FWA-230

Firewall Appliance
Configuration & Operation
Guide

Your ePlatform Partner

ADVANTECH

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Table of Contents

1. INTRODUCTION 3

1.1 About the Advantech FWA-230 3

1.2 Hardware 5

1.3 Operating Systems 6

1.4 Software Applications 6

1.5 Front Panel 8

1.6 Additional Features 9

1.7 Packing Contents 10

2. INSTALLATION AND CONFIGURATION 11

2.1 Hardware Setup 11

2.1.1 RAM Module Installation 11

2.1.2 CompactFlash Card Installation 13

2.1.3 Interface Connections 15

2.1.4 Power Connection 15

2.2 Before Login 16

2.2.1 Connect the FWA-230 to a PC through LAN, WAN or DMZ 16

2.2.2 Connect the FWA-230 to a PC through the Console Port 17

2.3 Login the FWA-230 20

2.3.1 Login through LAN, WAN, or DMZ 20

2.3.2 Login through the Console Port 23

2.4 Configure the FWA-230 24

2.4.1 Configure the LAN, WAN, DMZ ports on the FWA-230 24

2.4.2 Configure the FWA-230 through the Console Port 34

2.5 Operating System Installation 35

2.6 Upgrading the Software 35

2.7 Backing Up the Configuration 35

3. PRODUCT SPECIFICATIONS 37

3.1 Specifications 37

3.2 System and Environmental Specifications 37

4. FREQUENTLY ASKED QUESTIONS (FAQS) 38

1. Introduction

1.1 About the Advantech FWA-230

Advantech's FWA-230 is specifically designed for secure Internet connectivity, It has rock-solid hardware with a pre-installed operating systems and software applications. Applications for the FWA-230 are as follows:

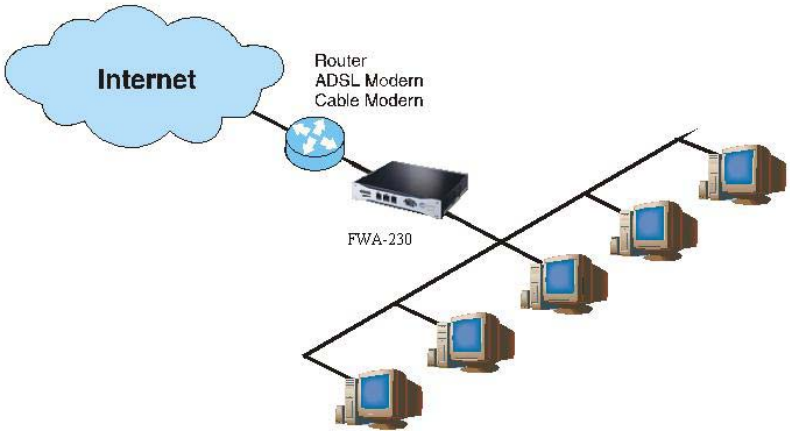


Fig. 1-1 FWA-230's application in a SOHO/SMB solution

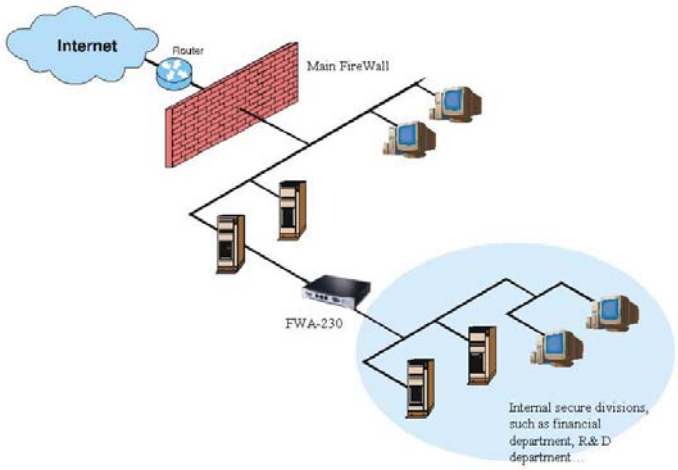


Fig. 1-2 The FWA-230 applied in an internal solution.

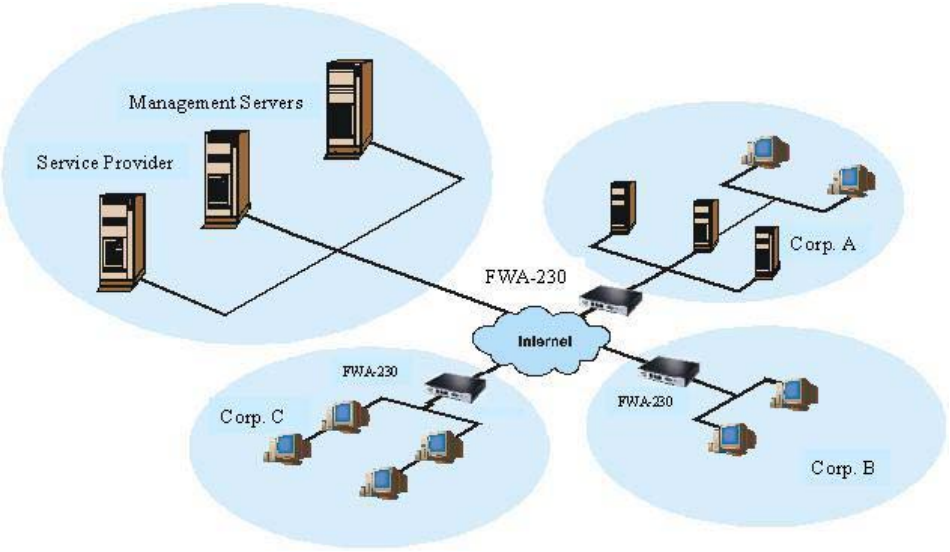


Fig. 1-3 The FWA-230 applied in a Service Provider solution.

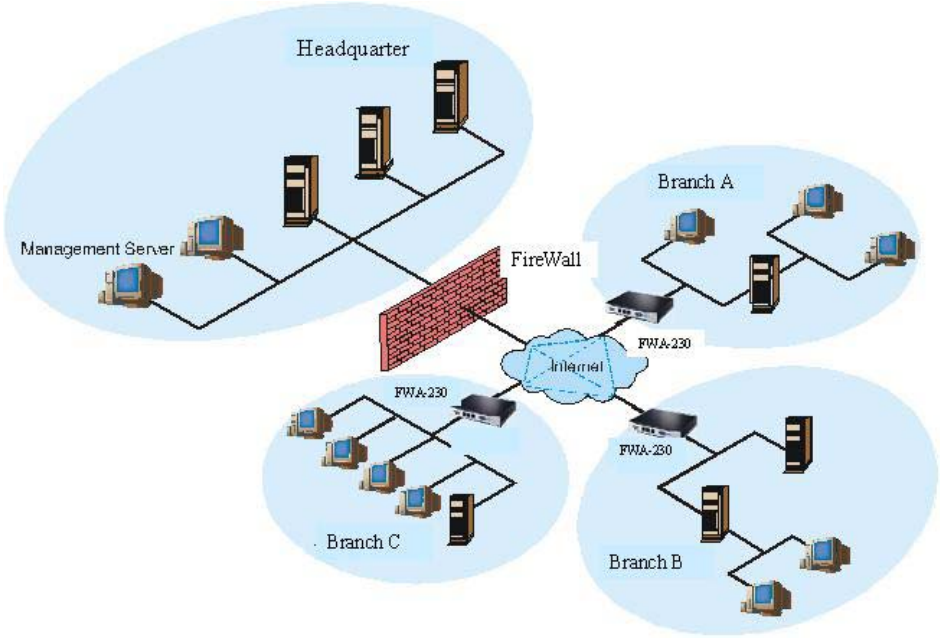


Fig. 1-4 The FWA-230 applied in a VPN solution.

1.2 Hardware

The FWA-230 has an internal CompactFlash card. The system only supports Celeron processor 566MHz with two SO-DIMM sockets, which support up to 256MB PC-100 SDRAM SO-DIMM. The machine is bundled with 128MB SDRAM memory and comes with an external AC adapter.

