switch.

The figure shows on Page 18 an example how Compex SGX3226 can be connected to an existing switch to increase the Internet access for the LAN users from just one dedicated Internet access to multiple accesses.

Chapter 3 Hardware Installation

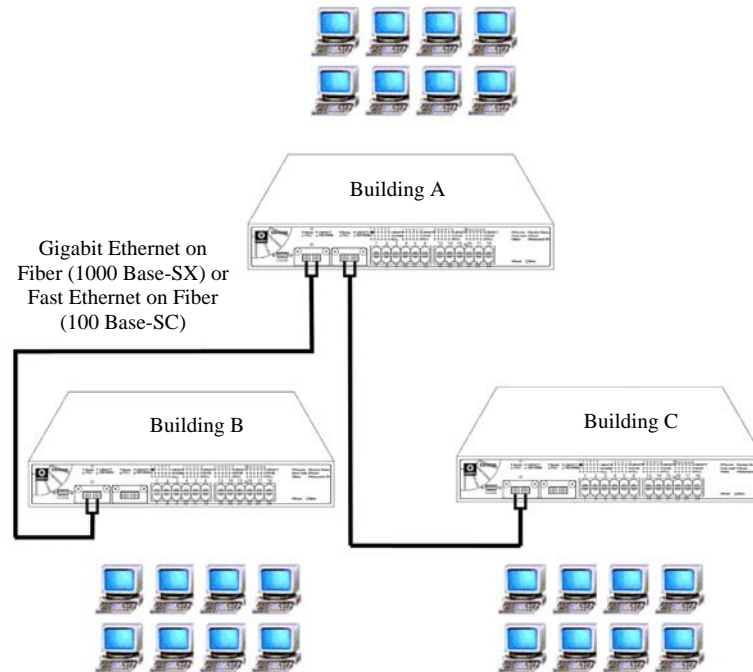


Figure 3.3-1 Complx SGX3226 cascaded to Switch to support more users

3.4 Performing Power On Self Test (P.O.S.T.)

Complx SGX3226 has the ability to perform P.O.S.T. automatically upon power up. On successful power up, System Status LED on the front panel will light up steadily in RED, indicating that Complx SGX3226 is running its Self Diagnostic Test. Once the LED turns green, Complx SGX3226 is then ready for operation.



NOTE

If the System Status LED does not light up in RED after powered up, you may need to reset the Switch by powering OFF and ON again. If it still fails, please contact your dealer for repair or replacement.

Chapter 4 Software Installation

Chapter 4 Software Installation

This chapter explains the basic setup procedures of configuring Compex SGX3226 using the web-based interface. For more detailed information about Compex SGX3226, please refer to **Chapter 7 “Advanced Configuration for Compex SGX3226”** on **Page 51**.

4.1 Configuration on PC settings

Each PC in the LAN must be configured in order for them to communicate with Compex SGX3226. To do so, follow the steps shown below:

1. From your Windows 95/98/2000/NT/ME computer, click “Start” button, point to **Settings**, and select **Control Panel**.
2. Double click the **Network** icon.
3. Check to see if the TCP/IP protocol is installed. If not yet, please add this protocol first before proceeding with the next step.
4. Select TCP/IP protocol and click “Properties” button. Click on the radio button for **Obtain an IP address automatically**.
5. Go to DNS Configuration tab and select Disable.
6. Select WINS Configuration tab. Click Disable WINS Resolution.
7. Hit the “Ok” button and restart your computer.

4.2 Npfind Utility Software

Npfind is an utility program for Windows which can be used to find out the IP address of Compex’s product. To check your IP Address of Compex SGX3226,

1. Connect one end of the MDI straight cable to one of the LAN port of Compex SGX3226, and the other end to your PC.
2. Next, insert Product CD to your CD-ROM Drive.
3. Go to DRIVERS & UTILITIES section and click on Npfind Utility Software.

Chapter 4 Software Installation

The program will automatically display the IP address of the device found.



Figure 4.2-1 Npfind discovered Compex Product

Contact your area of support for help if needed, or write to us at support@compex.com.sg

4.3 Configuration of Compex SGX3226 using Hyper Terminal

We can configure Compex SGX3226 through Hyper Terminal. To do so, please follow the procedures stated below:

1. Go to control panel and double click **Hyper Terminal** icon.



Figure 4.3-1 Select Hyper Terminal Icon from Control Panel

Chapter 4 Software Installation

2. Type the name in the space provided.

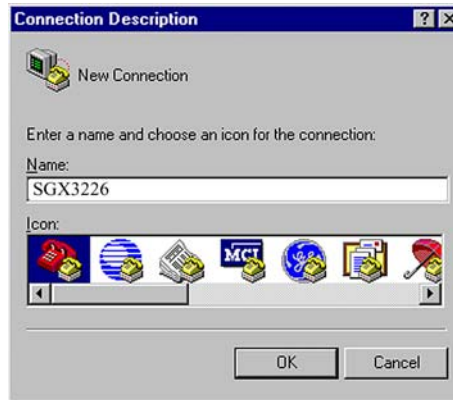


Figure 4.3-2 Give a name for the new connection

3. Choose the COM Port which you have selected from your PC.



Figure 4.3-3 Select a Com Port

Chapter 4 Software Installation

4. Adjust the Port setting from the COM1 (depends on the console port you have used) Properties screen.

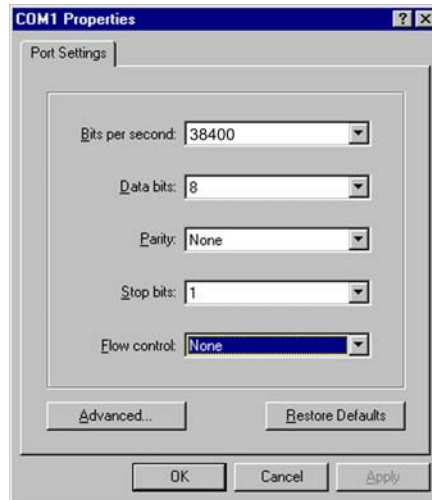


Figure 4.3-4 Configure the Port Setting

Chapter 4 Software Installation

After setting all configurations, reset the power supply of Compex SGX3226. A Hyper Terminal screen will appear to list out all configurations.

```

Command>sys show ethernet address
-----
Ifname      Admin. State  Oper. State  IP Address      Netmask          Destination Broadcast Addr
-----
LN0        Enabled Up       192.168.100.128 255.255.255.0   192.168.88.255

Command>sys show info
System:
System name      : SGX3226
System contact   : unknown
System location  : unknown
System up time   : 0 months 0 days 06:48:00
Console baudrate : 38400
Firmware Version : SGX1.10.81d.1404, Apr. 5 2002
MAC Address      : 00-80-40-11-11-11
IP Address       : 192.168.100.128
Network Mask     : 255.255.255.0

Command>sys show info
System:
System name      : SGX3226
System contact   : unknown
System location  : unknown
System up time   : 0 months 0 days 06:48:05
Console baudrate : 38400
Firmware Version : SGX1.10.81d.1404, Apr. 5 2002
MAC Address      : 00-80-40-11-11-11
IP Address       : 192.168.100.128
Network Mask     : 255.255.255.0

Command>

```

Figure 4.3-5 Information on Compex SGX3226 Configuration

You can modify the configuration on the screen itself, such as changing the IP Address after you have upgrade the firmware.

Here is the listing for commands used in Hyper Terminal:

System Commands	Descriptions
sys--System Management Commands	
sys show info	Show system information of the device
sys show ip	Show the IP Address of the device
sys show ethernet address	Show Ethernet address
sys set ip <IP Address> <Subnet Mask>	Set IP Address and Subnet Mask of the device, e.g. sys set ip <ddd.ddd.ddd.ddd> <ddd.ddd.ddd.ddd>
sys set name "string"	Give a name to the device,e.g. SGX3226
sys set contact "string"	Give a contact information to the device, e.g. Compex
sys set location "string"	Give a location name to the device, e.g. Singapore
sys set password	Set administrator's password
sys set link_info <on/off>	Enable or disable the link status in the Change Report, e.g. sys set link_info on
sys check fault	Check any fault occurs in Thermal, Chassis Fan, etc.

Chapter 4 Software Installation

System Commands	Descriptions
sys reset system	Reboot the device
sys reset config	Reset the configuration of the device
sys save config	Save the configuration of the device
logout--Exit Management Commands	
Logout	Log out of Web Interface
port--Port Management Commands	
port show	List out the configuration of every port
port set enable <port number> [-h -f] [-10 -100 -1000] [-A]	Set the configuration of the port, such as Half/Full duplex mode; speed, etc. E.g. port set enable 1 -A (where -h: half duplex; -f: full duplex and -A: Enable Auto-Negotiation)
port set disable <port number>	Disable the respective port, e.g. port set disable 10
port set flw <port number> <on/off>	Set flow control of the port, e.g. port set flw 10 on
port set bck <port number> <on/off>	Set back pressure of the port, e.g. port set bck 11 on
port set pri <port number> <-p priority>	Set the priority of the port, e.g. port set pri 1 10 -p 6
port set vid <port number> <-v vid>	Set the vlan ID <port number>: 1 to 26 <vid>: 1 to 4095 e.g port set vid 11 -v 1
vlan--Vlan Management Commands	
vlan show	Show the vlan configuration
vlan build <vid> <-u untags> <-t tags> <-p priority>	set the vlan, e.g. vlan build 2 -u 14,15 -t 14,15 -p 3
vlan delete <vid>	Delete the vlan ID, e.g. vlan delete 3
vlan set pri <vid> <-p priority>	Set the priority of vlan ID, e.g. vlan set pri 1 -p 2
trunk--Trunk Management Commands	
trunk show	Show the individual port trunking
trunk set <port1> [port2] [port3] [port4]	Set port trunking, e.g. trunk set 1 2 3 4
stp--Stp Management Commands	
stp [on/off]	Activate/Deactivate the Spanning Tree Management function
snmp--SNMP Management Commands	
snmp [on/off]	Activate/Deactivate the Simple Network Management protocol function

Chapter 4 Software Installation

4.4 Configuration of Compex SGX3226 using Web-based Interface

After setting up Compex SGX3226, install a browser on the PC or workstation. Make sure that TCP/IP protocol is installed and configured. Configuration will be much simpler, if you decided to obtain IP address dynamically and use the gateway default IP addresses. Compex SGX3226 comes with a built-in DHCP server that automatically assigns IP addresses, DNS and Gateway information to the computers connected in the same network. It has been pre-configured with IP address and Subnet Mask of 192.168.100.128 and 255.255.255.0 respectively.

An Internet browser would be used to configure Compex SGX3226. The most commonly used browsers include Netscape Navigator, Netscape Communicator and Microsoft Internet Explorer browsers as they support frames and Java. We recommend you to use the Netscape Communicator V4.06 and higher, or Microsoft Internet Explorer 4.0 and higher.

Start by running your browser on a workstation connected onto the same network as Compex SGX3226. Enter URL Address, <http://192.168.100.128>.

4.4.1 Login to Web Browser Interface

The following is a list of the various ways for different browsers in accessing a website. Follow the instructions for the browser that you use.

In Netscape Navigator

1. Select the File menu, then select **Open Location**.
2. In the Open Location dialog box, enter the IP address of the Gateway. This address is set at the factory to: <http://192.168.100.128>.
3. Click on the "Open" button.

In Netscape Communicator

1. Select the File menu, and then press **Open Page**.
2. In the Open Page dialog box, enter the IP address of the Gateway. This address is set at the factory to: <http://192.168.100.128>.
3. Make sure the Navigator radio button is selected then click the "Open" button.

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In Internet Explorer

1. Select the File menu, then select **Open**.
2. In the Open dialog box, enter the IP address of the Gateway. This address is set at the factory to: `http://192.168.100.128`.
3. Click on the “OK” button.

You will see the following screen comes out on the Web browser program:

1. Type in the password and click “Log On!” button. The default password is “*password*”.

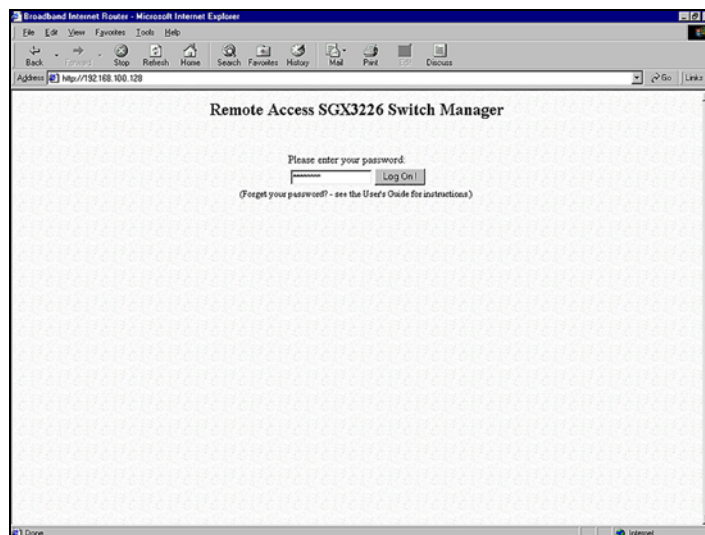


Figure 4.4-1 Login to Remote Access Switch Manager

Chapter 4 Software Installation

After logging in to the Management system, the Main Page will display as shown below. The image of Complex SGX3226 is shown on the upper right window. The status of each switch port (i.e. link, speed and duplex mode) can be seen clearly from the LED displays on the image. The lower right window is used to display the web pages of versatile configuration and operations.