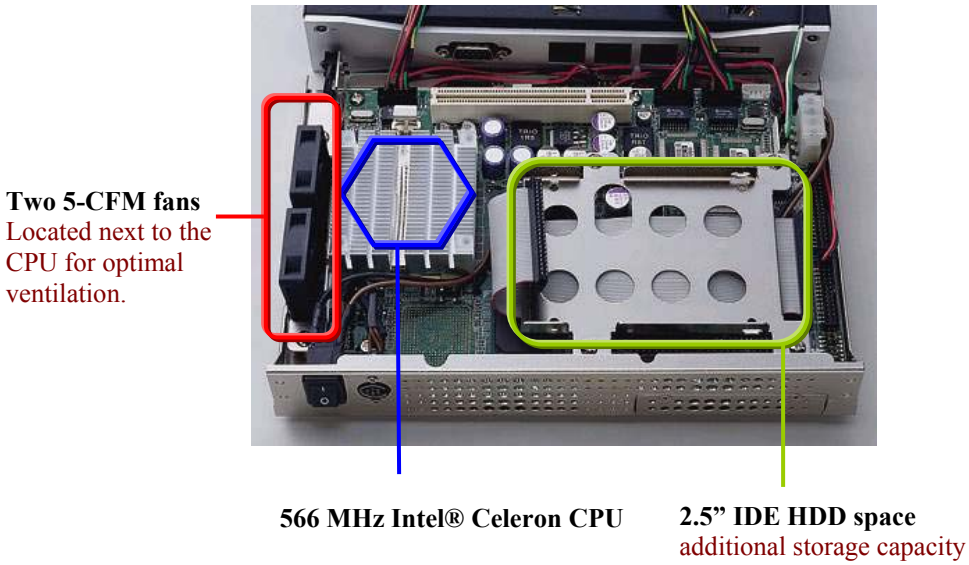


Fig. 1-5 The FWA-230 internals.

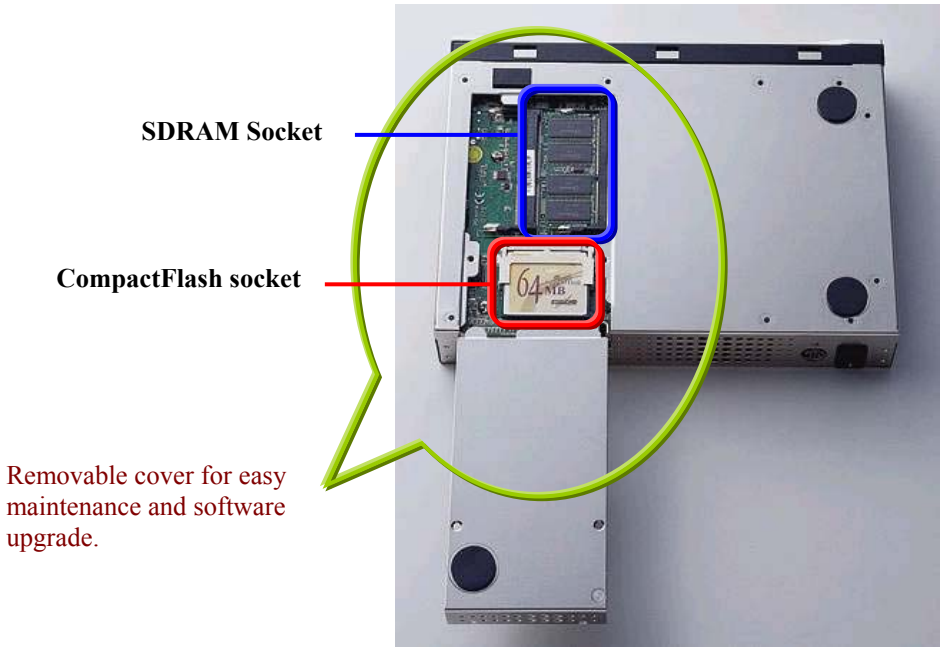


Fig. 1-6 Bottom of the FWA-230.

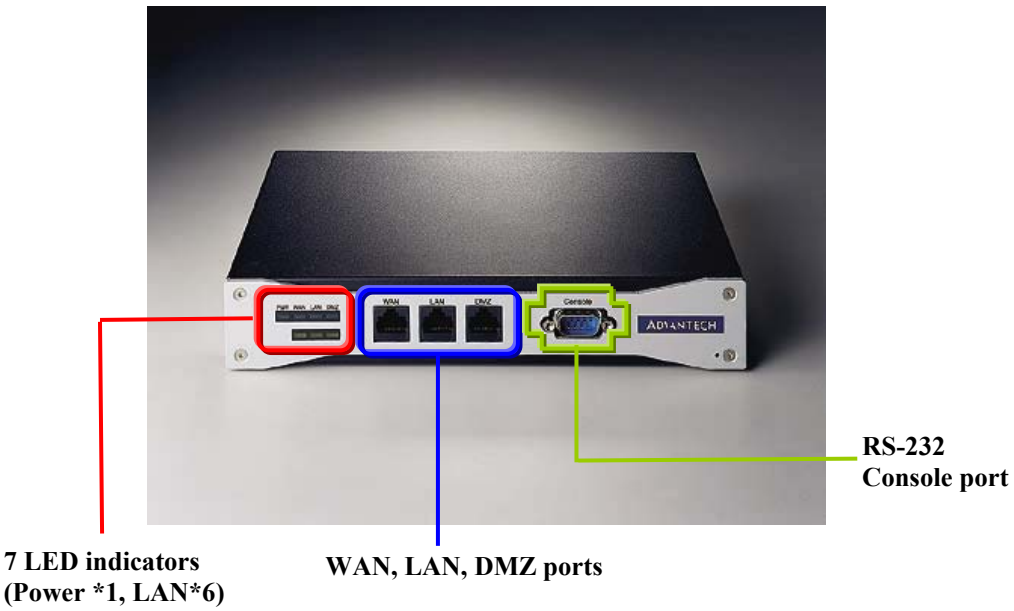


Fig. 1-7 The FWA-230's Front Panel

1.3 Operating Systems

The FWA-230 employs a hardened version of the RedHat Linux operating system, kernel version 2.2.19. This pre-installed Linux operating system is the foundation that the Check Point™ security software builds upon.

1.4 Software Applications

Pre-installed applications on the FWA-230 include:

- Check Point™ FireWall-1® — Enables enterprises to define and enforce a single, comprehensive Security Policy while providing full, transparent connectivity.
- Check Point™ VPN-1® — A powerful and secure Internet connectivity solution that lets enterprises deploy Virtual Private Networks (VPNs) to protect the privacy and integrity of business communications over the Internet.

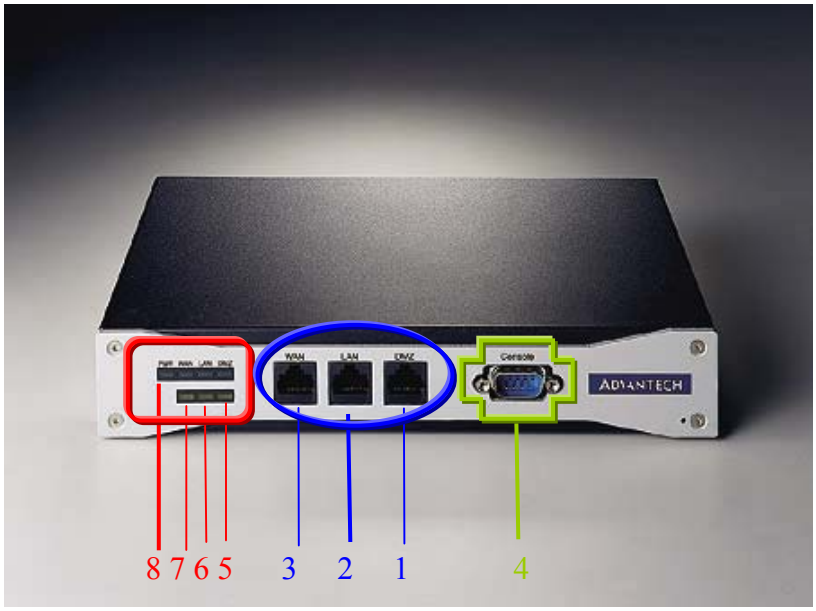
Pre-installed on the CompactFlash of the FWA-230 are inactive versions of Check Point™ VPN-1®/FireWall-1® and VPN-1®/FireWall-1® SmallOffice™. The following table is a comparison for enterprise Check Point™ VPN-1®/FireWall-1® and VPN-1®/FireWall-1® SmallOffice™ NG:

Table 1-1 Comparison of Enterprise Check Point™ VPN-1®/FireWall-1® and VPN-1®/FireWall-1® SmallOffice™ NG

Features/Functionality	Enterprise Check Point™ VPN-1®/FireWall-1®	Check Point™ VPN-1®/FireWall-1® SmallOffice™ NG
Remote access VPN	✓	✓
Site-to-Site VPN	✓	✓
FWZ vs. IKE	IKE only	**IKE only**
NAT	✓	✓
Logging	✓	✓
Authentication	✓	✓
Content Vectoring Protocol (CVP)	✓	✓
URL Filtering Protocol (UFP)	✓	✓
UDP encapsulation for SR/SC connections	✓	✓
Number of simultaneous VPN tunnels		**# of IP addresses + 5**
Maximum # of protected IP addresses	Unlimited	**50**
Cost	High	**Low**

1.5 Front Panel

Seven LEDs indicate the status of the three Ethernet ports (LAN/WAN/DMZ) and the console power. Users can easily determine the system status. This design allows for easy modification, maintenance, and saves time.



1. DMZ Port

   The DMZ port connector is RJ-45 and supports 10/100BaseTX Ethernet (10 Mbps/100 Mbps on a twisted pair cable). This port connects non-secured/untrusted devices.

2. LAN Port

   The LAN port connector is RJ-45 and supports 10/100BaseTX Ethernet (10 Mbps/100 Mbps on a twisted pair cable). This port connects to secured/trusted devices.

3. WAN Port

   The WAN port connector is RJ-45 and supports 10/100BaseTX Ethernet (10 Mbps/100 Mbps on a twisted pair cable). This port connects to the external network of Internet.

4. Console Port

   The console port supports a data terminal equipment (DTE) interface (cable included) with 8 data bits, no parity, and 1 stop bit, the default speed is 38400 bps.

5. DMZ LED
   When the cable is connected to the DMZ, the LED is orange. When the FWA-230 receives the data, the above LED flashes green.

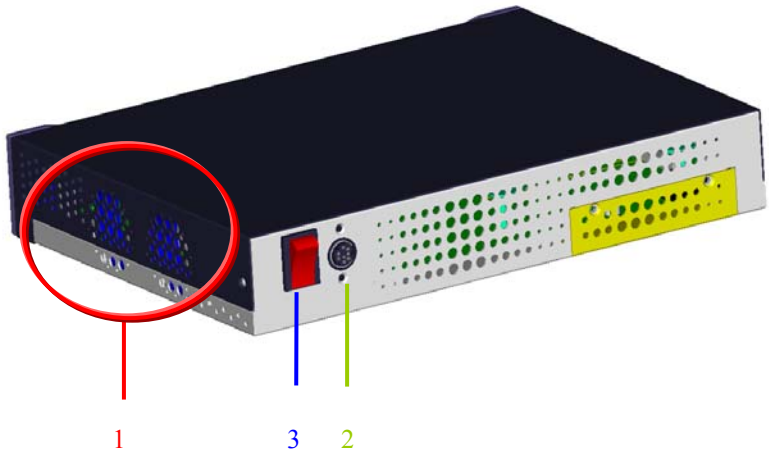
6. LAN LED
   When the cable is connected to the LAN, the LED is orange. When the FWA-230 receives data, the above LED flashes green.

7. WAN LED
   When the cable is connected to the WAN, the LED is orange. When the FWA-230 receives data, the above LED flashes green.

8. Power LED (PWR)
   The PWR LED is green under normal conditions.

1.6 Additional Features

For cooling, the two sets of fans are adjacent to the CPU heat sink.



1. CPU cooling fan

2. AC Adapter connector

   The AC Adapter automatically senses the input voltage (AC 90 ~ 264 V) and configures itself appropriately.

3. On/Off switch
   Power on/off system.

1.7 Packing Contents

The FWA-230 package consists of the following items:

- The FWA-230
- AC Adapter
- RS-232 Cable (to connect the Console port)
- FWA-230 Firewall Appliance Configuration & Operation Guide

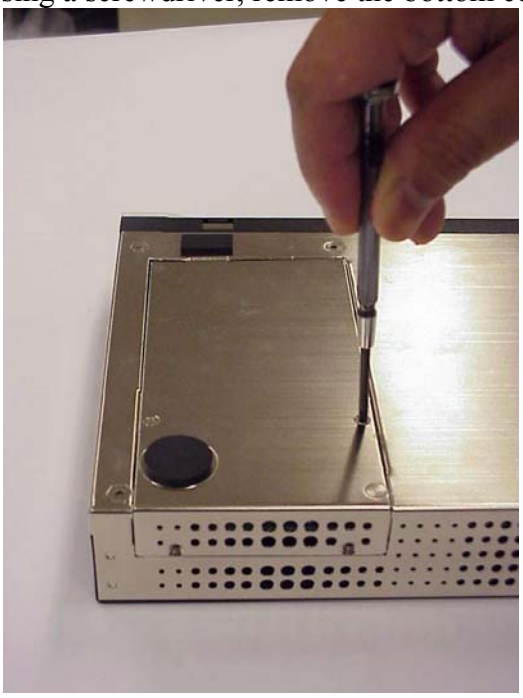
Please contact your distributor in case of any damaged or missing items.

2. Installation and Configuration

2.1 Hardware Setup

2.1.1 RAM Module Installation

1. Using a screwdriver, remove the bottom cover.



2. Once removed, the SO-DIMM sockets and CompactFlash card socket can be observed.

3. Insert an SO-DIMM into the right socket first.

4. The socket will be tightly secured once the SO-DIMM is pressed down.

5. A second SO-DIMM can be inserted in the left socket.

2.1.2 CompactFlash Card Installation

1. Insert the CompactFlash card into the socket.

2. A properly inserted CompactFlash card.

3. The full option installation of RAM and CompactFlash card.

2.1.3 Interface Connections

2.1.3.1 Network Connection

Connect a Twisted Pair Ethernet (TPE) network cable to the LAN, WAN, or DMZ port designated on the front of the FWA-230 interface.

2.1.3.2 Console Connection

Use the null-modem cable to connect the client's COM1 port to the console port of FWA-230.

2.1.4 Power Connection

The machine comes with one AC adapter.

- Tightly plug the AC adapter power cord into the power socket at the back of the FWA-230.
- Plug the power cord into the power socket of AC adapter.
- Plug the other end of the power cord (optional) to the power outlet.
- Press the power On/Off switch to turn the FWA-230 on.

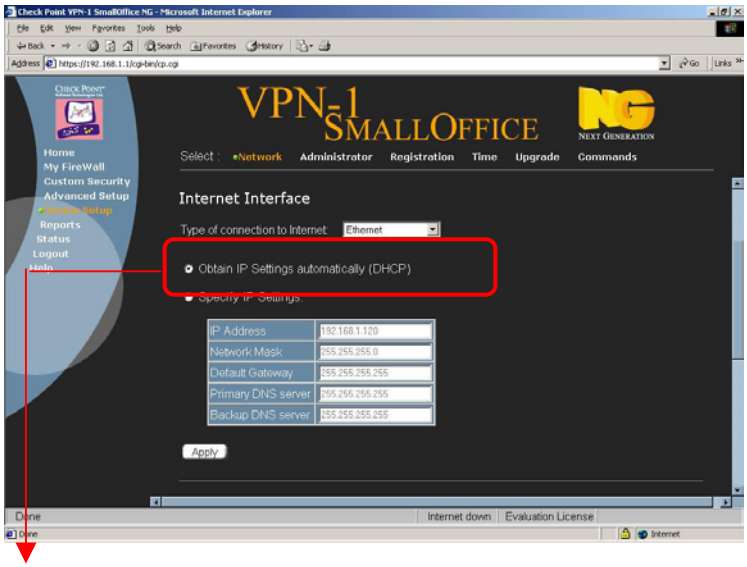
2.2 Before Login

There are two ways of logging into the FWA-230. One method is through the network connection such as LAN, WAN or DMZ. The other method is through Console Port. The procedures are described as below.

2.2.1 Connect the FWA-230 to a PC through LAN, WAN or DMZ

Perform the following steps:

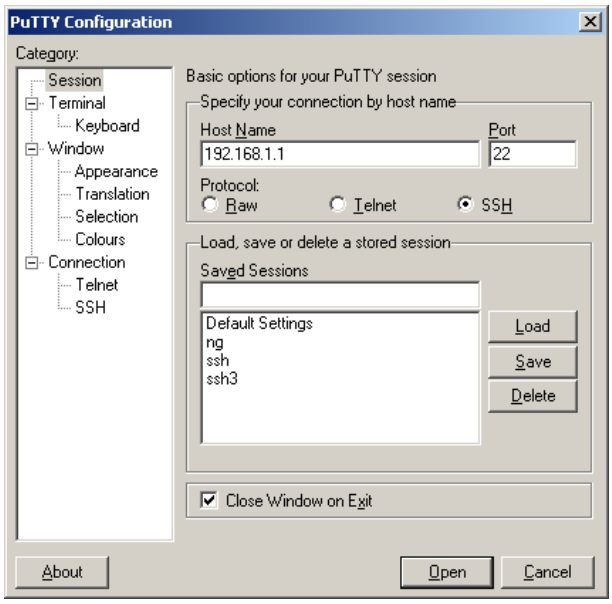
1. The default IP addresses of the FWA-230 are as follows:



** The IP address and Subnet mask of WAN port depend on what is dynamically obtained by DHCP.*

2. Check the client's IP address and subnet mask of the client are in the same network segment.

3. To connect the FWA-230, client management software can be used to support the SSH protocol. Below is a sample configuration that uses PuTTY.

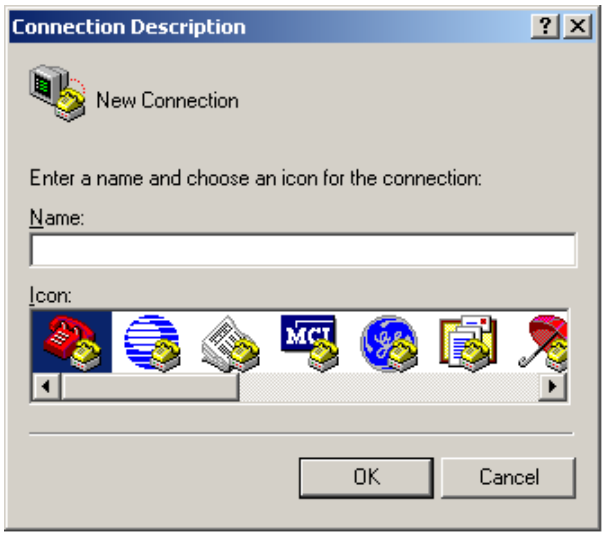


2.2.2 Connect the FWA-230 to a PC through the Console Port

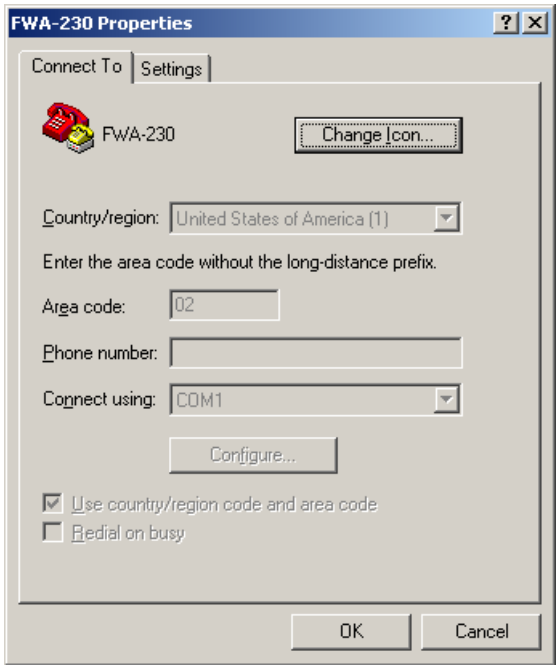
To set up a Windows OS system:

1. Run a console client management program such as HyperTerminal or NetTerm to configure the console port connection.

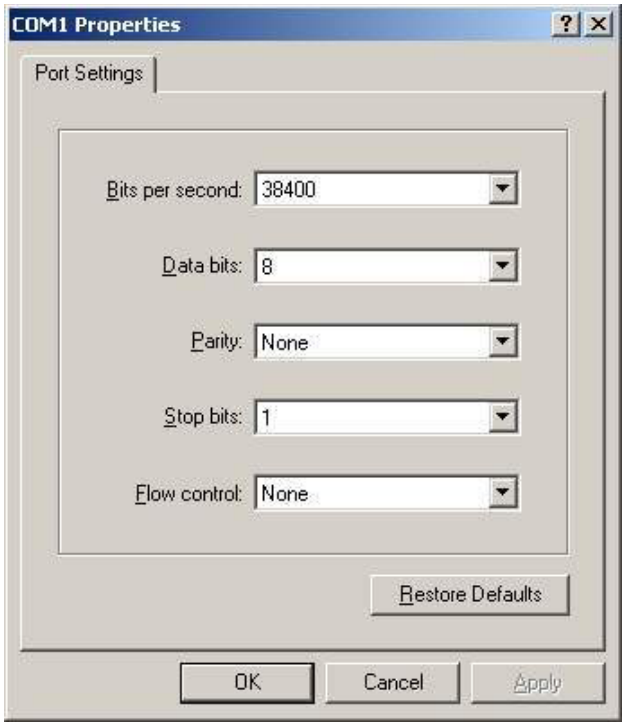
2. HyperTerminal is applied in the following example:



3. Set the connection to COM1.



4. Set the baud rate to 38400bps for COM1. It emulates ANSI.



Port settings to be configured:

Bits per second	38400 (bps)
Data bits	8
Parity	None
Stop bits	1
Flow control	None

2.3 Login the FWA-230

There are three different ways of logging in the FWA-230. They are described below:

2.3.1 Login through LAN, WAN, or DMZ

- **By Browser**

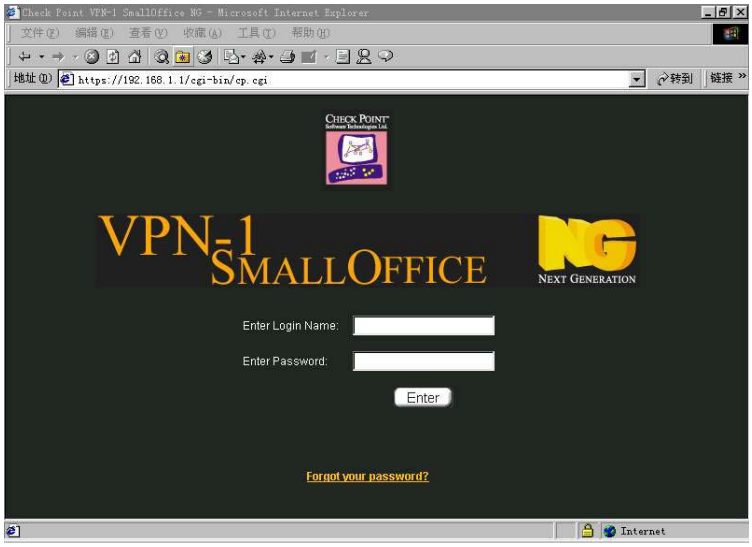
  Start the Internet browser on your computer and enter "**https://192.168.1.1**".