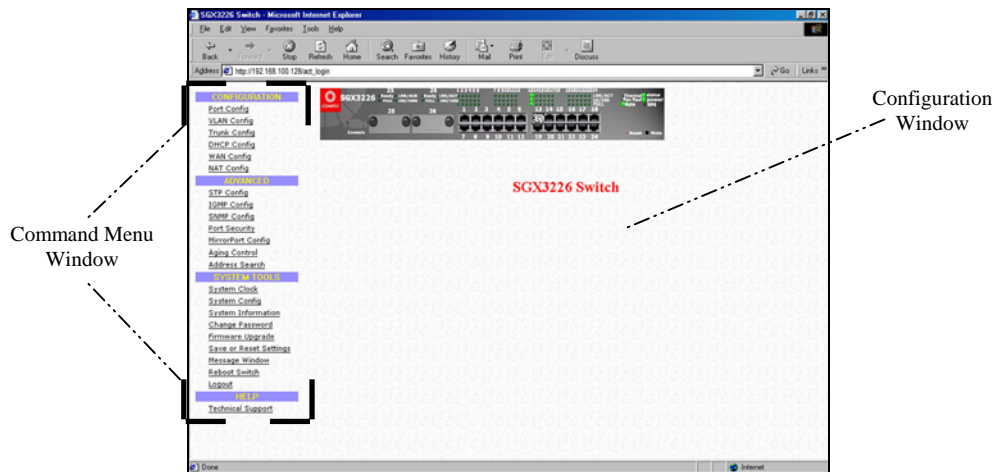


Figure 4.4-2 Main Page of Complex SGX3226

The Main menu includes four sections in the Command Menu Window, namely **CONFIGURATION**, **ADVANCED**, **SYSTEM TOOLS** and **HELP**. The overall descriptions for individual sub-functions are listed as shown:

CONFIGURATION menu

- ◆ **Port Configuration** – configuration for communications via network
- ◆ **VLAN Configuration** – setup Virtual LAN, whether in tagged or untagged-based
- ◆ **Trunking Configuration** – Extend the limitation of bandwidth
- ◆ **DHCP Configuration** – setup, reserve or activate DHCP
- ◆ **WAN Configuration** – support Static, Dynamic and PPP over Ethernet services
- ◆ **NAT Configuration** – increase security for unauthorized access through WAN

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ADVANCED menu

- ◆ **STP Configuration** - discovers and eliminates redundant paths in the network topology
- ◆ **IGMP Configuration** - allows the device to forward multicast traffic intelligently
- ◆ **SNMP Configuration** – monitor and oversee network
- ◆ **Port Security** – secure/reserve certain port/s from other user's access
- ◆ **Mirror Port Configuration** – duplicate a port's traffic on a port
- ◆ **Aging Control** – limit the resource in the forwarding table
- ◆ **Address Search** – search for Host and MAC address of the connected device in the network

SYSTEM TOOLS menu

- ◆ **System Clock** – managed and utilize timing based function
- ◆ **System Configuration** – change of IP Address, Subnet Mask or Gateway
- ◆ **System Information** – indicates essential information of Compex SGX3226
- ◆ **Change Password** – amend system administrator's password
- ◆ **Firmware Upgrade** – uploading latest firmware to Compex SGX3226
- ◆ **Save or Reset Settings** – save or reset all settings
- ◆ **Message Window** – various actions which is taken previously while configuring can be seen in this window
- ◆ **Reboot Switch** – restart the device
- ◆ **Logout** – get out of web-based interface environment

HELP menu

- ◆ **Technical Support** – make enquiries when encounter problems while setting up the device

Chapter 5 Using Menu Tools

Chapter 5 Using Menu Tools

This chapter explains the configuration menu tool that comes with Compex SGX3226 when you use the web-based configuration interface. Here, we will briefly discuss each Menu components and its function.

5.1 Using CONFIGURATION menu

5.1.1 Port Config

This function allows you to have an easy access to the network via the ports of Compex SGX3226. Notice that the “Link state” option indicates ‘Up’. This shows that the port is connected to the network. It can either be in “Up” (Connected) or ‘Down’ (No connection) state.

Broadcast Rate Limit

This function sets broadcast limit to the desired rate for the specified port. It controls the reception of broadcasting packets. The ranging for Broadcast rate limit varies from 0% to 100%. The higher the rate is, the more data can pass through the traffic. Rate is the percent of the traffic to allow before throttling.

Port Priority

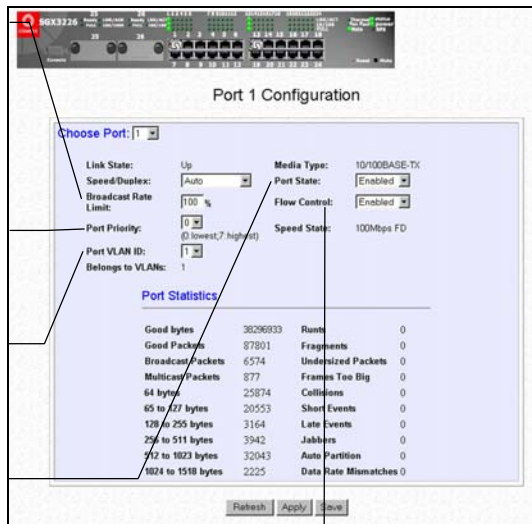
To specify the VLAN priority to expedite the VLAN traffic.

Port VLAN ID

VLAN ID is the sequence number of a VLAN. Compex SGX3226 has 32 VLANs to specify and therefore the VLAN ID is from 1 to 32.

Port State

Enabling this function allows the chosen port to receive and forward the packets, and learns the respective source MAC Addresses.



Flow Control

This feature reports the Flow Control setting of the port. Enabling the Flow Control function allows Half and Full Duplex mode.

Figure 5.1-1 Configuration for Individual Port

Chapter 5 Using Menu Tools



NOTE

It should be noted that if the CPU port (i.e. the switch port connected to the management port) is disabled, the communication link between user and the management system will be severed and the management cannot be proceed further. So, disabling the CPU port will be rejected automatically by the management system.

1. Click on the image to select a port or select from the '**Choose Port**' field.
2. Select **Speed/Duplex Mode**.
3. Enter the rate for **Broadcast Rate Limit** field and set **Port Priority** as well as the **Port VLAN ID**.
4. Choose either 'Enabled' or 'Disabled' for both **Port State** and **Flow Control** field.
5. Click on "Apply" button to make the configuration effective. Hit the "Save" button if you are satisfied with the setting.



NOTE

The screen is divided into two sections. The Port Statistics page displays the detailed information about each port. Click "Refresh" button to view the current port status of Compex SGX3226.

Chapter 5 Using Menu Tools

5.1.2 VLAN Config

Compex SGX3226 supports Virtual LAN, which logically group the connection into VLANs for traffic isolation and security purposes. Both tagged and untagged based VLAN are supported with a total maximum of 31 groups. Each VLAN group only forwards traffic within its member ports. For tagged VLAN, each port can be a member of more than one VLAN group and it also supports priority with eight levels. There is also provision for creating a tagged VLAN which support a connection with a legacy untagged VLAN. The VLAN configuration feature also allows you to build, delete and view tagged/untagged VLAN groups and setting priority for tagged VLANs. The range of VID starts from 2 to 4094, inclusively, as VID 001 is the default for Group 1.

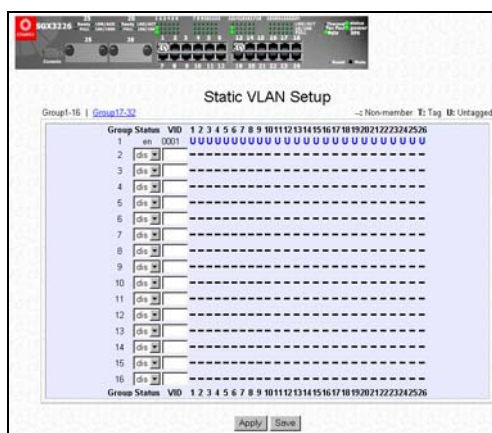


Figure 5.1-2 Setting Up of Static VLAN

1. Decide which Group you want to set for monitoring using mirror port. Click status column for that particular group and key in the VLAN ID.
2. Next, click on the dashed line ‘-’ to select either ‘T’ for Tagged or ‘U’ for Untagged.
3. Hit on “Apply” button after you satisfied with the setup. Click “Save” button to update the latest configuration.

Chapter 10 on Page 81 will elaborate examples on the application on Tagged & Untagged Virtual LAN.

Chapter 5 Using Menu Tools

5.1.3 Trunk Config

Port Trunking is the ability to group together several switch ports to increase the bandwidth between Compex SGX3226 and other switch. This is an inexpensive method to increase throughput between switches (or to servers). We define the Port Trunking as the ability to group a set of ports into a single logical link. The port trunk acts as single link between switches. It does not create a loop even though it is physically connected as such.

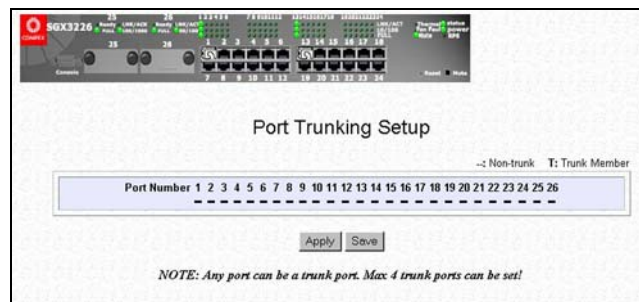


Figure 5.1-3 Port Trunking Setup

1. You can choose up to 4 ports for trunking by selecting '-' as 'T'.
2. Click on "Apply" button to make the configuration effective.
3. Click "Save" button to save the latest setting.



NOTE

If you select more than 4 ports for trunking, the following error message will appear:

4. Click "Ok" button and select the ports again.

Chapter 5 Using Menu Tools

5.1.4 DHCP Config

The Dynamic Host Configuration Protocol (DHCP) provides configuration Parameters to Internet hosts. DHCP consists of two components: a protocol for delivering host-specific configuration parameters from a DHCP server to a host and a mechanism for allocation of network addresses to hosts. DHCP is built on a client-server model, where designated DHCP server hosts allocate network addresses and deliver configuration parameters to dynamically configured hosts.

If you have set the TCP/IP protocol of your PC to dynamic IP address, the built-in DHCP server will assign the **DHCP Start IP Address** and **DHCP End IP Address** automatically to the PCs connected in the same network. For dynamic WAN IP, the **DNS IP address** is obtained automatically from the ISP.



NOTE

If you are running different DHCP servers on your network, you will have to enable only one DHCP server to prevent any conflict in the network addressing.

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IP Address

This IP (Internet Protocol) address uniquely identifies the Gateway in the network. This is the IP address that the users should point their Internet gateway to if fixed IP addresses are configured on the computers in the network. However, the DHCP Server will assign this information if the computers are configured to dynamically obtain IP addresses.

Subnet Mask

This is the Subnet Mask to identify the class of the Gateway's IP address. By default, Class C Subnet Mask 255.255.255.0 is set. The users may configure the network with Class A (255.0.0.0) and Class B (255.255.0.0) Subnet Mask as well. In addition, Compex SGX3226 can be configured for Classless Subnet to support certain application.

DHCP Start IP Address & DHCP End IP Address

These parameters specify the range of the IP address of which the DHCP Server will assign.

Primary DNS IP Address & Secondary DNS IP Address

DNS is an Internet service that translates domain names into IP addresses. If your WAN connection is using Static IP, you should configure the primary and secondary DNS IP addresses with the DNS information provided by your Broadband Internet Service Provider. For other WAN connection types, the DNS IP addresses is obtained automatically from ISP. The "Always use these DNS servers:" checkbox can be used to disable the automatic process, and your preferred DNS IP addresses can be used.

The screenshot shows the DHCP Setup configuration page. The fields are as follows:

IP Address	192	168	88	12
Subnet Mask	255	255	255	0
DHCP Start IP Address	192	168	100	100
DHCP End IP Address	192	168	100	254
Primary DNS IP Address	203	120	90	90
Secondary DNS IP Address	192	168	33	3
Default Gateway	192	168	88	128

The DHCP Server is set to Enable and Disable.

DHCP Server

DHCP server dynamically assigns IP addresses to the PCs connected in the same network. DHCP comes with a built-in DHCP server that automatically assigns IP addresses, DNS and Gateway information to the computers connected in the same network. It has been pre-configured with IP address and Subnet Mask of 192.168.100.128 and 255.255.255.0 respectively.

Figure 5.1-4 DHCP Setup

Chapter 5 Using Menu Tools

1. Enter the values for IP Address, Subnet Mask, DHCP Start and End IP Addresses to individual fields.
2. You can check on “Always use these DNS servers:” to disable the function of retrieving DNS IP Address automatically, so that you can enter your preferred DNS IP Address in the Primary and Secondary DNS IP Address field.
3. Next, you can set DHCP Server to **Enable** if you wish to use the built-in DHCP server of Compex SGX3226.
4. Click on “Save” button to save your configuration.



NOTE

If your IP Address of the PC has set to “Obtain an IP address automatically”, values in the fields will automatically appeared. Refer to “**Configuration on PC settings**” on **Page 19** for the configuration on the PC.

DHCP Active Leases

This section indicates the information of the PC whereby the IP addresses is dynamically assigned to it in the same network. The expire time indicates the time when the system needed to update the IP Address of that particular PC.

IP Address	Host Name	Hardware Address	Expires time
------------	-----------	------------------	--------------

Figure 5.1-5 DHCP Active Leases

Chapter 5 Using Menu Tools

DHCP Server Reservations

DHCP Server can also be configured to reserve specific IP address for specific host or Mac address.



CAUTION

The reserved IP address to be assigned should NOT have the same Dynamic IP address range as the DHCP Start and End IP address.

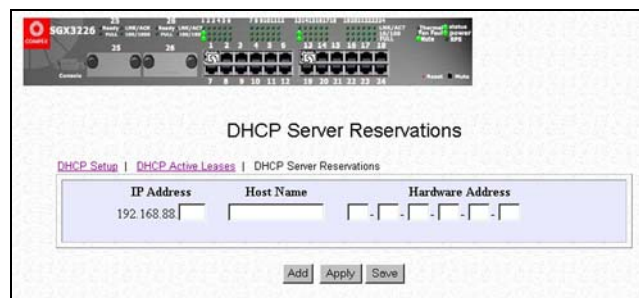


Figure 5.1-6 DHCP Server Reservations

To reserve certain IP address for the specific workstation,

1. Enter the IP address in the field provided to be assigned to your designated PC is.
2. Give a Host Name of the designated PC.
3. MAC address of the designated PC to be filled in the Hardware Address field.