- **Security Alert Window**

  The Security Alert window will be displayed the first time while your browser is connected to the Web server on the FWA-230. After establishing trust, instruct the browser to accept the Web server's certificate, the Security Alert won't be displayed in the future.

- **Login Window**

At the login prompt, type the user name. "**admin**" is the default login that owns the supervisor authority and then confirm the entry. Next type the password according to the system prompt. The default password is "**admin**".



- **Change Default Password**

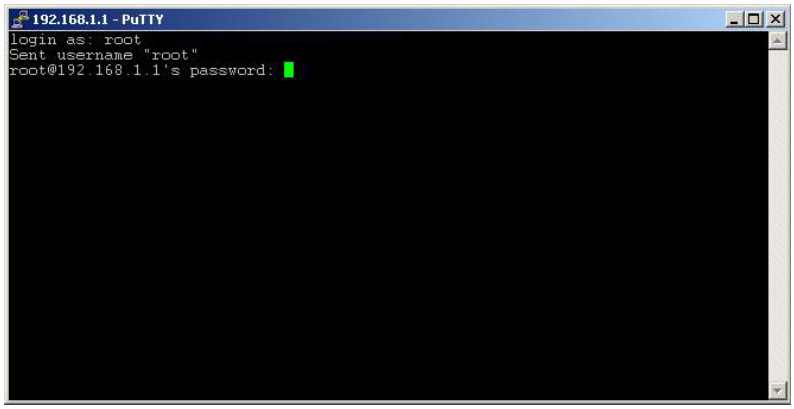
For your own protection, enter a new user name and password, and enter the same password in "**Verity Password**". Click "**Apply**".

The reminding window will be displayed while the new password is applied.

Afterward, click "**Login**" in order to login.

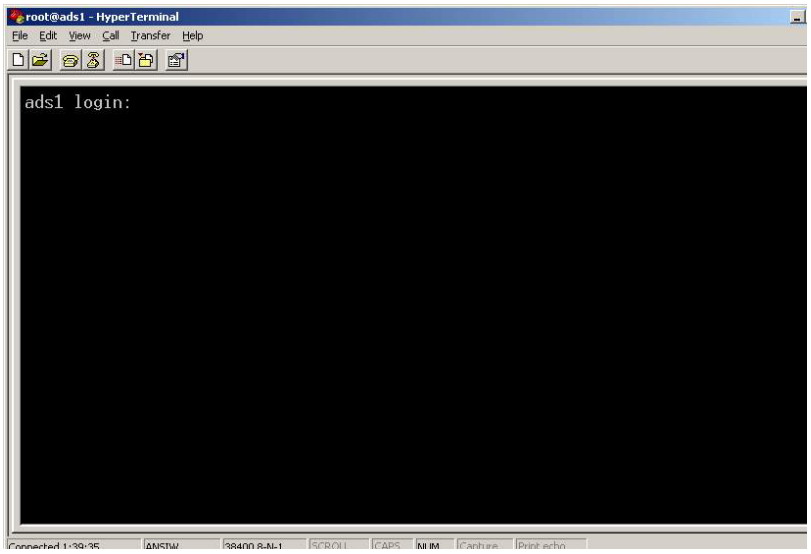
■ **By a SSH Protocol Client**

At the prompt, please type in the user name. "**root**" is the default that owns the supervisor authority, and then confirm the entry. Next, type the password according to the system prompt. The default password for root is "**admin**".



2.3.2 Login through the Console Port

At the login prompt, type the user name. "**root**" is the default that owns the supervisor authority. Then confirm the entry. Next type the password according to the system prompt. The default password for root is "**admin**".



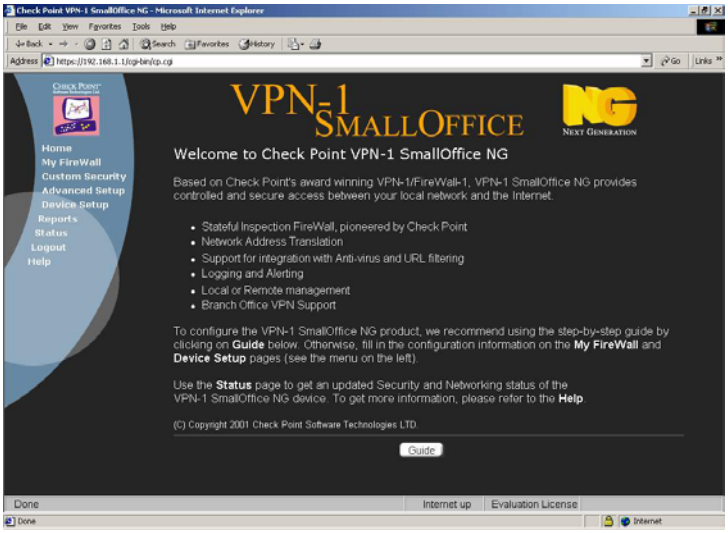
Note: *If you change the password through the browser, you will have to use the new password when you connect the FWA-230 through the Console port, however, the default setting—"**root**" will still be the username.*

2.4 Configure the FWA-230

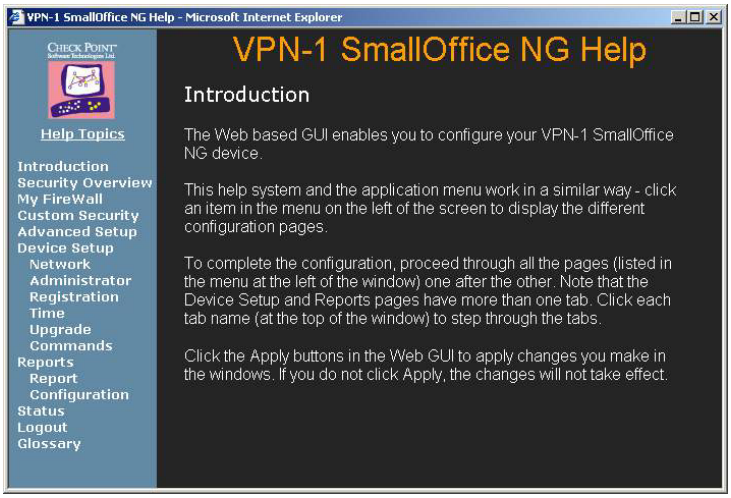
2.4.1 Configure the LAN, WAN, DMZ ports on the FWA-230

This step-by-step **Guide** is suggested to configure the FWA-230. Users can also modify the configuration in **My FireWall** and **Device Setup** pages.

- **Guide**
  Use the step-by-step guide by clicking on "**Guide**" icon, which will guide you through the configuration of your SmallOffice™ device.



- **Help**
  In the setting process, please click on the "Help" icon for supplementary information.



Note: *You can refer to the On-Line Help screen for additional information.*

- **Device Setup**

The Device Setup page consists of the following tabs:

1) Network
2) Administrator
3) Registration
4) Time
5) Upgrade
6) Commands

■ **Network Configuration**

This tab is used to define networking parameters and has three sections.

□ **Internet Name Association:**

The **Internet**: the external, untrusted interface leading to the Internet. The default setting is eth0, which is the WAN interface on the FWA-230.
Office: the internal, secure interface leading to the SmallOffice™ network. The default setting is eth1, which is the LAN interface on the FWA-230.

DMZ: an optional, external, untrusted network that is

publicly assessable. The default setting is eth2, which is the DMZ interface on the FWA-230.

Note: *The interface names are pre-configured in the FWA-230, and the default setting is related to the design of hardware of FWA-230.*

Linux	*FWA-230*	*Check Point™*
eth0	*WAN*	*Internet*
eth1	*LAN*	*Office*
eth2	*DMZ*	*DMZ*

- **Internet Interface:**
  The SmallOffice™ software can be configured to specify the type of device that the external Ethernet interface connects to, this can be specified with the drop-down menu.