NOTE

The DHCP server will ignore the Host Name if it finds a match in the Hardware Address. It checks the Hardware Address first, so you need only to enter either the Host Name or Hardware Address.

4. Click “Add” button to create an entry into the DHCP Server Reservations.
5. After the address is entered, click on “Save” button to save your setting.

Chapter 5 Using Menu Tools

Keep on adding the IP Address onto it by repeating the procedures as mentioned previously if you need more reservation.

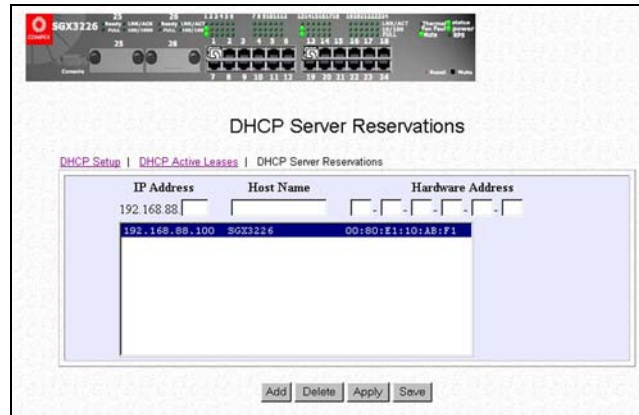


Figure 5.1-7 Adding New Records

Delete IP Address in Server Reservations

1. If you wish to delete any of the IP Address stated on the screen.
2. Highlight that particular IP Address.
3. Click on “Delete” button and the IP Address will be deleted instantly!

Chapter 5 Using Menu Tools

5.1.5 WAN Config

Compex SGX3226 is pre-configured as disabled. It can support Static IP, Dynamic IP and also PPP Over Ethernet.

If you have chosen self-installation when you register for the broadband service, you should first test the ADSL modem together with the logon account with your PC or notebook. Make sure that it can connect successfully before attempting to run it with CompexSGX3226. For simplicity and the purpose of illustrations, it is assumed that LAN uses the IP address 192.168.100.xxx and Compex SGX3226 is using the same settings as defaults.

However, if you have assigned a different IP address for Compex SGX3226, then use the new settings in the setup procedures.

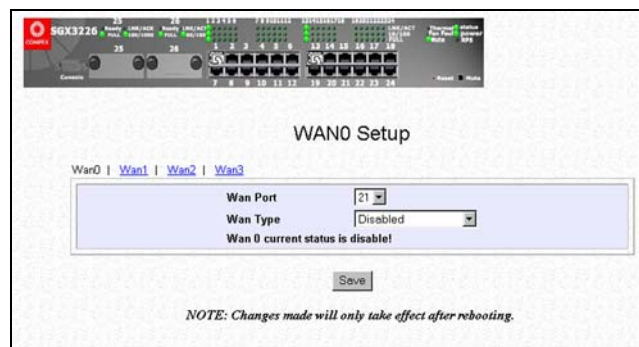


Figure 5.1-8 Default setting of Compex SGX3226 for WAN Setup

1. Select a WAN port and then a WAN Type. Any one of the 4 WAN Types are eligible to configure, depends on which Internet Service Provider you subscribed.
2. Click “Save” button to update configuration.

Details on various broadband Internet services can be seen on **“Configuring Your Wide Area Network”** on **Page 44**.

Chapter 5 Using Menu Tools

5.1.6 NAT Config

Network Address Translation allows an IP-based network to manage its public (Internet) addresses separately from its private (intranet) addresses. With NAT, each private IP address can be translated to a different public address, or multiple private addresses can be aliases to a single public one. To accomplish this, NAT software snoops both incoming and outgoing packets on the network. It modifies the source or destination address in the IP header to reflect the mapping between internal and external addressing for that network.

NAT functionality appears on Compex SGX3226 with low-level access to packets at the network boundary. Several variations on NAT have also been implemented to provide additional support for application-level protocols.

Defining Port-Forwarding Virtual Server

Port Forwarding redirects any incoming Internet request on the Public IP, based on its TCP/UDP Port number to another computer in the Private IP.

Hence, when a user from WAN sends a request to your network, Compex SGX3226 (based on the Port-Forwarding configurations) will forward these requests to the assigned PC.

When to use Port-Forwarding Virtual Server

When your ISP assign you with only one fixed Public IP address, and you want to define the various servers (such as, FTP, HTTP, Netmeeting, Mail server etc) to specific Private IP address in your LAN; hence, you can choose to host the servers by using the port-Forwarding Virtual server.

Example, suppose that you have a FTP Server with an IP address of 192.168.168.41. And your broadband ISP has assigned a Public IP address of 203.120.12.100 to the gateway. To support a Web Server in your Private Network, you need to define an **NAT Static Port-based Entry** to forward **TCP port 21** (used by FTP) to 192.168.168.41. Every http://203.120.12.100 requests will then be forwarded to the FTP Server.

Chapter 5 Using Menu Tools

Static Port Setting (Port Forwarding)

Follow the steps shown below to configure Static Port.

1. Go to NAT function at the Command Window. Select the type of Server you wish to configure as shown in the figure below:

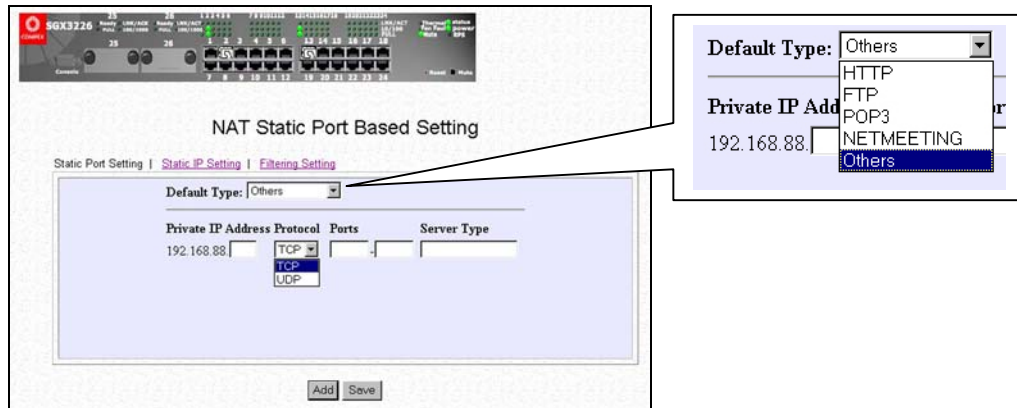


Figure 5.1-9 Static Port Based Setting

2. Key in the Private IP Address.
3. Next, choose a transport protocol, either TCP or UDP, for the respective IP Address.

The Internet makes two transport protocols available to its applications, namely TCP and UDP.

Transmission Control Protocol (TCP) is meant for building a reliable communications stream on top of the unreliable packet Internet Protocol (IP). TCP is the protocol that supports nearly all Internet applications.

User Datagram Protocol (UDP) is a connectionless protocol that runs on top of IP networks. UDP/IP provides very few errors recovery services, offering instead a direct way to send and receive datagrams over an IP network. It is used primarily for broadcasting messages over a network.

Chapter 5 Using Menu Tools

Static IP Setting (IP Forwarding)

To set a static IP Address,

1. Enter a private IP Address, such as 192.168.100.20, in the field provided and click “Save” button.

Please note that you must enable the **NAT** function in the Configuration window if you are using a single IP address account (fixed static IP) and want to share this connection on your LAN.

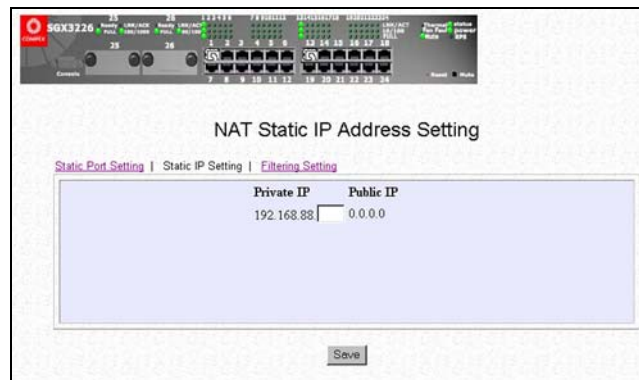


Figure 5.1-10 Static IP Address Setting

Chapter 5 Using Menu Tools

Filtering Setting

Compex SGX3226 allows Packet Filtering rules be defined based on three factors, Source IP Address, TCP Port and Time. IP Packet Filtering examines the outgoing packets and decides whether to bypass or to block them. After the Packet Filtering rules have been defined, the users may select to bypass or to block the outgoing packets that do not match the rules.

For example, assume that a rule has been defined as "TCP Port 23 (used by TELNET) from any IP on any day at any time". If the "forwarded" radio button is selected, all outgoing packets will be sent except TELNET session. If the blocked radio button is selected, all outgoing packets will be blocked except TELNET session.

Click on **Filtering section** at the Configuration window and the GUI will appear as shown:

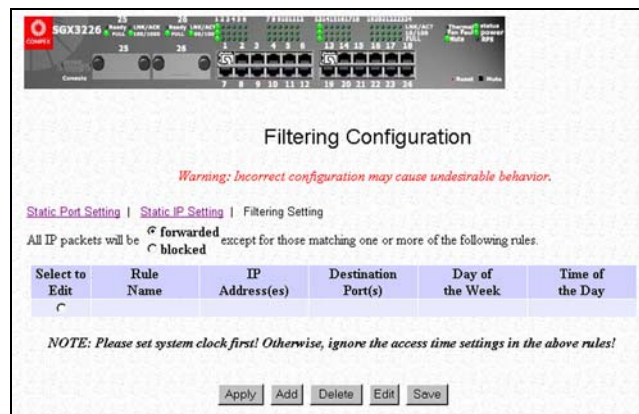


Figure 5.1-11 Adding Filtering Configuration

1. Select "Add" button and the screen will facilitate the users to add rules for IP Packet Filtering.

Chapter 5 Using Menu Tools

IP Address
Three values are possible for this field: Any, Range or Single. If you have selected Any, you may leave the next two fields blank. If you have selected Range, enter the range of IP addresses in (From) and (To) fields. If you have selected Single, you only need to enter the specific source IP address in the (From) field

Day of the Week
Two values are possible for this field, Any or Range. If you have selected Any, you may leave the next two fields blank. If you have selected Range, enter the duration of the weekdays in (From) and (To) fields.

Destination Port
Three values are possible for this field, Any, Range or Single. If you have selected Any, you may leave the next two fields blank. If you have selected Range, enter the range of TCP port in (From) and (To) fields. If you have selected Single, you only need to enter the specific TCP port in the (From) field.

Time of the Day
Two values are possible for this field, Any or Range. If you have selected Any, you may leave the next two fields blank. If you have selected Range, enter the time in (From) and (To) fields.

Figure 5.1-12 IP Filtering Configuration

2. Enter the appropriate data in the respective entries for **Rule Name**, **IP Address**, **Destination Port**, **Day of the Week** and **Time of the Day**.
3. Press the “Apply” button to add the new rule or “Cancel” button to discard the rule.

To save the rules, click the “Save” button.

To add new rules, click on “Add” button.

To delete a rule, select the rule on the **Select to Edit** column and click “Delete” button.



CAUTION

You must synchronize the clock of Compex SGX3226 to your PC’s time for the rules to execute accurately. Refer to **“Set System Clock”** on **Page 64** to utilize the timing based function of Compex SGX3226.

Chapter 6 Configuring Your Wide Area Network

Chapter 6 Configuring Your Wide Area Network

This section explains how to configure Compex SGX3226 to distribute Broadband Internet Access to the Wide Area Network.

If you have chosen self-installation when you register for the broadband service, you should first test the ADSL modem together with the logon account with your PC. Make sure it can connect successfully before attempting to run it with Compex SGX3226.

For simplicity and the purpose of illustrations, it is assumed that LAN environment uses the IP address 192.168.100.xxx and Compex SGX3226 is using the default settings.

However, if you have assigned a different IP address for Compex SGX3226, then use the new settings in the setup procedures.

6.1 Selecting the Right connection for your Broadband Internet Service

Choosing the right connection type on Compex SGX3226 is important to ensure that you are properly connected to your broadband Internet subscription. The following summarizes the type of connection suitable for your broadband Internet subscription.

Static IP

This type of connection should only be used if and only if you have subscribed to fix IP or a range of fix IP address from your service provider for your Cable Internet connection or Direct Ethernet point.

Dynamic IP

This type of connection should be used if you are configuring Compex SGX3226 for your Cable Internet service. Once powered on, Compex SGX3226 will request for an IP address, which will be assigned by your service provider. Certain Cable Internet Service Providers require DHCP Client ID to be passed in before an IP address is released. For such cases, you must configure the **System Config** with a **System Name** equivalent to the DHCP Client ID. The configuration of **System Config** may be found in “**System Configuration**” on **Page 65**.

PPP Over Ethernet (PPPoE)

This type of connection should be chosen for ADSL services that use standard PPP Over Ethernet (PPPoE) for authentication.

Chapter 6 Configuring Your Wide Area Network

6.2 Setup on Complex SGX3226 for Broadband Internet Access

For such service, you should have the IP address info ready that is provided by your ISP before proceeding.

1. Connect a crossover cable from the Ethernet port of Complex SGX3226 to your workstation.

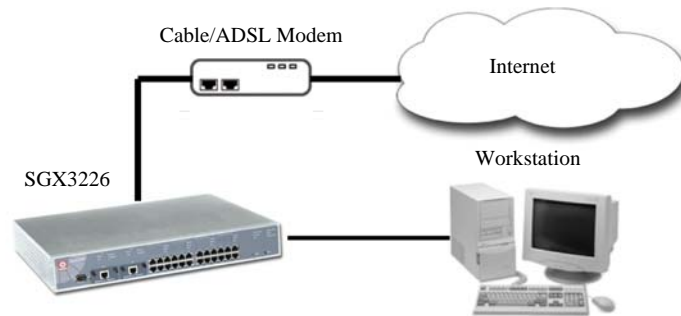


Figure 6.2-1 Connection between Complex SGX3226 and modem

2. Connect an Ethernet cable from Ethernet port of SGX3226 to the ADSL/Cable modem.

As there are many different brands of broadband modems. Some broadband modems may provide a straight-connect (MDI) Ethernet cable while some may use cross-connect (MDIX) Ethernet cable.