  1) **Obtain IP Setting Automatically**: these settings are configured centrally by the network administrator and obtained automatically by a DHCP client.

  2) **Specify IP Settings**: manually configures your network settings. To obtain these settings, contact your Internet Service Provider (ISP).

- **Office Interface:**
  You can set the IP address for the internal Ethernet interface of the FWA-230.

  1)**Interface Configuration**:

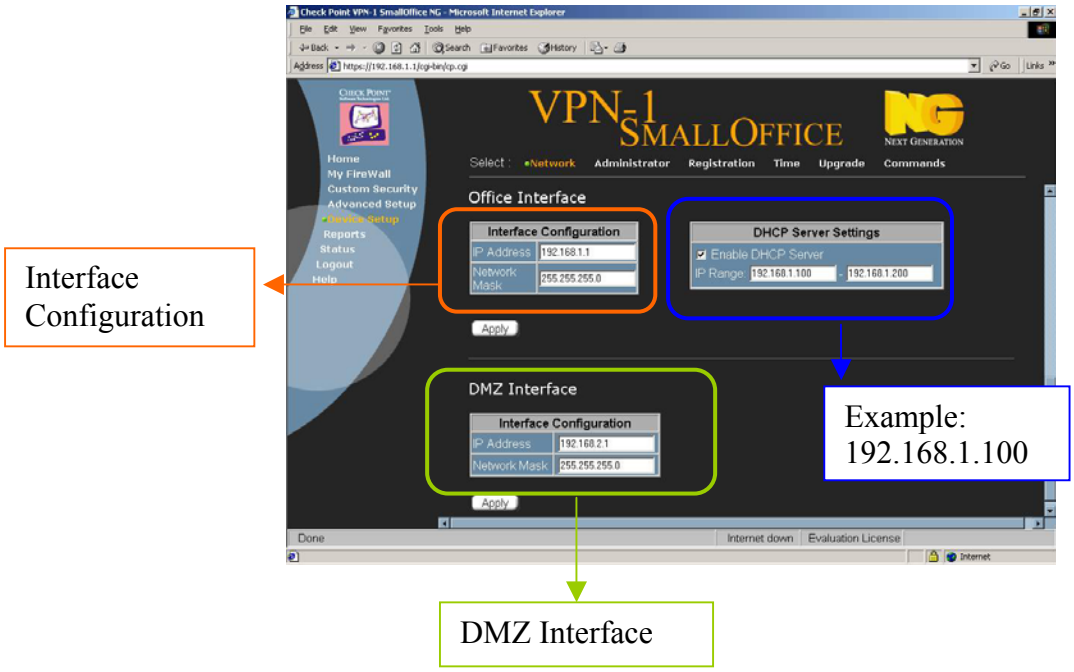
IP Address	192.168.1.1
Network Mask	255.255.255.0

  2) **DHCP Server Settings**: To use the DHCP Server to provide dynamic IP addresses for your office network, check "**Enable DHCP Server**" and enter the range of IP addresses in " **IP Range**".

- **DMZ Interface:**

  DMZ Interface is to configure the optional DMZ interface. Please fill in as follows:

IP Address	192.168.2.1
Network Mask	255.255.255.0

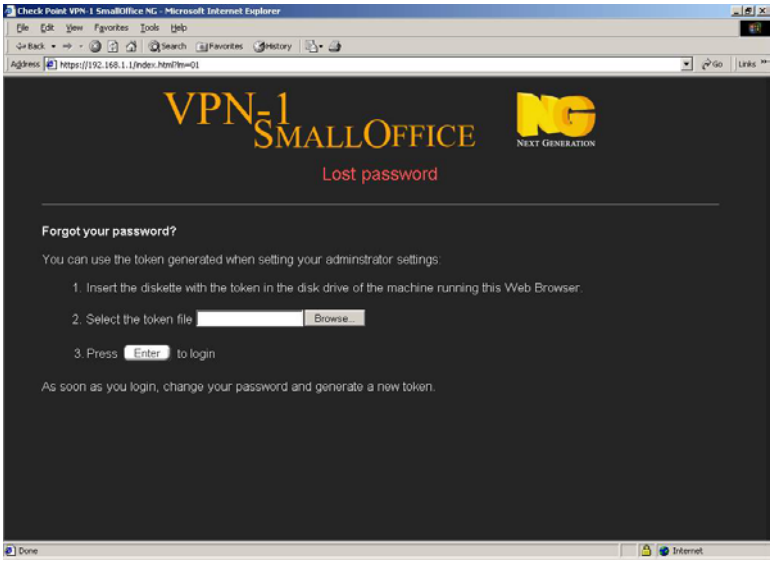


■ Administrator Configuration

An administrator is a person who is allowed to configure and maintain the SmallOffice™ network. This tab is used for changing the administrator login name and password and for enabling remote and local administration options.
Login Name: any ID you set.
Password: please enter your new password, which must be more than 5 letters.
Verify Password: enter your new password again for confirmation.
Apply: the setting will take effort after clicking on it.

Users can press the "**Token**" button to create and download a unique key that will be required in case the password is forgotten.

Note: *Save the token on a diskette and keep it in a safe place. Forgot your password? Just put the diskette with the token, and click "**Browser**" to open the file, and "**Enter**". You can successfully login FWA-230. Please reset your password and immediately make a new token.*



- **Remote/Local Administration:**
  Users can select "**Allow remote Web and Secure Shell (SSH) administration from Internet**" in order to manage the FWA-230 through a program that supports SSH protocol. The option will not be needed for users when the existing function is included in the FWA-230.

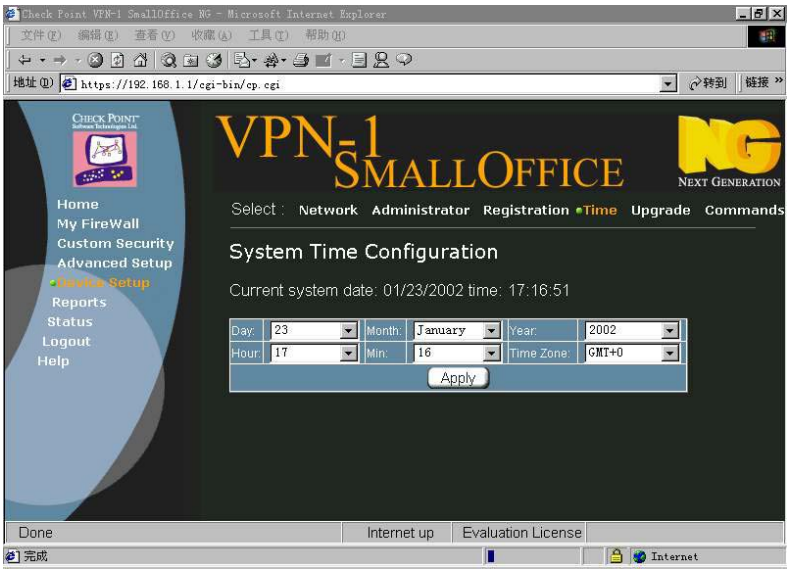
Note: *Telnet is insecure. To ensure high network security, the "**Allow local Telnet administration from LAN (not recommended)**" function of the FWA-230 is shutdown.*

■ Registration

You have 30 days to evaluate and register the SmallOffice™ software. Use this tab to specify the registration mode. Users are recommend using the "**Standard**" mode, in this mode users can register the device through the Check Point's SmallOffice™ Registration Site.
Alternatively, you can use the "**Manual**" mode to enter the license details already obtained from Check Point™.

■ Time Configuration

Make sure that the current system date and time are accurate. Accurate time is important for proper operation of your device. You can reset the time if necessary.



■ Software Upgrade

1) Download an upgrade package from Check Point Technical Support Site;
2) Select the upgrade package file from the file location;
3) And press "**Enter**" to upload the upgrade package and run the upgrade procedure. The package would be decompressed and installed during the upgrade procedure.