For example:

Aztech Turbo 900 provides cross-connect (MDIX) cable while Alcatel 1000 ADSL model provides straight-connect (MDI) cable.

3. Power on the broadband modem and wait for broadband modem to complete the initialization process that may takes about 1 minute or more, depending on the brand and design of individual modems.
4. Next, power on both your workstation and Complex SGX3226. The LNK/ACT LED should light up, indicating the connection has established.
5. You may start to configure Complex SGX3226 before connecting to the Internet. Please refer to **“Configuration of Complex SGX3226 using Web-based Interface”** on **Page 25**.
6. Once everything is checked, you can now access to the Internet.

Chapter 6 Configuring Your Wide Area Network

6.3 Configuring Static IP Connection

1. Go to **WAN Config** at Command Window, click on the pull-down menu from the **WAN Port** field.
2. Next, select **Static IP Address** from the pull down menu at **WAN Type** field. You may enter your IP Address, Subnet Mask and Gateway IP Address in the individual fields. All these information can be obtained from your ISP/Network Administrator.
3. Click on “Save” button to update the data.

The **WAN Setup** screen shows a **Static IP Configuration** that allows you to configure your Static IP connection to your ISP.

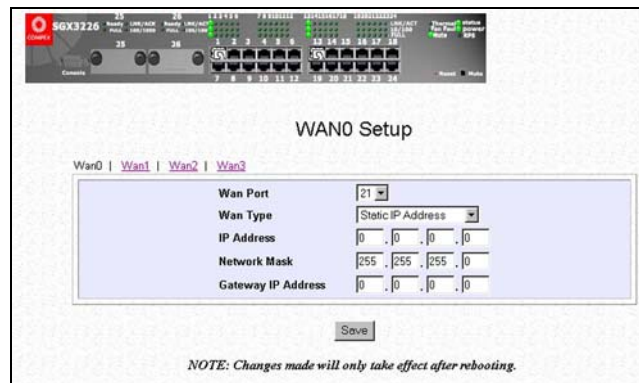


Figure 6.3-1 Select WAN Type - Static IP Address

Chapter 6 Configuring Your Wide Area Network

6.4 Configuring Dynamic IP Connection

Compex SGX3226 is pre-configured with WAN connection using Dynamic IP. Hence, if you are using Cable Internet, you do not need to configure the WAN connection.

However, if your account requires a **DHCP Client ID** in order to released an IP address, you may need to configure the name of Compex SGX3226 with the DHCP Client ID issued by your ISP.

See the section on “**System Configuration**” on **Page 65**, and remember to enter the DHCP Client ID issued by the ISP into the **System Name** field in the System Identity.



NOTE

If your computer is not able to resolve any web site, please verify that your DNS entry of the computer has been defined correctly.

6.4.1 How to configure Singapore Cable Vision (SCV) Service

SCV provides Dynamic IP address connection service. Assume that your SGX3226 is not in the Dynamic IP setting, please follow these procedures to change to the appropriate WAN type.

1. Go to **WAN Config**. Click on the pull-down menu from the **WAN Port** field.
2. On the list of other WAN types selection, select **Dynamic IP Address** and hit on the “Save” button.

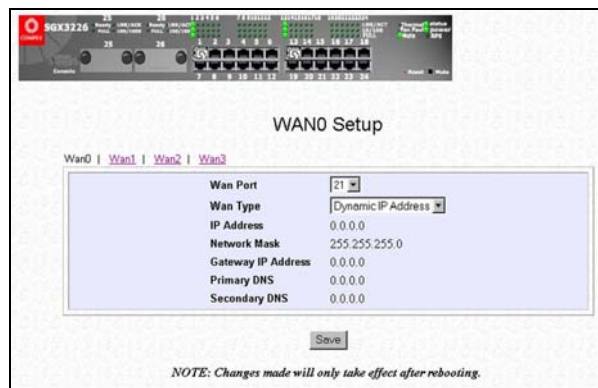


Figure 6.4-1 Dynamic IP Address –for SCV broadband provider

Chapter 6 Configuring Your Wide Area Network

6.4.2 How to Configure @HOME Cable Service

Many broadband services require a simple DHCP request for connection. Two such cable services are Optus@Home and **Roger@Home**.

To configure @HOME Cable Service,

1. Follow the steps stated in “Configuring for Singapore Cable Vision (SCV) Service” on the previous section.
2. Next, click on **System Config** at the Command window under the **SYSTEM TOOLS** menu and enter the required entry as shown.

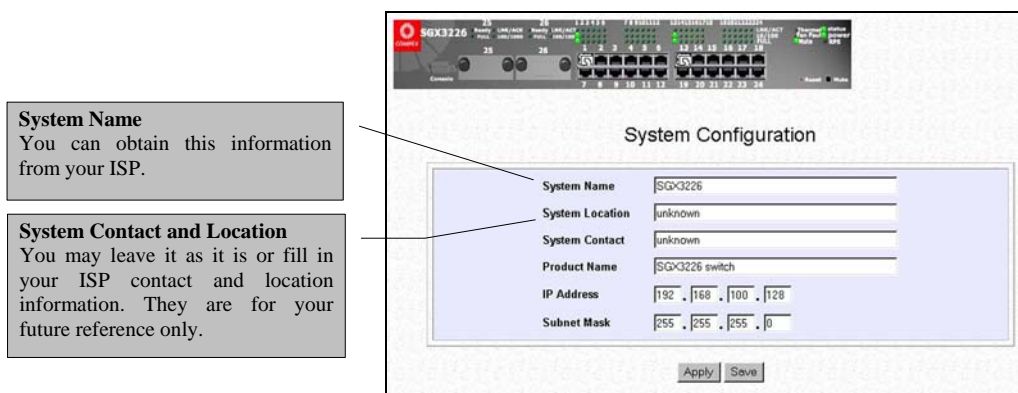


Figure 6.4-2 System Identity

3. Click on “Apply” and then “Save” button to set the System Configuration.
4. Reboot your device.

Chapter 6 Configuring Your Wide Area Network

6.5 Configuring PPP over Ethernet Session (PPPoE)

For Broadband service providers such as Pacific Internet Broadband and SingNet Broadband, you have to select the PPPoE WAN configuration. This includes Germany who are using T-1 connection.



NOTE

Certain ADSL Internet subscriptions require **Service Name** to be specified in order to establish a PPPoE connection.

6.5.1 How to Configure SingNet, PacNet & QALA DSL Broadband

This procedure assumed your ADSL modem and PC/notebook is working with the logon account from SingNet, Pacific Internet or QALA DSL broadband service, and necessary hardware connection has been established (refer to **Section 6.2** on **Page 45**),



NOTE

If you have chosen self-installation when you register for the broadband service, you should first test the ADSL modem together with the logon account on your PC. Make sure it can connect successfully before attempting to run it with Compex SGX3226

1. Go to **WAN Config**. Click on the pull-down menu from the **WAN Port** field.
2. Click on **WAN Type** option and select **PPP over Ethernet**.
3. Click "Save" button to update your configuration.

Now, you may activate the Internet Explorer and start surfing the net.

Chapter 6 Configuring Your Wide Area Network

The **WAN Setup** screen below shows **PPPoE** configuration that allows you to configure your ADSL Internet subscription.

Username and Password
The information is given by the Internet Service Provider.

Service Name
Certain ADSL Internet subscriptions require the user to enter the service name. You may enter the service name for your ADSL Internet subscription.

Idling Timeout
Idle Timeout is the count down time to cut off the broadband connection when there is no traffic passing through the WAN port i.e. when there is no more activity at the WAN port after all your PCs are turn off.

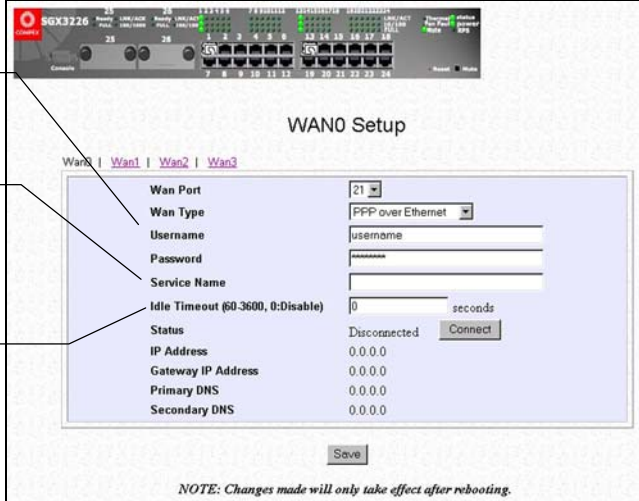


Figure 6.5-1 WAN PPPoE Configuration



NOTE

For Singapore users should follow the format below to enter their usernames:
Pacific Internet Broadband:username@pacific.net.sg
SingNet Broadband:username@singnet.com.sg
QALA DSL:username@qala.com.sg

To connect to the Internet service, you can easily do so by clicking on the “Connect” button. When the connection is established, the status appeared on the screen will indicated as connected.

Please note that before you click on the “Connect” button, make sure you have connected the broadband modem to Compex SGX3226’s remote port. The cable connection is good when the indicating light for the LAN on the broadband modem and the remote port on the switch is lighted up.

Click “Disconnect” button to terminate the Internet connection immediately.

Chapter 7 Advanced Configuration for Compex SGX3226

Chapter 7 Advanced Configuration for Compex SGX3226

In this chapter, you can understand how the configuration on Spanning Tree Protocol (STP) was easily done. Compex SGX3226 implements Internet Group Multicast Protocol (IGMP) function which forwards multicast traffic intelligently. In fact, Simple Network Management Protocol (SNMP) is also introduced to provide a standard mechanism to monitor and control network devices.

7.1 STP Config

Spanning Tree Protocol is a link management protocol that provides path redundancy while preventing undesirable loops in the network. For an Ethernet network to function properly, only one active path can exist between two stations.

Multiple active paths between stations cause loops in the network. If a loop exists in the network topology, the potential exists for duplication of messages. When loops occur, some switches see stations appear on both sides of the switch. This condition confuses the forwarding algorithm and allows duplicate frames to be forwarded.

7.1.1 STP Port

When Compex SGX3226 first powers up, all bridges will declare themselves to be the root. The one with the lowest priority will be the root. The bridges will stop advertising themselves and use the BPDUs of the root bridge.

During normal operation for Compex SGX3226, the ports are either forwarding or disabling.

In a forwarding state, the network can send and receive frames which takes about 50 seconds for a port to go from disabling to forwarding.

In a disabling state, the port is not forwarding frames, but will receive the BPDUs.

Active ports which can forward frames on the root bridge are known as designated ports.

Chapter 7 Advanced Configuration for Compex SGX3226

Bridge Port
This option shows the port of the bridge that connects to the root bridge.

Path Cost
This option sets the Spanning Tree path cost for this port. A lower path cost represents higher transmission speed.

Priority
The higher the number has higher priority.

Bridge Port	Path Cost	Priority	Designated Cost	Designated Bridge	Designated Port	State
1	19	128	0	0.000000000000	0.00	Forwarding
2	19	128	0	0.000000000000	0.00	Disabled
3	19	128	0	0.000000000000	0.00	Disabled
4	19	128	0	0.000000000000	0.00	Disabled
5	19	128	0	0.000000000000	0.00	Disabled
6	19	128	0	0.000000000000	0.00	Disabled
7	19	128	0	0.000000000000	0.00	Disabled
8	19	128	0	0.000000000000	0.00	Disabled
9	19	128	0	0.000000000000	0.00	Disabled
10	19	128	0	0.000000000000	0.00	Disabled
11	19	128	0	0.000000000000	0.00	Disabled
12	19	128	0	0.000000000000	0.00	Disabled
13	19	128	0	0.000000000000	0.00	Forwarding
14	19	128	0	0.000000000000	0.00	Disabled
15	19	128	0	0.000000000000	0.00	Disabled
16	19	128	0	0.000000000000	0.00	Disabled
17	19	128	0	0.000000000000	0.00	Disabled
18	19	128	0	0.000000000000	0.00	Disabled
19	19	128	0	0.000000000000	0.00	Disabled
20	19	128	0	0.000000000000	0.00	Disabled
21	19	128	0	0.000000000000	0.00	Disabled
22	19	128	0	0.000000000000	0.00	Disabled
23	19	128	0	0.000000000000	0.00	Disabled
24	19	128	0	0.000000000000	0.00	Disabled
25	4	128	0	0.000000000000	0.00	Disabled
26	4	128	0	0.000000000000	0.00	Disabled

Figure 7.1-1 Setting of STP Parameters

1. Select one port from 1 to 26 to connect to the root bridge.
2. Key in the value for **Path Cost** (from 1-65535) and set the **priority level** (0-65535).

Chapter 7 Advanced Configuration for Compex SGX3226

7.1.2 STP Bridge

Spanning-Tree Protocol defines a tree that spans all switches in an extended network. It forces certain redundant data paths into a standby (blocked) state. If one network segment in the Spanning-Tree Protocol becomes unreachable, or if Spanning-Tree Protocol costs change, the spanning-tree algorithm reconfigures the spanning-tree topology and reestablishes the link by activating the standby path.

Spanning-Tree Protocol operation is transparent to end stations, which are unaware whether they are connected to a single LAN segment or a switched LAN of multiple segments.

This section shows how configuration is done in Spanning Tree parameters.

STP State
When STP is enabled, it will dynamically detect network looping owing to mis-configuration of the network topology. The redundant connectors will be disabled to avoid looping of packets. Looping would often result in flooding of broadcast packets, halting the normal traffic.

Root Priority
The priority of the switch is currently acting as the root. The bridge with the lowest value has the highest Spanning Tree priority level and is related as the root.

Hello Time
The Hello time of the Spanning Tree field shows the number of seconds between the transmissions of spanning Tree protocol configuration messages.