■ **Device Commands**

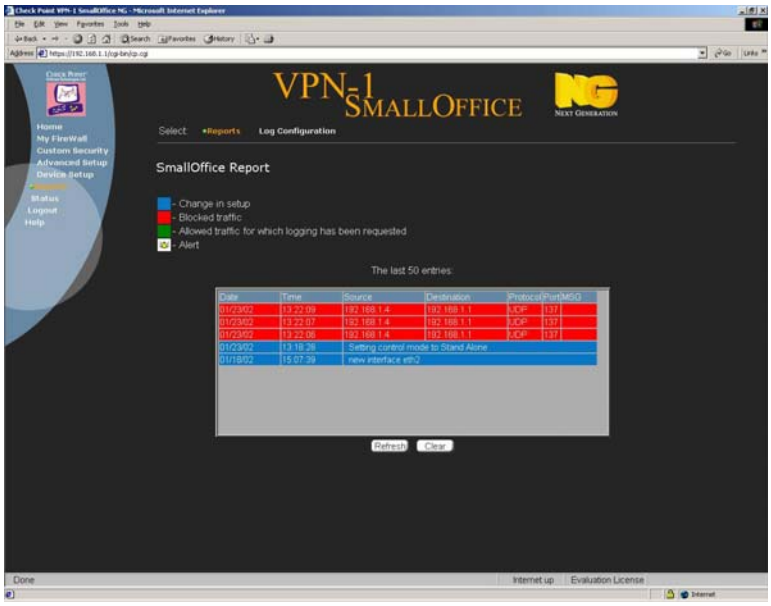
Off: Shutdown the FWA-230.
Reboot: Reboot the FWA-230.
Factory: Restore the factory defaults.
Diag: Download diagnostics files.

- **Report**

All VPN-1®SmallOffice™ events are monitored and tracked in four categories:

1) Any change in the setup configuration
2) Blocked traffic
3) Allowed traffic for which logging has been requested
4) All alerts

The table displays the 50 most recently logged events.



■ Logging Configuration

Users can select the slider to the desired log and alert level.

■ Log Destination

Since all VPN-1®SmallOffice™ events are monitored and tracked, logs can be stored and sent in two different ways. Users can specify the way logs and alerts will be sent from the FWA-230.

- **Send Logs to my Email:**

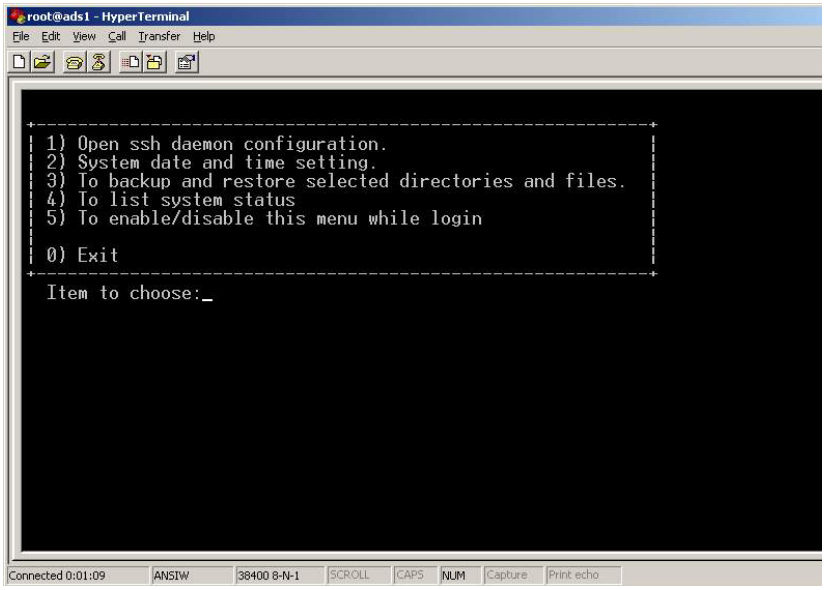
  Select "**Send Logs to my E-mail**". Type the e-mail address and then click "**Apply**".

- **Send Logs to FireWall-1 Log Server:**

  A Log Server can receive logs from numbers of VPN-1®SmallOffice™ NG and other Check Point™ modules. To access the Log Server, please select "**Send Logs to my E-mail**", fill in the desired "**Server hostname or IP address**", "**One Time Password**", "**FireWall-1 module Common Name (CN)**", and "**Management Server**", and then click "**Apply**".

2.4.2 Configure the FWA-230 through the Console Port

Once login succeeds, the following scene will show up. To re-configure the FWA-230, use the command "**setup**" to configure it. The procedures will remain the same no matter which port is applied. Configuration under network connection is as follows:



- **Open ssh daemon configuration**
  Changes the FWA-230's ssh daemon.

- **System date and time setting**
  Place to set the system's date and time.

- **To backup and restore selected directories and files**
  Select this option to backup and restore selected directories and files. (Please take 2.7 as your reference.)

- **To list system status**
  This option shows the system status.

- **To enable/disable this menu while login**
  This option enables/disables the menu while login.

- **Exit**
  Select this if no configuration changes were made and exit.

2.5 Operating System Installation

Operating System is pre-installed on in the FWA-230.

2.6 Upgrading the Software

Secure copy

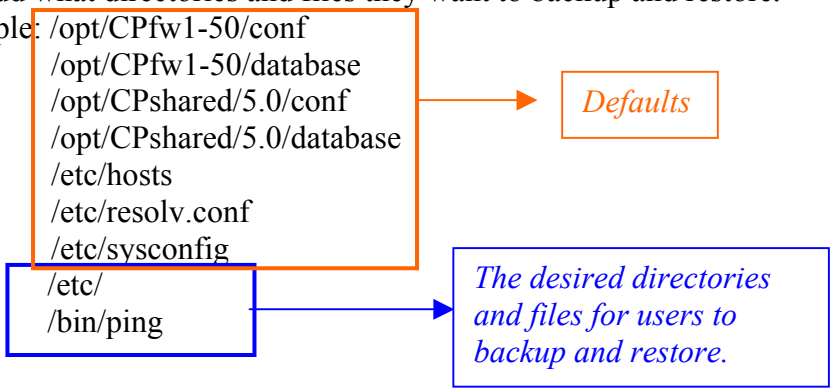
Type "pscp -r -pw password filename user@ip-address:/tmp/filename <mailto:user@ip-address:/tmp/filename>" (The "pscp" is a DOS tool for client management.) Users may adopt a separate secure copy, ex. openssh, standard ssh, and so on. Upgrade or install through rpm, tar and any other format.

2.7 Backing Up the Configuration

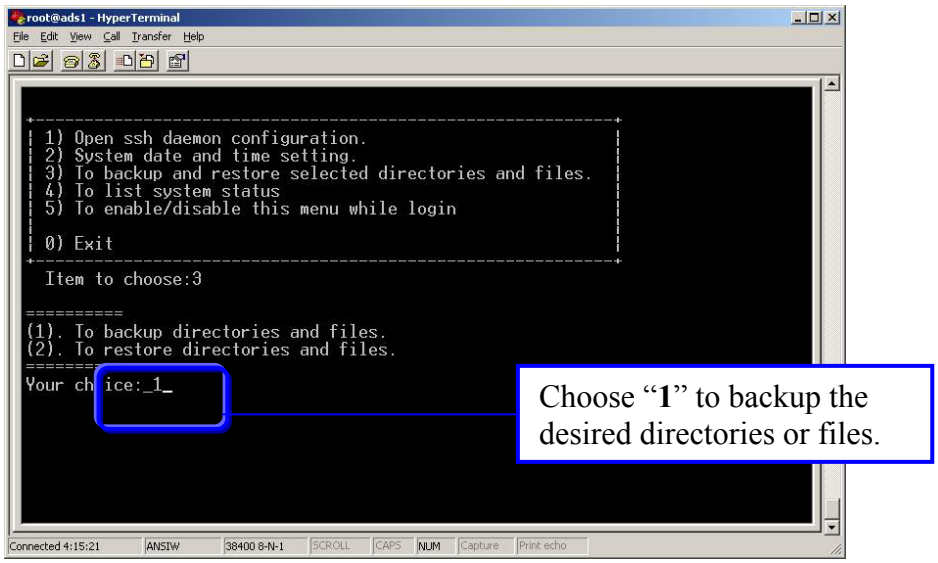
The FWA-230 provides a method to backup and restore the configuration. Login through LAN, WAN, or DMZ, the option "**To backup and restore selected directories and files**" offers the function to backup and restore selected directories and files which are listed in the "**/etc/backup_list**" according to the requirement.