Forward Delay
The Forward Delay field shows the number of seconds a port waits before changing from its Spanning Tree Protocol learning and listening states to the forwarding state. This wait is necessary so that other switches on the network ensure no loop is formed before they allow the port to forward packets.

Max Age
The maximum age time of the spanning tree shows the number of seconds the bridge waits without receiving Spanning Tree Protocol configuration messages before attempting a reconfiguration.

Figure 7.1-2 Configuration for STP Bridge

Chapter 7 Advanced Configuration for Compex SGX3226

1. Select **Spanning Tree state** option and set **Root Priority** from 0 - 65535 s, and **Hello Time** from 1 - 10 s.
2. Key in the **Forward Delay Time, Maximum Age** and **Hold Time**.
3. Click “Apply” button and save to update your configuration.



NOTE

The screen is divided into two sections. Current Spanning Tree Root section displays the read-only Spanning Tree settings for the current root switch and the parameters this switch is to use when it becomes the root switch only when you click on “Apply” button.

7.2 IGMP Config

Internet Group Management Protocol (IGMP) is an Internet **protocol** that provides a way for an Internet computer to report its **multicast** group membership to adjacent **routers**. It allows Compex SGX3226 to forward multicast traffic intelligently. The switch "snoops" the IGMP query and report messages and forwards traffic to only the ports that request the multicast traffic. This prevents the switch from broadcasting the traffic to all ports and possibly affecting network performance.

The membership of a host group is dynamic - hosts may join and leave groups at any time. There is no restriction on the location or number of members in a host group. A host may be a member of more than one group at a time. A host need not be a member of a group to send datagrams to it.

Chapter 7 Advanced Configuration for Comex SGX3226

Host Group Addresses

Host groups are identified by class D IP addresses, i.e., those with "1110" as their high-order four bits. Class E IP addresses, i.e., those with "1111" as their high-order four bits, are reserved for future addressing modes.

In Internet standard "dotted decimal" notation, host group addresses range from 224.0.0.0 to 239.255.255.255. The address 224.0.0.0 is guaranteed not to be assigned to any group, and 224.0.0.1 is assigned to the permanent group of all IP hosts (including gateways). This is used to address all multicast hosts on the directly connected network. There is no multicast address (or any other IP address) for all hosts on the total Internet. The addresses of other well-known, permanent groups are to be published in "Assigned Numbers".

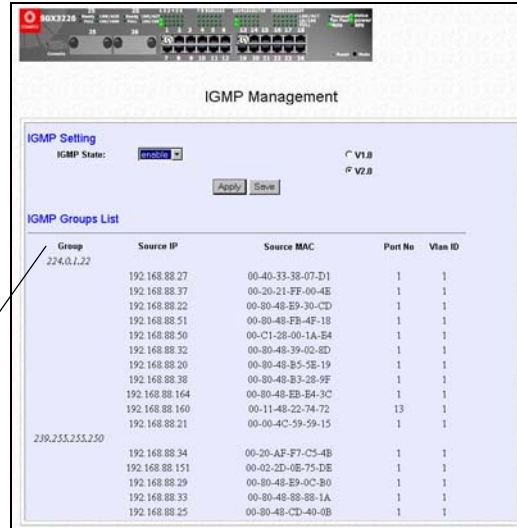


Figure 7.2-1 IGMP Management

To activate IGMP function,

1. Select "enabled" in the **IGMP state** field.
2. Click on the radio button to select the version for IGMP.
3. Hit on the "Apply" button and save your setting.

Definition on IGMP v1.0 and v2.0

For IGMP v1.0,

The Internet Group Management Protocol (IGMP v1.0) is used by IP hosts to report their host group memberships to any immediately neighboring multicast routers. IGMP is an asymmetric protocol and is specified here from the point of view of a host, rather than a multicast router.

Chapter 7 Advanced Configuration for Compex SGX3226



NOTE

Note: IGMPv1 has no leave mechanism. If a host no longer wants to receive the traffic, it simply quits. If it is the last, the router will not have any answers to its query and will delete the GDA for that subnet.

For IGMP v2.0,

IGMP v2.0 allows group membership termination to be quickly reported to the routing protocol, which is important for high-bandwidth multicast groups and/or subnets with highly volatile group membership.

Multicast routers use IGMP v2.0 to learn which groups have members on each of their attached physical networks. A multicast router keeps a list of multicast group memberships for each attached network, and a timer for each membership. "Multicast group memberships" means the presence of at least one member of a multicast group on a given attached network, not a list of all of the members.

When a host receives a General Query, it sets delay timers for each group (excluding the all-systems group) of which it is a member on the interface from which it received the query.

When a router receives a Report, it adds the group being reported to the list of multicast group memberships on the network on which it received the Report and sets the timer for the membership to the [Group Membership Interval].

When a host joins a multicast group, it should immediately transmit an unsolicited Version 2 Membership Report for that group, in case it is the first member of that group on the network

When a host leaves a multicast group, if it was the last host to reply to a Query with a Membership Report for that group, it SHOULD send a Leave Group message to the all-routers multicast group.

Chapter 7 Advanced Configuration for Comex SGX3226

7.3 SNMP Configuration

SNMP is a communication specification that defines how management information is exchanged between network management applications and management agents.

You can manage Comex SGX3226 using an SNMP application if the switch and the application contain the same community string. Use this page to set or modified the SNMP configuration parameters. The Community String settings in this page provide different levels of access for SNMP management applications.

Read Only Community String
The Read Only Community String is used for in-band read-only SNMP operation.

Read Write Only Community String
The Read Write Only Community String is used for in-band read-write SNMP operations.

	Community String	IP Address	Subnet Mask	State
1	public	0.0.0.0	255.255.255.0	disable
2	public	0.0.0.0	255.255.255.0	disable
3	public	0.0.0.0	255.255.255.0	disable
4	public	0.0.0.0	255.255.255.0	disable
5	public	0.0.0.0	255.255.255.0	disable
6	public	0.0.0.0	255.255.255.0	disable
7	public	0.0.0.0	255.255.255.0	disable
8	public	0.0.0.0	255.255.255.0	disable

Figure 7.3-1 Configuration for SNMP Management

1. Select “enable” or “disable” for **SNMP State**.
2. Type in either “Public” or “Private” for both **Read-only Community String** and **Read-Write Community String**.
3. Choose the **Trap Setting** from 1 to 8 and enter the **IP Address** and **Subnet Mask** correctly.
4. From the **State** field, select either “disable” or “enable”.

After clicking “Apply” button, the changes will appear on that particular data row. To save your configuration, hit “Save” button.

Chapter 7 Advanced Configuration for Compex SGX3226

7.4 Port Security

Of all 26 ports, some of the ports may need to assign to the specific port. In order to fulfill this act, MAC Address should be added to that particular port. This is to restrict other users from using the static port. A port can accommodate up to 20 MAC Addresses.

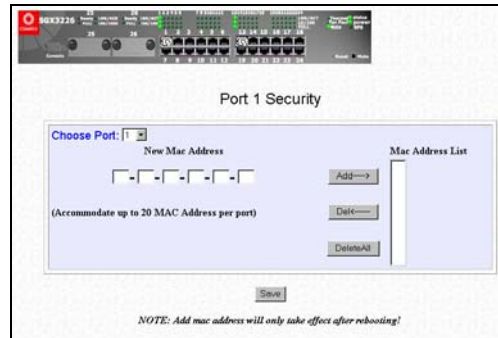


Figure 7.4-1 Input MAC Address for necessary port/s

1. Select the port that you want to add in the MAC Address.
2. Key in the MAC Address in the field provided, e.g. 00-80-40-E8-85-12, and click “Add” button.

The system will then add in the New MAC Address into the listing on the right side of the screen.

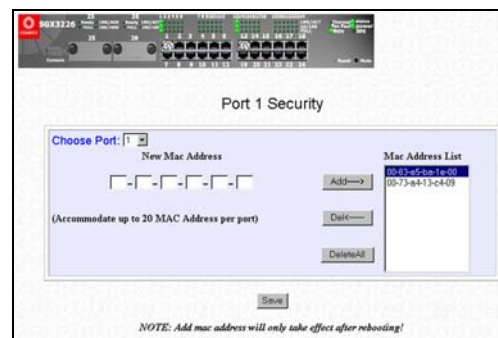


Figure 7.4-2 Adding MAC Address

Chapter 7 Advanced Configuration for Compex SGX3226

To delete MAC Address/es

If you want to delete MAC Address/es, simply

- ◆ Click on “Del →” button for single MAC Address, or
- ◆ Hit on “DeleteAll” button to delete all the MAC Addresses.

Chapter 7 Advanced Configuration for Compex SGX3226

7.5 MirrorPort Config

7.5.1 Using Mirror Port to monitor Traffic

This function allows you to set up a 'mirror' port of any specified port/s or VLAN, such that you can monitor the traffics of the monitored port/s or VLAN without intervening them. In effect, the traffics on the monitored port/s or VLAN are replicated on the mirror port that you can use a protocol analyzer to analyze the traffic for specific problem.

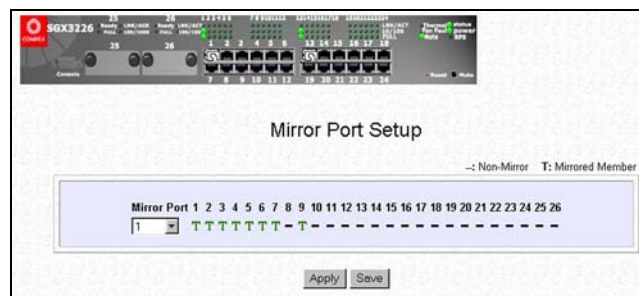


Figure 7.5-1 Setting of Mirrored Member for Mirror Port

1. Select one Mirror Port.
2. Click on the dashed line '-' on that particular port if you want to select it as a Mirrored Member (T).
3. Hit on "Apply" button after you are satisfied with the setup. Click "Save" button to update the latest configuration.

Chapter 7 Advanced Configuration for Comex SGX3226

7.6 Aging Control

Aging control is for the aging of address entries in the switch's forwarding table. If the aging control is enabled, a learned address entry (not include the static entry) will be removed from the forwarding table if there is no update within a pre-determined period (1 ~ 128 seconds). It is useful because the resource of the forwarding table is limited. Enabling the aging control will not influence packets forwarding, for that the packet is forwarded to all other ports when the destination MAC address cannot be found in the forwarding table. If the aging control is disabled, all address entries will not be removed.

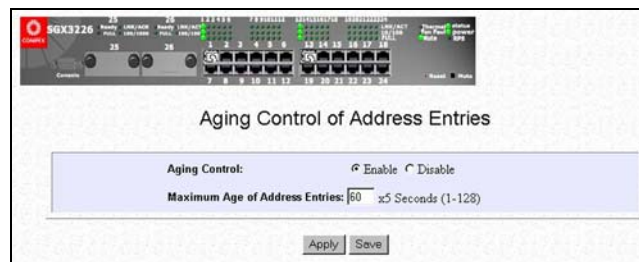


Figure 7.6-1 Address Entries for Aging Control

1. Select "Enable" from the **Aging Control** option.
2. Enter the **Maximum Age of the Address Entries**. If the aging control is enabled, enter an integer from the range of 1 to 128 as the maximum age of address entries. If the aging control is disabled, this step can be skipped.

Chapter 7 Advanced Configuration for Compex SGX3226

7.7 Address Search

7.7.1 Host Search

Host Search is for searching a host by IP address on the network, and getting the port number to which the host is connected. It is useful while configuring the VLAN. With this function, you can easily detect the port at which a host is connected to, and have an idea about which ports should be included in a VLAN.



Figure 7.7-1 Searching of Host

1. Enter the **Host IP Address**.
2. Click on “Search” button and the result will displayed as shown:

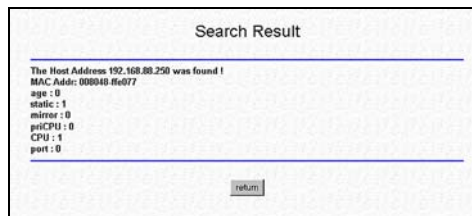


Figure 7.7-2 Final Result

Chapter 7 Advanced Configuration for Compex SGX3226

7.7.2 MAC Address Search

This feature helps to look for the particular MAC Address stated in the field, which provides a useful way while configuring the VLAN. The system will search through the device for the port's ownership of that particular PC.



Figure 7.7-3 Searching of MAC Address

1. Enter the **MAC Address** in the field provided.
2. Click on “Search” button and the system will show the result.

Chapter 8 Using SYSTEM TOOLS Menu

Chapter 8 Using SYSTEM TOOLS Menu

8.1 Set System Clock

It is recommended that you configure Compex SGX3226's timer to synchronize with your PC so that you can utilize the time-based functions.



NOTE

To manage and utilize the timing based functions provided in Compex SGX3226, (such as the Filtering functions), you **MUST** set its clock to synchronize with your managing workstation.

1. Access to the **System Clock** function at the Command window.
2. Key in the appropriate time zone and click "Apply" button.

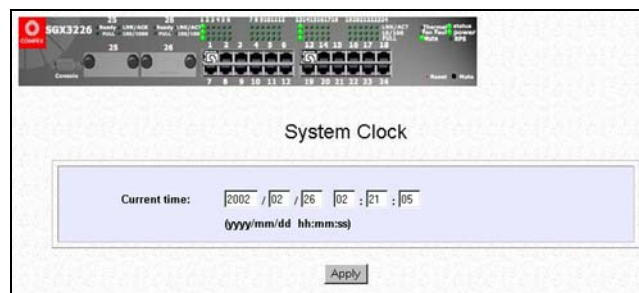
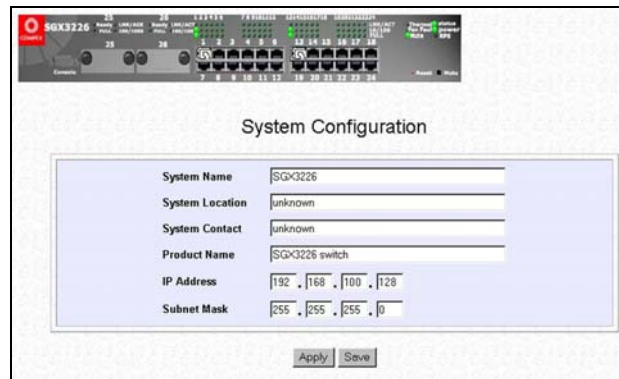


Figure 8.1-1 Synchronizing Compex SGX3226's timer

Chapter 8 Using SYSTEM TOOLS Menu

8.2 System Configuration

This is an easy access in configuring the system. You can configure IP address, Subnet Mask or Default Gateway of the management board in Compex SGX3226. It is likely that several VLANs are on the single switch, and each VLAN can be regarded as an independent network, so their network addresses may be different.