There are several default items (directory) in "**/etc/backup_list**". Users can also add what directories and files they want to backup and restore.

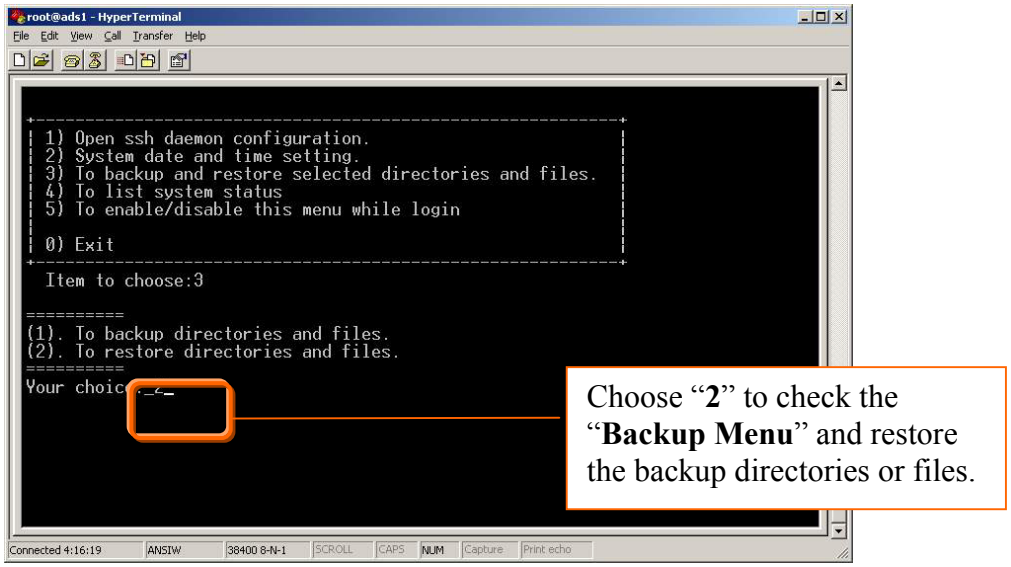
Example: /opt/CPfw1-50/conf
/opt/CPfw1-50/database
/opt/CPshared/5.0/conf
/opt/CPshared/5.0/database
/etc/hosts
/etc/resolv.conf
/etc/sysconfig
/etc/
/bin/ping



Choose "**(1). To backup directories and files**" to backup desired directories or files.



Choose "**(2). To restore directories and files**" in order to restore the backup directories or files.



Note: *The "root" is not suggested to backup, otherwise, the space of the CompactFlash will be shortage.*

3. Product Specifications

3.1 Specifications

- **CPU:** Intel® Celeron 566MHz
- **Chipset:** Intel 440BX chipset, support 100 MHz FSB
- **BIOS:** Award 2 Mb flash memory
- **Memory:** 128MB SDRAM
- **LAN:** Triple Intel 82559ER Fast Ethernet controllers, support 10/100 Base-TX with RJ-45 connectors
- **Storage:** One slim-type HDD drive (9mm thickness) option and one CompactFlash
- **I/O:** 1 x RS-232 port (Console), 3 x RJ-45 LAN ports, 1x DC-in

3.2 System and Environmental Specifications

- **Controls:** Power switch
- **Cooling System:** 5-CFM Fan x2
- **AC power:** 30 W/5 V/6 A External Adapter
- **Indicators:** 7 LED Displays for Triple LANs and Power
- **Operating temperature:** 0 ~ 40℃ (32 ~ 104℉)
- **Storage temperature:** -20 ~ 75℃ (-4 ~ 167℉)
- **Operating humidity:** 5 ~ 85 % @ 40℃ (104℉), non-condensing
- **Storage humidity:** 5 ~ 95 %
- **Dimension:** 224 x 39 x 170 mm (8.8” x 1.5” x 6.7”) (W x H x D)
- **Weight:** 1.4 kg (3.1 lb)

*Specifications are subject to change without notice

4. Frequently Asked Questions (FAQs)

Q: How can the configuration files be backed up?

FWA-230 provides one method to backup and restore the configuration. Refer to section 2.7 for more info.

Q: How can the configuration files be edited?

Use the command "**setup**" to edit the configuration file. Refer back to section 2.4 for more information.

Q: How can technical support be reached?

Please visit:http://www.advantech.com/support/index.asp to request any technical support and/or additional information.

Q: How can the system display the status through Console port?

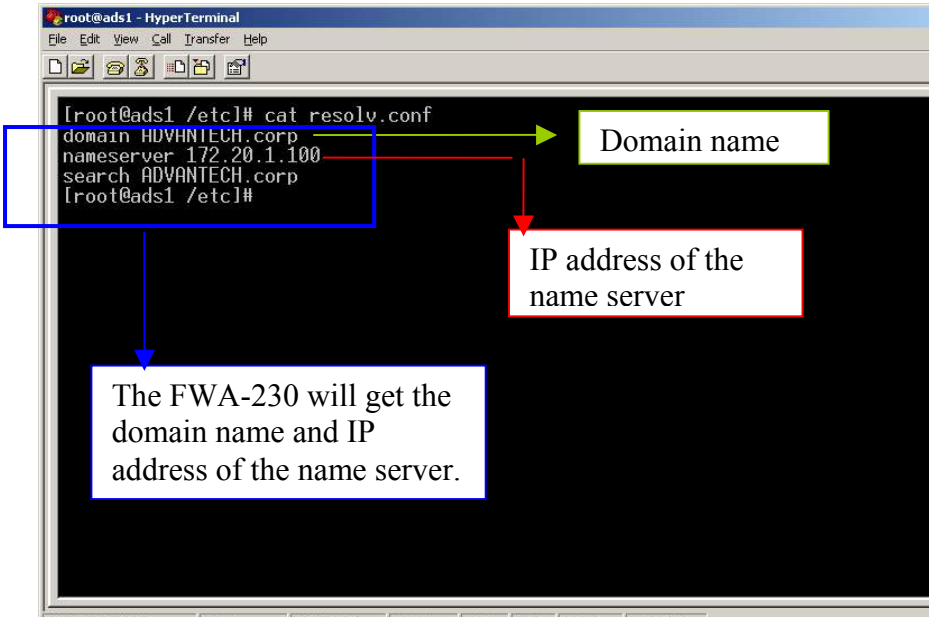
Use the command "**Ifconfig|more**" to view the IP addresses of eth0, eth1, eth2, io.

Q: What is "/etc/hosts" for?

The mapping hostname of the IP address is recorded in **/etc/hosts**. The defaults item "**127.0.0.1 localhost ads1 ads1.localdomain**" in the "**/etc/hosts**". Users can name the IP address as "**oldstock**" for example, and add "**192.168.1.1 oldstock**" in this text file. Afterward, if users "**ping oldstock**", that will be equaled to "**ping 192.168.1.1**."
Users can check the content of "/etc/hosts" to ensure the FWA-230 works well in VPN environment.

Q: What is "/etc/resolv.conf" for?

In this directory, the domain name and the IP address of the name server is saved.
The default of "**/etc/resolv.conf**" is blank. Users can setup their name server and domain through web browser.



Please do not delete the "**name server**". Otherwise, the consequence will occur like:

[root@ads1 /etc]# www.advantech.com
www.advantech.com: Host name lookup failure

Caused of missing the name server, the www.advantech.com can't be resolved, and the message "**Host name lookup failure**" would be showed.

Q: Can the Linux Software be upgraded?

Yes. Users can upload new packages to the FWA-230 through scp, uninstall old packages and install new one. However, the operation may occur unexpected consequence even to cause the devise not working. Refer to section 2.6 for more info.