System Configuration	
System Name	SGX3226
System Location	unknown
System Contact	unknown
Product Name	SGX3226 switch
IP Address	192 . 168 . 100 . 128
Subnet Mask	255 . 255 . 255 . 0

Apply Save

Figure 8.2-1 Configuration for the system

1. Give a description for the **System Name** and **System Location** of Compex SGX3226.
2. Key in the **System Contact** information and describe the **Product Name** of the switch.
3. Enter the **IP address** and **Subnet Mask**.
4. Click “Apply” button and save the setting.

Upon making amendments on this page, the screen will appear a message, “Reboot the switch?”. Click on “Yes” button to take effect on the changes.

Click on “Logon” button again if you still need to access to Compex SGX3226 web page. This cannot apply to the changing of IP Address!



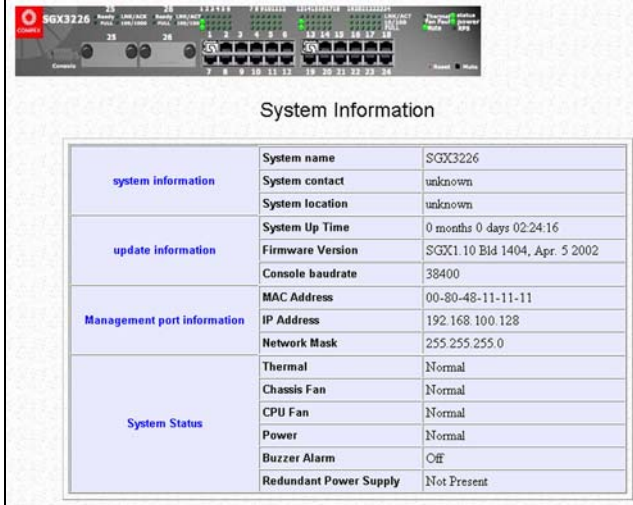
CAUTION

After changing IP Address of Compex SGX3226, the system will not lead you to log in to the web page after you have clicked “Logon” button. Instead, a page error will display on the screen, stating “The page cannot be displayed”. Enter your NEW IP Address to login to the web page again.

Chapter 8 Using SYSTEM TOOLS Menu

8.3 System Information

System Information displays the necessary data about the management system.



The screenshot shows the front panel of an SGX3226 device with a terminal window displaying the 'System Information' menu. The menu is organized into sections: 'system information', 'update information', 'Management port information', and 'System Status'. Each section contains specific system parameters and their values.

Category	Parameter	Value
system information	System name	SGX3226
	System contact	unknown
	System location	unknown
update information	System Up Time	0 months 0 days 02:24:16
	Firmware Version	SGX1.10 Bld 1404, Apr. 5 2002
	Console baudrate	38400
Management port information	MAC Address	00-80-48-11-11-11
	IP Address	192.168.100.128
	Network Mask	255.255.255.0
System Status	Thermal	Normal
	Chassis Fan	Normal
	CPU Fan	Normal
	Power	Normal
	Buzzer Alarm	Off
	Redundant Power Supply	Not Present

Figure 8.3-1 Detail Information about the system

Chapter 8 Using SYSTEM TOOLS Menu

8.4 Change Password

This option allows the System Administrator to amend the current password.

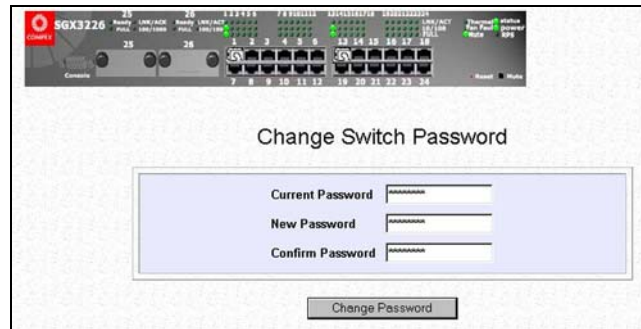


Figure 8.4-1 Password Changing for System Administrator

1. Type in your current password.
2. Enter your new password.
3. Enter the new password again for confirmation.
4. Click on “Change Password” button to activate the new setting.

The system will alert you that the password has changed successfully.



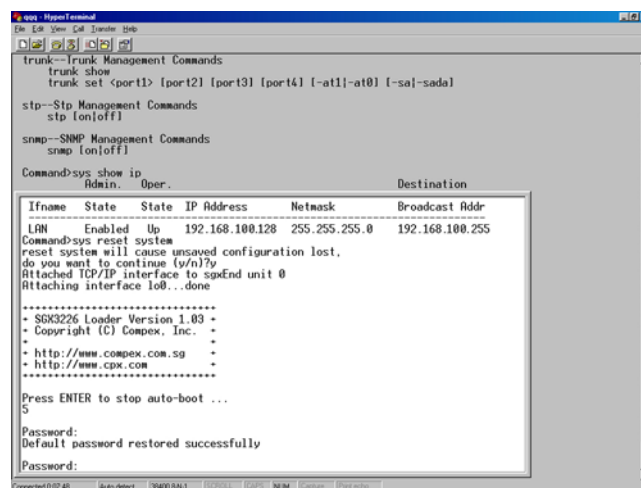
Figure 8.4-2 System Message showing password is successfully changed.

Chapter 8 Using SYSTEM TOOLS Menu

8.4.1 Forget your password

You can simply reset the password through Hyper Terminal.

1. In the Hyper Terminal environment, switch OFF and ON Compex SGX3226.
2. When “Press ENTER to stop auto-boot ...” message appear on the screen, hit “Enter” key on the keyboard within 5 seconds.
3. Upon seeing the word - “Password” appeared on the screen, press “F4” button to start resetting.
4. Next, the screen will display " Default password restored successfully". This indicates that the system has successfully reset the password to default setting.



```
trunk--Trunk Management Commands
trunk show
trunk set <port1> [port2] [port3] [port4] [-at1]-at0] [-sal-sada]

stp--Stp Management Commands
stp [on|off]

snmp--SNMP Management Commands
snmp [on|off]

Command>sys show ip
Admin. Oper. Destination
-----
Ifname State State IP Address Netmask Broadcast Addr
-----
L00 Enabled Up 192.168.100.128 255.255.255.0 192.168.100.255
Command>sys reset system
reset system will cause unsaved configuration lost.
do you want to continue (y/n)?y
Attached TDP/IP interface to spdEnd unit 0
Attaching interface lo0...done
-----
- SGX3226 Loader Version 1.03 -
- Copyright (C) Compex, Inc. -
-
- http://www.compex.com.sg -
- http://www.cpx.com -
-----

Press ENTER to stop auto-boot ...
5

Password:
Default password restored successfully

Password:
```

Figure 8.4-3 Password successfully reset

5. Type in the default password, which is “password” to login.

Simply change your password using Hyper Terminal by typing the command (use “help” command to view the command listing)

password new password and hit the "ENTER" key.

Chapter 8 Using SYSTEM TOOLS Menu

Otherwise, when done, type the command - **reboot** to restart the switch to normal mode.

The following commands can be seen in the screen when help command is activated:

Start	start firmware
Reboot	reboot system
Password	change user password
Update	update firmware through FTP
Update	update firmware through COM

Chapter 8 Using SYSTEM TOOLS Menu

8.5 Upgrading Compex SGX3226 Firmware

You can simply download the newer version Firmware from <http://www.compex.com.sg>. Here, you will find links that allows easy access for upgrading of future release of updated Firmware.

To check your current Firmware version, click "**System Information**" on **Page 66**. After downloading the firmware, saved it into your hard disk.

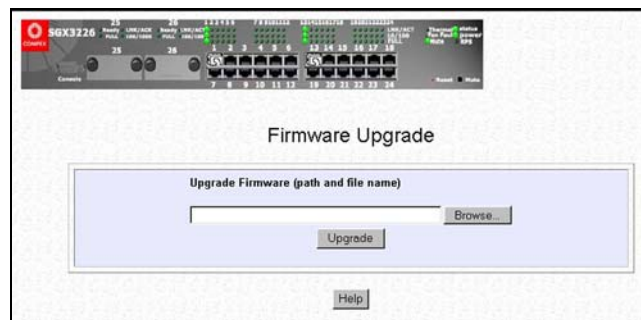


Figure 8.5-1 Upgrading of Firmware

1. Click "Browse" button to select the file where you have just saved and 'Choose file' dialog box will appear, prompting you to select the file to upgrade the firmware:

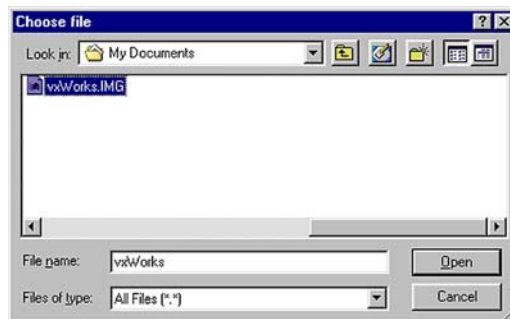


Figure 8.5-2 Select a correct file

Chapter 8 Using SYSTEM TOOLS Menu

2. Click “Upgrade” button to start replacing the latest Firmware revision.



Figure 8.5-3 Confirm the respective file from the directory

The system will prompt you to reboot Compex SGX3226.

3. Click “Yes” button to restart the device.

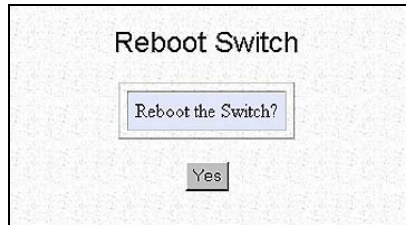


Figure 8.5-4 Confirmation on restarting Compex SGX3226

Log on to the web site after 30 seconds if you still need to do some configuration on Compex SGX3226.

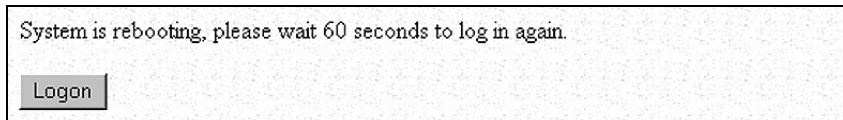


Figure 8.5-5 Re-log in to Management Switch

Chapter 8 Using SYSTEM TOOLS Menu

8.6 Save or Reset Settings

The Save and Reset Settings allow you to execute the amendments or reset to the default setting of Complx SGX3226 configuration.

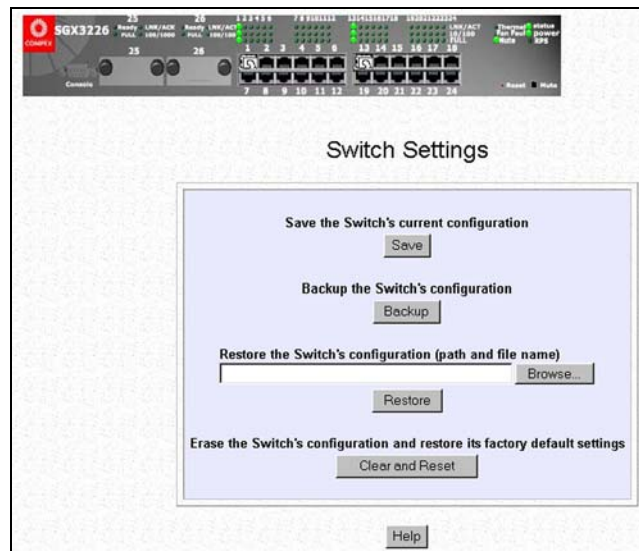


Figure 8.6-1 Switch Setting for Complx SGX3226

8.6.1 Save

By clicking “Save” button, you will save all the changes made from Complx SGX3226. You need to reboot the switch to ensure that the profile is updated correctly.



Figure 8.6-2 Message prompt by System

Chapter 8 Using SYSTEM TOOLS Menu

8.6.2 Backup

This option allows you to backup the switch's configuration into a file.

1. Click on the "Backup" button and the system will prompt you to either open the file or save it to disk.
2. Select the radio button to "Save this file to disk" and click "OK" button.

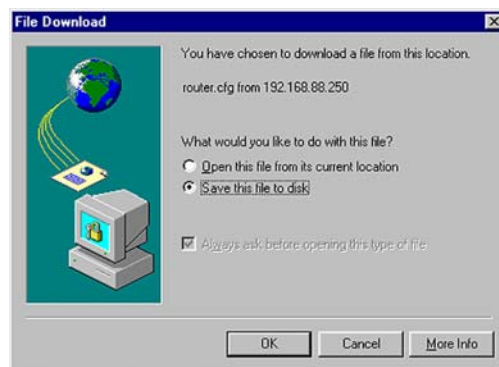


Figure 8.6-3 Save file to your PC

The system will then prompt you to save switch.cfg to a destination.

3. Select a folder that you want to save the file and click "Save" button to proceed.

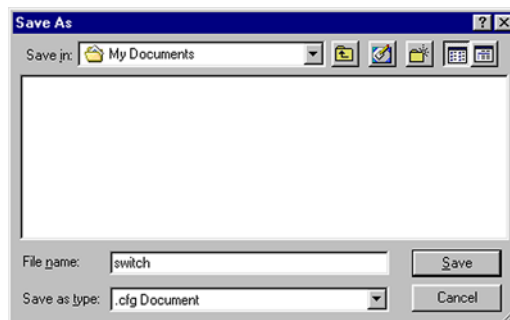


Figure 8.6-4 Save downloaded file to selected folder

Chapter 8 Using SYSTEM TOOLS Menu

4. After downloading process has completed, the following message will appear. Click “Close” button if you do not want to view the downloaded file.

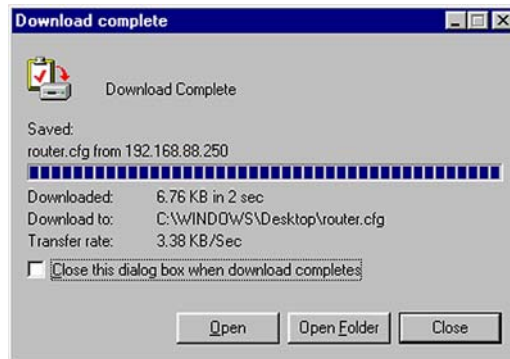


Figure 8.6-5 Completion of Downloading

8.6.3 Restore

1. Click “Browse” button and select the file that you want the system to restore back the configuration.

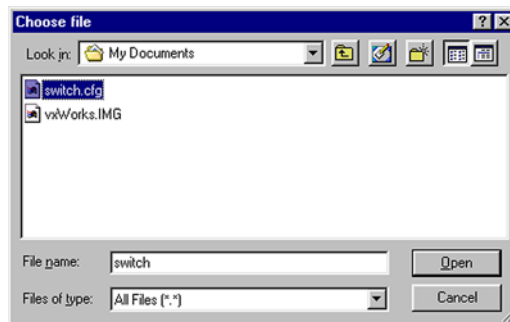


Figure 8.6-6 Select file to restore back the configuration

Chapter 8 Using SYSTEM TOOLS Menu

2. Click “Restore” button to start the process.

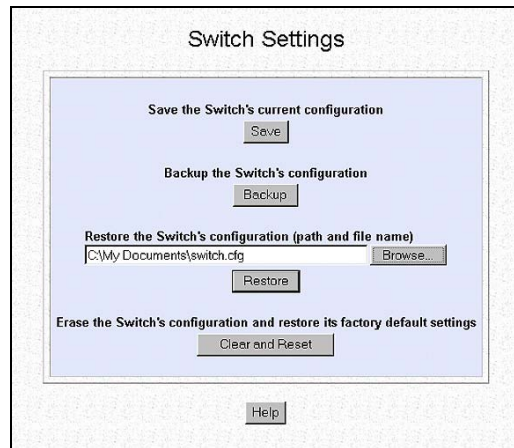


Figure 8.6-7 Confirm directory of the respective file to restore the configuration

3. The system will request you to reboot Compex SGX3226. Click “Yes” button to restart the switch.

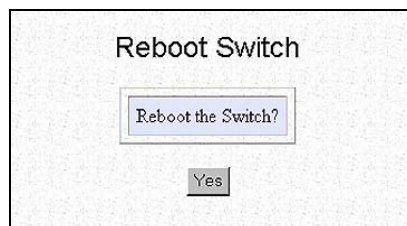


Figure 8.6-8 Confirmation for restarting the switch

4. Wait for 60 seconds and the system will automatically return to the Login Web page, prompting you to enter password again.

Chapter 8 Using SYSTEM TOOLS Menu

System is rebooting, please wait 60 seconds to log in again.

Logon

Figure 8.6-9 Rebooting in progress

8.6.4 Clear and Reset

By clicking this option, you will restore Compex SGX3226 to factory defaults. And you will have to re-enter all the configuration information to our network.

1. Click on “Clear and Reset” button. The system will prompt you to choose whether you want to reset the configuration data.
2. Click “Yes” button to proceed and the system will automatically reset the IP address to factory default, which is http://192.168.100.128

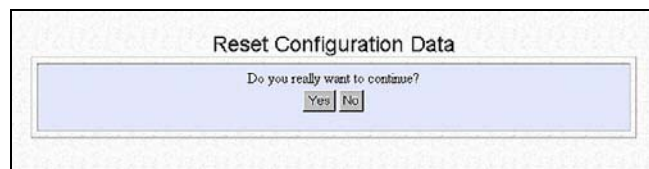


Figure 8.6-10 Confirmation on resetting the data

3. Click “Logon” button if you want to make some more changes.

switch's IP address has been set to the factory default 192.168.100.128.

Your workstation's IP address may need to be changed.

System is rebooting, please wait 60 seconds to log in again.

Logon

Figure 8.6-11 Logon again

Chapter 8 Using SYSTEM TOOLS Menu

8.7 Message Window

This window will list out the action/s taken while doing configuring. It helps you to dig out the history of various action/s.



Figure 8.7-1 Listing of actions

To save all your actions, click on "SaveAs" button. The system will prompt you save your file in your preference location.

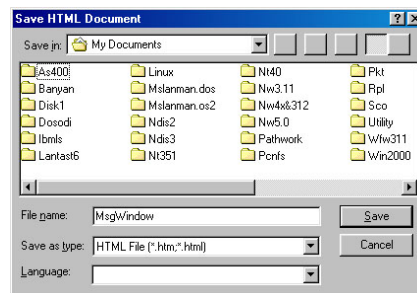


Figure 8.7-2 Save your document

Click "Save" button to keep a copy of your document.

Chapter 8 Using SYSTEM TOOLS Menu

8.8 Reboot Switch

Rebooting of CompeX SGX3226 is required after changes are made in the configuration or setting.

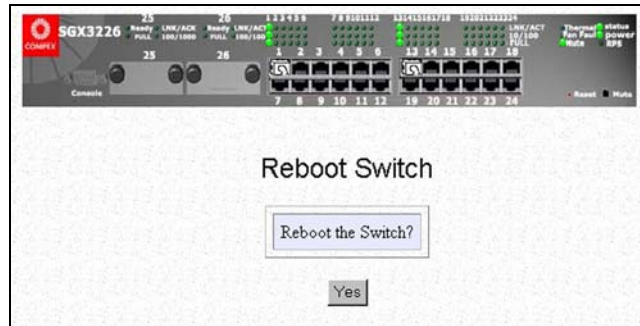


Figure 8.8-1 Rebooting CompeX SGX3226

4. Click “Yes” to reboot the switch. The system will prompt you to logon again after 30 seconds to see the effect:

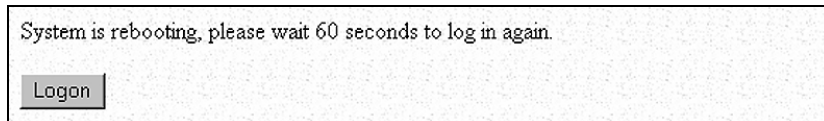


Figure 8.8-2 Rebooting in progress

Chapter 8 Using SYSTEM TOOLS Menu

8.9 Logout

By clicking “Logout” button, you will get a logout GUI as shown below.

Alternatively, you can log in again into the web-based browser via <http://192.168.100.128> or the new IP address, which you have assigned to the switch.

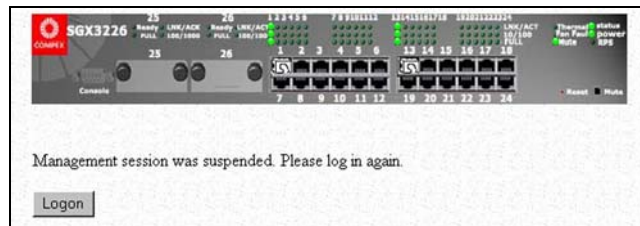


Figure 8.9-1 Logon to the system if amendments still needed



NOTE

If you changed a new IP Address for Compex SGX3226, the system will **NOT** automatically changed to the new IP address after you click on the “Logon” button.

Chapter 9 Using HELP Menu

Chapter 9 Using HELP Menu

9.1 Technical Support

For more information on technical support, click on “Technical Support” in the HELP menu. Here, you can refer to the respective technical group supported by Compex in the different countries as shown below:

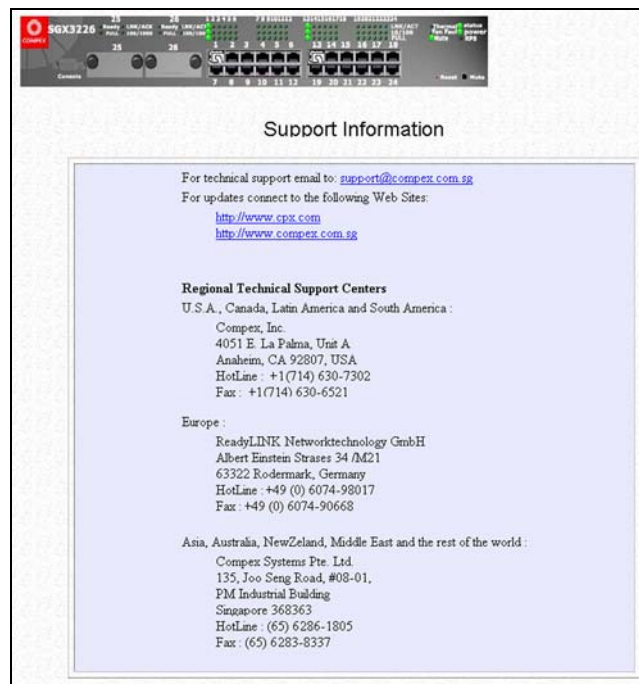


Figure 9.1-1 Technical support Information

Chapter 10 Application on Virtual LAN

Chapter 10 Application on Virtual LAN

10.1 Description on Untagged VLAN

In an untagged VLAN application, you can assign a group of ports within a switch as members of a specific VLAN. Data traffic would be confined within the member ports. In this way, devices connected with the switch can be partitioned into distinct groups each corresponds to a different VLAN. The partition (VLAN) can be expanded when two untagged VLANs are connected together through their member ports. No two VLANs can be overlapped. Each VLAN is separate from the rest. It provides a simple means to implement a secure and managed network.

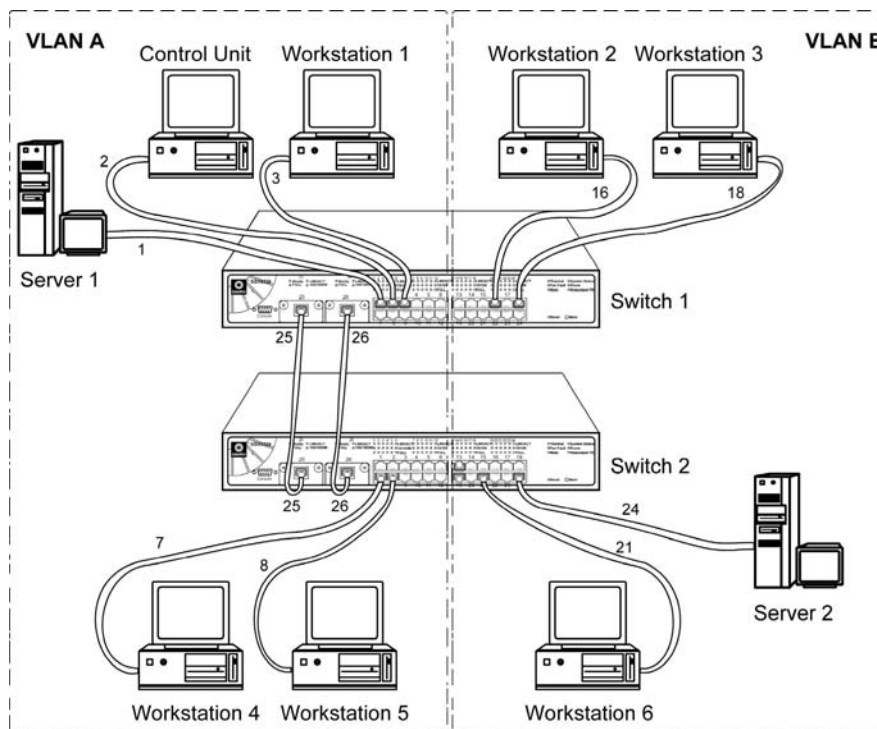


Figure 10.1-1 Application for Untagged VLAN

Chapter 10 Application on Virtual LAN

10.2 Working Examples on Untagged VLAN using Web-based Interface

This section gives you a better understanding on how an Untagged Virtual LAN is being set up using the Web-based Interface. You may follow the procedures stated below:

10.2.1 Hardware Setup for Networking

There are two VLANs, namely VLAN A and VLAN B in this network.

VLAN A

For Switch 1,
Connect Server 1, Control Unit and Workstation 1 to Port 1, 2 and 3 respectively.

For Switch 2,
Connect Workstation 4 and 5 to Port 7 and 8 respectively.

VLAN B

For Switch 1,
Connect Workstation 2 and 3 to Port 16 and 18 respectively.

For Switch 2,
Connect Server 2 and Workstation 6 to Port 24 and 19 respectively.

Notice that separate links are required between switches to join the two VLANs. You need to connect ONE link first in order to prevent any looping, which might caused malfunction to the entire network.

Make a link for Port 25 of both Switch 1 and 2. After finished all switches configuration, connect one end of the network cable to Port 26 of Switch 1, and another end to Port 26 of Switch 2.



NOTE

Please make sure that the port of Control Unit must be set within the same Virtual LAN in the Web-based Management as the other ports in Switch 1 (VLAN A - Port 1 to 12), so that it can manipulate both the configuration of the switches.

Chapter 10 Application on Virtual LAN

10.2.2 Configuration for Switch 1

VLAN A

1. Open a browser and key in the IP address for Switch 1, such as 192.168.100.128.
2. Go to VLAN Config option and enabled the Status at Group 2.
3. Set VID number to 10. (Any number between 2 to 4094.)
4. Click on '-' to 'U' for Port 1 to 12 and 25. Notice that the picture illustrated on **Page 81** used only Port 1, 2, and 3, we still can allocate the remaining ports to VLAN A for further usage.

VLAN B

5. Next, enabled the Status at Group 3. Set VID Number to 20.
6. Click on '-' to 'U' for Port 13 to 24 and 26. Also note that the picture illustrated on **Page 81** used only Port 16 and 18, we still can allocate the remaining ports to VLAN B for further usage.
7. Click "Save" button upon confirmation.

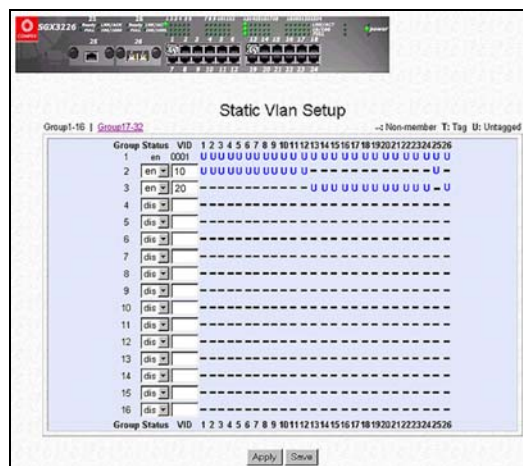


Figure 10.2-1 Untagged VLAN setting for Switch 1

Chapter 10 Application on Virtual LAN

10.2.3 Configuration for Switch 2

VLAN A

1. It is recommended to open another browser and key in the IP address for Switch 2, such as **192.168.100.141**.
2. Go to **VLAN Config** option and **enabled** the Status at Group 2.
3. Set the VID number to **10**. (Between 2 to 4094.)

Notice that the VID Number for Untagged VLAN A and VLAN B can be different.

4. Click on '-' to '**U**' for Port **1 to 12 and 25**. Notice that the picture illustrated on **Page 81** used only Port 7 and 8, we still can allocate the other ports to VLAN A for further usage.

VLAN B

5. **Enabled** the Status at Group 3 and set the VID number to **20**. (Any number between 2 to 4094.) VID number for Untagged VLAN A and VLAN B may not be the same from Switch 1 and 2.
6. Click on '-' to '**U**' for Port **13 to 24 and 26**. Also note that the picture illustrated on **Page 81** used only Port 24 and 21, we still can allocate the remaining ports to VLAN B for further usage.
7. Click "Save" button to save all configurations.

Chapter 10 Application on Virtual LAN

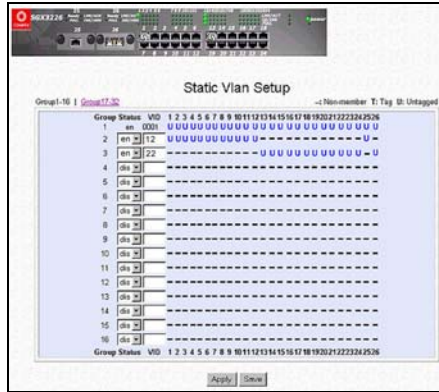


Figure 10.2-2 Untagged VLAN setting for Switch 2

Now, you can use another network cable to connect Port 26 of Switch 1 to Port 26 of Switch 2.

Chapter 10 Application on Virtual LAN

10.3 Description on Tagged VLAN

10.3.1 Shared Uplink Connection

In a tagged VLAN application, you still can assign specific ports within a switch to be a VLAN group. In addition, the data transferred within the VLAN group is tagged with an ID as specified with the 802.3Q Tagged VLAN standard. It allows the VLAN information to be carried along as the data flow from switch to switch. It also allows a port to carry multiple VLANs data stream. It is more flexible and scalable than the untagged VLAN application. However, all networking devices have to support the 802.3Q Tagged VLAN standard for VLAN Tagging system to work.

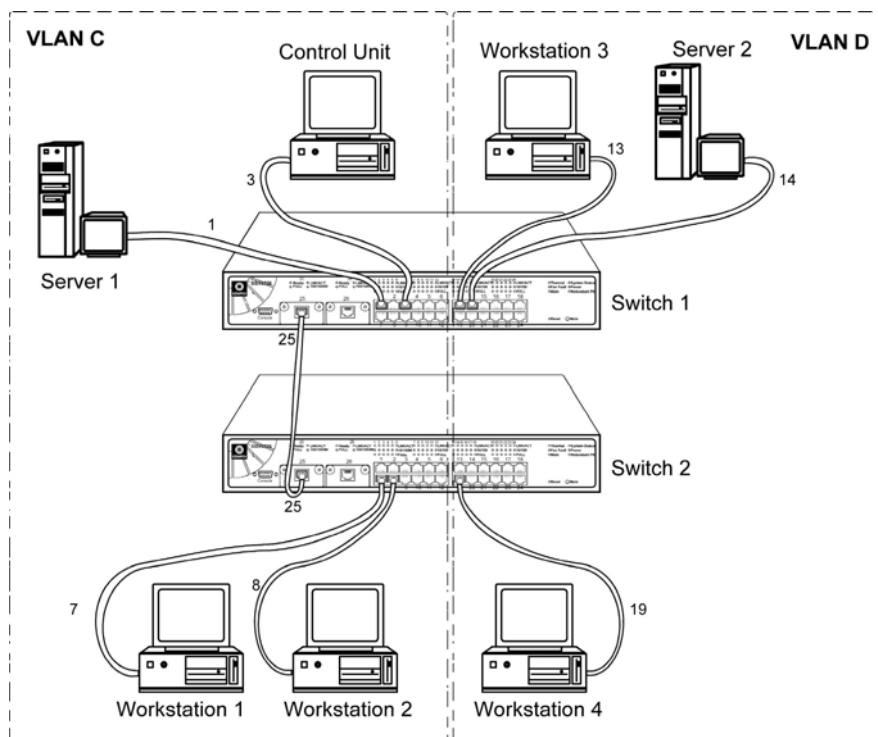


Figure 10.3-1 Application for Tagged VLAN

Chapter 10 Application on Virtual LAN

10.4 Working Examples on Tagged VLAN using Web-based Interface

The setting up of Tagged Virtual LAN will be discussed in this section using Web-based Interface. You may follow the procedures stated below:

10.4.1 Hardware Setup for Networking

Two tagged VLANs - VLAN C and VLAN D are created in the physical network. VLAN C consists of Server 1, Control Unit, Workstation 1 and 2. VLAN D consists of Server 2, Workstation 3 and 4. The connection with port 25 of Switch 1 and port 25 of Switch 2 transfer data for both VLAN C and D simultaneously and separately.

VLAN C

For Switch 1,
Connect Server 1 and Control Unit to Port 1 and 3 respectively.

For Switch 2,
Connect Workstation 1 and 2 to Port 7 and 8 respectively.

VLAN D

For Switch 1,
Connect Server 2, Workstation 3 to Port 14 and 13 respectively.

For Switch 2,
Connect Workstation 4 to Port 19.

For uplink purpose, you can make use of the Gigabit ports to connect Port 25 of Switch 1 to Port 25 of Switch 2.

Chapter 10 Application on Virtual LAN

10.4.2 Configuration for Switch 1

VLAN C

1. Open a browser and key in the IP address for Switch 1, such as **192.168.100.128**.
2. Go to **VLAN Config** option and **enabled** the Status at Group 2.
3. Set VID number to **12**. (Any number between 2 to 4094.)
4. Click on '-' to 'U' for Port **1 to 12** and select 'T' for Port **25**.

VLAN D

5. **Enabled** the Status at Group 3.
6. Set VID number to **22**. (Any number between 2 to 4094.)
7. Click on '-' to 'U' for Port **13 to 24 and 26** and select 'T' for Port **25**.
8. Click "Save" button upon confirmation.

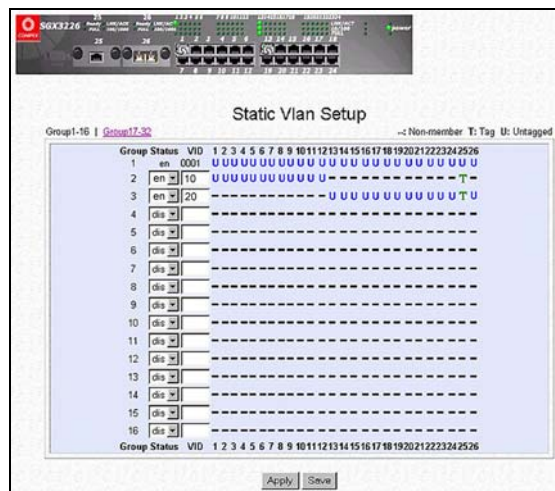


Figure 10.4-1 Tagged VLAN setting for Switch 1

Chapter 10 Application on Virtual LAN

10.4.3 Configuration for Switch 2

VLAN C

1. Open another browser and key in the IP address for Switch 2, such as **192.168.100.141**.
2. Go to **VLAN Config** option and **enabled** the Status at Group 2.
3. Set VID number to **12**. (Any number between 2 to 4094.)
4. Click on '-' to '**U**' for Port **1 to 12**.
5. Next, select '-' to '**T**' for Port **25**.

VLAN D

6. **Enabled** the Status at Group 3.
7. Set VID number to **22**. (Any number between 2 to 4094.)
8. Click on '-' to '**U**' for Port **13 to 24 and 26**.
9. Next, select '-' to '**T**' for Port **25**.



NOTE

Please note that for Tagged VLAN, VID number **MUST BE** the same from Switch 1 and 2.

Chapter 10 Application on Virtual LAN

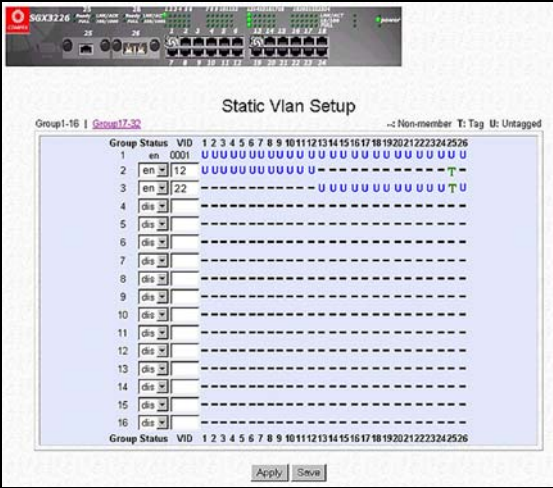


Figure 10.4-2 Tagged VLAN setting for Switch 2

Chapter 10 Application on Virtual LAN

10.5 Tagged VLAN with legacy (untagged) VLAN support

In most scenarios, there are legacy-networking devices that do not support 802.3Q Tagged VLAN. To accommodate such devices, tagged VLANs are normally inapplicable. However, Compex SGX3226 has provision for legacy device support. It allows an untagged VLAN or device to join the tagged VLAN while work together as in a tagged VLAN application.

10.5.1 Legacy Device – VLAN Support

The example below shows the switch in a backbone application. Workstation 1 is a legacy device, which do not support VLAN tagging. There is also an untagged VLAN connecting the hub to port 7 of the switch. Other devices would support 802.3Q Tagged VLAN. The commands build two tagged VLANs (Workstation on Port 2) and an untagged VLAN (hub on Port 7). The switch would tag and un-tag the data such that data flowing into Port 7 would be tagged with a VLAN ID of '3' while data flow out of it would be untagged that the legacy VLAN would recognize it.

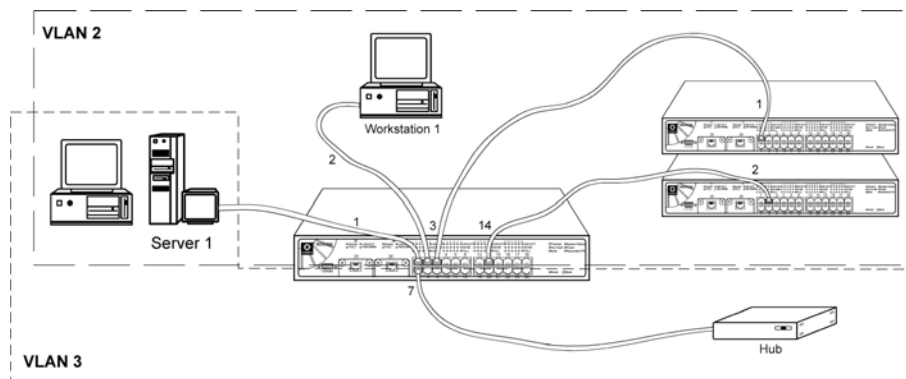


Figure 10.5-1 Legacy Device – VLAN Support



NOTE

The VLAN configuration shown above would be impossible to implement with untagged VLAN.

Chapter 10 Application on Virtual LAN

10.5.2 Legacy Devices Support

With the legacy support, the untagged example (Fig 10.1-1) now can be configured as two tagged VLANs with two ports less. The two connections now share one connection between the two switches. The tagged VLAN effectively connects all untagged devices.

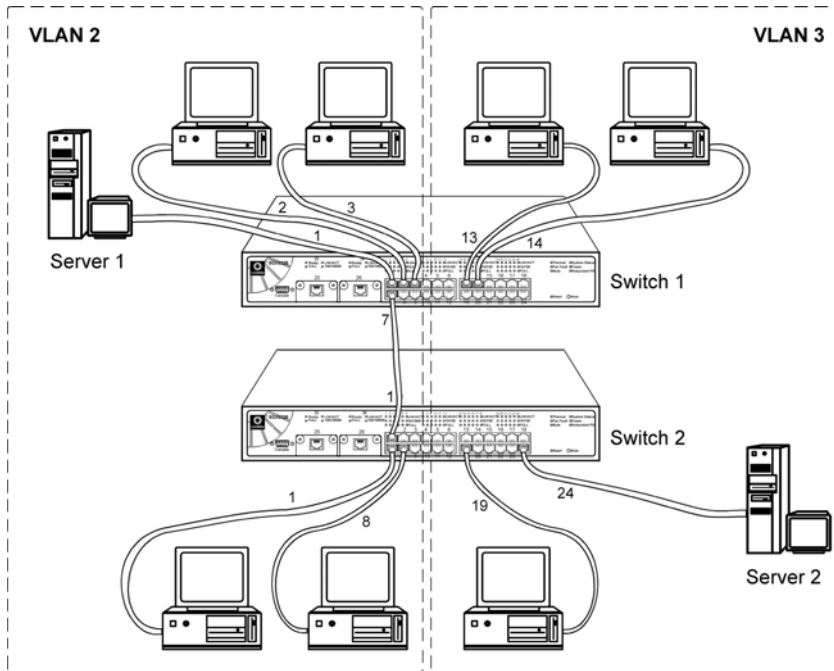


Figure 10.5-2 Legacy Devices Support